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The Victoria History of the Counties of England

EDITED BY H. ARTHUR DOUBLEDAY

A HISTORY OF SURREY

VOLUME I

A HISTORY OF THE COUNTY OF SURREY IN FOUR VOLUMES EDITED BY H. E. MALDEN, M.A.

THE VICTORIA HISTORY OF THE COUNTIES OF ENGLAND

SURREY

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INSCRIBED
TO THE MEMORY OF
HER LATE MAJESTY
QUEEN VICTORIA
WHO IN HER LIFETIME GRACIOUSLY
GAVE THE TITLE TO
AND ACCEPTED THE
DEDICATION OF
THIS HISTORY

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GENERAL ADVERTISEMENT

The Victoria History of the Counties of England is a National Survey showing the condition of the country at the present day, and tracing the domestic history of the English Counties back to the earliest times.

Rich as every County of England is in materials for local history, there has hitherto been no attempt made to bring all these materials together into a coherent form. There are, indeed, histories of English Counties; but many of them—and these the best—are exceedingly rare and costly; others are very imperfect; all are out of date.

The Victoria History will trace, county by county, the story of England's growth from its prehistoric condition, through the barbarous age, the settlement of alien peoples, and the gradual welding of many races into a nation which is now the greatest on the globe. All the phases of ecclesiastical history; the changes in land tenure; the records of historic and local families; the history of the social life and sports of the villages and towns; the development of art, science, manufactures and industries—all these factors, which tell of the progress of England from primitive beginnings to large and successful empire, will find a place in the work and their treatment be entrusted to those who have made a special study of them.

Many archæological, historical and other Societies are assisting in the compilation of this work, and the editor also has the advantage of the active and cordial co-operation of the National Trust, which is doing so much for the preservation of places of historic interest and natural beauty throughout the country.

The names of the distinguished men who have joined the Advisory Council are a

guarantee that the work will represent the results of the latest discoveries in every department of research. It will be observed that among them are representatives of science; for the whole trend of modern thought, as influenced by the theory of evolution, favours the intelligent study of the past and of the social, institutional and political developments of national life. As these histories are the first in which this object has been kept in view, and modern principles applied, it is hoped that they will form a work of reference no less indispensable to the student than welcome to the man of culture.

Family History will, both in the Histories and in the supplemental volumes of chart pedigrees, be dealt with by genealogical experts and in the modern spirit. Every effort will be made to secure accuracy of statement, and to avoid the insertion of those legendary pedigrees which have in the past brought discredit on the whole subject. It has been pointed out by the late Bishop of Oxford, a great master of historical research, that 'the expansion and extension of genealogical study is a very remarkable feature of our own times,' that 'it is an increasing pursuit both in America and England,' and that it can render the historian useful service.

Heraldry will also in this Series occupy a prominent position, and the splendours of the coat-armour borne in the Middle Ages will be illustrated in colours on a scale that has never been attempted before.

The general plan of Contents, and the names of the Sectional Editors (who will co-operate with local workers in every case) are as follows :—

Natural History. Edited by Aubyn B. R. Trevor-Battye, M.A., F.L.S., etc.

Geology. By Clement Reid, F.R.S., Horace B. Woodward, F.R.S., and others

Palæontology. Edited by R. L. Lydekker, F.R.S., etc.

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FAMILY HISTORY AND HERALDRY

The Histories will contain, in the Topographical Section, manorial pedigrees, and accounts of the noble and gentle families connected with the local history ; and it is proposed to trace, wherever possible, their descendants in the Colonies and the United States of America. The Editor will be glad to receive information which may be of service to him in this branch of the work. The chart family pedigrees and the arms of the families mentioned in the Heralds' Visitations will be issued in a supplemental volume for each county.

The Rolls of Arms are being completely collated for this work, and all the feudal coats will be given in colours. The arms of the local families will also be represented in connection with the Topographical Section.

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The issue of this work is limited to subscribers only, whose names will be printed at the end of each History.

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THE VICTORIA HISTORY OF THE COUNTY OF SURREY

EDITED BY
H. E. MALDEN M.A.

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PREFACE

FOR the general design and scope of the *History of Surrey* the reader is referred to the General Advertisement of the Victoria History.

One history of the county of the first class exists already, Manning and Bray's, published in three volumes in 1814; the first volume had appeared alone earlier. But not only has something been learned in the last hundred years in history and archæology, but certain features of the county, which are treated in this volume, scarcely occupied the attention of those very learned and painstaking writers at all. The various sides of Surrey Natural History, which are dealt with by specialists here, lay outside their plan altogether. Geology was an unknown science then, for if a beginning had been made yet the geology of to-day is practically new knowledge.

Manning and Bray have the distinction of having started this Topographical History upon the right lines, by translating Domesday and engraving a map of the Domesday Survey of the county. But the literature of the Domesday Survey is now something very different from what it was. Mr. J. Horace Round, the unrivalled authority upon Domesday and the age of Domesday, has contributed an Introduction to the Survey of Surrey, and the Editor has executed an entirely new translation of the whole of the text, with notes, with the invaluable assistance of the same specialist.

The general sketch of the Political History is included in the present volume. One of the aims of the series is to 'show what part the county played in the larger History of the Empire.' The geographical position of Surrey, between London and the south coast, has made the county the scene of events, especially of the march of armies, connected with the most important crises of our histories. Yet the reader will find that local considerations have ruled the scope of treatment of political events. The Great Charter was granted in a Surrey meadow; but it is not of local interest. Had John and the Barons adjourned across the Thames its effects would have been the same. The Chartist meeting of 1848 was in Surrey; but the bad local choice of its promoters had a good deal to do with the peaceful fiasco which ensued. The Political History is amplified about the age of Elizabeth. The existence in a Surrey manor house of a vast mass of unpublished papers, the Loseley MSS., which the courtesy of the owner, Mr. More Molyneux, has placed at the disposal of the Editor,

seemed to be a reason why county records should be more freely employed in illustrating certain phases of history, to throw light not only on the administration of Surrey, but on that of any county under the Tudors. The history of Surrey undoubtedly contributes here to the understanding of 'the larger History of the Empire.'

The continuity of the Political History appears to be impaired by the necessary postponement of the section on Roman Surrey. The section will appear later; but the break is more apparent than real. The Roman remains are not very extensive, and it is impossible to piece together with absolute certainty any continuous story from British tribes through Roman occupation to West Saxon and Mercian conquest. The Saxon remains are fragmentary, but their story has been given as fully as is compatible with certainty. Some further inferences are possible, but a few positive and negative facts stand out clearly. Among the latter is that Surrey was not South Saxon. The countries north and south respectively of a great forest were not inhabited by the same people, nor ruled by the same kings in primitive ages. This is among the fictions of the earlier histories of Surrey.

The Ecclesiastical History of Surrey will follow in the next volume. The Topographical and Manorial History will occupy the greater part of the second, third and fourth volumes, taken together. Other matters, commercial, industrial and social, will be included. Under the last head Surrey may perhaps again illustrate general history. Epsom is one of the earliest considerable English watering places, and has other associations. The early history of cricket has much to do with Surrey. Wimbledon and Bisley are in Surrey. Putney and Mortlake are in Surrey. The first London railway terminus was in Surrey. London has annexed parts of Surrey, and has made it certain that there can be no cities in Surrey except parts of itself; but the reader to the end of a story of this county is like the traveller—

Qui mores hominum multorum vidit.

For some of the illustrations in this volume the Editor is indebted to the courtesy of Sir John Evans, Mr. More Molyneux, the Mayor of Guildford, the Society of Antiquaries, the British Archæological Association, and the Surrey Archæological Society.

A HISTORY OF SURREY

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AL MAP.

E COUNTIES OF ENGLAND

County Boundary shown thus ——

GEOLOGY

INTRODUCTION

IF it were possible completely to trace the series of changes which any part of the earth's crust has undergone, geological history would everywhere embrace the whole vast range of time that has passed in the shaping of our planet to its present form. But in no place is more than a very small fragment of the record exhibited. The effects of the great cycles of earth-development have been ever varying from place to place. With the elevation of one tract into dry land, and the wearing down of its surface by the agents of sub-aerial erosion, there has gone on concurrently the depression of a neighbouring area beneath the waters, wherein the materials derived from that land were spread out in layers of sediment to become the solid strata of a newer land. Over every part of our country this chain of vicissitudes has passed unbrokenly since the remotest times to which our knowledge can reach, and it is still passing. The records of the older epochs are ground down into material for the newer history, even as the paper-maker may reduce old documents to pulp which shall in turn become a vehicle for later knowledge.

To use the well-worn but none the less faithful simile, the geological register is everywhere the mere fragment of a volume, with here and there a leaf or often only part of a leaf remaining; and it is the aim of the geologist to reconstruct the history of the past from these fragments. We might even pursue the simile further, and speak of the geology of a limited district as the fragmentary copy of a work of world-wide distribution, decipherable only by comparison and correlation with similarly imperfect copies found in other districts in constantly varying states of mutilation. From this point of view, our Surrey record is a fragment containing portions of the later chapters only, with by far the greater part of the volume missing.[1]

In other words, of the three great groups into which we divide the fossiliferous rocks, namely, Palæozoic (computed to represent in time-value nine-tenths of the whole), Mesozoic or Secondary, and Cainozoic or Tertiary, the strata actually visible in the county (excluding the comparatively recent 'superficial' deposits) belong entirely to the later part of the Mesozoic and the earlier part of the Cainozoic. It is true that, as will be shown in the context, older rocks are known to exist at some distance below ground, but these are too deeply buried to affect the present land-surface, and our knowledge respecting them is limited to the bare fact that they have been found in certain deep borings.

[1] For detailed information regarding the geology of Surrey generally, the following *Memoirs of the Geological Survey* may be consulted: *The Geology of the Weald*, by W. Topley (1875), for the beds below the base of the Chalk and for matters connected with the valley systems of the Weald, and its denudation; *The Geology of the London Basin*, by W. Whitaker (1872), for the Chalk and Eocene beds; *The Geology of London and of part of the Thames*

To illustrate the position in the wider geological scale of the formations recognized in Surrey, we give below, as preliminary to the next table, a summary of the full succession of rock-systems according to the commonly-adopted classification, indicating which divisions are already known to exist in the county.

Classification	Rock-systems	Relation to Surrey
Cainozoic or Tertiary	Recent	Fairly represented
	Pleistocene	Partly represented
	Pliocene	Doubtfully represented
	Miocene	Absent
	Oligocene	Absent
	Eocene	Widely represented
Mesozoic or Secondary	Upper Cretaceous	Widely represented
	Lower Cretaceous	Widely represented
	Upper Jurassic	Not yet proved, but almost certainly underlying southern part of county
	Middle Jurassic	In part represented in deep borings in north of county
	Lower Jurassic	Not yet proved
	Triassic	Possibly represented in deep borings in north of county (see p. 21)
Palæozoic or Primary	Permian	Not yet proved; but some part certain to exist deep underground
	Carboniferous	
	Devonian	
	Silurian	
	Ordovician	
	Cambrian	
Eozoic and Azoic (?)	Pre-Cambrian	
	Archæan	

We may now turn to consider the classification and subdivision of the known strata of the county, as shown in the following table, including those which crop out at the surface and those which have been found only in deep borings.

Valley, vol. i., by W. Whitaker (1889), for later information respecting the Eocene, the River Drifts and other superficial deposits, and for discussion of the deep borings and deep-seated geology, and vol. ii. of the same memoir for details of Surrey well-sections; *The Cretaceous Rocks of Great Britain*, vol. i., by A. J. Jukes-Browne (1900), for the Gault and Upper Greensand, and vol. ii. (in press), by the same author, for the divisions of the Chalk. The two first-mentioned memoirs contain full bibliographies of works on the geology of Surrey up to the date of their publication; and it has therefore not been deemed necessary to give such references in the present sketch. References to some later papers will be found in footnotes to subsequent pages, but for a fuller list the reader should refer to the account of the bibliography for the period 1889 to 1899 contained in Mr. W. Whitaker's presidential address for 1900 to the Croydon Microscopical and Natural History Club (*Proceedings* 1900, pp. iii.–xvii.). The numerous reports of excursions in Surrey in *Proceedings of the Geologists' Association* should also be consulted, as these contain lists of references, besides frequently recording new observations. The greater part of the county lies within Sheet 8 (old series) of the Geological Survey map, on the scale of one-inch = one mile; but it also enters Sheets 6, 7 and 9 of the same map.

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TABLE OF STRATA

	Period	Formation	Character of material	Approximate thickness in feet
Exposed at the surface.	Recent	Alluvium	Mud, silt, gravel, etc., at low levels in present valleys	rarely exceeding 20
	Pleistocene	High-level Valley-gravel and Brick-earth	Gravel, sand, sandy loam, etc., of ancient river terraces	rarely exceeding 20
		Clay with Flints	Angular flints and clay overlying Chalk	irregular, in 'pipes,' up to 20 or more
		Plateau Gravel	Gravel, chiefly of flint, but with some pebbles of quartz, quartzite, etc.	rarely exceeding 15
	Older Pliocene (?)	Lenham Beds (?)	Ferruginous sand and sandstone in fissures at the top of the Chalk	
	Eocene	Bagshot Beds: Upper Bagshot Sand	Yellowish sands	up to 150
		Bagshot Beds: Bracklesham Beds	Clay laminated with sand	40 to 60
		Bagshot Beds: Lower Bagshot Sand	Light-coloured micaceous sands with a few pebbles	100 to 150
		Lower London Tertiaries: London Clay	Stiff blue or brownish clay with layers of nodules	400 to 480
		Lower London Tertiaries: Oldhaven or Blackheath Beds	Rolled flint-pebbles with a little sand	up to 60
		Lower London Tertiaries: Woolwich and Reading Beds	Clay, loam and sand, usually of bright varied colours	30 to 80
		Lower London Tertiaries: Thanet Beds	Light-coloured sand with green-coated flints at base	up to 50
	Upper Cretaceous	Upper and Middle Chalk	Soft chalk, with flints	500 or more
		Lower Chalk with Chalk Marl	Chalk, without flints	200 or more
			Calcareous marl	30 to 100
		Selbornian: Upper Greensand	Glauconitic sand and marl, and calcareous sandstone with chert	30 to 150
		Selbornian: Gault	Stiff clay and sandy clay	100 to 150
	Lower Cretaceous	Lower Greensand: Folkestone Beds	Coarse sand and ferruginous concretions	130 to 160
		Lower Greensand: Sandgate Beds	Sand, sandstone and fuller's earth	up to 50
		Lower Greensand: Hythe Beds	Sand, with some sandstone, ironstone and chert	180 to 250
		Lower Greensand: Atherfield Clay	Clay, sometimes sandy	up to 60
		Wealden: Weald Clay	Clay and shale, mostly dark-coloured, with thin bands of shelly limestone and ironstone nodules	1000
		Wealden: Hastings Beds: Upper Tunbridge Wells Sand	Sand and soft sandstone	150
		Wealden: Hastings Beds: Grinstead Clay	Clay, usually red or greenish	30
		Wealden: Hastings Beds: Lower Tunbridge Wells Sand	Sand and soft sandstone	60
		Wealden: Hastings Beds: Wadhurst Clay	Clay and shale with ironstone bands	150
		Wealden: Hastings Beds: Ashdown Sand	Sand and soft sandstone	300 or more
Found in deep borings.	Jurassic	Great Oolite Series	Oolitic limestone, calcareous sandstone and thin bands of clay	see p. 19
	Triassic (?) (or older)	New Red Sandstone (?)	Red, white and mottled sandstone, with marls	see p. 21

Putting aside for the present the consideration of the deep-seated rocks, let us first examine the character and arrangement of the strata which occur at the surface, since it is in these that we shall discover the cause of its present configuration. The geological structure of the county is so simple and its existing features depend so closely upon this structure that it forms an ideal tract for the study of the elementary principles of the science.

As indicated by the different colours on the accompanying map, the outcrops of the several geological divisions tend to form bands of varying width running nearly east and west across the county, with the older formations in the south and the newer in the north. This arrangement arises from the general northerly dip or inclination of the beds, due to an unequal uplift of the land in past times by which the southern part of the county has been raised to higher levels than the northern portion. Hence we may walk east and west upon the same formation along the line of 'strike' from one end of the county to the other, while if we go southward we soon cross to underlying, and if northward to overlying beds.

For our present purpose it is sufficient to note that, as shown in the section accompanying the map, this northerly dip prevails, with some minor irregularities, throughout the greater part of the county. We shall see later that it is dependent upon the presence of an elongated dome of elevation which included the whole country between the North and South Downs, having its axis a little to the southward of our county boundary and extending through Kent and Sussex into the eastern part of Hampshire. The central portion of this dome has been so greatly eroded that it is now for the most part lower than the sides, but at one time the successive belts of strata which now encircle it have extended across it in a flat arch rising many hundreds of feet above the highest ground now existing. The arch has been broken through by long-continued erosion, and as some of the inner or lower strata happen to be of less enduring composition than those by which they were originally covered, the wasting away after the removal of the higher portion has been more rapid towards the interior of the dome than at the sides.

Deep borings in Sussex and Kent have proved that immediately beneath the central portion of the dome there occurs a thick series of marine deposits (Portlandian and Kimeridgian) of Upper Jurassic age ; but these do not reach the surface. The oldest strata actually outcropping within the uplifted tract consist of an estuarine series of shaly clays with thin calcareous stone bands, and with lenticular beds of gypsum in their deeper portion. These 'Purbeck Beds' cover a small area in Sussex some miles to the south-eastward of the Surrey boundary. They pass upwards into the 'Hastings Beds,' a thick series of soft sandstones and semi-coherent sands, with intercalated bands of clay, apparently the sediments brought down by a large river into a lake or estuary.

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HASTINGS BEDS

Though the greater part of the outcrop of the Hastings Beds occurs in Kent and Sussex, the series also occupies a few square miles in the extreme south-eastern corner of Surrey, there forming the pleasant rising ground to the south of the Medway valley. Limited though this area is, it is sufficient to show nearly the whole sequence of the series, including the various subdivisions known as the Ashdown Sand, the Wadhurst Clay, the Lower Tunbridge Wells Sand, the Grinstead Clay, and the Upper Tunbridge Wells Sand. The general characters and average thickness of these strata have been already given in the table, and need not be repeated. The fossils of these beds, which are most abundant in the clay-bands, consist chiefly of freshwater shells of the genera *Cyrena*, *Unio* and *Paludina*, along with the minute oval valves of *Cypris*, a small fresh or brackish water crustacean. In Sussex many plant remains have also been found, chiefly ferns and cycads, and from the same county have been obtained the teeth and bones of gigantic extinct reptiles of ungainly aspect, such as *Iguanodon*, *Hylæosaurus*, *Cetiosaurus*, etc., and the remains of turtles and of fish.

According to the usual classification the Hastings Beds constitute the lowest division of the Lower Cretaceous system, and they are thus shown in the table and on the map. Recently, however, it has been urged in several quarters[1] that the fossils indicate a closer affinity to the Jurassic system than to the overlying Cretaceous, and consequently that we should include the Hastings Beds with the Jurassic. This is a matter which is still under discussion, and we therefore need not enter further into it.

WEALD CLAY

As the Hastings Beds sink down northward towards the Medway valley they pass beneath the thick mass of Weald Clay which extends over almost the whole of the southern part of the county. The outcrop of this clay constitutes the low gently undulating plain of the Weald which spreads out from the foot of the hilly ridges dominating it to the northward in which the more durable overlying formations terminate. The fossils of the Weald Clay are chiefly freshwater shells and cyprids, resembling those of the Hastings Beds, and they indicate that, as in the former case, the deposit represents an accumulation of mud and silt brought down into a lake or land-locked estuary by a river draining an extensive land. This land is generally supposed to have lain chiefly to the westward, but there is really much doubt as to its position, as evidence recently obtained tends to show that the more strictly freshwater conditions prevailed in the eastern part of the Wealden area, while towards the south-westward there are indications of an estuary;

[1] See Prof. O. C. Marsh, *Geol. Mag.*, dec. 4, vol. iii. (1896) p. 8; A. S. Woodward, *Geol. Mag.*, dec. 4, vol. iii. (1896) p. 70; and A. C. Seward, *Nature*, vol. liii. (1896) p. 462; see also G. W. Lamplugh, *Geol. Mag.*, dec. 4, vol. vii. (1900) p. 443.

hence it is possible that the stream may have flowed from the eastward across a tract extending over what is now the southern part of the North Sea. The prevalence of the freshwater conditions must have been of very long duration, since the thickness of the Weald Clay alone in Surrey is estimated to range between 600 and 1,000 feet, and to this must be added at least 600 or 700 feet more for the Hastings Beds.

The Weald Clay is interstratified here and there with thin bands of sand and silt, with layers of limestone made up almost entirely of a freshwater univalve shell of the genus *Paludina*, and with nodular bands of clay-ironstone. These harder strata generally give rise to slight 'features' or elevations of the surface, but they are rarely sufficiently thick to have much effect upon the character of the soil, which is principally a heavy clay. The farming of these 'strong' lands has been most severely affected by the depression in agriculture, with the result that the acreage under the plough has largely decreased.

The ironstone of the Wealden Beds was at one time extensively dug and smelted, though not so largely in Surrey as in the neighbouring counties of Kent and Sussex. An Act of 23 Elizabeth (1581) to restrict the use of wood in these iron-works makes exemption of the woods of 'Christopher Darrell, gentleman, in the parish of Newdegate, within the weald of the countie of Surrie, which woods of the said Christopher have heeretofore beene, and be by him preserved and coppised for the use of his iron-works in these parts.'[1]

Although the great thickness of these Wealden freshwater deposits implies the duration of the same conditions of deposition over the area for a very long period, this must not be taken to denote that the land remained for all the time at the same level. In fact we can only imagine such an accumulation taking place where there was gradual subsidence that kept pace with the rate of infilling of the basin. A similar balance of conditions seems to be established at the present day at the mouths of many large rivers, and it is supposed that the weight of the accumulated sediments causes a gradual downward movement of the tract upon which the mass is spread.

However this may be, it is clear that towards the close of the Wealden episode the waters of the sea began to gain ground, so that in the uppermost portion of the Weald Clay in Surrey, as exhibited recently in an enlargement of the railway-cutting between Redhill and Earlswood, brackish-water shells make their appearance among the freshwater fossils.[2] A further stage in the depression submerged the whole of the Wealden area beneath the sea, and henceforward for a long period marine conditions alone prevailed, though at first land probably still existed not far distant to the northward and north-westward. The submergence below sea-level seems to have taken place rather suddenly,

[1] See *Geol. Survey Memoir*, 'Geology of the Weald,' chap. xix. pp. 329–346, for information regarding this extinct industry.

[2] See also 'Geology of the Weald,' pp. 110, 114.

since the top of the Weald Clay, wherever exposed to examination, has proved to be sharp and well defined, and to be directly overlain by deposits containing a marine fauna.

ATHERFIELD CLAY

In the western part of the county the first sediment of this sea was a brown and greyish clay, somewhat sandy in places, known as the Atherfield Clay, from a locality in the Isle of Wight where it is typically developed. As the chief difference between this marine clay and the underlying Weald Clay is in the character of their respective fossils, which are destroyed by weathering at the surface, and as the two deposits form ground of similar aspect, it is only in fresh and deeply cut sections that we can discriminate between them. In a railway-cutting near Haslemere, the Atherfield Clay was found to have a thickness of 60 feet, and yielded numerous fossils, including *Ammonites*, *Nautilus* and bivalve shells of many genera[1]; and in a stream-section at East Shalford near Guildford, where upwards of a hundred species of mollusca were obtained from it by Mr. C. J. A. Meyer, its thickness was estimated to be about 64 feet.[2] This marine clay has hitherto been supposed to extend right across the county, but in the newly-exposed railway-cutting between Redhill and Earlswood previously referred to, its place was taken by sandy loams which could not be distinguished from the overlying Hythe Beds. Hence we may conclude that it was only in the quieter and deeper parts of the sea of the period that the Atherfield Clay was laid down.

LOWER GREENSAND

In our upward progress in the geological scale, or northward progress across the present surface of the county, we now reach the belt of sands and sand-rocks which rise up boldly in a long escarpment overlooking the clayey lowlands of the Weald. These are all of marine origin, and are collectively known as the Lower Greensand. This term is often held to include also the Atherfield Clay at their base ; it has reference to the frequent occurrence of abundantly disseminated grains of glauconite, a green silicate of iron, which however is usually decomposed in the sands at the surface, giving rusty red and yellow tints to weathered exposures. These beds were accumulated in a shallow sea, swept by strong currents (as indicated by the prevalence of 'false' or 'current'-bedding where the material has been deposited on the slopes of sand-banks), and they represent the steady wasting of a land not far distant. Their threefold division into Hythe, Sandgate and Folkestone Beds is based upon characters which are conspicuous at the places indicated by these names on the coast of Kent but become less marked as the beds

[1] 'Geology of the Weald,' p. 115.

[2] 'On the Lower Greensand of Godalming,' by C. J. A. Meyer, *Proc. Geol. Assoc.*, sup. to vol. i., 1868.

are followed westward; so that in Surrey there is some doubt as to their identification, and it is only in the tract between Reigate and Oxtead that the middle division, or Sandgate group, is recognized on the Geological Survey maps, though Mr. Meÿer believes that it can be identified also in the west of the county.[1]

In Kent the lowest of these divisions, the Hythe Beds, is characterized by irregular bands and concretions of sandy limestone or 'Kentish Rag,' often associated with layers of chert formed by the concentration of silica derived from sponge-spicules, but in eastern Surrey it consists, for the most part, of unconsolidated slightly loamy sand, with only occasional nodular induration. These characters are modified, however, west of Dorking, where the belt occupied by the Lower Greensand suddenly expands from a breadth of less than a mile to nearly four miles, again increasing to over six miles west of Guildford, under the influence of a subsidiary fold of the strata which will be subsequently described. Some parts of the division here become indurated into cherty sandstone; and in the Guildford district a hard calcareous sandstone or grit known as 'Bargate Stone,' resting on pebbly sands, is developed in the upper part, and this part contains, among other fossils, the teeth and scales of many extinct genera of fish. Sponge-spicules may generally be detected in the cherts, and the decay of such spicules appears to have supplied the siliceous cement by which the sands are indurated.[2] This lateral change in the composition of the beds is strongly reflected in the physical features of the country; for while between Reigate and Dorking, where the Lower Greensand includes very little hard material, its outcrop forms a comparatively low broken terrace dominated by the Chalk escarpment, it rises both eastward and westward into a bold hill-range which on the west is higher than the Chalk Downs, with its culminating points at Leith Hill (967 feet) and at Hind Head (894 feet) making the highest ground in the county.

In the district east of Reigate, where the Sandgate Beds of the Lower Greensand have been recognized as a separate division, they consist of alternations of soft sandstone with clayey material and fuller's earth, having a total thickness near Nutfield of 40 feet or more. The fullers' earth of this district is of considerable economic importance, having been extensively worked from an early date for use in the preparing and cleansing of cloth, and latterly for export to America for use in the dehydrating of cottonseed-oil and other vegetable oils, which it is said can then be used for adulterating lard. The demand for the former purpose had gradually dwindled, but the new use for the material has given a fresh lease of life to the industry.

The upper division, or Folkestone Beds, is persistent in character

[1] 'On the Lower Greensand of Godalming,' *Proc. Geol. Assoc.*, sup. to vol. i., 1868; see also T. Leighton, 'The Lower Greensand above the Atherfield Clay of East Surrey,' *Quart. Journ. Geol. Soc.*, vol. li. (1895) pp. 101–123, which contains full references to previous literature of the subject.

[2] See Dr. G. J. Hinde, *Phil. Trans.*, vol. clxxvi. (1885) p. 403.

throughout the county, consisting of clean sharp incoherent sand or soft sand-rock, of white, yellow, brown or reddish tints, with irregular concretions of hard iron-sandstone locally known as 'carstone,' which is often dug for road-mending. The sand generally shows strongly-marked 'current-bedding'; it is usually about 100 feet thick. It forms, in many places, heathy common land, too poor for cultivation. Its topmost layers, immediately underlying the Gault, usually contain small phosphatic concretions, probably denoting a pause in the accumulation of the sediments, when fresh supplies of sand were no longer brought down by the waves and rivers into the sea, but before the quiet conditions necessary for the settling down of the overlying clay were established.

Soon however the shallow sea or gulf with its strong currents and shifting sand-banks gave place to more open waters, as the renewed depression which ushered in the Upper Cretaceous period submerged more and more land, until finally, during the deposition of the Chalk, there was no longer any shore within a considerable distance of the area now constituting our county.

SELBORNIAN

The first deposit of this deeper sea was the Gault, a more or less calcareous mud or clay, which is so celebrated for the abundance and beauty of its fossils where exposed on the Kentish coast near Folkestone. This clay, as indicated on the map, has a continuous outcrop across the county in a narrow belt at the foot of the Chalk Downs, causing by its more rapid wasting a longitudinal depression between the Downs and the Lower Greensand hills. Good sections of the Gault are rare in Surrey, and there is some uncertainty as to its thickness, which is believed to be usually between 90 and 120 feet at the outcrop, and may be much less in places, but is said to reach 343 feet in a boring at Caterham,[1] and about 200 feet in borings in the north of the county (see p. 19).

The next division of the series, the Upper Greensand, a name having little reference to the composition of the rock in Surrey, is closely associated with the upper portion of the Gault; and in the latest scheme of classification the two are linked together as a single formation under the term Selbornian, since it is suggested that there is a lateral as well as a vertical passage between them, and that the upper part of the Gault clay of Kent was deposited contemporaneously with the Upper Greensand rocks of Surrey.[2]

These Upper Greensand or 'Merstham Beds' of Surrey consist in the lower portion of slightly glauconitic silty marl, containing large siliceous concretions, surmounted by beds of Malm-rock or Fire-stone, a peculiar more or less calcareous sandstone with cherty aggregations,

[1] See W. Whitaker's 'Some Surrey Wells and their Teachings,' *Trans. Croydon Microscop. and Nat. Hist. Club*, 1886, p. 48.

[2] See A. J. Jukes-Browne in *Geol. Survey Memoir*, 'The Cretaceous Rocks of Great Britain,' vol. i. (1900) p. 93.

which in the east of the county are about 20 feet and in the west from 60 to 80 feet in thickness. The Malm-rock is peculiar in containing a large amount of colloid silica, soluble in alkaline solutions, this material having been derived from organic sources, chiefly from the siliceous spicules or internal framework of sponges which have lived in the ancient sea. Some beds of this stone are valued for building, while the softer kind is dug for rubbing on hearths. It has been extensively worked at Godstone, Merstham, Reigate and other places, not only in open quarries but also by long galleries driven under the Chalk from the outcrop. These stone-bands give rise to a terrace-like feature at the foot of the Downs. They are overlain by 5 to 15 feet of marly greyish-green sand, which forms the top of the Upper Greensand and passes up gradually into the Chalk Marl. The soil of this tract is peculiarly favourable to the growth of hops and for orchards.

CHALK

The general aspect of the Chalk, which is the next formation to demand our attention, is so familiar in England that description seems almost superfluous. It forms the range of the North Downs, and the bold escarpment marking its southward termination runs from east to west across the county, broken only by the transverse valleys of the rivers Mole and Wey. In the west, between Farnham and Guildford, the northerly dip is so steep that the Chalk is rapidly carried out of sight beneath newer beds, its outcrop where it forms the well-known ridge of Hog's Back averaging only about half a mile in width. But eastward from Guildford the dip lessens and the area of Chalk widens out gradually, until in the eastern part of the county it has a breadth of about seven miles.

The most striking characteristic of the formation is its homogenous composition throughout its extensive range, both horizontally and vertically. From its lowest to its highest beds with a thickness in some parts of England reaching from 1,000 to 1,500 feet,[1] and from the shores of the English Channel to the shores of the North Sea in East Yorkshire this clean white limestone preserves everywhere the same general characters, with only such minor modifications of structure as require special study to discriminate. The whole of this enormous mass has slowly accumulated at the bottom of an open sea as a calcareous mud, made up for the greater part of the relics of generation after generation of lime-secreting organisms, among which the minute shells of foraminifera usually predominate. The presence of any extraneous material of other than microscopic dimensions in the formation is extremely rare, so that the discovery some years ago in the Hayling chalk-pit at Croydon of a boulder of granitic rock along with some other fragments alien to the Chalk and a similar discovery more recently in the Middle

[1] See *Mem. Geol. Survey*, 'The Cretaceous Rocks of Great Britain,' vol. i., by A. J. Jukes-Browne, pp. 1–3.

Chalk at Betchworth have attracted much attention.[1] These stones have probably been rafted from a distant shore either by floating ice or entangled in the roots of a fallen tree, whence they have dropped and sunk to the mud of the sea-floor. In this mud the remains of many of the denizens of the sea have been embedded and preserved, so that the Chalk is famous for the beauty and variety of its fossils, which in many parts of the mass can be extracted and cleaned from their matrix with little trouble. Among these fossils we may note the teeth and other hard parts of extinct fish and reptiles; the shells of Ammonites and several other extinct genera of Cephalopoda; a few univalve and many bivalve shells, the latter including characteristic species of *Inoceramus* and *Spondylus*; the tests of sea-urchins, often in great profusion, the different species and gradual evolution of which have been closely studied, and have afforded a method of dividing the Chalk into zones where the sameness of composition would otherwise render this task difficult or impossible[2]; abundant traces of sponges whose siliceous spicules have supplied most of the material for the nodules of flint which are a conspicuous feature in a considerable part of the Chalk; and the remains of corals, polyzoa, etc.

In Surrey the Chalk is thinner than in most parts of its range in England, and in some places has evidently lost a considerable portion by denudation before the deposition of the Eocene beds,[3] especially where, in the south-east of the county, the Blackheath Beds rest directly upon it and the older divisions of the Eocene are absent. Where the last-mentioned conditions prevail, its present thickness is estimated at about 500 feet; but as we shall presently see, where penetrated in deep borings farther north it was between 600 and 700 feet thick, while in a boring at East Horsley a thickness of 817 feet was proved.[4] Its northerly dip carries it down beneath the Tertiary strata along a line running from the vicinity of Farnham, past Guildford, Leatherhead, Epsom and Sutton, to the eastern boundary of the county near Croydon; and it is not again seen at the surface to the northward of this line in Surrey, except at one spot at the north-eastern boundary presently to be mentioned. It is known, however, from the evidence of numerous borings, to underlie the newer strata throughout the northern part of the county; and by a reversion in the direction of dip is brought gradually nearer the surface again further northward, until it emerges to form the Chalk range running across the south-midland counties west and north of London (see

[1] See R. A. C. Godwin-Austen, *Quart. Journ. Geol. Soc.*, vol. xiv. p. 252; and W. P. D. Stebbing, *ibid.* vol. liii. (1897) pp. 213–220.

[2] See especially the recent papers of Dr. A. W. Rowe, 'On the genus *Micraster*, between the zones of *Rh. Cuvieri*, and *M. Cor-anguinum*,' *Quart. Journ. Geol. Soc.*, vol. lv. (1899) pp. 494–548; and 'The Zones of the White Chalk of the English Coast,' *Proc. Geol. Assoc.*, vol. xvi. (1900) pp. 289–368.

[3] For discussion on this point see Prof. J. Prestwich in 'Geological Inquiry respecting the Water-bearing Strata of the Country around London' (London: Van Voorst, 1851), and W. Whitaker in *Mem. Geol. Survey*, 'The Geology of the London Basin,' p. 23.

[4] See W. Whitaker, 'Some Surrey Wells (Second Paper),' *Trans. Croydon Microscop. and Nat. Hist. Club*, 1894–95, p. 138.

map). The Tertiary deposits thus lie in a shallow trough or basin of Chalk, termed by geologists the London Basin. A trough of this kind formed by strata dipping towards a medial line from both sides is technically known as a syncline. This arrangement of the strata is of course the reverse of an anticline such as we have traced out in the Weald. The dome or anticline of the Weald and the trough or syncline of the London Basin, taken in conjunction, are the governing factors in the geological structure of Surrey.

To return to the description of the Chalk at its outcrop ; we shall find that when closely examined its successive parts exhibit slight differences of character, which enable us to distinguish the divisions given in the table on p. 3.

Of these, the lowest or Chalk Marl consists, as the name implies, of a marly admixture of calcareous and clayey material. Above this comes rather hard greyish chalk, slightly clayey, and then 100 to 150 feet or more of white chalk. The beds up to the top of this 'Lower Chalk' division are marked by the absence of flint; but from this horizon to the top of the formation in Surrey flints in scattered nodules and occasionally in thin continuous layers are everywhere present ; and the whole formation is thus roughly divisible into an upper part containing flints and a lower part without flints, of which the former is always thicker than the latter. As previously mentioned, it is however from the successive appearance and disappearance of the different species of fossils in the slowly accumulated sediment that we are best able to divide the Chalk into zones ; but at present it is only in certain parts of the county that this has been done,[1] and further research on these lines is greatly to be desired.

In the Hog's Back ridge the Chalk has scarcely sufficient width to display the typical down-land scenery, but farther east where the outcrop begins to widen it exhibits the rounded steep-sided hills and deep dry winding valleys which are everywhere so characteristic of a chalk country. The elevation of the Downs also increases eastward through Surrey, their highest ground, 876 feet above sea level, occurring near the eastern boundary of the county.

The dry thin soil of the Downs where the Chalk immediately underlies the surface is generally treeless, and covered only with smooth short turf. But these conditions are largely modified in the Surrey uplands by the presence on the hills of an irregular surface-deposit of clay or clayey earth containing many flints derived from the Chalk, hence termed the 'Clay-with-flints.' This material occurs as a variable sheet which fills all the little pits and hollows in the weathered surface of the Chalk wherever the ground is not too steep for it to rest. Its origin bears a simple explanation. We know that the calcareous matter of the Chalk is slowly taken up and carried away in solution by the downward percolation

[1] Consult C. Evans' paper, 'On some Sections of the Chalk between Croydon and Oxtead, with Observations on the Classification of the Chalk,' *Proc. Geol. Assoc.*, supplement to vol i., 1870 ; also that of G. E. Dibley, *ibid.* vol. xvi. (1900) pp. 489–496.

of surface waters; and the Clay-with-flints represents the insoluble residuum of the rock thus dissolved, often with the addition of a little detritus from the Tertiary strata which have once overlain the Chalk.[1] From this cause many parts of the Chalk Downs possess a deep loamy soil, and are either enclosed and cultivated, or support a thick woodland growth, the beech, yew and ash all thriving well in these tracts.

The Chalk is of economic consequence as an inexhaustible source of lime, and perhaps still more on account of its valuable properties as a water-bearing formation. The rain which falls on its surface is rapidly absorbed and stored in the pores of the rock and in the innumerable cracks or joints by which it is traversed, so that at low levels the Chalk is in a state of saturation, and yields a copious supply of water when wells are sunk, besides feeding the springs which are thrown out along the base of its escarpment, and in other places where the surface falls below the plane of saturation.

Between the deposition of the uppermost part of the Chalk in Surrey and that of the lowermost Tertiary beds now overlying it there must have been a long lapse of time. Not only do we find that the physical conditions of the area were completely changed during this interval, but also that a new group of life-forms were developed, so that the species of fossils in the Tertiary deposits are quite different from those in the Chalk. In both respects the Chalk bears witness to a remote past in which there was no approximation towards the present conditions, while the Eocene strata dimly foreshadow the existing state notwithstanding the great cycles of change which had still to pass over our country before the present distribution of land and sea was attained.

As to the course of events during the transition from Cretaceous to Tertiary times we can glean very little information in England, since there are no deposits in this country which bridge the gap. The bottom of the Chalk sea seems to have been gently and evenly uplifted, until brought within the influence of erosive agencies; and these agencies affected wide tracts so equally that when the newer deposits were formed, their stratification was almost parallel to that of the Chalk on which they rested. Hence in actual sections no discordance can be traced between the Chalk and the Tertiary Beds, although other data indicate that considerable erosion of the older rock had occurred before the newer strata were laid down. The great change in physical circumstances which had taken place in the meanwhile is shown in the character of the sediments. The homogenous mass of chalk denoting widespread and long-continued marine deep-water conditions is succeeded by a changeful group of sands, clays and pebble-beds, constituting the 'Lower London Tertiaries,' the earliest division of the Eocene Period, which was accumulated in part in a shallow sea and in part in the estuary of a large river. In the aggregate this group rarely attains a thickness of more than 100 feet in

[1] See W. Whitaker, *Mem. Geol. Survey*, 'The Geology of London' (1889), chap. xviii., where this subject is fully discussed, with references to previous literature.

Surrey and is subject to much variation in this respect as well as in the local development of its different members.[1]

LOWER LONDON TERTIARIES

The Thanet Sand, which forms the lowest portion of the group, is a fine light-coloured slightly clayey sand, having at its base a band of green-coated chalk flints derived from the erosion or dissolution of the Chalk.[2] This sand is best developed in the county of Kent, but extends thence into Surrey, where its narrow outcrop fringes the Chalk in an indented belt running from Addington past Croydon, Sutton and Epsom, and thinning away gradually westward towards the Mole Valley until no longer traceable. Numerous small outlying patches of this and overlying divisions are also found capping the Chalk Downs some distance to the southward of the main outcrop, being the relics of the sheet which has once extended over the whole of the Chalk of Surrey.

The scanty fossils which the Thanet Sand has yielded in our county support the evidence of the more plentiful organic remains which it contains in Kent in proving that the bed is essentially of marine origin.

The Woolwich and Reading Beds, so named from the localities at which the different forms of these very variable deposits are typically developed, constitute the middle division of the Lower London Tertiaries, and either overlie the Thanet Sands, or where these are absent rest directly upon the Chalk. Their outcrop stretches across the middle of the county from west-south-west to east-north-east in a narrow belt along the northern edge of the Downs, and in West Kent sweeps northward to the banks of the Thames between Erith and Greenwich, as shown on the map, and re-enters the north-eastern corner of Surrey for a limited space in the neighbourhood of Peckham and Dulwich, along with the Thanet Sands, encircling a small 'inlier' of Chalk which reaches the surface at the county boundary west of Greenwich. These beds have been laid down in the estuary of a large river, which probably flowed from west to east. Like most estuarine deposits, their composition varies from place to place; in the western part of the county they consist chiefly of lenticular alternations of plastic clay and coarse and fine sand, generally of bright tints, the clay often red and mottled, and the sand green, yellow, or greenish-grey. Almost the only fossils of the beds of this type are the plant-remains which occur in some of the laminated clays. Gradually changing eastward, the series at the eastern border of the county is mainly composed of light-coloured sands and finely-bedded grey clay, often crowded with estuarine shells and sometimes with layers of oysters compacted into rock, with pebble-beds of rolled flints towards the base, and occasionally with thin seams of lignite. Besides shells and plant-remains, the beds of this character have yielded traces of an extinct

[1] The most important contributions to our knowledge of the Eocene deposits of the county were made by the late Prof. J. Prestwich in a series of papers contributed to the Geological Society between 1847–57.

[2] See W. Whitaker, *Mem. Geol. Survey*, 'Geology of London' (1889), vol. i. pp. 103–106.

mammal, bird, turtles, crocodiles and fish, chiefly from sections at Croydon[1] and Dulwich.[2] These fossils, like those of the London Clay, indicate a climate considerably warmer than that which now prevails in the district.

The Blackheath or Oldhaven Beds, which come next above the Woolwich and Reading Beds in the sequence, need not detain us long, as they attain their chief development to the eastward of the county boundary, and thin out westward soon after crossing it, finally disappearing at Croydon. Small 'outliers' of these beds are scattered over the Chalk Downs to the southward of Croydon, up to the very crest of the escarpment south of Caterham. They consist of pebble-beds of extremely well-rounded flints more or less intermingled with sand. They seem to have been accumulated as shingle-banks in a shallow sea some little distance from the shore. Though in some places containing estuarine shells they yield more marine fossils than the Woolwich and Reading Beds, and thus herald the submergence which brought the waters of the sea once more over the whole of the south-east of England.

LONDON CLAY

With the deepening of this sea during the subsequent stage a thick and widespread mass of marine clay was deposited, which extends without much change throughout the London Basin and reappears to the south-westward of the Wealden dome in Sussex and Hampshire, having evidently once been continuous over all the intervening tract.

This deposit, which from the fact of its underlying the metropolis is known as the 'London Clay,' occupies a wide area in Surrey; and though concealed by newer deposits in the north-west of the county, it is continuous either at or beneath the surface in all that part of Surrey which lies to the northward of the outcrop of the Lower London Tertiaries. In composition it is a tenacious bluish-grey clay, weathering brown at the surface, containing layers of nodular concretions of clayey limestone. These nodules generally show shrinkage-cracks lined with calcite or aragonite, giving them a *divided* appearance, whence they are termed *septaria*; they are often very fossiliferous. For a few feet at its base the London Clay generally shows an admixture of green and yellow sand, with rounded pebbles of flint, and part of this 'basement-bed' is sometimes indurated into tabular rocky masses. The topmost layers of the clay are also intermingled with sand, thus passing gradually upward into the overlying Lower Bagshot Sand; but otherwise its composition is remarkably uniform.

Its thickness in Surrey ranges from about 300 to about 400 feet, increasing gradually from west to east. Its fossils, not everywhere present and obtained more abundantly in the neighbouring counties of Middlesex and Kent than in Surrey, include extinct mammals, birds, turtles, croco-

[1] See H. M. Klaassen, *Proc. Geol. Assoc.*, vol. viii. (1883) No. 4, pp. 236–242.

[2] See C. Rickman, *Quart. Journ. Geol. Soc.*, vol. xvii. p. 6; and *Mem. Geol. Survey*, 'Geology of London,' pp. 211–213.

diles and fish, together with marine shells numerous both in individuals and in species, and plant-remains; and these, as already mentioned, indicate a warm, almost sub-tropical temperature.

Where the outcrop of the London Clay enters the county on the west, near Farnham Park, it is comparatively narrow—from a half to three-quarters of a mile in width—owing to the steep northerly dip, but it expands as the dip decreases, until near Leatherhead it attains a width of about three miles. East of this locality, owing to the upward shelving of the south-eastern margin of the London Basin the strike of the beds swings northward, and the London Clay, no longer covered by the Bagshot Beds (except by a few small outliers), lies exposed in a wide sheet extending to the banks of the Thames and occupying all the north-eastern part of the county around the suburbs of London, save the little strip previously described where the underlying strata come to the surface. The Clay also stretches along the Thames Valley at the northern border of the county to Chertsey and Egham, though usually covered in this quarter by the Recent Valley-deposits presently to be discussed. Wherever exposed at the surface it forms a heavy cold clay-land, but in many parts of its outcrop this character is modified by the presence of thin 'superficial' accumulations of gravel, loam and brick-earth of Post-Tertiary or Recent age.

BAGSHOT BEDS

After the long period of depression indicated by the London Clay, the pendulum of change once more swung slowly back, and a gradual re-elevation set in which brought shallow water conditions again into our area. This change is indicated by the character of the beds by which the London Clay is overspread, which consist of a thick mass of sand and pebbly beds, with a subordinate clayey portion, known collectively as the Bagshot Beds. Fossils are extremely rare throughout this series in Surrey, but the few that have been found indicate that the deposits are of marine origin. The equivalent beds in the Hampshire Basin are, however, in their lower portion, partly fluviatile and estuarine, so that we seem, as in case of the Woolwich and Reading Beds, to have evidence of the existence of a river flowing from west to east during the accumulation of the series.

Much has been written respecting the subdivision and correlation of the Bagshot Beds,[1] but for our present purpose it is sufficient to note that in Surrey a threefold division, based on the composition of the strata, is possible.[2] Of these, the lowest (Lower Bagshot Beds) consists mainly of fine whitish or yellowish sand, often micaceous, sometimes slightly laminated or intermixed with clay, and occasionally containing

[1] See J. S. Gardner, *Geol. Mag.* 2, dec. vol. vi. (1879) p. 151, and *Quart. Journ. Geol. Soc.*, xxxv. p. 210; Rev. A. Irving, *Quart. Journ. Geol. Soc.*, vol. xlviii. p. 485, and several other papers; H. W. Monckton, *Quart. Journ. Geol. Soc.*, xxxix. p. 352, and xlviii. p. 48, etc.; Monckton and Herries, *ibid.* xlii. p. 415; H. G. Lyons, *ibid.* vol. xlv. p. 633; etc., etc.

[2] It is now generally agreed that the so-called Upper Bagshot Beds of Surrey are not strictly equivalent to the Upper Bagshots of the Hampshire Basin.

rolled black flint pebbles, thin layers and nodules of iron-sandstone, and concretionary masses of hard siliceous sandstone. The last-mentioned material is also developed abundantly in the Thanet Sands and Woolwich and Reading Beds; and from its superior durability large blocks, popularly termed 'grey-wethers,' are frequently strewn over the surface when the remaining portion of the bed of which they formed part has been wasted away.

The thickness of the Lower Bagshot division varies from 100 to 150 feet. Its outcrop corresponds in shape to that of the London Clay, being similarly contracted to a narrow belt between the western border and the valley of the Wey and then broadly expanded as it sweeps round northward on both sides of that river up to its junction with the Thames, whence it returns westward to the county boundary in the neighbourhood of Virginia Water and Egham. Many detached 'outliers' also occur on the London Clay beyond the limits of the main outcrop.

The middle division of the Bagshot series, or 'Bracklesham Beds' as they are usually called, from a place on the coast of Sussex where beds supposed to be of the same age are typically exposed, consists in Surrey of laminated clays and sands (sometimes containing a little lignite) from 40 to 60 feet thick. The sands are often of a dark-green colour, and occasionally include layers of flint pebbles. The clayey character of this division serves to distinguish it from the other portions of the series; the water percolating through the porous overlying beds is thrown out along its outcrop in a line of small springs and boggy patches. The soil also is less sterile than on other parts of the Bagshot Beds, on which as a rule the proportion of uncultivated common is great.

The outcrop of the Bracklesham Beds in Surrey occupies a broad much-indented tract between the valleys of the Blackwater and the Wey, lying within the crescent-shaped rim of Lower Bagshots. Outliers are also found between the Wey and the Mole, and again to the north of the main mass.

The Upper Bagshot Beds of Surrey consist of light-yellow or ochreous sands, from 120 to 300 feet in thickness, which form for the most part dry barren land covered with heath and in places with fir, occurring only in a limited tract near the western border within the bounds of the Bracklesham Beds. Their most continuous development in the county is in the Chobham Ridges, extending thence southward into Fox Hills and Ash Common; a large outlier occurs on Pirbright Common to the east of Pirbright, and a northerly chain of smaller outliers to the north of Bagshot and Chobham. They contain few pebbles, but many ferruginous concretions which sometimes exhibit the casts of marine shells. The 'grey-wether' sandstone of these sands has already been mentioned.

With these strata our survey of the materials which have gone to the *making* of the county is nearly concluded. Up to this time we have concentrated our attention upon the piling up of masses of strata by the accumulation of matter removed from other areas and deposited in our

district, although it is true that now and again we have found the forces of destruction and reconstruction going hand in hand even within this limited field of observation. But henceforward we shall have to deal only with the *shaping* of the land as the strata which we have been considering were uplifted above the waters and broken down piecemeal by rain, frost, heat and wind, to be carried away by brooks into rivers and by rivers into seas, to take their part in the construction of a newer land.

In the passage seaward, however, the detritus of the land makes many halts. It forms gravel-banks and flats in the streams, of which portions are sometimes left stranded for a while as terraces on the slopes when the valley is deepened ; it is blown by the wind from dry channels and spread over tracts where it may find temporary rest ; or it is carried as mud by river-floods and deposited on low ground beyond reach of immediate re-transport. In these and other similar ways, the remnants from the waste of the land, termed by geologists the 'superficial' deposits, are formed ; and as we shall presently see, we may glean from their examination some knowledge of conditions which though geologically 'recent' are still long since past.

It is not indeed certain that because no newer 'solid' strata than the Bagshot Beds now exist in our county none were ever deposited ; in Hampshire there are newer (Oligocene) beds several hundred feet in thickness ; but if such were ever laid down in Surrey they have since been entirely removed. Of a still later period—the Pliocene—it is believed that there are actually some faint traces in the form of small masses of ferruginous sand and loam which are preserved in 'pipes' or hollows of the chalk in a few places on the summit of the Downs. No conclusive evidence has yet been found in Surrey to indicate the age of this material, though it has recently yielded a few ill-preserved traces of shells at Netley Heath, while in hardened sand similarly situated at Lenham and Harrietsham in Kent the casts of marine shells of Early Pliocene age have been discovered.[1]

DEEP-SEATED ROCKS

Before following the later development of the geological history of our county, however, let us turn back for a moment to investigate its very foundations. We started our examination with the oldest rocks which are exposed at the surface ; but as previously mentioned there have been two deep borings in the north of the county which have proved the existence of a sequence of much older rocks at considerable depths below the surface. These borings were made at Richmond and at Streatham, and their results are arranged and classified in the following summary. In both records the lower portions printed in italics represent strata older than those exposed at the surface in Surrey, or indeed in any part of the south-east of England.

[1] See C. Reid, *Mem. Geol. Survey*, 'Pliocene Deposits of Great Britain' (1890) p. 48 ; and W. P. D. Stebbing 'Excursion to Netley Heath and Newlands Corner,' *Proc. Geol. Assoc.*, vol. xvi. (1900) pp. 524–526.

GEOLOGY

I.—Boring at Richmond Waterworks, 1876–84.[1]

Thickness in feet	Kind of Material	Geological Classification
10	Made ground and sandy gravel	Recent
160	Clay	London Clay
59½	Mottled clays with a bed of sand	Reading Beds } Eocene
22½	Light grey and greenish sand with green-coated flints at base	Thanet Sands
300	White chalk with flints	Upper Chalk
150	Greyish and cream-coloured chalk without flints	Middle Chalk
220	Grey marly chalk passing downward into chalk marl	Lower Chalk } Upper Cretaceous
16	Calcareous sandstone	Upper Greensand
201½	Pale and dark blue clay with glauconitic sand and phosphatic nodules at base	Gault
10	Limestone, somewhat oolitic, with thin bands of clay	(?) Lower Greensand. (?) Lower Cretaceous
87½	*Limestones, more or less oolitic, with a thin band of clay and some layers of calcareous sandstone*	*Great Oolite Series. Jurassic*
207½	*Alternations of red, white and mottled sandstone with red and variegated marls; dipping steeply*	(?) *New Red Sandstone.* (?) *Triassic*
1,444½	Total depth	

II.—Boring at Streatham Common for the Southwark and Vauxhall Water Company, 1882–88.[2]

Thickness in feet	Kind of Material	Geological Classification
10	Gravel and mud	Recent
153	Blue clay, sandy and pebbly at base	London Clay
43½	Black and mottled clay, sandy clay and thin beds of green sand	Woolwich and Reading Beds } Eocene
35	Green and grey sand, with flints at base	Thanet Sands
221½	White chalk with flints	Upper Chalk
219	Hard greyish chalk without flints	Middle Chalk
182½	Grey chalk passing downwards into chalk marl	Lower Chalk } Upper Cretaceous
28½	Greenish-grey calcareous sandstone	Upper Greensand
188½	Firm clay with phosphatic nodules at base	Gault
38½	*Alternations of oolitic limestone, calcareous sandstone, sandy clay and clay*	*Great Oolite Series* (? *Forest Marble*) } *Jurassic*
138	*Greenish-grey, reddish and mottled sandstone, with bands of hard reddish clayey rock; dipping steeply*	*Triassic* (?), *or Devonian* (?)
1,258	Total depth	

[1] For fuller details see Prof. J. W. Judd and C. Homersham, *Quart. Journ. Geol. Soc.*, vol. xl. (1884) pp. 724–783; and vol. xli. (1885) pp. 523–527.

[2] *Mem. Geol. Survey*, 'The Geology of London,' vol. ii. (1889) pp. 224–229.

We shall notice that in these borings the older rocks are much closer to the surface than they would have been if the whole sequence which we found in crossing the county from south to north had been continuous underground up to the places where the borings were made. The various divisions of the Eocene, with the Chalk, the Upper Greensand and the Gault, are indeed fairly represented; but the great mass of the Lower Greensand is absent altogether at Streatham, and if present at Richmond (respecting which there is much doubt) has dwindled to a thickness of only 10 feet; while the Wealden Series is entirely unrepresented in either section. Furthermore, although the Jurassic rocks at their outcrop in the middle and the west of England constitute a great and varied system rivaling the Cretaceous in extent, and have likewise been proved by deep borings in Kent and Sussex to attain a considerable development beneath the Cretaceous rocks in certain parts of those counties, they are most scantily represented in these sections, only one division of the Middle Jurassic having been recognized therein. If, however, the borings had been made in the southern part of Surrey instead of in the north, it is almost certain that Jurassic strata of very much greater thickness and more varied character would have been encountered.

This rapid thinning away northward of the Secondary rocks underlying the Chalk in the south-east of England is a fact of great economic importance in view of the discovery that among the older rocks brought by this cause within practicable reach of the surface, the Coal Measures are included. The possibility that such might be the case was suggested on theoretical grounds by R. A. C. Godwin-Austen nearly half a century ago,[1] and since that time much has been written on the subject.[2] It was not however until 1890 that the existence of Coal Measures was actually proved, in an experimental boring at the foot of Shakespeare's Cliff at Dover, where they were entered at a depth of 1,157 feet below the surface, and penetrated for 1,173 feet further and found to contain several coal seams.[3] Several other borings have since been made in Kent, and one of these, at Ropersole eight miles west-north-west of Dover, again reached the Coal Measures, beneath 1,580 feet of Secondary rocks.[4] Meanwhile efforts have been made to sink shafts for the mining of the coal at Dover, but at the time of writing the coal has not actually been reached in the pits.

The westerly limits of this concealed coalfield still remain to be proved, and therein lies the importance of the matter in regard to Surrey.

[1] 'On the Probable Extension of the Coal Measures beneath the South-eastern part of England,' *Quart. Journ. Geol. Soc.*, vol. xii. p. 38.

[2] For references to this literature up to 1889, see *Mem. Geol. Survey*, 'The Geology of London,' vol. i. chaps. ii. and iii.: and for recent review of the subject see W. Whitaker's Presidential Address to the Geological Society, *Quart. Journ. Geol. Soc.*, vol. lvi. (1900) pp. lxxi.–lxxxv.

[3] See Prof. W. Boyd Dawkins, 'On the History of the Discovery of the South-eastern Coalfield,' *Trans. Manchester Geol. Soc.*, vol. xxv. pt. vi. (1897), containing references to previous publications.

[4] Prof. W. Boyd Dawkins, *Rep. British Assoc.* for 1899, p. 735.

It has been surmised that the buried Coal Measures may extend beneath some portion of the county, but the factors bearing on the question are so complex and the evidence at present in hand so scanty, that further deep boring can alone give proof or disproof to the supposition.

Since the Richmond and Streatham borings are as yet the only instances in Surrey where rocks older than the Jurassic have been pierced, it is the more unfortunate that doubt should exist as to the age of these rocks in both places. No fossils were obtained from them in either case, so that we have only their general aspect on which to base an opinion, and this is not sufficiently distinctive to determine the point with any certainty. By some geologists they are thought to belong to the New Red or Triassic system—that is to say, to a system *newer* than the Coal Measures: while other geologists have inclined to the view that they more nearly resemble the Old Red or Devonian rocks, in which case they will be *older* than the Coal Measures,—a difference of opinion of course very seriously affecting the question as to the most likely quarter in which to search for Coal Measures.

The main point has, however, been clearly established, that in the northern part of Surrey rocks unconformably underlying the Jurassics are within comparatively easy reach of exploration by borings; and such exploration, at some time or other, will no doubt be undertaken. More might be said as to the bearing of the evidence from deep borings outside the county limits on the probable range of its concealed Jurassic rocks, but to enter more fully into the subject would be to transgress the bounds and scope of this article.

We will now therefore ascend from the depths to follow the fortunes of the land-surface after the newest of its 'solid' strata was laid down.

ELEVATION AND DENUDATION

We have seen that throughout the building up of its strata the area was now rising, now sinking, and probably never for long quite stationary. But from the Wealden onward to the close of the Eocene these movements were all of a simple character, elevating or depressing the whole tract without seriously disturbing its horizontality. Some slight tilting and sagging there doubtless was, by which during submergence the waters became relatively deeper or shallower in one place than in another; but this was never sufficiently sharp to destroy the general parallelism of the successive deposits in any particular spot, or, to use technical parlance, to develop strong unconformability between any of the separate formations.

But subsequently, during the Miocene Period, there came a time of storm and stress in the earth's crust, which affected the British Islands in common with the greater part of the European continent: a time of mountain-building in some quarters, as for instance in the Alps: and of great volcanic eruptions and outpourings of lava in others, as in Scotland and Ireland. And during this time of disturbance the rocks of the south-east of England were forced by lateral pressure into broad waves

and hollows, which remained ever afterwards as the dominant factors in its structure. The dome of the Weald and the trough of the London Basin, referred to in the foregoing pages, are the results of this earth-movement with which we are principally concerned in Surrey.

In the Wealden dome the strata were raised up in a huge oval tract extending from Hampshire on the west to the Bas Boulonnais in France on the east, now broken through towards the eastern end by the Straits of Dover. We must not however overlook the fact pointed out by W. Topley, that the Secondary rocks attained their maximum thickness within this dome, and therefore that its elevation may be in part the result of original irregularities of deposition.[1] But it seems highly probable, though the point seems to have escaped notice, that where the strata are thickest, there also will they be most likely to bulge upwards under lateral pressure, thus accentuating the original inequality. At any rate, there can be no doubt that considerable disturbance tending to elevation has taken place throughout the dome.

Broadly speaking the Wealden uplift forms a single anticline ; but when examined more closely we find that it is made up of numerous subsidiary waves or flexures, arranged *en échelon*, which usually rise up gradually from the south and plunge over more steeply towards the north, and flatten and fade out longitudinally. One of these flexures or minor folds explains the sudden expansion of the Lower Greensand outcrop west of Dorking, and its crest brings up a small 'inlier' of Atherfield Clay and Weald Clay, surrounded by the overlying formations, in the neighbourhood of Pease Marsh two miles south of Guildford, whilst its northerly plunge gives rise to the steep dips and narrow outcrops of the Hog's Back and its vicinity. Less pronounced waves of the same kind occur farther south between Godalming and Haslemere, and to the eastward near Dorking, Reigate and Westerham.

But besides these flexures, the strata are sometimes broken through by fractures or 'faults,' between the two sides of which there has been differential movement, so that a once continuous bed now occurs at different levels on the opposite sides of the dislocation. A pronounced 'fault' of this kind is found about a mile to the eastward of Farnham, where the strata on the north-east side of the fracture are carried down from 150 to 200 feet lower than the corresponding strata on the south-west side. This fault is sufficiently large to affect the line of outcrop considerably, the Hog's Back ridge being brought to a termination by the setting back of the Chalk escarpment on the west ; and a depression of the surface has been subsequently developed at this point, through which the railway between Farnham and Guildford is carried. Another fault has been traced running east and west from the southern outskirts of Dorking to beyond Wotton, with a downthrow to the north amounting in places to 100 feet ; and again at Betchworth, two miles east of Dorking, there is a line of fracture striking from south-east to north-west,

[1] See *Quart. Journ. Geol. Soc.*, vol. xxx. p. 186, and *Geology of the Weald*, pp. 241, 242. The result of recent deep borings in Kent has added fresh weight to Mr. Topley's argument.

OROGRA

REFERENCE NOTE
above 800 feet
600 to 800 feet
400 to 600 feet
200 to 400 feet
100 to 200 feet
below 100 feet
45'
30'
20'
51°
10'
MAIDENHEAD
Burnham
Slough
Iver
Bray
Dorney
Eton
Datchet
WINDSOR
COLNBROOK
Horton
Old Windsor
Wraysbury
STAINES
Egham
Ashford
Thorpe
Laleham
Littleton
CHERTSEY
Addlestone
Weybridge
Byfleet
Wisley
Ripley
Ockham
WOKINGHAM
Bracknell
Binfield
Warfield
Winkfield
Sunninghill
Easthampstead
Bagshot Heath
Bagshot
Windlesham
Chobham
Bisley
Horsell
Woking
Sandhurst
Finchampstead
Swallowfield
Shinfield
Arborfield
Barkham
Eversley
Heckfield
Frimley
Farnborough
Pirbright
Worplesdon
Send
Aldershot
Ash
Normandy
Crondall
FARNHAM
Bentley
Froyle
Binsted
Frensham
Elstead
Puttenham
Compton
Shalford
GUILDFORD
Albury
Shere
Clandon
Merrow
GODALMING
Hambledon
Hascombe
Cranley
Witley
Thursley
Chiddingfold
Dunsfold
Alfold
HASLEMERE
Hindhead
Headley
Kingsley
Selborne
Greatham
Liphook
Bramshott
Lynchmere
Fernhurst
North Chapel
Plaistow
Kirdford
Lurgashall
Liss
ODIHAM
Dogmersfield
Long Sutton
Holybourne
ALTON
Empshott
Priors Dean
Hawkley
Steep
Ashford
Loxwood
Rudgwick
Billingshurst
Wisborough Green
Hurtwood Common
Ewhurst
Ewhurst
SCALE 4 MILES TO AN INCH
0 1 2 3 4 5 6 7 8
The Edinburgh Geographical Institute

…CAL MAP

J.G.Bartholomew

County Boundary shown thus

. COUNTIES OF ENGLAND

with a drop on the south-west side of about the same amount as the last.[1] Several smaller faults have also been recognized, chiefly in the Lower Greensand tract ; but these need not detain us, as the instances already given are sufficient to show the general character of this kind of disturbance.

At the close, then, of this period of great earth-movement the strata in the south of the county, including the Chalk and the underlying beds, formed part of the elevated dome and probably extended continuously from the present line of the North Downs to the present line of the South Downs, while the north of the county was relatively depressed to form part of what we now know as the London Basin. It is, however, probable that before the elevation had attained its maximum the Chalk had already been partly worn away over the rising area, since in many parts of the Eocene deposits, as we have seen, there are water-worn flints derived from the Chalk ; but on the other hand there is evidence to show that some of the Eocene deposits were themselves once continuous over at least a portion of the elevated tract; so that we may estimate the original surface to have been not less than 2,000 feet higher than it now is in the middle of the tract. We have next to consider how this huge pile of material has been removed and the land brought to its present shape.

At about the time of the relative upheaval of the Wealden dome there was, besides, a general elevation, by which the whole area became dry land. When the rain fell on this land and gathered into streams, these streams of course flowed down the slopes from the dome towards the lower ground. Hence in our particular district they flowed northward from the Wealden tract towards the London Basin ; and in this direction the main streams have never since ceased to flow, although what was once relatively the higher ground has now been worn away until it has become relatively low ground, and the streams have had to cut deep valleys across the hilly ridges of the present land to maintain their courses. Thus we find the Wey at Guildford and the Mole at Dorking crossing the Chalk in trenches which they have excavated transversely through the escarpment which threatened to bar their passage ; and the same conditions prevail with regard to the Darent and the Medway in Kent; while on the opposite side of the dome the Arun and the Adur in Sussex break their way through the South Downs in an exactly similar manner, but in the reverse direction. If the configuration of the land when these streams began to flow had been even approximately that of to-day, such courses would have been impossible; and we are compelled to recognize that these drainage-channels were established in a remote past before the escarpments were in existence. They are the sluices down which the greater part of the waste of the land has been conveyed to the sea, and their channels have been scoured and deepened at a more rapid rate than that at which the general level has been lowered. Meanwhile, as formation after formation crumbled away on the elevated tract, the

[1] F. Drew, *Mem. Geol. Survey*, 'Geology of the Weald,' p. 233.

unequal hardness of the strata had its effect in the development of ridge and hollow in agreement with the strike of the rocks; and thus longitudinal depressions were formed in which the surface-waters gathered and flowed until intercepted by an older transverse stream. Hence the trunk-streams crossing the strata gradually developed lateral branches or tributaries running parallel to the strike of the rocks. And this trenching of the land has gone on until in the central tract the soft Weald Clay has been reached and partly scooped out, while the broken rim of overlying harder beds forms steep escarpments facing inwards to the hollow. But in the rim also the wasting back has been irregular, so that the present Lower Greensand escarpment west of Dorking attains higher levels than the Chalk escarpment to the north, though in other parts of the county this relation is reversed.

PLEISTOCENE AND RECENT DEPOSITS

We shall now be better able to appreciate the evidence afforded by the shreds and patches of transported material which, as previously mentioned, have here and there been left behind during the erosion of the land. We may find such material at all levels, though it is necessarily the more abundant the more nearly we approach the level of the present rivers. Even on the higher slopes and ridges of the Chalk Downs there are patches of gravel and sand which represent the residue of the Chalk and of once-existing Tertiary strata rearranged and modified by the flow of water. In the north and west of the county also, small tracts of high-level gravel and sand occur on the highest ground, often capping the little plateaus and ridges into which the Tertiary strata have been eroded; and these gravels contain not only the detritus of the Chalk and Tertiary beds, but also many pebbles of quartzite and other rocks which must have been transported for long distances. The conditions under which these 'high-level' or 'plateau gravels' were deposited have been the subject of much discussion and difference of opinion[1]; by some geologists they have been thought to indicate old beaches, and to denote a period of submergence during which the land was planed down to an even surface by the sea; by others, whose views are now more generally accepted, they are considered to be flood-gravels formed at a time when the rivers were far more powerful than at present, and when the bottoms of the valleys were approximately at the level of these gravels. In some of these high-level deposits, as well as in others at lower levels, the agency of floating ice seems to be indicated by the presence of large blocks of grey-wether sandstone, etc., in positions which it is believed they could not otherwise have attained; and as we know that after the close of Pliocene times there was a long period during which the climate in our islands was so inclement and moist that

[1] See Prof. J. Prestwich, *Quart. Journ. Geol. Soc.*, xlvi. (1890) p. 159; Rev. A. Irving, *Proc. Geol. Assoc.*, vol. viii. (1883) p. 143, and *Quart. Journ. Geol. Soc.*, vol. xlvi. (1890) p. 562; H. W. Monckton, *ibid.* vol. liv. (1898) p. 184; and *Proc. Geol. Assoc.*, vol. xvi. (1900) p. 443. Other references will be found in these papers.

the greater part of the country north of the Thames was covered by a vast accumulation of snow and ice, there is much reason to assign the formation of some of the older gravel-deposits of Surrey to this Glacial Period. The ice-sheet during its maximum development spread southward as far as the northern margin of the Thames Valley, but there is no evidence of a permanent ice-field to the southward of that valley. Thus the conditions in Surrey at this time would be peculiarly favourable to rapid erosion ; for although the ice-sheet itself planes away the land in its gradual outward flow, it also protects the surface from the severer action of streams and of alternate freezing and thawing. We may picture the Surrey of the Glacial Period as a bleak tract lying just beyond the margin of the ice-fields ; its surface frozen and rendered impervious by the autumn frosts ; then deeply covered by the winter snows ; to be drenched and torn during the thaw in the late spring by the sudden release of the waters. And as the land probably stood higher above sea-level than at present, the torrential denudation during the short summer may have been extremely great. The turbid rivers, laden with mud from the disintegrated clays and with stones from the harder strata, deepened their channels rapidly, and cast down wide sheets of detritus wherever their course was checked. Hence, throughout all the Glacial time there was everywhere in the county a rapid wasting of the hills and slopes, and a transference of the material to lower and lower levels.

In the vicinity of the main valleys, like that of the Thames, it is more or less difficult to distinguish between the lower portion of the high-level accumulations and the higher of the deposits clearly connected with the existing valley, although in some other districts the distinction seems well marked. It is probable that at the close of the Glacial Period there was no such radical change in the conditions in this area as in places which had been actually overridden by the ice-sheet, but only a gradual and progressive amelioration by which the past was merged insensibly into the present. The streams and rivers still maintained their courses and continued to deepen their channels, but with diminishing activity as their flow diminished ; until they reached their present shrunken state, in which the main streams are able to transport only the finer detritus, while many of the smaller head-valleys, especially those traversing the more porous strata, are no longer able to maintain a permanent stream.

The older of the undoubted valley-deposits are especially interesting from the fact that they yield the earliest indications of ancient man, in the form of coarsely-chipped implements of flint, associated with the remains of extinct animals.[1] Though these 'Palæolithic' implements have not been obtained so plentifully in Surrey as in some of the neighbouring counties they have already been recorded from many localities, and fresh discoveries are constantly being made as the search by qualified observers

[1] For numerous records of Palæolithic and Neolithic implements in Surrey consult Sir J. Evans' *Ancient Stone Implements*, 2nd ed. (1897), where references to previous literature will also be found.

is extended. These implement-bearing deposits occur for the most part on the slopes of the existing valleys at varying heights above the present streams; but at Limpsfield worked flints have been found in an ancient gravel which, though probably originally belonging to the Darent drainage system, now lies on the watershed between the Darent and the Medway at an altitude of 500 feet above sea level.

It is of course in the larger valleys that the valley-deposits attain their widest development; hence in Surrey we find that the old river-gravels and flood-loams, and also the more recent alluvium, are thickest and most extensive in the vicinity of the Thames. The older gravels fringe the valley irregularly, in somewhat ill-defined terraces at varying elevations, throughout its extent, but are generally widest near the confluence of the larger tributaries with the main river. At the lower levels they are well seen between Walton and Petersham; between Richmond and Wandsworth; and between Wandsworth and Deptford; while the remnants of high terraces are found on Kingston Hill, Wimbledon Common, Richmond Hill and Putney Heath; and again at Clapham, Balham and other places.[1] It is however on the northern side of the river in Middlesex and in Essex, and on the southern side in Kent, that the Thames Valley Drifts reach their greatest importance both in extent and in fossil contents. Among the mammalian remains which they have yielded in these counties we may mention those of the wolf, lion, hyæna, bear, bison, musk-ox, reindeer, Irish elk, horse, elephant, mammoth, rhinoceros, hippopotamus, beaver, etc., some being of species now extinct; and along with these are many land and freshwater shells, all except two or three belonging to species still living in England. It is in association with these mammalian remains that the Palæolithic implements are found, in some places in considerable abundance; and in the study of these rude implements the sciences of geology and archæology join hands. In Surrey, as instances of the occurrence of the fauna, we may mention that elephant remains have been obtained from Thames Ditton, Kingston and other places in the Thames Valley, and Palæolithic implements at Cookham, East Sheen, Battersea Rise, Wandsworth, Lewisham and other places; in the valley of the Wey similar relics of elephant have been found in the neighbourhood of Shalford, at Waverley near Farnham, in gravels 150 feet above the present river between Alton and Godalming (where Palæolithic implements are very abundant, especially in the pits near Wracklesham), and again along with a flint implement at Pease Marsh; in the valley of the Mole remains of elephant have been obtained at Charlwood, Dorking, Betchworth and Petridge Wood Common, with those of rhinoceros also at the last named place; remains of the horse, rhinoceros and elephant at Sutton[2]; the horse, rhinoceros, reindeer and roebuck from

[1] Among recent papers on this subject, and for references to previous literature, consult H. W. Monckton, *Quart. Journ. Geol. Soc.*, vol. xlviii. (1892) pp. 29–47, and vol. liv. (1898) pp. 184–195; and *Proc. Geol. Assoc.*, vol. xiii. pp. 74–81; and A. E. Salter, *ibid.* vol. xv. (1898) pp. 264–286.

[2] See W. W. Watts, *Quart. Journ. Geol. Soc.*, vol. lv. (1897) p. ii.

the neighbourhood of Mitcham,[1] and portions of an elephant's tooth and tusk at Croydon, in the valley of the Wandle ; mammoth, rhinoceros, horse, reindeer, etc., with a Palæolithic implement, from the Caterham Valley[2]; and many palæoliths from West Wickham, in a branch of the Ravensbourne.

In its tributary valleys we find the phenomena of the Thames Valley repeated on a smaller scale, strips of gravel, sand or loam of ancient date occurring at varying levels above the streams, sometimes sharply defined and sometimes more or less coalescent down the slopes to the present valley-floors, all telling the same story of a continuous, though now abated, wearing away of the land and deepening of the drainage-hollows.

With the more recent deposits or alluvia of the rivers—the sand, loam and mud of the lowest levels, which in some cases are still receiving additions in times of flood—the work of the geologist closes and that of the historian commences. The mammoth, rhinoceros and its companions disappeared, and the makers of the rude implements of the gravels gave place to a more advanced race of workers in stone, whose finely chipped tools and weapons lie scattered here and there over the surface of the land. The time-interval from the Palæolithic or Older Stone Age to the Neolithic or Newer Stone Age and thence through the Age of Bronze and the Age of Iron to the dawn of history is, as measured by our human standards, of vast duration, but as compared with the æons of geological time it is indeed but as yesterday.

SUMMARY OF GEOLOGICAL HISTORY

In the foregoing pages we have dealt with periods of time that it is beyond our grasp to estimate. To follow the sequence of events is all that we can attempt in the present state of our knowledge, without venturing to guess at their absolute time-value. Before concluding the chapter let us briefly rehearse this sequence.

Our earliest glimpse was of a land of ancient rocks, now hidden deep below the surface : a land planed down by erosion, and afterwards buried under the slowly-accumulated deposits of Jurassic seas. These deposits were in turn hidden by the sediments of the mighty Wealden river flowing from a continent whose confines we cannot trace. By renewed submergence this river, after a protracted existence, was obliterated, and its site covered with the sandbanks of the shallow current-swept Lower Greensand sea. Then, with the gradual deepening of the ocean there followed an accumulation of clay and of siliceous silt, forming the Gault and Upper Greensand, until the shore-line had receded so far that scarcely any waste from the land could reach our tract, and only a gentle

[1] See G. J. Hinde, 'Notes on the Gravels of Croydon,' *Trans. Croydon Microscop. and Nat. Hist. Club* (1896–97).

[2] See J. P. Johnson, 'Palæolithic Man in the Valley of the Wandle,' *Science Gossip*, vol. vii. (1900) p. 75.

shower of calcareous organic particles descended upon the sea floor ; and the duration of this shower was so long that the great Chalk formation was built up by it. Then we found a wide gap in the records; and when we crossed this gap to the Eocene strata, we learnt once more of a shallow sea, inhabited by animals all different from those of the older time, and this sea had already made great inroads upon the consolidated sediment of the preceding period ; the climate was warm, perhaps sub-tropical, and not far off there was a land clothed with rich vegetation ; and as the sea grew shallower the estuary of a large river invaded our tract, but was soon driven back by a renewed sinking of the land. Then, as the Eocene Period drew to its close, we observed how re-elevation set in, with the renewal of shallow-water conditions; and with this stage the building up of our county was concluded.

Regarding subsequent events our evidence has been scanty, but we have been able to gather that the strata were disturbed and uplifted into dry land ; and that owing to inequalities of the uplift this land sloped to the north, so that the rivers which flowed from it took a northerly course, which they have since maintained. And we have traced the work of these rivers and their tributaries through a period of gradually increasing cold, until conditions of arctic severity ruled in the land ; and finally through a period of gradual amelioration, which has continued up to time recent ; and meanwhile great piles of strata have melted away, and the remnants have been carved into hill and dale under the persistent sapping of the agencies of erosion.

PALÆONTOLOGY

TWO 'finds' made some years ago by Mr. H. M. Klaassen in the Lower Eocene Woolwich and Reading beds of the Park Hill railway cutting at Croydon constitute the chief point of interest in the palæontological history of the county, so far as vertebrates are concerned. The first of these 'finds' is one of the bones (ulna) of the fore-limb of a large primitive type of hoofed mammal referable to a genus first described by Sir R. Owen from the London clay of Essex under the name of *Coryphodon*, in allusion to the ridges capping the crowns of the molar teeth. By Mr. E. T. Newton, who described it,[1] the Croydon fossil is regarded as indicating a species distinct from the one to which the Essex remains belongs, and it was accordingly named *Coryphodon croydonensis*.

The second peculiar form is a gigantic flightless bird, considerably superior in size to the ostrich ; it is represented by two imperfect bones of the leg, likewise obtained from the Park Hill railway cutting. These bones were also described by Mr. Newton,[2] who named the bird to which they belong *Gastornis klaasseni*, after the finder of the specimens. The genus *Gastornis*, it may be mentioned, was first established on the evidence of bones from Lower Eocene deposits at Bas-Meudon, in France, and was subsequently discovered at Rheims. Mr. Newton regards the English bones as indicating a species distinct from the one represented by the Meudon specimens. Whether *Gastornis* belongs to the same group of birds as the ostrich may perhaps be doubtful, as it is now ascertained that representatives of other groups have acquired a large bodily size concomitantly with the loss of flight. The limb-bones present a considerable resemblance in certain respects to those of the duck tribe.

Coryphodon croydonensis and *Gastornis klaasseni*, together with the undermentioned *Ichthyodectes elegans*, appear the only extinct vertebrates peculiar to the county.

The Surrey chalk has yielded remains of at least two species of reptiles and several kinds of fishes, and doubtless more remain to be discovered. The first reptile is *Polyptychodon interruptus*, of which remains from the chalk of the county were described by Sir Richard Owen.[3] This reptile was a swimming marine creature allied to the plesiosaurs of the Lias, but with a much shorter neck and larger head. In these respects it resembles the pliosaurs of the Jurassic strata, from which it differs by

[1] *Proceedings of Geologists' Association*, vol. viii. p. 254 (1883).
[2] *Trans. Zool. Soc. London*, vol. xii. p. 143 (1866).
[3] *Quart. Journ. Geol. Soc.*, vol. xvi. p. 262 (1860).

its many-ridged teeth being uniformly conical instead of more or less distinctly trihedral.

The second reptile is a huge marine turtle allied to the existing leathery turtle (*Dermatochelys*) ; it was named by the present writer[1] *Protostega anglica* on the evidence of two imperfect specimens of the upper arm-bone (humerus) in the British Museum, one of which was obtained from the chalk of Lewes and the other from that of Dorking.

In several geological works it is stated that remains of another reptile, *Mosasaurus gracilis*, have been met with in the chalk of the county. These, however, are now known to belong to fishes of the genus *Pachyrhizodus*, whose teeth are of unusual size and strength.

Some of the most common fish-remains that occur in the Surrey chalk are the well-known crushing palatal teeth of rays of the genus *Ptychodus*, of which several species are represented in the county. Of *Ptychodus mammillaris* the British Museum possesses twenty associated teeth in a block of chalk from Guildford, and likewise an associated set of twenty-three teeth obtained from the same locality in 1851 ; in addition to these there are also teeth from the chalk of Dorking. In the same collection there are likewise teeth of *Pt. rugosus* from Guildford, of *Pt. decurrens* from Dorking, as well as of *Pt. polygyrus* from a chalk-pit on St. Catherine's Hill near Guildford, while there is a single large tooth of *Pt. latissimus* from Croydon and a smaller one referable to the same species from Guildford. A Cretaceous ray belonging to the genus *Squatina* is represented in the national collection by several vertebræ from the chalk of Dorking.

Among sharks, a tooth from the chalk of Guildford in the British Museum is referable to *Notidanus microdon*, one of the comb-toothed representatives of the group. In the same collection are an associated set of eleven vertebræ and a fin-spine from Guildford, as well as a tooth from Warlingham near Croydon, referable to *Cestracion rugosus*, a comparatively rare species of pavement-toothed shark, nearly related to the living Australian representative of the genus. Another type of pavement-toothed shark is represented by *Synechodus illingworthi* (formerly known as *Acrodus*) of which the British Museum possesses teeth from the chalk of Guildford and Dorking. Among other sharks *Scapanorhynchus rhaphiodon* is represented in the national collection by teeth from the upper chalk of Shalford near Guildford, and Purley near Croydon, as well as by others from the lower chalk of Guildford. *Scapanorhynchus* was long regarded as an extinct type, but it appears closely allied to, if not identical with, a living Japanese form described as *Mitsikurina*. Of porbeagle sharks (*Lamna*) the British Museum contains teeth from Surrey belonging to two species, *L. sulcata* and *L. appendiculata*, the latter being frequently referred to as *Otodus appendiculatus*. Two teeth from the lower chalk of Guildford in the same collection are assigned to the nearly related *Oxyrhina angustidens*, while the remains of

[1] *Catalogue Fossil Reptilia British Museum*, pt. iii. p. 229 (1889).

O. mantelli have likewise been recorded from the county. But this by no means exhausts the list of Surrey Cretaceous sharks, the British Museum possessing teeth of *Corax falcatus* and three vertebræ of *Cetorhinus duponti* from the chalk of Guildford.

Passing on to the chimæroid fishes, a tooth from the chalk of Dorking in the British Museum indicates the occurrence of *Edaphodon agassizi* in the county. Two other types are *Plethodus oblongus* and *P. pentagon*, the former represented by a skull and the latter by teeth from the Dorking chalk. Among the so-called ganoid fishes, the well-known *Macropoma mantelli* is represented in the same collection by a crushed head and dorsal fin from the chalk of Dorking as well as by vertebræ from Guildford. The well-known rhomboidal scales and button-like teeth of *Lepidotus pustulatus* occur in the lower greensand of Godalming; while the smaller ornamented crushing teeth of *Gyrodus cretaceus* have been obtained from the chalk of St. Catherine's Hill and Croydon. Another Cretaceous ganoid found in the county is *Neorhombolepis punctatus*, of which the national collection contains scales from the lower chalk of Dorking. To a family (*Amiidæ*) now represented only by *Amia calva* of the freshwater of North America belongs *Protosphyræna ferox*, a Cretaceous fish with large spear-like teeth long known under the name of *Saurocephalus lanciformis* ; teeth of this type have been found in the chalk of Guildford. Yet another form is *Tomognathus mordax*, a fish with large teeth fixed to the jaws, of which skulls have been obtained at Dorking.

Among fishes of a more essentially modern type, the extinct Cretaceous family *Ichthyodectidæ*, which includes some species of gigantic dimensions, is represented in the Dorking chalk by jaws of two species of the typical genus *Ichthyodectes*, namely *I. elegans* and *I. lewesiensis*. To the same family belongs the fish known as *Enchodus lewesiensis*, of which remains have been recorded from the chalk of Shalford and Guildford. An allied type is *Prionolepis angustus*, typically from the chalk of Sussex, but also represented by scutes from that of Dorking. To another family—the *Elopidæ*—belongs *Osmeroides lewesiensis*, likewise a Sussex Cretaceous fish, of which remains occur both at Shalford and Guildford. Another Sussex type is *Aulolepis typus*, of which certain remains have been found in the Dorking chalk.

Neither are the so-called barracudas wanting from the Cretaceous beds of the county, scales of an extinct generic type termed *Cladocyclus lewesiensis* occurring in the chalk of Dorking as well as in that of Sussex. The perch-like fishes, which only date from the Cretaceous epoch, have at least three representatives in the county, one of which (*Hoplopteryx lewesiensis*) belongs to an extinct, while the other two (*Beryx radians* and *B. microcephalus*) are assigned to a still living genus. Of the first-named remains have been obtained at Guildford, of the second at Dorking, and of the third at Reigate.

The Lower Tertiary deposits of Surrey appear to be poor in fish-

remains as compared with those of the adjacent counties. But the British Museum possesses teeth of the shark *Lamna macrota* from the Lower Eocene of Woking and Sydenham, as also some of *Carcharodon auriculatus* from the same deposits at Woking. The chimæroid *Edaphodon leptognathus* is likewise represented in the national collection by a tooth from the Thanet Sand near Croydon. From the London Clay of Dulwich has been obtained an imperfect femur of the typical *Coryphodon eocænus*.

From a paper by Mr. C. Rickman, of which only an abstract was published in the *Quarterly Journal of the Geological Society*,[1] it appears that during the excavations in 1859 at Peckham in connection with the main drainage of the metropolis, a considerable number of vertebrate remains were discovered in the Woolwich and Reading beds of that district. These, which seem never to have been described, are stated to have included mammalian and chelonian bones, scutes of crocodiles, and scales of fishes.

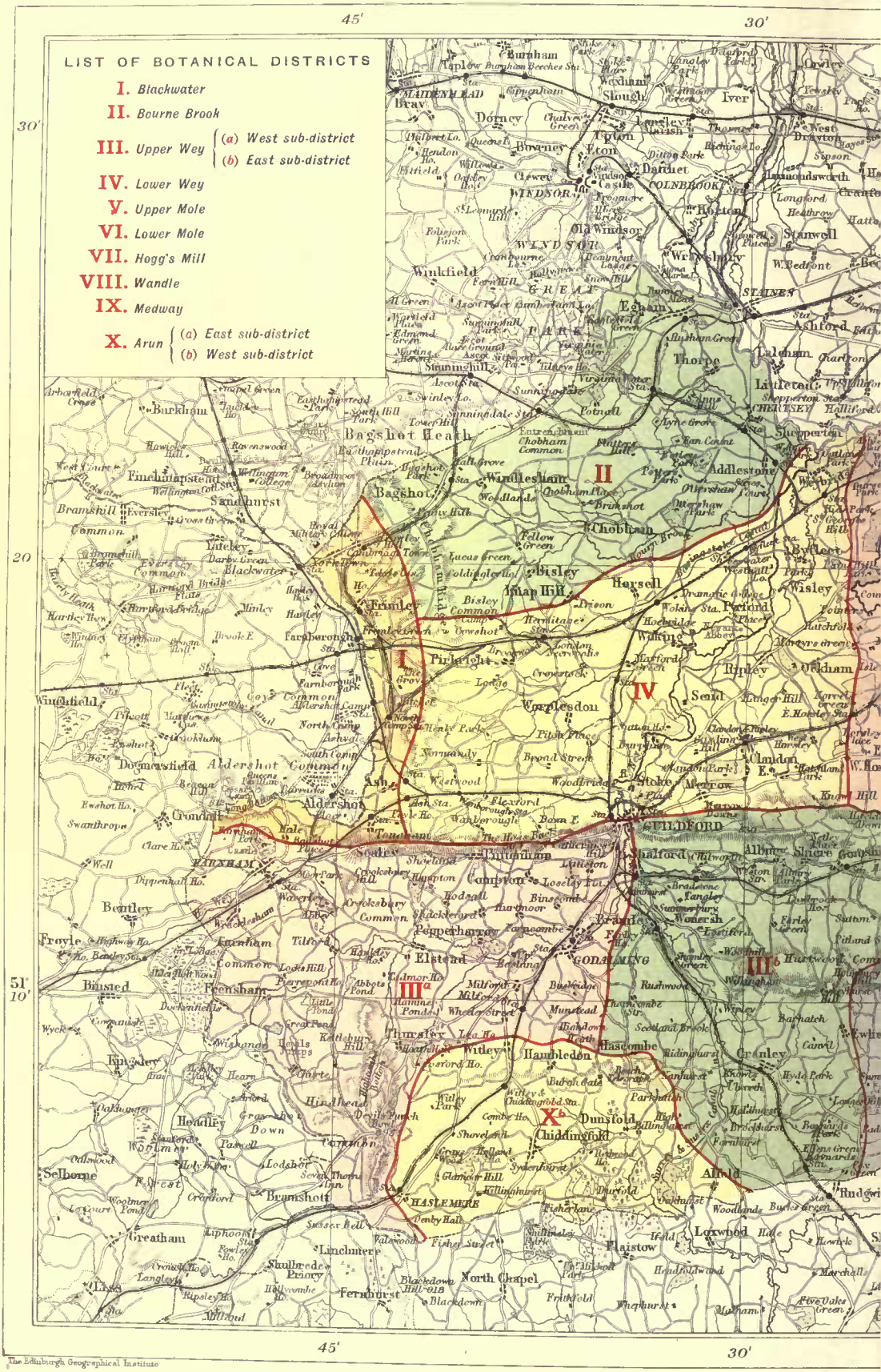
The Pleistocene gravels and other superficial deposits along the course of the Mole as well as those of the Thames valley at Peckham, Camberwell, Kennington, Kew, Battersea and elsewhere, have yielded remains of some of the mammals usually met with in similar deposits. It will suffice to refer to certain of these remains preserved in the collection of the British Museum. Of the mammoth (*Elephas primigenius*) there are molar teeth from Dorking, Peckham and Lower Tooting ; while there are also molars of the straight-tusked elephant (*E. antiquus*) from Peckham, one of which was described by the late Professor Leith Adams in his monograph of the British fossil elephants. The woolly rhinoceros (*Rhinoceros antiquitatis*) is represented in the national collection by molars and bones from Peckham, the former being referred to by Professor W. B. Dawkins[2] in a memoir on the dentition of that species ; there are likewise molars from the same locality of the species commonly known as *R. leptorhinus*, one of which is figured by Professor Dawkins.[3] The collection also includes several tusks of the Pleistocene hippopotamus (*Hippopotamus amphibius major*) from Peckham, which are remarkable for their unusually large size. All the foregoing remains are mentioned by Professor Dawkins in the passage cited, where it is stated that while those of the hippopotamus and *Rhinoceros leptorhinus* were obtained from a bed of clay, the fine associated series of molars of the woolly rhinoceros came from a subjacent peaty layer. They were dug out during the excavation of the sewer in Rye Lane in 1862.

From the same clay-bed were likewise disinterred certain limb-bones apparently referable to the aurochs or wild ox (*Bos taurus primigenius*). The British Museum also possesses an imperfect skull of the Pleistocene bison (*Bos priscus*) from Peckham. In addition to this the collection contains an imperfect skull of the domesticated breed of ox commonly known as the Celtic short-horn which was dug up at Lambeth, near

[1] Vol. xvii. p. 6 (1860).
[2] *Quart. Journ. Geol. Soc.*, vol. xxiii. p. 226 (1867).
[3] *Ibid.* pl. x. fig. 5.

Vauxhall Bridge, in deposits of prehistoric age. Certain limb-bones in the collection from Peckham are likewise assigned to the same breed, and, if rightly determined, are probably newer than the remains of the bison and aurochs.

Antlers and a lower jaw from Kew preserved in the British Museum testify to the former presence of the reindeer (*Rangifer tarandus*) in the county, while the existence of the red deer (*Cervus elaphus*) at the same epoch is indicated by a humerus (upper bone of the fore-leg) from Kew. That such animals as the hippopotamus and the reindeer should have coexisted in the same locality may seem very remarkable, but it is nevertheless attested by other evidence.



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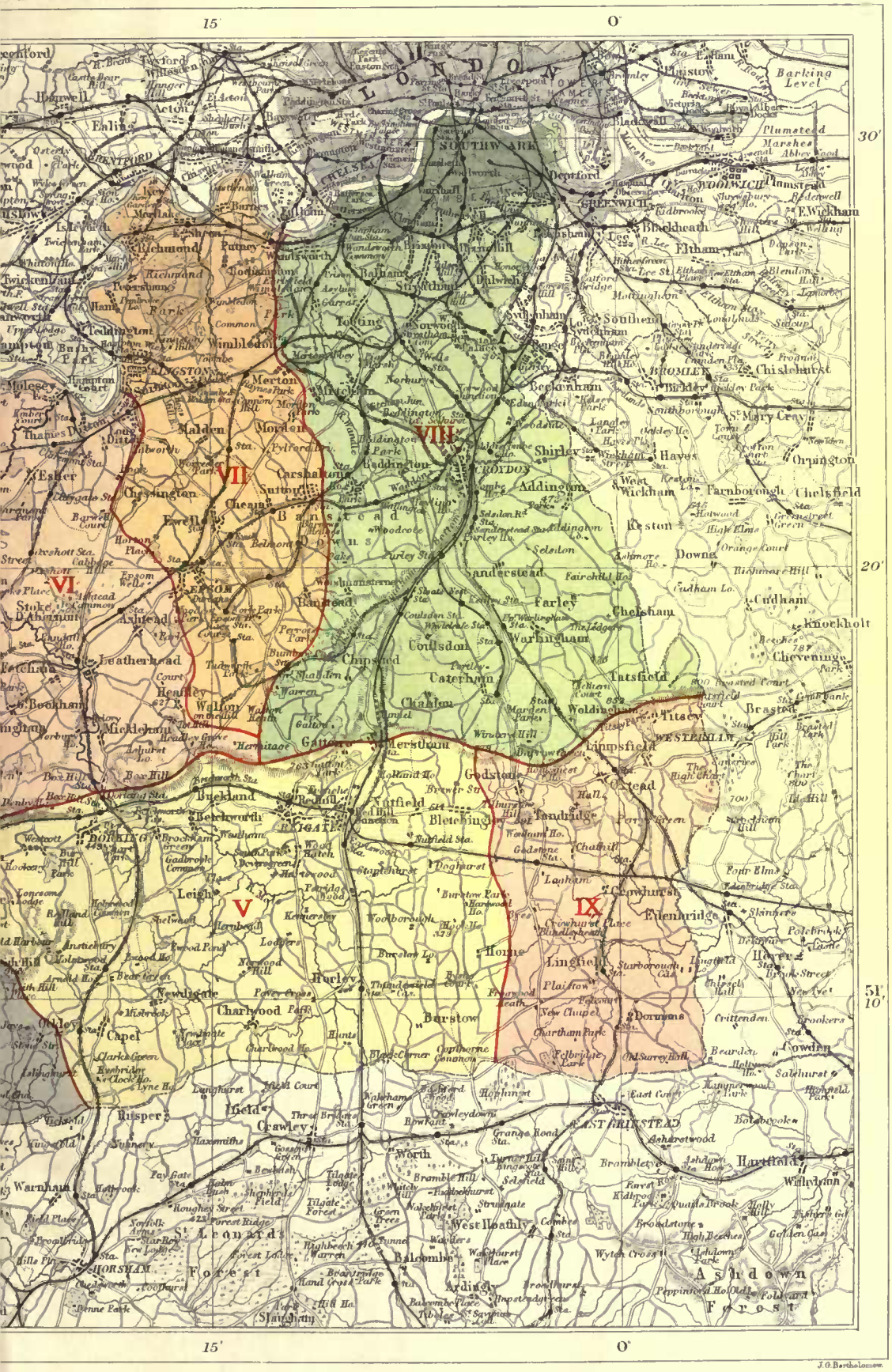


J.G.Bartholomew.

E COUNTIES OF ENGLAND

BOTANY[1]

THE county of Surrey is included within parallels 51° 5′ and 51° 31′ north latitude, and longitude 0° 5′ east and 0° 31′ west of Greenwich. It is bounded on the south by the county of Sussex, on the east by Kent, on the west by Hampshire and Berkshire, while on the north the bed of the river Thames is taken as the limit, although strictly speaking a small portion of Surrey extends north of that river near Chertsey, while Middlesex encroaches on its southern bank at Walton Bridge.

For botanical purposes the county has been divided into ten districts (two of which are sub-divided) founded on the river basins, this system being regarded as the most desirable in all respects, except perhaps that it is not always easy to fix the exact limits of a given drainage area. It is believed that this system of subdivision leads to the most valuable scientific results ; at the same time, in a small county like the present, in which the geological strata run in such remarkably parallel bands from east to west, while the streams run transversely to them, so that each of the principal rivers has its share of each of the formations, it is perhaps obvious that the general scenic features of the different parts, the characteristics that strike the eye, dependent as they must be on species or groups which are plentiful, will follow rather the *soil* than the particular river valley. Notwithstanding therefore that my observations have been almost entirely made from the river basin point of view, I shall endeavour to give a sketch of the county regarded in the above aspect, dealing with the districts later on.

According to the Agricultural Returns (1900) Surrey has a total area of 461,791 acres, of which 2,907 acres are under water, leaving a land area of 458,884 acres distributed as follows :—

	Acres
Corn crops	55,974
Green crops	34,877
Clovers, etc.	22,208
Permanent pasture	155,993
Hops and small fruit	2,611
Bare fallow	6,142
	277,805
Woods and plantations	54,437
Heathland used for grazing	12,981
	345,223

[1] In 1884 I undertook the compilation of a Flora of the county of Surrey, and the following account of the Botany of the county is drawn up from notes gathered together for that purpose, mainly

leaving a balance of no less than 113,661 acres represented by waste lands.

With regard to the principal soils, I think that there is no doubt that the Bagshot Sands is by far the hottest and driest and most sterile in the county. The Lower Greensand comes next, and I have no hesitation in placing the chalk midway between the sands and the heavier clays. Porous as the chalk undoubtedly is, there is always a certain amount of moisture to be found a little way below the surface, and farmers find that in very hot and dry seasons the corn crops, which are not deep rooters, suffer less on the chalk than on even the Lower Greensand. Last come the clays—the Gault, Wealden, and London Clay.

It will be convenient to speak first of the southern portion of the county, both because we find here the oldest geological formations, and because these correspond to the upper waters of the chief rivers. The Weald Clay stretches in an unbroken belt across the south of the county from east to west ; broadest at the eastern end and narrowing irregularly westwards until near Haslemere it disappears, so that the extreme west is devoid of this formation. It is characterized generally by its flatness and an absence of any high hills, by an alternation of cultivated land, green woods and copses of oak, willow, etc., and more or less extensive commons covered with scattered bushes of gorse (*Ulex europæus*), but without the heaths (*Erica*), although the ling (*Calluna*) occurs, and by a general absence of pine woods. The coral-root (*Dentaria bulbifera*) is confined to this formation as well as two pondweeds (*Potamogeton fluitans* and *P. decipiens*).

The Lower Greensand which follows affords the two highest points in the county, Leith Hill (965 feet) and Hind Head (840 feet). Unlike the Wealden, the Lower Greensand is very narrow at its eastern end, expanding towards the west. The pine woods, very extensive in parts, notably in the region lying between Leith Hill and Pitch Hill and about Hind Head, together with the heaths (*Erica tetralix* and *E. cinerea*), which now become abundant, alone suffice to give a very distinctive character to this formation as compared with the last. The peculiar species also are more numerous, and there may be mentioned a bitter-cress (*Cardamine impatiens*), a very rare waterwort (*Elatine Hydropiper*), the sea stork's-bill (*Erodium maritimum*), brookweed (*Samolus Valerandi*), and the following members of the sedge family : *Cyperus fuscus*, *Rhynchospora fusca*, *Carex arenaria* and *C. depauperata*.

The chalk and gault belt again has its widest part at the eastern end of the county, narrowing towards the west, until the extremely narrow ridge of the Hog's Back is reached. This formation presents a strong

personal observations made in all parts of the county, seconded by communications with which I have been favoured by numerous correspondents. To these I desire to express my best thanks, as well as to Mr. S. W. Carruthers for his *extracta* of præ-Linnean records, to Mr. G. S. Boulger for his valuable advice in connection with the delimitation of the districts, and particularly to the Rev. W. Moyle Rogers, author of a *Handbook of the British Rubi*, Mr. Harold W. Monington, Messrs. W. and G. S. West, Mr. E. M. Holmes, and Mr. George Massee for their kindness in contributing papers on the Surrey Brambles, Mosses, Algæ, Lichens and Fungi respectively.

contrast: long stretches of bare down dotted over with junipers or sweet-briar bushes, with here and there copses consisting to a considerable extent of white beam-tree (*Pyrus Aria*), guelder-rose (*Viburnum Lantana*), dogwood (*Cornus sanguinea*), the abundance of various orchids and of some grasses such as the oat-grasses (*Avena pubescens* and *A. pratensis*), as well as *Bromus erectus*, or the more sombre woods of yew (*Taxus*) and locally of box (*Buxus*), all tend to give a character to this formation very distinct from anything to be seen elsewhere in the county. Brewer (*Flora of Surrey*, 1863) gives sixty species as peculiar to the chalk and gault (including the Upper Greensand), some of which are now known elsewhere. Among interesting plants not mentioned above are the two milkworts (*Polygala calcarea* and *P. amara*), the horseshoe vetch (*Hippocrepis comosa*), everlasting pea (*Lathyrus sylvestris*), *Lathyrus hirsutus*, squinancywort (*Asperula cynanchica*) and bastard toadflax (*Thesium humifusum*); among still-surviving orchids, *Cephalanthera ensifolia*, *Orchis ustulata*, the man orchis (*Aceras anthropophora*), gnat orchis (*Habenaria conopsea*), musk orchis (*Herminium mon-orchis*), the bee and fly orchids (*Ophrys apifera* and *O. muscifera*), and the Turk's-cap lily (*Lilium Martagon*). The flora of the Bagshot Sands formation shows much similarity to that of the Lower Greensand in its general and more striking features, except in those parts where the bog myrtle (*Myrica Gale*) or *Agrostis setacea*, two species which are peculiar to this formation, are plentiful. The hills however are not nearly so high and the pine woods are less extensive. Besides the above two species, the following are confined to the Bagshot Sands: the great burnet (*Sanguisorba officinalis*), a bur-reed (*Sparganium affine*), the bog-rush (*Schœnus nigricans*), slender cotton-grass (*Eriophorum gracile*), *Scirpus pauciflorus*, and a sedge (*Carex dioica*). I find it difficult to characterize the London Clay by any special features: in many it resembles the Wealden, and like that formation is very poor in peculiar species. Fourteen are enumerated by Brewer, but nearly all of these have either been found on other strata or are introductions like the winter aconite (*Eranthis hyemalis*) or blue anemone (*Anemone apennina*). A species of hare's-ear (*Bupleurum tenuissimum*) is however peculiar to the London Clay; it is somewhat spasmodic in its appearance, but it has been gathered in one or two places in recent years. With regard to the Valley gravels which overlie the London Clay in many places; the Reading and Woolwich beds; and the Thanet Sands, I have no special observations, but according to Brewer the first-named possesses nineteen peculiar species, most of which may now be passed over for the reasons mentioned above; there remain however a groundsel (*Senecio viscosus*), goosefoot (*Chenopodium glaucum*), fritillary (*Fritillaria meleagris*) and squill (*Scilla autumnalis*). For the Thanet Sands none are enumerated, while for the Reading and Woolwich beds two are named; of these there may be mentioned *Silene quinquevulnera* now extinct, and there must be added the sulphur clover (*Trifolium ochroleucum*).

In the lists of rare or characteristic species appended to the accounts of the separate districts but small notice has been taken of the very

numerous introduced plants which have occurred in the county. Only a few which have taken a very firm hold, such as the balsam (*Impatiens fulva*) or *Galinsoga parviflora*, are mentioned. Such plants are denoted by an asterisk (*). The hybrids also are for the most part omitted. The study of hybridity among wild plants has been almost entirely neglected in this country until a comparatively recent date; but considerable advances have been made, so that a very large number of hybrid forms are now known. In some genera which are more especially prone to crossing, such as the willow herbs (*Epilobium*) and willows (*Salix*), the hybrids far outnumber the true species. In various others, such as the violets (*Viola*), docks (*Rumex*) and pondweeds (*Potamogeton*), they are more or less frequent. The few named are included either for their rarity or for the rarity with which the phenomenon of hybridity occurs in the genus to which they belong. Some hybrids, such as the thistle (*Cnicus Forsteri*), are probably rare simply because of the different time of year at which the parent species flower, one of them (*Cn. pratensis*) being usually seeding at the time that the other (*Cn. palustris*) is opening its first flowers. Others, such as the small willow (*Salix ambigua*), do not occur at all in the county, although common in other parts of the kingdom. The reason is in this case, I believe, that although the parent species are often found growing together, one of them (*S. repens*) flowers later than the other (*S. aurita*). As we go further north this hybrid becomes more frequent, indeed in Shetland one does not ever see the two parent species growing together without the accompaniment of hybrid forms. The explanation no doubt is that as we advance towards more boreal regions the summers become more and more shortened, so that the flowering period of some species which do not bloom at the same time in the south becomes synchronized, and the opportunity of crossing occurs.

The following summary of orders, etc., is drawn up in accordance with Hooker's *Student's Flora of the British Islands*, but the census of species is calculated according to the *London Catalogue of British Plants* (ed. 9). The result shows Surrey to possess, including both native and naturalized plants, 1,081 phanerogams out of a total of 1,861 found in Britain. Of these 830 are dicotyledons and 251 monocotyledons.

BOTANY

SUMMARY OF ORDERS

	Genera	Species
PHANEROGAMIA		
DICOTYLEDONES		
POLYPETALÆ		
Thalamifloræ		
1. Ranunculaceæ	12	33
2. Berberideæ	1	1
3. Nymphæaceæ	2	2
4. Papaveraceæ	3	7
5. Fumariaceæ	2	9
6. Cruciferæ	22	53
7. Resedaceæ	1	2
8. Cistineæ	1	1
9. Violaceæ	1	9
10. Caryophylleæ	10	37
11. Portulaceæ	2	2
12. Polygaleæ	1	4
13. Elatineæ	1	2
14. Hypericineæ	1	10
15. Malvaceæ	1	3
16. Tiliaceæ	1	2
17. Lineæ	2	4
18. Geraniaceæ	4	17
19. Ilicineæ	1	1
Calycifloræ		
20. Celastrineæ	1	1
21. Rhamneæ	1	2
22. Sapindaceæ	1	2
23. Leguminosæ	16	54
24. Rosaceæ	12	98
25. Saxifrageæ	3	7
26. Crassulaceæ	2	5
27. Droseraceæ	1	2
28. Lythraceæ	2	2
29. Halorageæ	3	9
30. Onagrarieæ	3	13
31. Cucurbitaceæ	1	1
32. Umbelliferæ	27	45
33. Araliaceæ	1	1
34. Cornaceæ	1	1
MONOPETALÆ		
35. Caprifoliaceæ	4	7
36. Rubiaceæ	3	14
37. Valerianeæ	3	9
38. Dipsaceæ	2	5
39. Compositæ	43	101
40. Campanulaceæ	5	11
41. Ericaceæ	5	6
42. Monotropeæ	1	1
43. Primulaceæ	6	11
44. Oleaceæ	2	2
45. Apocynaceæ	1	2
46. Gentianeæ	5	8
47. Borragineæ	9	19
48. Convolvulaceæ	3	5
49. Solanaceæ	4	5
50. Plantagineæ	2	5
51. Scrophularineæ	13	37
52. Orobanchaceæ	2	5
53. Lentibularineæ	1	3
54. Verbenaceæ	1	1
55. Labiatæ	17	47
INCOMPLETÆ		
56. Illecebraceæ	1	1
57. Chenopodiaceæ	2	15
58. Polygonaceæ	3	22
59. Thymelæaceæ	1	2
60. Euphorbiaceæ	3	9
61. Urticaceæ	4	7
62. Ceratophylleæ	1	2
63. Loranthaceæ	1	1
64. Santalaceæ	1	1
65. Myricaceæ	1	1
66. Cupuliferæ	7	8
67. Salicineæ	2	12
68. Coniferæ	3	3
MONOCOTYLEDONES		
Microspermeæ		
69. Hydrocharideæ	2	2
70. Orchideæ	11	28
Epigyneæ		
71. Irideæ	1	2
72. Amaryllideæ	2	2
73. Dioscoreæ	1	1
Coronarieæ		
74. Liliaceæ	12	16
75. Junceæ	2	16
Nudifloræ		
76. Typhaceæ	2	6
77. Aroideæ	2	2
78. Lemnaceæ	2	5
Apocarpeæ		
79. Alismaceæ	4	5
80. Naiadaceæ	3	24
Glumaceæ		
81. Cyperaceæ	7	60
82. Gramineæ	36	82
Total genera and species	393	1081

The ten districts into which the county is divided are: (1) Blackwater; (2) Bourne Brook; (3) Upper Wey; (4) Lower Wey; (5) Upper Mole; (6) Lower Mole; (7) Hogg's Mill; (8) Wandle; (9) Medway—all of which drain into the river Thames; and (10) Arun, draining into the English Channel. These are now described, and lists of their rare or characteristic species are appended.

1. Blackwater

This district is bounded on the south by a line leaving the Hants border at Lower Old Park, and extending to a point on the Hog's Back a little north-east of Seale; thence the eastern boundary runs past Ash Green station, the Fox Hills and Chobham Ridges to the borders of Berkshire. The other boundaries are formed by the counties of Hants and Berks.

This is a small district, comprising as it does only a limited portion of the river basin. For the most part it consists of more or less barren and uncultivated sandy heaths, interspersed with considerable tracts of deep and dangerous peat bog. On the former the three heaths (*Calluna vulgaris*, *Erica cinerea*, and *E. tetralix*), with the furze (*Ulex europæus* and *U. nanus*) and the broom (*Cytisus scoparius*), form the bulk of the vegetation, together with extensive pine woods which cover much of the higher ground. A boggy wood adjoining the railway and canal near Ash Vale is remarkable for the various species of sedges which grow together there and which are not usually associated, such as *Carex elongata* and *C. riparia*; the latter however appears rarely to flower, so that its identity was not certainly made out for several years. In the alluvial meadows by the river Blackwater between Frimley and Blackwater there occurs a small quantity of the great burnet (*Sanguisorba officinalis*), not known elsewhere in Surrey; while in a deep bog near the canal at North Camp the slender cotton-grass (*Eriophorum gracile*) grows in abundance, its discovery here restoring the species to the county list. The generally boggy nature of the land is indicated by the occurrence of such plants as the meadow thistle in several places on the railway banks, while the alder (*Alnus glutinosa*) quite replaces the more familiar hawthorn in long sections of the railway hedges. As an absentee from the greater portion of the district the common primrose (*Primula vulgaris*) may be mentioned; this plant, so widely distributed over the county and often so abundant, is quite unable to exist on the hot dry sand of the Bagshot series, and is only found in the neighbourhood of the chalk with the exception of one locality near North Camp, where it occurs on alluvial soil by a small stream.

The following are among the more remarkable and interesting plants found in this district:—

Ranunculus tripartitus, DC.
var. intermedius, Hiern.
Cerastium tetrandrum, Curtis
Sanguisorba officinalis, L.
Anthriscus vulgaris, Pers.
Pyrola minor, L.
Wahlenbergia hederacea, Reich.
Utricularia neglecta, Lehm.
— minor, L.
Myrica Gale, L.
Potamogeton heterophyllus, Schreb.
Potamogeton nitens, Weber.
— rufescens, Schrad.
— trichoides, Cham.
Scirpus pauciflorus, Lightf.
Eriophorum gracile, Koch
Carex elongata, L.
— canescens, L.
— fulva, Good.
— Oederi, Auct.
Agrostis setacea, Curtis

2. Bourne Brook

The Bourne Brook district is bounded on the west by district 1, on the north and north-east by the county of Berks and the river Thames, and southwards by a line starting from Chobham Ridges and passing near Bisley and through Horsell to a point on the river Thames about midway between the mouths of the Bourne Brook and river Wey. The stream from which the district takes its name rises close to the village of Bagshot, uniting a little north of Horsell with another branch which rises on Bisley Common, and flowing in a north-easterly direction to its junction with the river Thames. The general character both of the soil and vegetation is very similar to that of district 1, except that the bogs are more extensive. One feature may be noted which is quite unique in the county. As one crosses the wide expanse

of moorland stretching from the Basingstoke Canal near Brookwood to Bagshot, one comes suddenly on a level tract of pure white sand, glistening with water. The sand however is found to be merely on the surface, beneath which the soil consists of black peat mud. This sand-covered bog occurs about halfway between Brookwood and Bagshot, and is sufficiently firm to be crossed on foot; its origin is at present somewhat doubtful. It has been suggested that it may be the remains of an old peat cutting, and this seems probable. The film of sand which covers it has no doubt gradually filtered out of the hills above and been carried down by rain. Peculiar and interesting as this bog is in itself, it is no less so in its relation to the plants which it supports. The black bogrush (*Schœnus nigricans*), confined to this district, occurs in abundance, as well as several of the rarer sedges, etc. But it is chiefly remarkable as the home of the rare horsetail (*Equisetum litorale*) referred to more particularly on another page. Among other plants may be named the broad-leaved water parsnip (*Sium latifolium*) which occurs in some plenty in several places between Chertsey and Egham, although almost extinct elsewhere in the county. A rare hybrid between the two skullcaps (*Scutellaria galericulata* and *S. minor*) was found near Virginia Water by Mr. George Nicholson. The common bladderwort (*Utricularia vulgaris*), a very rare species in the county, is plentiful in ditches about Chertsey and Thorpe, growing with the frog's-bit (*Hydrocharis Morsus-ranæ*). One peculiarity of the district is that it is the only one of those which drain into the river Thames that does not comprise within its area some portion of the chalk formation. This is however compensated for in some measure by the chalk plants which occur by the Thames side, especially in the neighbourhood of Runnymede. These are included in the following list of the more noteworthy species :—

Clematis Vitalba, L.
Ranunculus Drouetii, Schultz
— hirsutus, Curtis
Berberis vulgaris, L.
Myriophyllum verticillatum, L.
Callitriche obtusangula, Le Gall.
Sium latifolium, L.
Valerianella Auricula, DC.
Scabiosa Columbaria, L.
Campanula glomerata, L.
Gentiana Pneumonanthe, L.
Scutellaria galericulata × minor
Utricularia vulgaris, L.
— minor, L.
Plantago media, L.
Myrica Gale, L.
Lemna gibba, L.
Potamogeton rufescens, Schrad.
— zosterifolius, Schum.
Hydrocharis Morsus-ranæ, L.
Allium oleraceum, L.
Juncus compressus, Jacq.
Schœnus nigricans, L.
Scirpus pauciflorus, Lightf.
Carex dioica, L.
— fulva, Good.
Agrostis setacea, Curtis
Festuca elatior, L.

3. Upper Wey

This large district consists of the basin of the river Wey south of the chalk range. It is bounded on the north by the ridge of the chalk hills, on the south by the borders of the Arun districts and the county of Sussex, on the east by the Arun (Oke) district and by a line passing from the latter by Leith Hill northward to the chalk, and on the west by Hampshire. Two sub-districts have been separated, representing the basins of the west and east branches of the river; the dividing line runs nearly due north from a point between Hambledon and Hascomb to the junction of the two branches, and thence by the river Wey itself to the chalk at Guildford.

The wide heaths which occupy so large a part of the district, on the Lower Greensand formation, differ somewhat in character from those of districts 1 and 2 in the absence, for the most part, of deep bogs. The general character of the vegetation is very similar except for the absence of *Agrostis setacea* and the bog myrtle (*Myrica Gale*) which occur so abundantly in many parts of the latter. Two usually maritime species occur in the western sub-district, one of the stork's-bills (*Erodium maritimum*) found near Farnham (W. W. Reeves); and the sand sedge, (*Carex arenaria*). The former is extremely rare as an inland plant, the latter less so. Specimens of this stork's-bill are preserved in Kew Herbarium, but it appears doubtful whether the plant is still to be found at Farnham. A rare species of broom-rape (*Orobanche Picridis*) has been found in one locality (Rev. E. S. Marshall), while the discovery of the brown beak-sedge (*Rhynchospora fusca*) greatly extended the eastern range of the species. It occurs on Thursley Common (Revs. E. S. Marshall and R. P. Murray), where it may be found in profusion in a series of bogs adjoining a pond called The Moat. Another species of decidedly western

tendencies, viz. the navelwort (*Cotyledon Umbilicus*) occurs in various localities, and is particularly abundant round the village of Churt. Other interesting plants are rare species of fumitory (*Fumaria pallidiflora*, Rev. E. S. Marshall), bitter cress (*Cardamine impatiens*), water wort (*Elatine Hydropiper*, L.) found in Frensham Pond and Cut-mill Pond, *Senecio campestris* found on the Hog's Back, *Hieracium surrejanum* (Rev. E. S. Marshall), the cranberry (*Vaccinium Oxycoccos*) now extinct, the bog orchis (*Malaxis paludosa*) recently rediscovered (T. Howse), and a sedge (*Carex depauperata*). The original specimens of a new species of branched bur-reed (*Sparganium neglectum*) were gathered at Albury Ponds in the eastern sub-district. The following are some of the more remarkable plants of the district :—

Papaver hybridum, L.
Fumaria pallidiflora, Bor.
Cardamine impatiens, L.
*Isatis tinctoria, L.
Stellaria umbrosa, Opiz.
Lepidium Smithii, Hook.
Elatine Hydropiper, L.
Hypericum quadrangulum, Fries
Geranium lucidum, L.
Erodium maritimum, L.
*Impatiens fulva, Nutt.
Trifolium glomeratum, L.
Rosa sepium, Thuill
— obtusifolia, Desv.
Potentilla Comarum, Nestl.
Epilobium lanceolatum, Seb. et M.
Cotyledon Umbilicus, L.
Chrysosplenium alternifolium, L.
Galium tricorne, With.
Valerianella carinata, Lois
— Auricula, DC.
Senecio campestris, DC.
Hieracium surrejanum, Hanbury
Campanula patula, L.
Wahlenbergia hederacea, Reich.
Vaccinium Oxycoccos, L.
Pyrola minor, L.
Verbascum Lychnitis, L.
Euphrasia curta, Fries
Orobanche Picridis, F. Schultz
Teucrium Botrys, L.
Lithospermum officinale, L.
Utricularia minor, L.
Samolus Valerandi, L.
Sparganium neglectum, Beeby
Orchis ustulata, L.
Epipactis media, Fries
Malaxis paludosa, Sw.
*Ornithogalum umbellatum, L.
Cyperus fuscus, L.
Rhynchospora fusca, R. et S.
Carex arenaria, L.
— strigosa, Huds.
— depauperata, Good.
— canescens, L.
Leersia oryzoides, Sol.
Gastridium lendigerum, Gaud.
Glyceria declinata, Breb.

4. Lower Wey

This district comprises the basin of the river Wey north of the ridge of the chalk hills which forms its southern limit. It is bounded on the north by the river Thames ; on the east by a line leaving the chalk above Gomshall and passing between East and West Horsley, and east of Ockham and Weybridge to a point on the Thames a little east of Walton Bridge ; and on the west and north-west by districts 1 and 2. After leaving the chalk a belt of the London Clay is met with, and following this a considerable area of the Bagshot Sands with heaths and boglands, similar to those of district 2, but from which some of the more noteworthy species found in the latter district are absent.

The most remarkable plants of the district are the two following : a pondweed (*Potamogeton prælongus*) found in the pool above Walton Bridge and in the slow ditch which runs from it, and a bur-reed (*Sparganium affine*) which occurs in a large pond on Pirbright Common. Both of these have usually a more boreal range in this country. The pondweed never flowers in Surrey, and I am informed that it does not fruit in our eastern counties, though it does so freely in the north of England and in Scotland. This as well as another pondweed (*P. zosterifolius*) which occurs also in district 2, occurs only close to the southern margin of the river Thames, having doubtless been brought down from some of that river's northern tributaries and left in times of flood. A species of treacle mustard (*Erysimum cheiranthoides*) although not uncommon, may be mentioned for the great profusion in which it occurs in the sandy region around Woking. A water-parsnip (*Apium inundatum*) has been known from Pirbright since 1666 (Merrett), and still grows there in abundance. On Clandon Downs grows the frog orchis (*Habenaria viridis*, T. Howse), one of the rarest orchids in the county, while another, the marsh helleborine, occurs in abundance in boggy ground by the canal near Woking (Rev. W. R. Linton). The slender cotton-grass (*Eriophorum gracile*) which formerly grew by Whitemoor Pond has long been extinct there and is confined to the more recently noted locality in district 1.

The following plants may be mentioned :—

Ranunculus tripartitus, DC.
  var. intermedius, Hiern.
Erysimum cheiranthoides, L.
Rosa sepium, Thuill.
— spinosissima, L.
Alchemilla vulgaris, L.
Myriophyllum verticillatum, L.
Callitriche obtusangula, Le Gall.
Chrysosplenium alternifolium, L.
Cnicus Forsteri, Smith
Crepis biennis, L.
Gentiana Pneumonanthe, L.
Euphrasia stricta, Host.
— curta, Fries
Galeopsis speciosa, Miller
Utricularia neglecta, Lehm.
— minor, L.
Myrica Gale, L.
Sparganium affine, Schnizl.
Wolffia arrhiza, Wimm.
Potamogeton fluitans, Roth. (forma)
Potamogeton heterophyllus, Schreb.
— nitens, Weber
— prælongus, Wulfen.
— rufescens, Schrad.
— zosterifolius, Schum.
— acutifolius, Link.
Habenaria viridis, Br.
Epipactis palustris, Sw.
Juncus diffusus, Hoppe
— compressus, Jacq.
Eriophorum gracile, Koch (*extinct*)
Carex dioica, L.
— elongata, L.
— canescens, L.
— fulva, Good.
— Oederi, Auct.
Leersia oryzoides, Swartz.
Alopecurus fulvus, Smith
Agrostis setacea, Curt.
Calamagrostis Epigejos, Roth.
Deschampsia discolor, Rœm. et S.

5. Upper Mole

This district is bounded on the north by the ridge of the chalk hills, on the south by the Sussex border, on the east by a line running north from near Copthorne past Horne and Bletchingley to the chalk near White Hill, and on the west by the Upper Wey and Arun districts.

Except at the western end there is now a very considerable widening of the Wealden formation, and a corresponding narrowing of the Lower Greensand. Hence the sandy heaths give place to meadow and arable lands, the common heath plants are no longer a striking feature, and the pine woods in great measure disappear in favour of green copses, consisting mainly of deciduous trees and shrubs. Among the plants may be mentioned a rare form of bitter cress (*Cardamine Hayneana*) which occurs near Red Hill and near Horley ; the common lady's mantle (*Alchemilla vulgaris*) ; a milk vetch (*Astragalus glycyphyllos*) which with the everlasting pea (*Lathyrus sylvestris*) is abundant on the hills east of Merstham ; a starwort (*Callitriche vernalis*) not certainly known to occur elsewhere in the county ; the ivy-leaved campanula (*Wahlenbergia hederacea*) formerly found on Reigate Heath, and recently re-discovered in the neighbourhood (C. E. and E. S. Salmon). The wild tulip (*Tulipa sylvestris*) is, I believe, really wild in a meadow by the river Mole near Buckland, where it seldom flowers ; the wood barley (*Hordeum sylvaticum*), rare in the county, is abundant in several copses in the chalk above Dorking. On this formation the ragged robin (*Lychnis Floscuculi*), a plant usually found in wet lowland spots, occurs on the top of Box Hill, and also on a high bare chalk hill in Gatton Park. The following is a list of the more interesting species :—

Ranunculus tripartitus DC.
  var. intermedius, Hiern.
*Meconopsis cambrica, Vig.
Fumaria confusa, Jord.
Cardamine Hayneana, Welw.
*Barbarea intermedia, Bor.
Iberis amara, L.
Dianthus Armeria, L.
Astragalus glycyphyllos, L.
Lathyrus sylvestris, L.
Alchemilla vulgaris, L.
Pyrus germanica, L.
Callitriche vernalis, Kuetz.
Chrysosplenium alternifolium, L.
Galium erectum, Huds.
— sylvestre, Poll.
Valerianella carinata, Lois
Gnaphalium uliginosum, L.
  var. pilulare, Wahl.
Campanula latifolia, L.
Wahlenbergia hederacea, Reich.
Erythræa pulchella, Fries
Euphrasia Kerneri, Wettst.
Buxus sempervirens, L.
Epipactis palustris, Sw.
Tulipa sylvestris, L.
Carex teretiuscula, Good. (extinct)
— Bœnninghausiana, Weihe
Leersia oryzoides, Sol.
Alopecurus fulvus, Smith
Gastridium lendigerum, Gaud.
Festuca elatior, L.
Hordeum sylvaticum, Huds.

6. Lower Mole

The boundaries of this district are on the north the river Thames, on the south the chalk ridge, on the east a line starting on Walton-on-Hill Heath and passing near Headley, Epsom and Kingston to the Thames side a little north of the latter town, and on the west the Lower Wey district.

The chalk mass now widens out, and the same is the case with the London Clay formation, while the Bagshot Sands are now more limited in extent and are not found east of this district.

Of the more interesting plants the box (*Buxus sempervirens*) deserves the first place, occurring as it does in great quantity at the well known locality of Box Hill, with all appearance at the present day of being indigenous. Nevertheless some of our best authorities have doubted whether it be really so. Many years ago the late Professor Babington pointed out a passage in Asser's *Life of King Alfred*, in which it is stated that in that day, a thousand years ago, *Buxus* grew most abundantly in the adjacent county of Berkshire; and if one could accept Asser's *Buxus* as certainly representing our box tree, the question of its nativity in this country might be regarded as settled. On the dry slope of the hill facing the river Mole, the water figworth (*Scrophularia aquatica*), a plant rarely seen in such places, grows abundantly. It also occurs on the railway embankment at Thames Ditton, where it has no doubt been introduced; but elsewhere it is only found in more or less moist localities. Another plant of the Box Hill region is the Turk's cap lily (*Lilium Martagon*), probably introduced but thoroughly established. Seedling plants have been found on the side of the valley opposite to its main habitat, indicating that the seeds may sometimes be distributed by birds (Dr. A. R. Wallace). It is also reported from another locality in the neighbourhood.

The principal species are :—

Adonis autumnalis, L.
Ranunculus Drouetii, Schultz
Fumaria densiflora, DC.
Iberis amara, L.
Cerastium tetrandrum, Curt.
Hypericum quadrangulum, Fries
Rosa systyla, Bast.
Linum angustifolium, Huds.
Trifolium glomeratum, L.
Ribes Smithianum (Syme)
Œnanthe Lachenalii, Gmel.
Valerianella Auricula, DC.
— carinata, Lois.
*Silybum Marianum, Gaert.
Filago spathulata, Presl.
Erythræa pulchella, Fries
Gentiana Pneumonanthe, L.
Verbascum Lychnitis, L.
Linaria repens, Mill.
Calamintha Nepeta, Clairv.
Teucrium Botrys, L.
Cynoglossum montanum, Lam.
Chenopodium glaucum, L.
Buxus sempervirens, L.
Wolffia arrhiza, Wimm.
Damasonium stellatum, Pers.
Orchis militaris, L.
— fusca, L.
Epipactis purpurata, Smith
Cephalanthera ensifolia, Rich.
Lilium Martagon, L.
Scilla autumnalis, L.
Juncus compressus, Jacq.
Leersia oryzoides, Sol.
Alopecurus fulvus, Smith
Gastridium lendigerum, Gaud.
Poa compressa, L.

7. Hogg's Mill River

This district includes the basin of the Beverly Brook as well as that of the small stream from which it takes its name. It is bounded on the north by the river Thames, on the east by a line passing through Banstead, Sutton, Morden and Wimbledon to the Thames side near Wandsworth, and on the south and west by the Lower Mole district.

The geological features are similar to those of the last district except that the Bagshot series is wanting and that there is a larger proportion of the London Clay formation.

The tidal waters of the Thames have now been reached, and a few usually maritime species are still to be found by the river side near Putney. The sea clubrush (*Scirpus maritimus*) occurs in plenty, and near it two other much rarer species, *Scirpus triqueter* and *Sc. carinatus*. Whether both of these are still to be found there is doubtful, as some years ago there appeared to be but a single small mass of *Sc. triqueter* left. A sedge (*Carex teretiuscula*) formerly grew on Wimbledon Common, and as it appears to be lost in its other locality in the Upper Mole district it cannot be claimed as an inhabitant of the county at the present day. A rare species of bitter cress (*Cardamine Hayneana*) was first recorded as a

British plant from this district (G. Nicholson), but is now extinct in its original station. Some interesting roses occur, such as the burnet rose (*Rosa spinosissima*) which is found on several of the suburban commons, as well as *Rosa involuta* and *R. hibernica*, all rare in the county; the two latter however are now regarded as hybrids rather than distinct species. The hairy violet (*Viola hirta*), elsewhere confined to the chalk and gault, occurs in two localities on the London Clay : on Ham Common (G. Nicholson), and between Lower Malden and Epsom Common.

The principal plants of the district are :—

Ranunculus trichophyllus, Chaix
Papaver hybridum, L.
Dianthus deltoides, L.
Cerastium pumilum, Curt.
Rosa spinosissima, L.
— involuta, Sm.
— hibernica, Sm.
— obtusifolia, Desv.
Myriophyllum verticillatum, L.
*Centranthus ruber, DC.
Valerianella Auricula, DC.
Filago spathulata, Presl.
Antennaria dioica, Br. (*extinct?*)
*Galinsoga parviflora, Cav.
*Inula Helenium, L.
Crepis biennis, L.
Campanula latifolia, L.
Gentiana præcox, Raf.
Limnanthemum peltatum, Gmelin
Euphrasia Kerneri, Wettst.
Atriplex marina, L.
Rumex maritimus, L.
— elongatus, Guss.
— sylvestris, Wallr.
Wolffia arrhiza, Wimm.
Scilla autumnalis, L.
Luzula maxima, DC.
Juncus diffusus, Hoppe
Scirpus carinatus, Smith
— triqueter, L.
— maritimus, L.
Alopecurus fulvus, Sm.
Festuca elatior, L.
Bromus madritensis, L. (*extinct?*)

8. Wandle

The Wandle district includes also parts of the basins of other small streams, but owing to the alterations in levels in the neighbourhood of London it has not been thought advisable to attempt to make any subdivisions. The district is bounded on the north by the river Thames, on the south by the chalk ridge, on the east by the county of Kent, and on the west by the Hogg's Mill district.

About one half of the district is on the chalk formation, the remaining half being on the London Clay. In proportion to its area, it possesses considerably less running water than any other district, the river Wandle being practically its only stream.

The blue wood anemone (*A. apennina*) was formerly abundant as an introduced plant in Wimbledon Park, but it is now reported extinct. A rare crowfoot (*Ranunculus heterophyllus* var. *triphyllus*) grows on Mitcham Common (H. and J. Groves), as well as the two less rare plants *R. Drouetii* and *R. trichophyllus*. The London rocket (*Sisymbrium Irio*) formerly occurred, but is no longer to be found. A very uncommon species of milkwort (*Polygala amara*) was found some years since in the Caterham Valley (W. Whitwell). This particular form of the species, called *Polygala austriaca*, is confined to Surrey and Kent. The hairy vetchling (*Lathyrus hirsutus*), another very rare plant, is found on the hills in the same valley. A yellow clover (*Trifolium ochroleucum*) was recorded from Duppas Hill so long ago as 1798; but, as far as I am aware, it had not been seen there during the nineteenth century previously to 1882, in which year Mr. Arthur Bennett informs me that Miss Bennett brought him a specimen from the hill, thus confirming its occurrence in Surrey. The cowbane (*Cicuta virosa*) formerly grew by the Thames side at Battersea. Gerarde also records the plant (1633) from 'Moor Parke,' and it has been suggested that Moor Park near Farnham was intended; but the plant does not appear to grow there, and I think it more probable that Moor Park, Chelsea, is the locality meant, and that it occurred on both sides of the Thames. The plant is scarcely likely to be refound in the county, unless in the neighbourhood of the Thames between Chertsey and Runnymede. The sea aster (*A. Tripolium*) formerly grew by the Thames near Battersea (J. Britten), but is no longer a plant of the county. Among other extinctions are the brookweed (*Samolus Valerandi*), a goose foot (*Atriplex marina*), and the two rare club rushes, *Scirpus triqueter* and *Sc. carinatus*.

The principal plants of the district are :—

Ranunculus heterophyllus
var. triphyllus (Hiern.)
— Drouetii, Schultz
— trichophyllus, Chaix
Papaver hybridum, L.
Fumaria Boraei, Jord. (*extinct ?*)
— densiflora, DC.
Diplotaxis tenuifolia, DC.
Sisymbrium Irio, L. (*extinct*)
Lepidium Smithii, Hook.
Iberis amara, L.
Polygala amara, L.
Dianthus Armeria, L.
— deltoides, L.
Silene quinquevulnera, L.
— noctiflora, L.
Trifolium ochroleucum, L.
— glomeratum, L.
Lathyrus hirsutus, L.
— palustris, L. (*extinct*)
Rosa spinossima, L.
— sepium, Thuill.
Epilobium lanceolatum, Seb. et M.
Myriophyllum verticillatum, L.
Callitriche obtusangula, Le Gall.
Cicuta virosa, L. (*extinct*)
Œnanthe Lachenalii, Gmel.
Carduus pycnocephalus, Jacq.
Filago spathulata, Presl.
Campanula latifolia, L.
Gentiana præcox, Raf.
Verbascum Lychnitis, L.
Euphrasia Kerneri, Wettst.
Lathræa squamaria, L.
Teucrium Botrys, L.
Samolus Valerandi, L. (*extinct*)
Chenopodium ficifolium, L.
Atriplex marina, L. (*extinct*)
Rumex palustris, Sm.
Allium oleraceum, L.
Juncus obtusiflorus, Ehrh.
Luzula maxima, DC.
Scirpus carinatus, Sm. (*extinct*)
— triqueter, L. (*extinct*)
— maritimus, L.
Calamagrostis lanceolata, Roth. (*extinct*)

9. Medway

This concludes the districts comprised within the Thames drainage system. It is bounded on the north by the chalk ridge, on the south by the county of Sussex, on the east by that of Kent, and on the west by the Upper Mole district. The greater part of its area is occupied by the Wealden formation, the Lower Greensand belt being much restricted, as in the case of the adjacent district. At the extreme south-eastern corner there occurs a small tract of Hastings Sands, on which are found several interesting species.

The general botanical features are very similar to those seen in the Upper Mole basin. A pale flowered buttercup (*Ranunculus hirsutus*), a very scarce plant in Surrey, occurs abundantly in several places near Lingfield, and a flax (*Linum angustifolium*) near the same place. In a swamp to the west of Hedge Pool is one of the few localities for *Cnicus Forsteri*. The wood forget-me-not (*Myosotis sylvatica*), found in many other parts of the county, grows here truly wild and in great profusion. Recorded many years for the county without any specific locality, it was first found about the top of Titsey Hill by Mr. Arthur Bennett. It has since been observed to occur in almost every wood and copse over an area of several square miles, extending from Oxted chalk pit up to and beyond the Kent boundary. Southwards its limit appears to be practically the edge of the Lower Greensand. The daffodil (*Narcissus pseudo-narcissus*) is exceptionally abundant in the neighbourhood of Hedge Court. The Hastings Sands supplies three species not met with elsewhere in the county. These are a violet (*Viola lactea*) found about Copthorne and Hedge Court; a pondweed (*Potamogeton Zizii*) abundant in Hedge Pool; and a sedge (*Carex turfosa*) which grows in a swamp at the north-west corner of the same piece of water.

The principal plants are :—

Ranunculus hirsutus, Curt.
Viola lactea, Smith
Hypericum quadrangulum, Fries
Rosa obtusifolia, Desv.
Callitriche obtusangula, Le Gall.
Chrysosplenium alternifolium, L.
Cnicus Forsteri, Smith
Crepis biennis, L.
Wahlenbergia hederacea, Reich.
Pyrola minor, L.
Myosotis sylvatica, L.
Utricularia neglecta, Lehm.
Potamogeton Zizii, Roth.
Narcissus pseudo-narcissus, L.
Luzula maxima, DC.
Juncus lamprocarpus × acutiflorus
Carex canescens, L.
— turfosa, Fries
— strigosa, Huds.
Alopecurus fulvus, Smith
Festuca ovina, L.
var. tenuifolia, Sibth.

10. Arun

This district, unlike all those previously described, drains into the English Channel. It consists of two sub-districts, the river Oke or eastern and the North river or western sub-district, the two streams afterwards uniting and forming the river Arun. The two sub-districts are completely separated by a portion of the Upper Wey basin which intervenes.

Both of the sub-districts lie almost wholly on the Wealden Clay, only touching the Lower Greensand along their northern boundaries.

The eastern is bounded on the north by Leith and Holmbury hills, on the south by the county of Sussex, on the east by a line leaving the latter county near Cowick and passing east of Ockley to Coldharbour, and on the west by an almost direct line from Holmbury Hill to the county border. The western is bounded on the north by a line running from near Boundless Farm by Witley and Hambledon to a point south of Hascomb, on the south by the county of Sussex, on the east by a line running south-east to a point near Alford, and on the west by a line running almost south past Haslemere to the county border.

The Oke sub-district is chiefly remarkable as affording the only locality for the coral root (*Dentaria bulbifera*), found some years since by Mr. E. Straker; the old record of the occurrence of the plant near Croydon arising through a misconception of the meaning of the præ-Linnean name *Dentaria* as indicating the present plant instead of the toothwort, an error pointed out by Mr. S. W. Carruthers. In Vann woods the yellow wort (*Chlora perfoliata*), very rare away from the chalk, grows in abundance in one place. The less common form of the hawthorn (*Cratægus oxyacanthoides*) is frequent, and its long sweeping branches give quite a character to the woods. One of the taller sedges (*Carex pendula*) is exceptionally plentiful. The water speedwell (*Veronica Anagallis*) is absent so far as I have observed, though common enough in wet places in most of the other districts.

The few more noteworthy plants are :—

Dentaria bulbifera, L.
Hypericum quadrangulum, Fries
Cratægus oxyacanthoides, Thuill.
Arctium nemorosum, Lej.
Chlora perfoliata, L.
Euphrasia stricta, Host.
Carex strigosa, Huds.
— pendula, Huds.

The North River sub-district is chiefly noted for the plants which occur in or about the Wey and Arun canal. Here the agrimony (*Agrimonia odorata*) grows in great profusion; the canal also supplies the only stations in the county for two rare pondweeds (*Potamogeton fluitans* and *P. decipiens*). The water speedwell appears to be wanting here also, and neither the dogwood (*Cornus sanguinea*) nor the elder (*Sambucus nigra*) have been observed except where the latter has been planted. One of the sowthistles (*Sonchus oleraceus*) is extremely rare, its place being quite taken by the other species (*S. asper*). In considering these absent species it is, of course, necessary to remember that the two Arun sub-districts include a very small portion of the river basin of which they form part.

The principal species are :—

Barbarea stricta, Andrz.
Hypericum quadrangulum, Fries
Cerastium tetrandrum, Curt.
Rosa systyla, Bast.
Agrimonia odorata, Mill.
Epilobium lanceolatum, Seb. et M.
Wahlenbergia hederacea, Reich.
Pyrola minor, L.
Euphrasia stricta, Host
Potamogeton fluitans, Roth.
— decipiens, Nolte
Epipactis media, Fries
Leersia oryzoides, Sol.

THE BRAMBLES (*Rubi*)

Surrey is especially rich in brambles; so far as has been yet ascertained amongst the richest counties in Great Britain. Two only, Hereford and Devon, are known to surpass it in the number of their species and subordinate forms (sub-species and varieties); and in both of those the search for brambles has probably been much more nearly exhaustive than in Surrey. All three counties are pre-eminent both for

the extent of their bramble ground and for the number of forms first discovered as British within their borders; but as especially favourable places for the study of the genus the best localities in Britain are perhaps to be found in Surrey—in the extensive commons and heaths to the south-west of London near the Kent border, and to the south-west of Guildford towards the Hants and Sussex borders.

Fifty-three species and twenty-seven additional sub-species or varieties have already been found in the county; and, out of these, three species and two subordinate forms had not been known as British until they were observed in Surrey. These are *Rubus holerythros*, Focke; *R. Marshalli*, Focke & Rogers; and *R. viridis*, Kalt.; with the sub-species or varieties *rhombifolius*, Weihe, and *britannicus*, Rogers. Of these *R. Marshalli* and *R. britannicus* were new to science and are still numbered among our endemic brambles, though both have since been found abundantly in several British counties. *R. holerythros*, *R. rhombifolius* and *R. viridis* have also proved to be somewhat widely distributed, though chiefly or wholly in the south of England.

Among other Surrey brambles perhaps the most interesting, for their rarity elsewhere or for their special beauty, are *R. Bakeri*, F. A. Lees; *R. Colemanni*, Blox.; *R. leucanthemus*, P. J. Muell.(?); *R. cinerosus*, Rogers; *R. ericetorum*, Lefv.; *R. mutabilis*, Genev.; *R. hostilis*, Muell. & Wirtg.; and *R. cognatus*, N. E. Brown. Until recently these were either unknown in Britain or most imperfectly understood; and for the most part they have become fairly familiar to us chiefly through Surrey specimens. Four of them, *Bakeri*, *Colemanni*, *cinerosus* and *cognatus* seem to be endemic.

Of many good Surrey localities some of the best are the commons at Wimbledon, Barnes, Tooting and Wandsworth, and Putney Heath near London, and further west the commons and heathy land at Oxshott and round Godalming and Haslemere. In all or nearly all of these the most conspicuous brambles, in addition to some of those mentioned above, are *R. plicatus*, Wh. & N.; *R. carpinifolius*, Wh. & N.; *R. Lindleianus*, Lees; *R. rhamnifolius*, Wh. & N.; *R. pulcherrimus*, Neum.; *R. argentatus*, P. J. Muell.; *R. subinermis*, Rogers; *R. leucostachys*, Schl.; *R. Babingtonii*, Bell Salt.; *R. adornatus*, P. J. Muell.; and *R. corylifolius*, Sm. Hence it will be seen that the group best represented in the county is that of the *Rhamnifolii*. The abundance of *R. carpinifolius* and (in a less degree) *R. pulcherrimus* is especially remarkable, and the comparative rarity of *R. rusticanus*, *R. cæsius*, and most of the glandular species.

As instances of single localities, Wimbledon Common alone produces 24 species and 3 sub-species, and Putney Heath 16 species and 6 sub-species or varieties; while the six chief commons to the south-west of London have between them about 50 different brambles in all, and the commons and heathy places between Guildford and the Sussex border seem at least as richly supplied.

Perhaps the most marked feature in the Haslemere district is the extraordinary abundance of *R. Marshalli* and *R. rosaceus*, Wh. & N. Between Haslemere and Godalming *R. fissus*, Lindl.; *R. nitidus*, Wh. &

N.; *R. affinis*, Wh. & N.; with forms of *R. imbricatus*, Hort; *R. erythrinus*, Genev.; and *R. incurvatus*, Bab., are fairly frequent and locally abundant.

CRYPTOGAMEÆ VASCULARES

LYCOPODIACEÆ

Three species of this order are found in the county. Of these the peat-loving clubmoss (*L. inundatum*) is the commonest. It has been found in all of the districts except Medway, and is particularly abundant on the heaths and moors of the western part of Surrey. The common clubmoss (*L. clavatum*) occurs in about six of the districts, and is decidedly uncommon, while the fir clubmoss (*L. Selago*) is rare. It has been found in about half of the districts, but it occurs very sparingly where I have seen it. The following is a list of the species :—

Lycopodium clavatum, L. L. inundatum, L. L. Selago, L.

EQUISETACEÆ

Eleven species of horsetail are found in Great Britain, and of these Surrey possesses seven, of which one is of special interest. Of the others *Eq. arvense* and *Eq. limosum* are very common, *Eq. maximum* and *Eqs palustre* considerably less so. The wood horsetail (*Eq. sylvaticum*) occurt in about half of the districts but is not common ; it may be seen in greabeauty and profusion on the railway banks between Witley and Hasle, mere, and in some of the adjoining woods. The Dutch rush is very rare. having been found in only two districts. The remaining species, *Eq. litorale*, has been briefly referred to before. It grows in plenty on the curious sand-covered bog on Bisley Common, and in one or two peaty places close at hand. This plant, by many regarded as a hybrid (*Eq. arvense* and *limosum*), is not known to occur elsewhere in Britain. It is sparsely scattered over a considerable part of Europe and is also found in North America. The following is a list of the species :—

Equisetum maximum, Lam.
— arvense, L.
— sylvaticum, L.
— palustre, L.
Equisetum litorale, Kühl.
— limosum, L.
— hyemale, L.

MARSILEACEÆ

The pillwort (*Pilularia globulifera*), the only species of this order found in Britain, is a curious little creeping herb with erect, rush-like leaves 3–4 inches long, at the base of which are found the round capsules from which the plant derives its name. It is not very uncommon about margins of ponds, but is easily overlooked. It grows in a number of localities extending over five or six of the districts.

FILICES

Owing to the absence of any important outcrop of rock, the ferns of Surrey are naturally restricted to such species as love either woodland shade or the open heath. A very limited extent of bare rock may be seen by that part of the Eden stream which flows from Hedge Pool to Woodcock Pool, in the extreme south-eastern corner of the county, and it may be noted that the formation here is the Hastings Sands, the same as at Tunbridge in Kent. Towards the extreme south-western corner also, between Grayswood and Killinghurst, the streams have somewhat rocky banks, but so far these have not proved productive.

The most common of all, the bracken (*Pteris aquilina*) occurs abundantly in all the districts, and to it our woods and heaths owe much of their autumnal beauty. The other commoner species are the lady fern (*Athyrium Filix-fœmina*), male fern (*Nephrodium Filix-mas*), polypody (*Polypodium vulgare*), and hard fern (*Lomaria Spicant*), while on the open heaths and moorland *Nephrodium spinulosum* is most general. Excepting the bracken, all of these have all but disappeared from the neighbourhood of London, and little is to be seen of the less common species within twenty miles of the metropolis. Among the latter may be mentioned the prickly shield ferns (*Aspidium aculeatum* and *A. angulare*), marsh fern (*Nephrodium Thelypteris*), abundant on several parts of Bisley Common but rare elsewhere, the spleenwort (*Asplenium Trichomanes*), still plentiful on some parts of the Lower Greensand, wall rue (*A. Ruta-muraria*) and scale fern (*A. Ceterach*). The adder's tongue (*Ophioglossum vulgatum*) is not rare, but the moonwort (*Botrychium Lunaria*), although not a species greatly sought by the fern-hunter, seems to be diminishing in frequency. When residing at Godalming Dr. A. R. Wallace informed me that the beech fern (*Polypodium Phegopteris*) formerly grew within the Surrey border near Haslemere. No station is known for it at the present day although it occurs a short distance beyond the county boundary in Sussex. It remains only to notice the royal fern (*Osmunda regalis*), once so plentiful in some parts of the county. It has occurred in at least nine of the ten districts, but is now on the verge of extinction. Some plants were met with by the Rev. E. S. Marshall in 1883 in the region of Hind Head, but a few years later they had gone. But from information gleaned in a still more remote part of the county, I believe I may safely say that the giant fern, as it is there called, is not quite extinct in Surrey. The following is a list of the species :—

Pteris, L.
— aquilina, L.
Lomaria, Willd.
— Spicant, Desv.
Asplenium, L.
— Ruta-muraria, L.
— Trichomanes, L.
— Adiantum-nigrum, L.
— Filix-fœmina, Bernh.
— Ceterach, L.
Scolopendrium, Sm.
— vulgare, Sm.
Aspidium, Sw.
— aculeatum, Sw.
— angulare, Willd.
Nephrodium, Rich.
— Filix-mas, Rich.
— spinulosum, Desv.
— dilatatum, Desv.
— Thelypteris, Desv.

Nephrodium Oreopteris, Desv.
Polypodium, L.
— vulgare, L.
— Phegopteris, L. (*extinct*)
Osmunda, L.
Osmunda regalis, L.
Ophioglossum, L.
— vulgatum, L.
Botrychium, Sw.
— Lunaria, Sw.

SUMMARY OF VASCULAR CRYPTOGAMS

	Genera	Species
Filices	10	20
Equisetaceæ	1	7
Lycopodiaceæ	1	3
Marsileaceæ	1	1
Total genera and species. . .	13	31

The total genera and species of vascular cryptogams for the whole of Britain is 25 and 70 respectively.

MOSSES (*Musci*)

Surrey possesses a moss flora closely resembling that of Kent and Sussex but is less favoured than either as regards conditions suitable for the growth of these plants. The climate is drier, the land better drained and the rocks softer and less durable. Geologically the three counties are identical, the same formations occurring in all and in about the same proportion, the chief distinction lying in the limited outcrop of Hastings Sand. In Sussex this bed covers a large area and composes the High Rocks at Tunbridge Wells, furnishing many species of considerable interest. In Surrey however it only occurs in the extreme south-east.

The county is intersected midway by the chalk which extends from the west as an increasingly broad belt towards the east and north-east. The highest land is formed by the ridge of Lower Greensand which lies to the south of the downs as a series of hills covered with heather and well wooded with pines and larches. In the west on the Bagshot sand are extensive undulating commons rising into low hills capped with clumps of pines, and with bogs and marshy ground of considerable extent, and in the south-west also are several large commons with numerous ponds and alder swamps.

The bryology of the county has received considerable attention from many workers of ability, but some districts still require careful investigation as is shown by the recent addition to our list of several striking species. There are however few lists in existence and none of much importance with the exception of an excellent paper on the 'Mosses of Kew,' by Mr. E. S. Salmon. Among others who have contributed to our knowledge of the mosses of the county is Dr. Capron, who devoted many years of his residence at Shiere to the collection of species growing in his neighbourhood. His collection and records however are unfortunately not accessible. Dickson also collected, and Black, the latter working chiefly in the Dorking district, many of his specimens being in the British Museum Herbarium. More recently, Mr. E. S. Salmon, who has devoted considerable time to the mosses of the Reigate district,

and Mr. Ferguson Shepherd of Staines have been instrumental in adding largely to the county records. The present writer has also worked for many years at the distribution of species through the eight watershed districts.

The species recorded include several mosses of great interest, chief among them being *Buxbaumia aphylla*, which formally grew upon mud banks at Virginia Water on the border of the county, the almost equally rare *Physcomitrium sphæricum*, which is abundant on the muddy margin of a pond near Felbridge, and *Weisia rostellata*, from the mud of a drained pond at Dormansland. *Campylopus subulatus* is another rare species of recent discovery, of which a single tuft was gathered by the writer in 1899 at Addington on dry stony ground.

Several commoner species are of interest from their occurrence under unusual conditions. *Pleurochæte squarrosa*, which is most frequently found by the sea, is well established on the steep northern slopes of Box Hill, and *Brachythecium megapolitanum*, another maritime plant, grows close by; two other mosses which frequent sub-alpine regions, *Bartramia ithyphylla* and *Rhacomitrium canescens*, occur, the former on a soft sandy bank near Dorking and the latter on moory commons and by the side of stony roads.

Hypnum imponens and *H. giganteum* are rare species which appear to be becoming better known as new records are multiplying. The former has no doubt been confounded with *H. cupressiforme* var. *ericetorum*, which it much resembles; it grows on most of the larger commons, often in profusion.

The *Sphagna* are well represented. *S. medium* recently made known to us as a British species is abundant on Pirbright Common; *S. molle* from the same locality is perhaps our rarest bog moss, although *S. fimbriatum* has so far been recorded from only one locality. *S. Girgensohnii* has not yet been reported, but it is not unlikely to occur in one of the more elevated bogs.

Instead of a single list enumerating all the species found in the county, the most interesting or characteristic mosses recorded in each watershed division are given, with, in the case of rarities, a reference to the localities.

1. Blackwater. The smallest division, forming the extreme north-west of the county. The greater part is composed of Bagshot Sand with a small area of chalk at the base. The hills forming the eastern boundary are covered with heather and pine woods, and with a few bogs at the base.

Aulacomnion androgynum, Schwgr.; Bartramia pomiformis, Hedw.; Philonotis fontana, Brid.; Brachythecium albicans, B. & S.; Hypnum cordifolium, Hedw.

2. Upper Wey. The southern slopes of the chalk downs form the north border of this district, and a broken ridge of high hills of Lower Greensand forming the highest land in the county lies about halfway between them and the Sussex border. To the south of this ridge extends the Weald Clay characterized by oak woods and plantations. In the west are large commons with numerous ponds, bogs and alder swamps.

Sphagnum cymbifolium, Ehrh.
— papillosum, Ldb.
— rigidum, Schp. et vars. compactum, Schp. squarrosum, Russ. and subsquarrosum, W.
— tenellum, Ehrh.; S. subsecundum, Nees. et var. contortum, Schp.
— laricinum, Spr. *Leith Hill*
— squarrosum, Pers.; S. acutifolium, Ehrh. S. intermedium, Hoff. et vars. mucronatum, W. et amblyphyllum, W.; S. cuspidatum, Ehrh. et var. falcata, Russ.
Tetraphis pellucida, Hedw. Not uncommon and often fruiting
Polytrichum formosum, Hedw.
Ditrichum flexicaule, Hpe. Downs, frequent
Brachyodus trichodes, Fürnr. Blocks of sandstone in shady places, *Leith Hill*; *Ewhurst*
Dicranella rufescens, Schp.; D. cerviculata, Schp.
Fissidens crassipes, Wils. *Leith Hill*
Grimmia apocarpa, Hedw.; Rhacomitrium canescens, Brid. Not common but plentiful in a few localities
Acaulon muticum, C. M. Frequent
Pottia cæspitosa, C. M. Friable chalky ground, occurring sparingly along the downs
Tortula ambigua, Ångstr. Downs. T. cuneifolia, Roth.; T. marginata, Spr.; T. angustata, Wils.
Barbula rubella, Mitt.; B. cylindrica, Schp.; B. Hornschuchiana, Schultz
Weisia crispa, Mitt. Abundant on the downs. W. tortilis, C. M. Downs
Encalypta Streptocarpa, Hedw.
Ulota Bruchii, Hornsch.; Orthotrichum Lyellii, H. & T. Fruiting freely
Schistostega osmundacea, Mohr.
Splachnum ampullaceum, L.
Ephemerum serratum, var. β angustifolium, B. & S. Clay banks and amongst grass in meadows
Aulacomnion palustre, Schwgr. c. fr.
Philonotis fontana, Brid. Frequent throughout the county but in poor condition
Neckera crispa, Hedw.; N. pumila, Hedw.; Homalia trichomanoides, Brid. c. fr.
Leucodon sciuroides, Schwgr.; Porotrichum alopecurum, Mitt.; Thuidium hystricosum, Mitt. Abundant along the downs
Thuidium recognitum, Ldb. *Broadmoor Bottom* amongst Sphagna; it is much more commonly met with in drier situations, and occurs plentifully on the downs, always however barren
Cylindrothecium concinnum, Schp. Bare places on the downs
Brachythecium albicans, B. & S.; B. rivulare, B. & S.; B. cæspitosum, Dixon. Sandstone walls, and trees by water
Eurhynchium abbreviatum, Schp. Dry banks, *Ewhurst*; *Shiere*
Plagiothecium Borrerianum, Schp. *Wotton*. P. denticulatum, var. β aptychus, L. Cat. ed. 2.; P. undulatum, B. & S. c. fr.
Amblystegium varium, Ldb.; A. irriguum, B. & S. *Shiere*
Hypnum stellatum, var. β protensum, B. & S.; H. Sommerfeltii, Myr. c. fr.
— commutatum, Hedw. Rare; *Gomshall Marsh*. H. scorpioides, L.
Hylocomium loreum, B. & S. Rather sparingly distributed throughout the district

3. Lower Wey. With the exception of the narrow strip of land forming District I., this forms the north-western section of the county. About halfway along the south boundary the chalk widens out considerably and is covered by extensive beech woods. Further north and west are undulating commons and low hills of Bagshot Sand. The sandstone is soft and offers no support to rock loving species. On the commons occur the most considerable bogs in the county.

Sphagnum cymbifolium, Ehrh.; S. medium, Ldb.; S. papillosum, Ldb.; S. rigidum, Schp. et vars. squarrosum, Russ. and subsquarrosum, W.; S. molle, var. β Mülleri, Braith.
— tenellum, Ehrh.; S. subsecundum, Nees. et var. β contortum, Schp.; S. teres. S. squarrosum, Pers.; S. acutifolium, Ehrh. et vars. rubellum, quinqueforium
— fimbriatum, Wils. Pools by the canal *Brookwood*; rare
Sphagnum intermedium, Hoff. et vars. amblyphyllum, W. et mucronatum, W.; S. cuspidatum, Ehrh. et vars. falcatum, Russ., and plumosum, Nees. & H.
Catharinea angustata, Brid.
Buxbaumia aphylla, L. *Virginia Water*
Dicranum undulatum, Ehrh.
— Bonjeani, De Not.
Leucobryum glaucum, Schp. Fruiting near *Weybridge*
Fissidens adiantoides, Hedw. Grimmia apocarpa, Hedw. Rather rare

Rhacomitrium canescens, Brid.
Tortula Vahliana, Wils.
Barbula lurida, Ldb.
Zygodon viridissimus, var. rupestris, Ldb. ; Z. Stirtoni, Schp. Dry walls, fairly common
Orthotrichum anomalum, var. saxatile, Milde.
Splachnum ampullaceum, L. Not uncommon on the moory ground by the *Basingstoke Canal*
Aulacomnion palustre, Schwgr. ; A. androgynum, Schwgr.
Bryum murale, Wils. ; B. roseum, Schreb. Rare ; sandy bank, *St. George's Hill*
Cryphæa heteromalla, Mohr. ; Neckera pumila, Hedw. ; Leucodon sciuroides, Schwgr. c. fr.
Porotrichum alopecurum, Mitt.
Leptodon Smithii, Mohr. Trees and dry walls ; rare, although frequent in Kent and Sussex. *Horsley*
Climacium dendroides, W. & M. Not a frequent inhabitant of the bogs of the county. *Brookwood*, plentiful
Camptothecium lutescens, B. & S. ; Brachythecium glareosum, B. & S. ; B. albicans, B. & S. ; B. illecebrum, De Not. c. fr.
Hypnum stellatum, Schreb. H. exannulatum, Gümb. ; H. imponens, Hedw. Abundant on several moory commons
— scorpioides, L. ; H. stramineum, Dicks. ; H. cordifolium, Hedw.
— giganteum, Schp. Pools and marshes, rare ; *Brookwood*

4. Upper Mole. This resembles District II. with however a far less extensive development of Lower Greensand which forms a much lower series of more isolated hills, well wooded and with a few bogs and alder swamps.

Sphagnum papillosum, Ldb. ; S. molle, var. β Mülleri, Braith.
Tetraphis pellucida, Hedw. c. fr. ; Ditrichum homomallum, Hpe. ; Seligeria paucifolia, Carr.
Dicranella varia, Schp. ; Dicranum Bonjeani, var. calcareum, Br.
Fissidens exilis, Hedw. *Reigate*. F. incurvus, Starke. Abundant on the downs
— decipiens, De Not. Frequent and often fruiting freely
Phascum Flœrkeanum, W. & M. Chalky fields. Pottia bryoides, Mitt. ; P. lanceolata, C. M. P. cæspitosa, C. M. Bare ground on the downs sparingly
Tortula pusilla, Mitt.
Barbula lurida, Ldb. ; B. fallax, var. β brevifolia, Schultz ; B. cylindrica, Schp. ; B. vinealis, Brid.
Leptodontium gemmascens, Braith. *Betchworth*
Weisia crispa, Mitt. ; W. multicapsularis, C. M. ; W. tenuis, C. M. *Redhill*
Trichostomum tortuosum, Dixon.
Ephemerum recurvifolium, Ldb.
Physcomitrella patens, B. & S. *Buckland*
Bartramia ithyphylla, Brid. Near *Dorking*
Leptobryum pyriforme, Wils.
Bryum inclinatum, Bland. ; B. Donianum, Grev. ; Mnium affine, Bland. ; M. rostratum, Schrad. ; M. stellare, Reich.
Cryphæa heteromalla, Mohr.
Neckera crispa, var. falcata, Boul. *Reigate Hill*
Thuidium hystricosum, Mitt. Abundant on the downs. T. recognitum, Ldb.
Climacium dendroides, W. & M. ; Cylindrothecium concinnum, Schp.
Brachythecium illecebrum, De Not
Eurhynchium crassinervium, B. & S. ; E. pumilum, Schp. ; E. tenellum, var. scabrellum, Dixon. Trees about *Dorking*. E. murale, Milde. ; E. prælongum, var. β Stokesii, Turn.
Hypnum stellatum, var. β protensum, B. & S. ; H. Sommerfeltii, Myr. c. fr.
— imponens, Hedw. *Reigate Heath* ; plentiful. H. stramineum, Dicks

5. Lower Mole. The southern half of the district is almost entirely composed of chalk and exhibits the most typical scenery of that formation. Norbury Park and Box Hill are richly wooded and yield a large number of species. Further north is a broad belt of London Clay with a small outcrop of Bagshot Sand towards Cobham.

Sphagnum rigidum, Schp. ; S. tenellum, Ehrh. ; Tetraphis pellucida, Hedw. c. fr.
Polytrichum nanum, Neck. ; P. aloides, Hedw.
Archidium alternifolium, Schp. ; Ditrichum flexicaule, Hpe. ; Seligeria paucifolia, Carr. Very common in the woods on the downs, growing on small stones. S. calcarea, B. & S.

Dicranum Bonjeani, var. calcareum, Braith.
Leucobryum glaucum, Schp.
Fissidens pusillus, Wils. *Box Hill.* F. incurvus, Starke ; F. adiantoides, var. β collinus, Mitt. ; F. decipiens, De Not
Grimmia apocarpa, Hedw. Not common
Acaulon muticum. Frequent
Pottia minutula, Furnr. ; P. lanceolata, C.M. ; Tortula marginata, Spr. ; T. mutica, Ldb.
Barbula cylindrica, Schp. ; B. vinealis, Brid. ; B. sinuosa, Braith.
Weisia microstoma, C.M. ; W. tortilis. *Box Hill*, etc.
Trichostomum crispulum, Bruch. *Box Hill.* T. mutabile, Bruch. *Box Hill*
— tortuosum, Dixon. *Box Hill*, where it becomes detached and rolling over forms a number of small completely spherical masses
Pleurochæte squarrosa, Ldb. North slopes of *Box Hill*
Cinclidotus Brebissoni, Husn. c. fr. ; Encalypta Streptocarpa, Hedw.
Zygodon Stirtoni, Schp. Walls, frequent
Orthotrichum leiocarpum, B. & S. ; O. affine, var. β rivale, Wils.
— Sprucei, Mont. Trees by the *Mole*
Ephemerum serratum, var. β angustifolium, B. & S.
Physcomitrium pyriforme, Brid.
Mnium undulatum, L. Common, and fruiting freely in *Norbury Park*
— stellare, Reich. ; M. punctatum, L.
Cryphæa heteromalla, Mohr. ; Neckera crispa, var. falcata, Boul. *Box Hill*
— pumila, Hedw. c. fr. ; N. complanata ; Homalia trichomanoides, Brid.
Leucodon sciuroides, Schwgr. ; Porotrichum alopecurum, Mitt. ; Leskea polycarpa, Ehrh.
Anomodon viticulosus, H. & T. c. fr. ; Thuidium hystricosum, Mitt.
— recognitum, Ldb. Abundant on the north slopes of the downs
Cylindrothecium concinnum, Schp. ; Camptothecium lutescens, B. & S.
Brachythecium glareosum, B. & S. ; B. rivulare, B. & S.
— cæspitosum, Dixon ; B. illecebrum, De Not
Eurhynchium piliferum, B. & S. Fruiting on *Box Hill.* E. crassinervium, B. & S. c. fr. ; E. pumilum, Schp. c. fr. ; E. tenellum, var. scabrellum, Dixon
— circinatum, B. & S. *Norbury Park*
Plagiothecium depressum, Dixon. c. fr. ; Amblystegium irriguum, B. & S.
Hypnum riparium ; H. stellatum, var. β protensum, B. & S. ; H. chrysophyllum, Brid. ; H. imponens, Hedw. ; H. Sommerfeltii, Myr.
— Patientiæ, Ldb. Not common, sandy places on *Box Hill.* H. molluscum, Hedw. c. fr. ; H. stramineum, Dicks
Hylocomium loreum, B. & S. ; H. squarrosum, B. & S. (*Box Hill.* c. fr.)
— triquetrum, B. & S. (*Norbury Park.* c. fr.)

6. Northern Streams. The north-east section of the county, drained by three small rivers, consists of chalk hills in the south-east, and more or less flat country of London clay stretching away to the Thames. Near Croydon are some elevated commons of the Oldhaven series.

6A. Sphagnum cymbifolium, Ehrh. et var. β squarrosulum, N. & H. ; S. subsecundum, Nees. et var. β contortum, Schp. ; S. acutifolium, Ehrh. ; S. intermedium, Hoff. ; S. cuspidatum, Ehrh.
Pleuridium axillare, Ldb. ; P. alternifolium, Rab.
Campylopus fragilis, B. & S. ; Fissidens exilis, Hedw. ; F. viridulus, var. Lylei, Wils. ; F. pusillus, Wils. ; F. crassipes, Wils. *Kew.* Acaulon muticum, C. M.
Phascum cuspidatum, var. Schreberianum, Brid. *Kew.* Cinclidotus fontinaloides, P. Beauv.
Funaria fascicularis, Schp. *Kew*
Bryum atropurpureum, W. & M. ; Mnium affine, Bland. *Kew*
Brachythecium illecebrum, De Not ; Amblystegium varium, Ldb. *Kew*
Amblystegium Kochii, B. & S. *Riverside, Kew*
Hypnum elodes, Spr. *Kew.* H. palustre, L.

6B. Campylopus subulatus, Schp. *Addington Hills* ; dry stony ground
— brevipilus, B. & S. ; Phascum curvicolle, Ehrh. ; Leptodontium flexifolium, Hpe.
Orthotrichum Sprucei, Mont. ; Ephemerum recurvifolium, Ldb. Near *Croydon.* Thuidium hystricosum, Mitt. ; Plagiothecium undulatum, B. & S. ; H. Sommerfeltii, Myr. ; H. giganteum, Schp. Pool on *Mitcham Common*

7. EDEN. A small but interesting division, noteworthy from possessing the only outcrop of Hastings Sand. The country is very undulating with deep hollows and many little watercourses, besides large ponds. The land northwards is flatter and of Weald Clay, with the Lower Greensand and Chalk in the north.

Polytrichum nanum, Neck.; P. aloides, Hedw.; Archidium alternifolium, Schp.
Pleuridium axillare, Ldb. *Copthorne Common*
Rhacomitrium canescens, Brid.
Tortula rigidula, Mitt.; Barbula vinealis, Brid.
Weisia rostellata, Ldb. Dried mud of a pond near *Felbridge*
— squarrosa, C. M.; Orthotrichum tenellum, Bruch.
Physcomitrium sphæricum, Brid. Muddy edge of a pond near *Felbridge*
Brachythecium salebrosum, B. & S.; B. illecebrum, De Not
Hypnum aduncum, var. Kneiffii, Schp.; H. uncinatum, Hedw. *Felbridge*. c. fr. H. imponens, Hedw.

8. ARUN. Two small detached districts drained by two branches of the Arun and lying respectively one to the south of Leith Hill, and the other to the south-east of Hind Head.

Orthotrichum Lyellii, H. & T.; Neckera pumila, var Philippeana, Milde.
Brachythecium illecebrum, Dixon
Eurhynchium myosuroides, Shp.; Plagiothecium sylvaticum, B. & S.

CHARACEÆ

This somewhat obscure group of water plants had received but little attention until the publication of Messrs. Groves' monograph led to a more general study of the order. The *London Catalogue of British Plants* (1895) enumerates 28 species, a number which has since been slightly increased. Eleven of these are found in Surrey. The most widely distributed and, I think, the commonest Chara is *C. vulgaris*, which occurs in all of the districts, while *C. fragilis* is so far recorded from eight. *C. aspera* and *C. hispida* are each of them found in three. The rarest species, *C. contraria*, has been noted in two districts; it has been gathered in the pool by the Thames below Walton bridge, and in Fetcham Mill pond (C. E. Salmon). *Lychnothamnus stelliger* was discovered in the above-mentioned pool by Walton bridge (H. & J. Groves) some years ago; no other locality is known for it in the county. *Tolypella intricata* is confined to the neighbourhood of Egham, where it has occurred in several ditches. The commoner species *T. glomerata*, which grows on the opposite side of the Thames, near Staines, has not yet been detected. Of the genus *Nitella* the commonest is *N. opaca*, found in nine districts, but not yet noted in the Bourne Brook basin, where it doubtless occurs. *N. flexilis* and *N. translucens* are each found in six districts. There remains *N. gracilis*, a few fragments of which occurred mixed with a gathering of *Chara fragilis* collected near Kingston (G. Nicholson). Although including a few interesting species such as, more particularly, *Lych-*

nothamnus stelliger, the county list can scarcely be regarded as a rich one.

SUMMARY OF GENERA AND SPECIES

CHARA
- Chara fragilis, Desv.
- — aspera, Willd.
- — contraria, Kuetz.
- — hispida, L.
- — vulgaris, L.

LYCHNOTHAMNUS
- Lychnothamnus stelliger, Braun.

TOLYPELLA
- Tolypella intricata, Leonh.

NITELLA
- Nitella gracilis, Agardh
- — translucens, Agardh
- — flexilis, Agardh
- — opaca, Agardh

FRESHWATER ALGÆ

The county of Surrey is very rich in algæ. The best gatherings can be obtained from the larger commons, the one at Thursley yielding the greater number of species. Puttenham Common is also very productive, especially General's Pond. Wherever the small carnivorous bladderwort (*Utricularia minor*) occurs a number of interesting algæ are sure to be met with, and this interesting plant occurred on both these commons accompanied by submerged species of bog moss (*Sphagnum*), which latter also are good indicators of the presence of small species of algæ. On Thursley Common there is also an abundance of the fine richly-coloured julaceous moss (*Hypnum scorpioides*), which always indicates that algæ will be prolific. A rather uncommon sedge (*Rhyncospora fusca*) also occurs on this common and the bog water surrounding this species never fails to be productive of algæ.

Among other localities which are well worth visiting by reason of their richness in these interesting plants are : Barnes Common, Bisley Common, Bolder Mere, Brockham Green to Betchworth, Chobham Common and the neighbourhood, Ditton Marsh, Frensham (Devil's Jumps, bog by river Wey, the Great Pond and the Little Pond), Esher and Esher West-end Commons, Dorking, Earlswood Common, Felbridge, Hackbridge, Mitcham Common and Grove, Putney Heath and Roehampton Lane, pond on Ranmore Common, Richmond Park, Wandsworth Common, Wimbledon Common, the canal at Woking, Whitemoor Common, Worplesdon, Witley Common, and in the south-east Blindley Heath, Crowhurst, Frogit Heath and Mill Pond east of Chapel Wood. The bluish-green algæ (*Myxophyceæ*) are not represented as well as they would be if the county possessed some rocky hills, nevertheless the county is one of the richest in England.

The reader must bear in mind that the use of the microscope is absolutely essential to the discovery even as well as to the determination of all but an extremely few of these algæ. They are exceedingly pretty objects and will amply repay the attention of any investigator.

Those in the following list, including a new genus to science and twenty species and varieties also new to science—no less than fifty-nine in number—were recorded for the first time in the British Isles from

this county in a paper by the writers which appeared in the *Journal of the Royal Microscopical Society* for 1897.[1]

Hormiscia subtilis, De Toni, var. tenerrima, Kirchn. *Esher Common*, *Richmond Park* and *Wimbledon Common*

— subtilis, De Toni, var. variabilis, Kirchn. *Devil's Jumps* (*Frensham*), *Esher* and *Esher West-end Commons*

Microthamnion Kützingianum, Näg. *Esher Common*, *Richmond Park* and *Puttenham Common*

Gonatonema Boodlei, West and G. S. West. A species new to science of a very interesting and rare genus; *Mitcham Common*

Spirogyra Spreeiana, Rabenh. *Esher West-end Common*

— decimina, Kütz. A distinct new variety; *Frensham Little Pond*

Penium subtile, West and G. S. West. A species new to science; abundant on *Thursley Common*

Closterium siliqua, West and G. S. West. New to science; *Esher West-end Common*

Cosmarium Subcucumis, Schmidle. *Esher West-end* and *Wimbledon Commons*

— ocellatum, B. Eichler and Gutw., var. incrassatum, West and G. S. West. A new variety; *Thursley Common*

— bioculatum, Breb., var. hians, West and G. S. West. A new variety; *Puttenham* and *Thursley Commons*

— aspherosporum, Nordst., var. strigosum, Nordst. *Puttenham Common*

— geometricum, West and G. S. West. *Puttenham Common*

— helcangulare, Nordst. *Thursley Common*

— Heimerlii, West and G. S. West. *Thursley Common* and *Mill Pond* east of *Chapel Wood*

— sphagnicolum, West and G. S. West. A species new to science; *Thursley Common*

— difficile, Lutkem. *Thursley Common*

— Sinostegos, Schaarschm., var. obtusius, Gutw. *Puttenham Common*

— Portianum, Arch., var. orthostichum, Schmidle. *Puttenham Common*

— Nathorstii, Boldt. *Mill Pond* east of *Chapel Wood*

— subbroomei, Schmidle. *Mill Pond* east of *Chapel Wood*

Cosmarium Ungerianum, De Bary, var. subtriplicatum, West and G. S. West. A new and very distinct variety of a very rare species not previously known from the British Isles; *Mill Pond* east of *Chapel Wood*

— ellipsoideum, Elfv., also its var. minus, Racib. Both on *Thursley Common*

— subarctoum, Racib. *Esher West-end Common*

— gonioides, West and G. S. West. *Thursley Common*

Staurastrum trachytithophorum, West and G. S. West. A species new to science; *Thursley Common*

— tunguscanum, Boldt. *Puttenham Common*

— nodosum, West and G. S. West. A species new to science; *Thursley Common*

Staurastrum rostellum, Roy et Bisset, var. erostellum, West and G. S. West. A new and very distinct variety; *Thursley Common*

— tetracerum, Ralfs, var. validum, West and G. S. West. A new variety; in *Mill Pond* east of *Chapel Wood*

— Heimerlianum, Lutkem., var. spinulosum, Lutkem. *Thursley Common*

— margaritaceum, Meneg., var. subcontortum, West and G. S. West. A new variety; *Devil's Jumps* (*Frensham*)

Arthrodesmus Incus, Hass., var. subquadratus, West and G. S. West. A new variety; *Chobham Common*

Sphærozosma vertebratum, Ralfs, var. latius, West and G. S. West. A new variety; *Esher West-end Common*

Hyalotheca neglecta, Racib. A rare species; very abundant on *Thursley Common*

Chlamydomonas Kleinii, Schmidle. *Barnes*, *Chobham*, *Esher* and *Wimbledon Commons*

Dactylococcus dispar, West and G. S. West. A species new to science; occurring on old wood at *Dorking*

Scenedesmus granulatus, West and G. S. West. A species new to science; *Richmond Park*

Rhaphidium polymorphum, Fresen., var. mirabile. A very remarkable new variety; *Wimbledon Common*

— polymorphum, Fresen., var. tumidum. A new variety; *Puttenham Common*

[1] As the *British Desmids* and *British Freshwater Algæ* by Mr. C. Cooke only contain a part of the species now known for Britain, the writers have also used standard works such as Bornet and Flahault's *Revision des Nostocacées Heterocystées*, Gomont's *Monographie des Oscillariées*, as well as standard Swedish, German, Italian and Polish works; also published works of the writers themselves, as well as using the original figures contained in such standard works as Ralf's *British Desmidieæ*.

Selenastrum gracile, Reinsch. *Puttenham Common*
Lagerheimia genevensis, Chodat. *Mill Pond* east of *Chapel Wood*
Tetraëdron horridum, West and G. S. West. A species new to science; *Puttenham Common*
Characium Pringsheimii, A. Br. *Barnes* and *Mitcham Commons*
Ineffigiata neglecta, West and G. S. West. The genus itself is new to science; the species occurs on *Thursley*, *Esher West-end* and *Puttenham Commons*, also at *Mill Pond* east of *Chapel Wood*
Stichococcus dissectus, Gay. Occurs on damp walls about *London*
Trochiscia aspera, Hansg. *Wimbledon Common*
— stagnalis, Hansg. *Chobham Common*
Hapalosiphon intricatus, West. *Puttenham Common*
Lyngbya putealis, Mont. *Richmond Park*
— ærugineo-cœrulea, Gom. *Esher* to *Kingston*
— versicolor, Gom. *Dorking*
Phormidium molle, Gom. Growing on *Myriophyllum* in *Richmond Park*
— foveolarum, Gom. In a chalk pit at *Dorking*
— tenue, Gom. *Wimbledon* and *Bisley Commons*
Oscillatoria prolifica, Gom. *Ranmore Common* in a pond
— simplicissima, Gom. *Wimbledon Common*
— angustissima, West and G. S. West. *Wimbledon Common*
Polycystis flos-aquæ, Wittr. *Thursley Common*

No less than thirty species of Desmids have been found with zygospores; this proves that the conditions and places are often suitable for their production.

The total number of species which have been determined is nearly 500, *in addition to which* the writers have noticed several hundred species of diatoms. *Batrachospermum vagum* (Florideæ) is a large and graceful alga which feels like frog-spawn, hence its generic name; it can be recognized without the aid of a microscope; it occurs at Devil's Jumps, Frensham, as well as in boggy pools at Thursley Common. Three species of *Coleochæte* occur—*C. orbicularis* at Crowhurst, *C. soluta* at Frensham and Bisley, *C. scutata* being more widely distributed; the species of this genus are usually found attached to larger submerged aquatic plants. Three species of *Bulbochæte* occur, *B. mirabilis* being of the most interest, from Thursley Common. *Monostroma bullosum* is an uncommon species; it occurs on Mitcham Common. So many good species of Desmids occur that it is a difficult matter to select certain of them for special mention. *Penium spirostriolatum*, *P. curtum* and *P. interruptum* are fine at Puttenham Common; the last also occurs at Thursley Common, and a large form in the Mill Pond east of Chapel Wood. The characteristic and uncommon *P. rufescens* is found on Bisley Common. Other rare species of *Penia* are *polymorphum* from Chobham Common, *inconspicuum* from Puttenham Common, *cucurbitinum* from Thursley Common, and *cruciferum* from Wimbledon Common. Many species of *Closterium* occur: *Malinvernianum* at Esher West-end Common and Frensham, *pseudodianæ* at Thursley Common, *Cynthia* and *regulare* at Puttenham Common, *directum* at Esher and Mill Pond east of Chapel Wood, *Ralfsii* var. *hybridum* and *setaceum* at Puttenham and Thursley Commons, and *Ceratium* on Esher and Wimbledon Commons. The genus *Euastrum* is well represented and the following good species are worth enumerating: *affine* and *insigne* at Chobham Common, *pyramidatum*, *inerme*, *sinuosum*, *ventricosum* and *cuneatum* at Thursley Common, *erosum* var. *notabile* at Bisley Common. The rarer species of the beautiful genus *Micrasterias*

are the following : *Thomasiana* and *mucronatum* at Chobham and Thursley Commons, *Americana* and *radiosa* at the Mill Pond east of Chapel Wood, and *Jenneri* and *angulosa* at Thursley Common. The rarer species of *Xanthidium* that occur are : *concinnum* var. *Boldtianum* at Thursley Common, and *Smithii* var. *variabile* at Devil's Jumps, Frensham. The large genus *Cosmarium* is represented by no less than ninety-eight species ; the following are a few of the rarer ones : *Ralfsii* on Chobham Common, *pachydermum* at Mitcham Common and at Mill Pond east of Chapel Wood, *subtumidum* at Devil's Jumps, Frensham, *isthmium*, *Gregorii*, *fontigenum* and *succisum* on Puttenham Common, *inconspicuum* on Mitcham Common, *Quasillus* at Esher West-end and Wimbledon Commons, *quinarium*, *pygmæum* and *Broomei* at Mill Pond east of Chapel Wood, *Blyttii* and *Regnellii* at Bisley Common, *truncatellum* on Chobham Common, *subcrenatum* at Witley Common, *eboracense* at Richmond Park, *Nymannianum*, *cristatum*, *orthostichum*, *margaritatum* (most abundant), *amœnum*, *cymatonotophorum*, *sphagnicolum*, *pseudoprotuberans*, *elegantissimum*, *nitidulum* and *variolatum* at Thursley Common. The large genus *Staurastrum* is also well represented, the following being some of the rarer ones : *glabrum* on Bisley Common, *O'Mearii* on Thursley and Puttenham Commons, *inconspicuum* and *sibiricum* at Devil's Jumps, Frensham, *turgescens* at Wimbledon Common, *sexcostatum* at Esher West-end Common, *oxyacanthum*, *pseudosebaldi*, *asperum*, *corniculatum*, *pachyrhynchum*, *subpygmæum*, *lanceolatum* and *brevispinum* at Thursley Common, *iotanum*, *micron* and *tunguscanum* at Puttenham Common. *Tetragonium lacustre* is only known from Esher Common ; *Cœlastrum verrucosum* also occurs at Esher Common. *Pediastrum glanduliferum* is very fine at Bisley. *Scenedesmus antennatus* is abundant on Puttenham Common and *Rhaphidium convolutum* occurs in Richmond Park. *Tetraëdron tetragonum* occurs in Ditton Marsh and *Dimorphococcus lunatus* with *Dasyglœa amorpha* and *Gloiotrichia pisum* are found on Thursley Common. *Scytonema figuratum* is found on Esher West-end Common. *Chroococcus pallidus*, *Glœothece confluens* and *G. linearis* occur on Thursley Common.

The student who may continue the investigation of the algæ of the county will find plenty of work to do, some districts not having been visited at all and others only at certain times of the year.

LICHENS (*Lichenes*)

Lichens flourish only where there is a moist atmosphere and full exposure to sun and pure air. They are therefore very rarely seen in the neighbourhood of smoky cities, almost the only species known to exist in the Surrey suburbs of London being *Lecanora galactina*, which, with the sub-species *dissipata*, occur in the Crystal Palace grounds ; and *Urceolaria scruposa*, which has been found in Kew Gardens. But as a rule until a distance of ten or fifteen miles from London is reached, it is only a waste of time to search for well developed lichens, the thallus in a more or less undeveloped state being alone met with. Lichens are there-

fore indicative of pure and moist air. In the eastern counties of England, where the atmosphere is drier, they are by no means so numerous as in the moister air of the western and southern counties.

Surrey is probably rich in species growing in woodlands and on walls, in those found on heaths and on flint stones and chalk, but as the students of lichenology in this county have been extremely few and their researches have been confined to a very few localities, chiefly the tract of country between Guildford and Dorking and the neighbourhood of Esher, the number of species recorded is comparatively small. Nevertheless a few rare species have been met with. Of these may be mentioned *Lecidea spododes* and *L. Nægelii*, found by Dr. Capron at Shiere ; *L. lubens*, found by the Rev. J. M. Crombie at Shiere ; also *Verrucaria sparsula*, found by Mr. W. Joshua at Dorking, the last three not having been found recorded from elsewhere in Great Britain, although *L. Nægelii* has also been found in Ireland. There are thus two species apparently peculiar to Surrey, although it is of course possible they may subsequently be found in other counties. Another very rare species also found by Dr. Capron at Shiere is *Opegrapha prosodea*, which has also been recorded from Jersey, but from nowhere else in Britain than in Surrey. The list of lichens hitherto found in the county is nevertheless a very small one : but as it is somewhat mixed in character, containing some comparatively rare and other very common species, whilst a large number of common species have never been recorded that would almost certainly reward a careful search, a full list is here given, so far as county records are obtainable.

The most recent work on British lichens, by the Rev. J. M. Crombie, being incomplete, the previous work, by the Rev. W. A. Leighton, *The Lichen Flora of Great Britain* (3rd edit.), has been followed both as to classification and nomenclature except in those cases in which new species have been discovered since Leighton's work was published. In such cases Crombie's work has been followed. My own initials are only given after species not mentioned in either of these works as occurring in Surrey, and are therefore more recent records. The initials 'J. M. C.' indicate that the species are mentioned in his work without the name of the finder, but the specimens have not necessarily been found by himself, the list of localities given in his work referring to specimens in the Cryptogamic Herbarium of the British Museum. The initials 'W. B.' refer to William Borrer late of Henfield ; 'W. J.' to William Joshua late of Cirencester ; and 'E. C.' to Dr. E. Capron of Shiere.

COLLEMACEI (*Jelly Lichens*)

COLLEMEI

Collema pulposum, Bernh. *Reigate* (J. M. C.)

var. ceranoides, Borr. *Shiere* (J. M. C.)

var. tenax, Ach. *Reigate* (J. M. C.)

COLLEMEI (*continued*)—

Collema limosum, Ach. *Croydon* (E. M. H.)

— granuliferum, Nyl. *Headley Lane* (E. M. H.)

Leptogium microphyllum, Ach. *Ockley Green* (W. B.)

— cretaceum, Sm. *Reigate* (W. J.)

COLLEMEI (*continued*)—
Leptogium pusillum, Nyl. *Shiere* (J. M. C.)
— lacerum, Ach. *Godalming* (W. B.)
var. pulvinatum, Hffm. } *Shiere*
— subtile, Schad. } (J. M. C.)
— fragrans, Sm. *Surrey* (W. B.)
— palmatum, Huds. *Cobham* (W. B.)
— turgidum, Ach. *Reigate*; *Shiere* (J. M. C.)
— Schraderi, Bernh. *Shiere* (E. M. H.)
Collemopsis Schœreri, Mass. } *Shiere*
— Arnoldiana, Nyl. } (J. M. C.)
Pyrenidium actinellum, Nyl. *Box Hill* (J. M. C.); *Shiere* (E. M. H.)

LICHENACEI (*Ordinary Lichens*)

CALICIEI
Sphinctrina turbinata, Pers. *Shiere* (J. M. C.)
Calicium aciculare, Sm. *Esher* (J. M. C).
— trichiale, Ach., var. ferrugineum, Borr. *Reigate* (J. M. C.)
var. brunneolum, Ach. *Dorking* (W. J.)
— melanophæum, Ach. *Leith Hill* (W. J.)
— hyperellum, Ach. *Shiere* (E. M. H.)
— quercinum, Pers., var. lenticulare, Nyl. *Shiere* (J. M. C.)
— curtum, Borr. *Shiere* (J. M. C.)
Coniocybe furfuracea, Ach. *Shiere* (E.M.H.)
Trachylia stigonella, Fr. *Shiere* (J. M. C.)

BŒOMYCEI
Bœomyces rufus, DC. *Haslemere* (E. M. H.)
— roseus, Pers. *Ewhurst* (E. M. H.)

CLADONIEI
Cladonia endiviæfolia, Fr. *Surrey* (Mr. Dickson), *Shiere* (E. M. H.)
— pungens, Flk. *Esher* (W. B.)
f. foliosa, Flk. *Shiere* (J. M. C.)
sub-sp. muricata, Cromb. *Shiere* (J. M. C.)
— pyxidata, Fr., var. chlorophæa, Flk. *Leith Hill* (J. M. C.)
— fimbriata, Fr. *Dorking* (J. M. C.)
— Floerkeana, Fr., f. trachypoda, Nyl. *Leith Hill* (W. J.)
Cladina uncialis, Hffm. *Reigate* (J. M. C.)
f. adunca, Cromb. *Esher* (J. M. C.)

USNEI
Usnea florida, L., f. rubiginea, Ach. *Albury* (E. M. H.)

RAMALINEI
Evernia prunastri, L. *Shiere* (J. M. C.); *Albury*, in fruit (E. M. H.)
Ramalina farinacea, L. } *Leatherhead* (E. M. H.)
— pollinaria, Ach. } *Leatherhead* (E. M. H.)
— evernioides, Nyl. } *Leatherhead* (E. M. H.)

CETRARIEI
Cetraria aculeata, Fr. *Reigate* (J. M. C.)

PARMELIEI
Parmelia caperata, L. } *Leatherhead* (E. M. H.)
— physodes, L. } *Leatherhead* (E. M. H.)
— perlata, L. } *Leatherhead* (E. M. H.)
— tiliacea, Ach., var. rugosula, Leight. *Esher* (W. B.); *Dorking* (W. Jenner)
— Borreri, Turn. } *Shiere* (E. M. H.)
— saxatilis, L. } *Shiere* (E. M. H.)
— subaurifera, Nyl. *Tooting* (J. M. C.)
Physcia parietina, L. } *Shiere* (E. M. H.)
var. lychnea, Ach. } *Shiere* (E. M. H.)
— ciliaris, L. *Dorking* (J. M. C.)
— pulverulenta, Schreb. } *Shiere* (E. M. H.)
— obscura, Ehrh. } *Shiere* (E. M. H.)
— stellaris, L., var. β leptalea } *Shiere* (E. M. H.)
var. tenella, Scop. } *Shiere* (E. M. H.)
var. cæsia, Hffm. *Richmond House* (J. M. C.)
— aipolia, Nyl., var. cercidia, Nyl. *Reigate* (J. M. C.)

LECANO-LECIDEII
Pannaria nigra, Nyl. } *Shiere* (J. M. C.)
Squamaria saxicola, Poll. } *Shiere* (J. M. C.)
Placodium murorum, Hffm. *Leatherhead* (E. M. H.)
— citrinum, Ach. *Leatherhead* (E. M. H.)
Lecanora vitellina, Ach. *Haslemere* (E. M. H.)
— glaucocarpa, Whlnb., f. pruinosa, Sm. *Shiere* (J. M. C.)
— varia, Ehrh. *Shiere* (J. M. C.)
— syringea, Ach. } *Shiere* (E. M. H.)
— conizæa, Nyl. } *Shiere* (E. M. H.)
— atra (Huds.) *Reigate* (J. M. C.)
— expallens, Ach. *Shiere* (E. C.)
— subfusca, L. } *Shiere* (E. M. H.)
f. rugosa, Pers. } *Shiere* (E. M. H.)
f. intumescens, Rabenh. *Shiere* (J. M. C.)
f. chlarona, Ach. *Shiere* (J. M. C.)
— urbana, Nyl. *Dorking* (J. M. C.)
— galactina, Ach., sub-sp. dissipata, Nyl. *Crystal Palace grounds* (J. M. C.)
— parella, L., f. Turneri, Sm. *Shiere* (E. M. H.); *Holmwood* (J. M. C.)
— rupestris, Scop., f. calva, Dicks. *Reigate* (J. M. C.)
— irrubata, Nyl. *Shiere* (J. M. C.)
— ferruginea, Huds. *Shiere* (E. M. H.)
— hæmatomma, Ehrh. On trees, *Albury*, with very young apothecia (E. M. H.)
Pertusaria multipunctata, Turn. *Shiere* (J. M. C.)
— communis, DC. *Shiere* (J. M. C.)
— melaleuca, Sm. *Shiere* (E. C.)
— fallax, Pers. *Ockham* (W. B.)
— lutescens, Lamy. *Ockham* (J. M. C.)
— faginea, L. *Shiere* (E. M. H.)
— velata, Turn., f. aspergilla, Cromb. *Shiere* (J. M. C.)

LECANO-LECIDEII (*continued*)—
Pertusaria globulifera, Turn. } *Shiere*
Phlyctis agelæa, Ach. } (J. M. C.)
— argena, Ach. *Haslemere* (J. M. C.)
Urceolaria scruposa, L. *Kew Gardens* (J. M. C.), *Leatherhead* (E. M. H.)
Lecidea ostreata, Hffm. } *Shiere* (E. M. H.)
— lucida, Ach. }
— spododes, Nyl. } *Shiere* (E. C.)
— dubia, Borr. }
— quernea, Dicks. *Shiere* (E. M. H.)
— canescens, Dicks. *Leatherhead* (E.M.H.)
— Lightfootii, Sm. *Reigate* (W. J.); *Haslemere* (E. M. H.)
— denigrata, Fr. *Esher* (W. B.)
— cyrtella, Ach. *Shiere* (E. C.)
— Caradocensis, Leight. *Wonham* (W. J.)
— Nægelii, Hepp. *Shiere* (E. C.)
— aromatica, Sm. *Leatherhead* (E. M. H.)
— milliaria, L., f. saxigena, Leight. *Leith Hill* (W. J.)
— sabuletorum, Flk. } *Shiere* (E. C.)
— endoleuca, Nyl. }
— lubens, Nyl. *Shiere* (J. M. C.)
— muscorum, Sm. *Shiere* (E. M. H.)

LECANO-LECIDEII (*continued*)—
Lecidea effusa, Sm., var. cæsiopruinosa, Mudd. *Shiere* (E. C.)
— tantilla, Nyl. *Reigate* (W. J.)
GRAPHIDEI
Graphis inusta, Ach. *Shiere* (E. M. H.)
Opegrapha herpetica, Ach. *Shiere* (E. C.)
— varia, Pers., f. tigrina, Ach. *Coulsdon* (W. B.)
— prosodea, Ach. *Shiere* (E. C.)
— viridis, Pers. } *Shiere*
Arthonia astroidea, Ach. } (E. M. H.)
PYRENOCARPEI
Normandina lætevirens, Turn., Borr. *Esher* (Mr. Turner)
Endocarpon hepaticum, Ach. *Croydon* (Mr. Dixon)
Verrucaria margacea, Whlnb. *Hindhead*, and near *Abinger* (W. B.)
— sparsula, Nyl. *Dorking* (W. J.), *Gomshall* (E. M. H.)
— punctiformis, Ach. *Shiere* (W. C.)
— olivacea, Borr. *Shiere* (E. C.)
— nitida, Weig. } *Leatherhead*
— rupestris, Schrad. } (E. M. H.)

It will be observed from the above list that the Surrey lichen-flora is richest, so far as it has been investigated, in those species which are found on old trees and palings, and in the jelly lichens found in chalky districts, whilst those growing on sandstone rocks and limestone walls are comparatively few in number. The genus *Cladonia* is represented only by a few species. There can be hardly any doubt that when the damp heaths so numerous in the county and the stony districts of the Upper and Lower Greensand have been more thoroughly explored, the list of species might be very considerably extended.

Sub-alpine lichens are practically not represented at all in Surrey, probably owing to the absence of suitable localities. In the neighbouring county of Kent these species are chiefly confined to the sea beach at Lydd, where many lichens common to mountainous or sub-alpine and maritime districts occur.

The exploration of parks and woods containing very old trees would probably also add a considerable number of species, as well as the stony southern sides of the high hills overlooking the weald, as at Leith Hill, Ewhurst and Black Down.

THE FUNGI

The occurrence of fungi in any given locality depends almost entirely on the relative abundance of the higher forms of plant life, since it is on these latter that the fungi are dependent for food ; some kinds, as rusts, mildews, smuts and bunts, attack living plants, causing in many instances serious injury when they appear as a widespread epidemic on cultivated

plants. Others again, as illustrated by the numerous forms of fungi popularly known as toadstools, derive their food from dead wood or decaying vegetable matter. The common mushroom and other kinds that grow in the ground might be supposed to obtain their food directly from the soil as flowering plants do. This however is not the case; the spawn or mycelium of all such fungi derive their food from decaying vegetable matter present in the soil.

Just about five thousand different kinds of fungi are natives of Britain and out of these two thousand have been found in Surrey. This number, although higher than that for any other equal area in Britain or probably elsewhere, does not necessarily prove that the fungus flora of Surrey is exceptionally rich but simply that one particular portion of the county has been thoroughly investigated. This portion is the Royal Gardens, Kew, where continuous attention has been paid to the fungi for many years past. The Gardens have an area of about three hundred acres, and in 1897 a list of the fungi was published which included 1,340 species (*Kew Bulletin*, April, 1897). Since the above publication some hundreds of species have been added to the list, hence after deducting 150 foreign species introduced along with exotic plants the number of native species is enormously in excess of any published record for a similar area.

The latticed stinkhorn (*Clathrus cancellatus*) is undoubtedly the most interesting fungus met with in the county, not only on account of its quaint form, beautiful colour and most abominable smell, but more especially as being along with two other commoner British species the outlying representatives of one of the most highly organized groups of fungi characteristic of tropical regions. In the vast majority of fungi the spores or reproductive bodies are dispersed by wind, but in the group under consideration (*Phalloideæ*) the spores are produced on a body which at maturity dissolves into a dripping slimy exceedingly fœtid mass possessing an intensely sweet taste and is much appreciated as food by blue-bottles and other flies which visit the plants in myriads, being attracted by the widespread penetrating smell and brilliant colour of the fungus. The spores after passing through the body of an insect germinate readily, and those that are deposited in a suitable locality give origin to a fungus in due course. The development of the fungus takes place underground, where at a certain stage it resembles in shape and size a hen's egg, feeling rather soft and elastic. When the spores are mature the egg-like structure bursts irregularly at the top and a hollow sphere bounded by an irregular network of a bright red colour and varying from two to four inches in diameter appears above ground. The fœtid mass of greenish slime containing the spores is spread over the latticed sphere. It is interesting to note that the combination of smell and colour utilized by many flowering plants for the purpose of attracting insects to secure cross-fertilization should also be employed by certain fungi as an indirect aid in spore dispersion.

Tremellodon gelatinosum, Pers., another very remarkable fungus and

so rare everywhere that no provincial name has been assigned to it, is confined so far as is known to one locality on Paul's Cray Common near Chislehurst. The entire substance of the fungus consists of a nearly colourless quaking jelly-like mass having just sufficient consistency to retain its form, which is tongue-shaped and covered on the under surface with pointed spines.

No other county in England can boast of so many species belonging to the beautiful genus *Russula*—fifty-five out of a total of sixty-one British species. All grow on the ground and are distinguished by the stout smooth stem and rigid white or yellow gills ; the cap is usually bright-coloured—crimson, purple, yellow and green being the prevailing tints.

During early autumn members of the genus *Boletus* command attention owing to their large size and brilliant colour. Seen growing the species might be mistaken for gill-bearing fungi, but on examination it will be found that instead of gills the under surface of the cap is furnished with myriads of small holes or tubes in which the spores are produced. In many kinds of *Boletus* the colourless flesh of the cap changes instantly to a deep blue when broken.

Edible fungi are abundant. At least thirty different kinds perfectly safe to eat and each possessing its own peculiar taste and aroma have been tested. Among these the parasol mushroom (*Lepiota procera*) is perhaps most frequent and most easily recognized. The general appearance of the fungus is that of a parasol; stem slender, five to eight inches high, furnished with a loose ring or collar ; cap six to ten inches across, rather scaly ; gills white. The horn of plenty (*Craterellus cornucopioides*) is a quaint fungus blackish in colour, thin and rather gelatinous, funnel-shaped, usually growing in clusters and delicious when properly cooked. The edible boletus (*Boletus edulis*) has a cap corresponding in size and colour to a penny bun, supported on a stout stem ornamented with a delicate network of raised lines.

Poisonous fungi are not lacking. The death-cup (*Amanita phalloides*) is probably responsible for at least ninety per cent. of the deaths due to fungus-poisoning both in this country and on the continent. It is an elegant fungus and entirely devoid of any objectionable taste or smell; the stem is slender, three to five inches long and inserted at the base into a sheath or volva with a loose broken margin ; gills white ; cap three to four inches across, whitish or pale primrose-yellow.

Parasitic fungi, many of which prove very destructive to cultivated plants, are unfortunately too abundant. The leaf blotch (*Rhytisma acerinum*), forming large black patches on the living leaves of sycamores and maples, is generally present. Coral spot (*Nectria cinnabarina*), very common on decaying branches of various trees, is recognized by forming numerous small wart-like bodies of a clear coral-red colour; these warts are the fruit of the fungus, which bursts through the bark after the branch has been killed by the mycelium. Apple tree canker is caused by a closely related parasite (*Nectria ditissima*), and the minute bright red pustules of the fungus may be found nestling in the crevices of the cankered parts of

the branch. Rose mildew (*Sphærotheca pannosa*), forming delicate white cottony patches on the living leaves, young shoots and sometimes also on the fruit of both wild and cultivated roses, is everywhere common.

The following list includes many rare and interesting species. Those preceded by an asterisk (*) were first observed in Surrey and many have not yet been recorded as occurring outside the county.

BASIDIOMYCETES

HYMENOMYCETES

(The arrangement in Massee's *British Fungus Flora* is adopted)

Amanita virosa, Fries
— mappa, Batsch.
— phalloides, Fries
— muscaria, Linn.
— pantherina, DC.
— spissa, Fries
Lepiota excoriata, Schæff.
— leucothites, Vitt.
— badhami, B. and Br.
*— emplastra, Cke. and Mass.
— cæpistipes, Sow.
— carcharia, Pers.
— felina, Pers.
*Armillaria citri, Inzeg.
Tricholoma portentosum, Fries
— imbricatum, Fries
— ionides, Bull.
— carneum, Bull.
— album, Schæff.
*— duracinum, Cke.
*— pes-capræ, Schæff.
*— circumtectum, Cke. and Mass.
*— tenuiceps, Cke. and Mass.
*— russula, Schæff.
*— subpulverulentum, Fries
— cuneifolium, Fries
Clitocybe odorus, Fries
— dealbatus, Pers.
— tornatus, Fries
— gilvus, Fries
— lobatus, Sow.
— fumosus, Pers.
— inversus, Scop.
— pruinosus, Fries
Laccaria bella, Pers.
*Collybia distorta, Fries
— stipitaria, Fries
— tuberosa, Bull.
— nitellina, Fries
— esculenta, Fries
— tenacella, Pers.
— aquosa, Fries
— ocellata, Fries
— rancida, Fries
— ambusta, Fries
Collybia protracta, Fries
— prolixa, Fries
Mycena pelianthina, Fries
— lineata, Bull.
— polygramma, Bull.
*— dissiliens, Fries
— atro-cyanea, Batsch.
— ammoniaca, Fries
— metata, Fries
— vitrea, Fries
— rubro-marginata, Fries
— elegans, Pers.
— hæmatopoda, Fries
— vitilis, Fries
— tenella, Fries
— consimile, Cke.
— tenerrima, Berk.
— discopoda, Pers.
— hiemale, Osbeck
— stylobates, Pers.
Omphalia rustica, Pers.
— muralis, Sow.
— infumata, B. and Br.
— sphagnicola, B. and Br.
— retosta, Fries
— griseo-pallida, Desm.
— campanella, Batsch.
— fibula, Bull.
var. swartzii, Fries
Pleurotus salignus, Fries
— limpidus, Fries
— tremulus, Schæff.
— acerinus, Fries
— acerosus, Fries
— algidus, Fries
— chioneus, Pers.
*— sapidus, Kalchbr.
Hygrophorus aureus, Arrh.
— mesotephrus, B. and Br.
— livido-albus, B. and Br.
— fornicatus, Fries
— distans, Berk.
— clarkii, B. and Br.
— irrigatus, B. and Br.
— calyptræformis, Berk.
Lactarius controversus, Pers.
— pubescens, Schrad.
— quietus, Fries
— aurantiacus, Fries

Lactarius glyciosmus, Fries
— camphoratus, Bull.
*Russula albo-nigra, Kromb.
*— densifolia, Gillet
*— mustelina, Fries
*— olivascens, Fries
— rosacea, Fries
*— maculata, Quélet
— sardonia, Fries
— purpurea, Fries
— lactea, Fries
— cutefracta, Cke.
— linnæi, Fries
— olivacea, Schæff.
*— serotina, Quélet
*— lilacea, Quélet
— galochroa, Bull.
— expallens, Gillet
*— elegans, Bres.
*— fingibilis, Britz.
*— granulosa, Cke.
*— æruginea, Fries
— citrina, Gillet
*— punctata, Gillet
— veternosa, Fries
*— barlæ, Quélet
*— armeniaca, Cke.
*— chamæleontina, Fries
Cantharellus lobatus, Fries
— infundibuliformis, Fries
Nyctalis asterophora, Fries
Marasmius urens, Fries
— prasiosmus, Fries
— erythropus, Fries
— archyropus, Fries
— alliaceus, Jacq.
— hudsoni, Pers.
Lentinus tigrinus, Fries
— cochleatus, Fries
Volvaria bombycina, Schæff.
— temperata, B. and Br.
— speciosa, Fries
Entoloma rhodopolium, Fries
— jubatum, Fries
Clitopilus cancrinus, Fries
— carneo-albus, Wither.
Leptonia anatina, Lasch.
— chloropolia, Fries
Nolanea mammosa, Fries
Eccilia acuus, W. G. Sm.
— rhodocylyx, Lasch.
Claudopus depluens, Batsch.
Pholiota erebia, Fries
— dura, Bolt.
— ægerita, Fries
— spectabilis, Fries
Inocybe incarnata, Bres.
*— fasciata, Cke. and Mass.
— bongardii, Weinm.
— asterospora, Quélet
Inocybe perbrevis, Weinm.
— scabella, Fries
Hebeloma firmum, Fries
— claviceps, Fries
— longicandum, Pers.
*Flammula purpurata, Cke. and Mass.
— gymnopodia, Bull.
— lenta, Pers.
Naucoria hamadrya, Fries
— striæpes, Cke.
— tabacina, DC.
Galera hypnorum, Batsch.
Tubaria crobula, Fries
Cortinarius cœrulescens, Fries
— glaucopus, Fries
— mucifluus, Fries
— castaneus, Fries
*Paxillus orcelloides, Cke. and Mass.
— leptopus, Fries
Agaricus augustus, Fries
— comptulus, Fries
*— sagatus, Fries
Stropharia thrausta, Kalchbr.
Hypholoma epixanthum, Fries
— catarium, Fries
— œdipus, Cke.
Psilocybe spadicea, Schæff.
— sarcocephala, Fries
Psathyra semivestita, B. and Br.
Panæolus egregius, Mass.
Psathyrella hiascens, Fries
Coprinus soboliferus, Fries
— fimetarius, Fries
*— tardus, Karsten
*— tuberosus, Quélet
— hendersonii, Berk.
— lagopus, Fries

POLYPOREÆ

*Boletus elegans, Schum.
— subtomentosus, Linn.
— impolitus, Fries
*— fulvidus, Fries
— castaneus, Fries
— spadiceus, Fries
*— radicans, Pers.
— duriusculus, Schulzer
— bovinus, Linn.
*— tenuipes, Cke.
*— regius, Krombh.
— purpureus, Fries
— rubinus, W. G. Sm.
— laricinus, Berk.
*— cæspitosus, Mass.
Polyporus rufescens, Fries
— picipes, Fries
— giganteus, Fries
— dryadeus, Fries
— chioneus, Fries
— cæsius, Fries
— armeniacus, Berk.

Fomes lucidus, Fries
— connatus, Fries
— nigricans, Fries
— fraxineus, Fries
— ferruginosus, Mass.
Polystictus perennis, Fries
— abietinus, Fries
Poria blepharistoma, B. and Br.
— medulla-panis, Fries
Trametes serpens, Fries
Dædalea quercina, Pers.
— unicolor, Fries
Merulius lacrymans, Fries
— tremellosus, Schrad.

HYDNEÆ

Hydnum viride, Fries
— weinmannii, Fries
— niveum, Pers.
— alutaceum, Fries
Caldesiella ferruginosa, Sacc.
Irpex fusco-violaceus, Fries
Radulum orbiculare, Fries
Phlebia vaga, Fries
— radiata, Fries
— merismioides, Fries
Grandinia granulosa, Fries
Odontia fimbriata, Pers.
Kneiffia setigera, Fries

THELEPHOREÆ

Solenia fasciculata, Pers.
Cyphella capula, Fries
Craterellus cornucopioides, Pers.
Stereum sanguinolentum, Fries
Corticium cœruleum, Fries
*— roseolum, Mass.
*— lycii, Cke.
Hymenochæte tabacina, Lév.
*— leonina, B. and Curt.
*Peniophora pezizoides, Mass.
— phyllophila, Mass.
*— terrestris, Mass.
Soppittiella cristata, Mass.
Thelephora caryophyllea, Pers.
*Coniophora incrustans, Mass.
— pulverulenta, Mass.

CLAVARIEÆ

Clavaria kewensis, Mass.
— fusiformis, Sow.
— uncialis, Grev.
Typhula erythropus, Fries
Pistillaria micans, Fries

DACRYOMYCETÆ

Dacryomyces succineus, Fries
Ditiola radicata, Fries
Calocera striata, Fries

TREMELLINEÆ

Tremella tubercularia, Berk.
Ulocolla saccharina, Bref.
Tremellodon gelatinosum, Pers.

AURICULARIÆ

Hirneola auricula-judæ, Berk.

GASTROMYCETES

PHALLOIDEÆ

Mutinus caninus, Fries
Clathrus cancellatus, Fries

LYCOPERDEÆ

Lycoperdon echinatum, Pers.
*— atropurpureum, Vitt.
*Bovista ovalispora, Mass.

NIDULARIEÆ

Cyathus striatus, Hoffm.
Crucibulum vulgare, Tul.
Nidularia pisiformis, Tul.
Sphærobolus stellatus, Tode.
*Thelebolus terrestris, Tode.

ASCOMYCETES

PYRENOMYCETES

(Arranged according to Saccardo's *Sylloge Fungorum*)

ERYSIPHEÆ

Podosphæra tridactyla, D. By.
*Uncinula bivonæ, Lév.
— spiralis, B. and Cke.

HYPOCREÆ

Cordyceps militaris, Link.
Nectria aquifolii, Fries
— mammoidea, Plow.

XYLARIEÆ

Xylaria carpophila, Fries
— vaporaria, Berk.

DIATRYPEÆ

Diatrype brassicæ, Cke.

VALSEÆ

Valsa stellulata, Fries
— ailanthi, Sacc.
— hippocastani, Cke.
Fenestella salicis, Rehm.

EUTYPÆ

Eutypa flavo-virens, Tul.
Diaporthe ryckholtii, West.

SORDARIÆ

Sordaria fimicola, Rob.
*— anserina, Hans.
*Delitschia insignis, Mout.
*Sporormia ovina, Desm.

CRYPTOSPHÆRIEÆ

Endophlæa sphingiophora, Oud.
Læstadia veneta, Sacc. and Speg.

BOTANY

DISCOMYCETES

(Arranged according to Massee's *Fungus Flora*)

HELVELLEÆ

Morchella crassipes, Pers.
— smithiana, Cke.
Mitrophora gigas, Lév.
Vibrissea guernisaci, Crouan

PEZIZEÆ

Acetabula vulgaris, Fckl.
Peziza ampliata, Pers.
Humaria chateri, W. G. Sm.
*— nicholsonii, Mass.
— violacea, Sacc.
*Dasyscypha vitriola, Mass.
*Chlorosplenium discoideum, Mass.
*Helotium renisporum, Ellis
*Mollisia melaleuca, Sacc.

ASCOBOLEÆ

*Ascobolus asininus, Mass.
*— masseei, Sacc.
Saccobolus violascens, Bond.
*— tetraspora, Mass. and Salm.
*Ascophanus rhyparobioides, Hiem.

HYPHOMYCETES

*Monilia pruinosa, Cke. and Mass.
*Oidium farinosum, Cke.
*— erumpens, Cke. and Mass.
*— pactolinum, Cke.
*Œdocephalum sulphureum, Cke. and Mass.
*Rhinotrichum niveum, Cke. and Mass.
*Botrytis croci, Cke. and Mass.
*— corolligena, Cke. and Mass.

ZOOLOGY

MOLLUSCS

Although Surrey has not been so well, or so systematically, worked as some other English counties, 103 species have been recorded out of the 139 known to inhabit the British Islands.

Several more, especially slugs, will doubtless be found when thorough search is made, but so far the principal records are a series of papers by Professor T. D. A. Cockerell in the *Zoologist* for 1885, so that further and more extended observations remain to be made.

The assemblage presents an average British facies, with the addition of two or three forms of interest. Thus the occurrence of *Helicella cartusiana*, if established, is noteworthy, since this is rather a costal species. More interesting still is the discovery near Mickleham of a colony of the cheese snail (*Helicodonta obvoluta*), and probably more may yet be met with in other places along the North Downs, where it should be sought for in beech woods.

Surrey is distinctly the home of the Roman snail (*Helix pomatia*), its headquarters being the great escarpment of the North Downs. Its English name is inappropriate, since it has been found in deposits of pre-Roman age near Reigate, and was consequently not introduced by the Romans as formerly supposed. Yet more unfortunate is its other trivial name of 'apple snail,' derived from a mistaken translation of its specific name, *pomatia*, which was given because in winter the animal closes the mouth of its shell by secreting a chalky lid (πῶμα) or trapdoor.

The Royal Gardens at Kew have furnished some introduced forms, such as *Subulina octona* from the West Indies, *Physa acuta* from southern Europe, and *Vitrea lucida*, which last however may yet prove indigenous in the county, since it occurs on the other side of the Thames at Isleworth.

A. GASTROPODA

I. PULMONATA

a. STYLOMMATOPHORA

Testacella haliotidea, Drap. Nutfield Priory in company with the next species; Sutton Common
— *scutulum*, Sby. Nutfield Priory; Sydenham; Croydon, etc.
Limax maximus, Linn.
— *flavus*, Linn.
Limax arborum, Bouch.-Chant.
Agriolimax agrestis (Linn.)
— *lævis* (Müll.). Barnes
Amalia sowerbii (Fér.)
Vitrina pellucida (Müll.)
Vitrea crystallina (Müll.)
— *lucida* (Drap.)
— *alliaria* (Miller). Barnes Common
— *glabra* (Brit. Auct.)
— *cellaria* (Müll.)

Vitrea nitidula (Drap.)
— *pura* (Ald.)
— *radiatula* (Ald.)
— *excavata* (Bean). Copthorne Common (E. Saunders)
— *nitida* (Mull.). Barnes
— *fulva* (Müll.). Haslemere
Arion ater (Linn.)
— *hortensis*, Fér.
Punctum pygmæum (Drap.)
Pyramidula rupestris (Drap.). Mickleham
— *rotundata* (Müll.)
Helicella virgata (Da C.)
— *itala* (Linn.)
— *caperata* (Mont.)
— *cantiana* (Mont.)
— *cartusiana* (Müll.). Banstead Downs (Cooper)
Hygromia granulata (Ald.). Reigate; Limpsfield
— *hispida* (Linn.)
— *rufescens* (Penn.)
Acanthinula aculeata (Müll.) Croydon, etc.
Vallonia pulchella (Müll.)
Helicodonta obvoluta (Müll). Norbury Park, near Mickleham [dead specimens]. One reversed example said to have come from Mitcham, but more probably also from Mickleham
Helicigona lapicida (Linn.)
— *arbustorum* (Linn.)
Helix aspersa, Müll.
— *pomatia*, Linn.
— *nemoralis*, Linn.
— *hortensis*, Müll.
Buliminus montanus (Drap.). Near Godalming (H. W. Kidd); also in a holocene deposit at Reigate
— *obscurus* (Müll.)
Cochlicopa lubrica (Müll.)
Azeca tridens (Pult.). Between Reigate and Dorking
Cælianella acicula (Müll.). Barnes Common; Epsom
Pupa cylindracea (Da C.)
— *muscorum* (Linn.)
Sphyradium edentulum (Drap.)
Vertigo antivertigo (Drap.). Barnes
— *substriata* (Jeff.). Redhill (E. Saunders)
— *pygmæa* (Drap.). Near Oxtead
— *pusilla*, Müll. Reigate (E. Saunders)
Vertigo angustior, Jeff. Battersea Fields (Stephens)
Balea perversa (Linn.)
Clausilia laminata (Mont.)
— *bidentata* (Ström.)
— *biplicata* (Mont.). Putney, near the banks of the Thames
— *rolphii*, Gray. Between Reigate and Dorking
Succinea putris (Linn.). In addition to the type, which is common, a variety that has been described as a separate species under the name of *S. virescens* has been met with at Mitcham and Twickenham
— *elegans*, Risso

b. BASOMMATOPHORA

Carychium minimum, Müll.
Ancylus fluviatilis, Müll. Barnes
Limnæa auricularia (Linn.)
— *pereger* (Müll.)
— *palustris* (Müll.)
— *truncatula* (Müll.)
— *stagnalis* (Linn.)
— *glabra* (Müll.). Battersea (Cooper)
Amphipeplea glutinosa (Müll.). Barnes
Planorbis corneus (Linn.)
— *albus*, Müll.
— *glaber*, Jeff.
— *nautileus* (Linn.). Tooting; Bookham Common
— *carinatus*, Müll. Kew
— *marginatus*, Drap.
— *vortex* (Linn.)
— *spirorbis*, Müll.
— *contortus* (Linn.)
— *fontanus* (Lightf.). Kew
— *lineatus* (Walker). Barnes Common
Physa fontinalis (Linn.)
— *hypnorum* (Linn.)

II. PROSOBRANCHIATA

Bithynia tentaculata (Linn.)
— *leachii* (Shepp.)
Vivipara vivipara (Linn.). Guildford, etc.
Valvata piscinalis (Müll.)
— *cristata*, Müll.
Pomatias elegans (Müll.)
Acicula lineata (Drap.). Gatton; Battersea (Cooper)
Neritina fluviatilis (Linn.)

B. PELECYPODA

Dreissensia polymorpha (Pall.) } River Wey
Unio pictorum (Linn.) }
— *tumidus*, Retz. Basingstoke Canal
Anodonta cygnæa (Linn.)
Sphærium rivicola (Leach). River Wey
— *corneum* (Linn.)
Sphærium ovale (Fér.)
— *lacustre* (Müll.). Guildford
Pisidium amnicum (Müll.). Nutfield
— *pusillum* (Gmel.)
— *fontinale* (Drap.)
— *milium* (Held.)

INSECTS[1]

A comparatively small county like Surrey, some considerable part of which is absorbed by south London and the suburbs, cannot of course be expected to have an insect fauna equal to any one of the adjoining counties of Hampshire, Sussex or Kent, each of which has not only a much larger acreage but an extensive coast line.

Whilst making allowance for the size of the county as compared with that of any one of those just named, the suburban character of the north-eastern portion of it, and the absence of sea coast and consequently of all maritime species, it must be confessed that considering the varied geological formations of Surrey and the great extent of its heaths and woodlands, the number of species in one or two orders is smaller than would be expected, the Rhopalocera (Butterflies) being especially poorly represented.[2] It is believed that no other county in England of similar size possesses anything approaching the extent of wooded common land and heaths, and in proportion to its acreage Surrey includes more wasteland than Yorkshire.

ORTHOPTERA

Earwigs, Cockroaches, Grasshoppers and Crickets

The list of Orthoptera known to have been taken in Surrey is very meagre ; in fact only the generally distributed forms occur, with a very few of the more restricted species. This may possibly be due to want of observation, for several good collecting grounds are within the borders of the county. The fact remains however that the list compares very unfavourably with that of Hants or of Kent. Such a rarity as *Decticus verrucivorus*, L., the Wartbiter, has occurred in both these counties, but has yet to be recorded for Surrey ; *Platycleis roeselii*, Hagenb., and *Apterygida albipennis*, Meg., have also been taken in Kent, which should encourage entomologists to search carefully for them in Surrey. The number of localities, too, from which Orthoptera have been recorded is small, and a very little trouble will doubtless greatly add to the number

[1] The sequence of the orders here followed is that adopted by Dr. D. Sharp, F.R.S., in the *Cambridge Natural History*, 1889–92.—H. G.

[2] I have to express my cordial thanks for valuable assistance received to Mr. R. Adkin, F.E.S. ; Mr. Ernest E. Austen ; Mr. C. G. Barrett, F.E.S. ; Mr. Alfred Beaumont, F.E.S. ; Mr. E. B. Bishop ; Mr. C. A. Briggs, F.E.S. ; Mr. Thomas H. Briggs, M.A., F.E.S. ; Mr. G. Bowdler Buckton, F.R.S. ; Mr. Malcolm Burr, F.L.S., F.Z.S. ; Mr. G. C. Champion, F.Z.S. ; Miss Ethel F. Chawner, F.E.S. ; Major A. Ficklin ; Mr. J. G. Hewat ; Mr. W. J. Kaye, F.E.S. ; Mr. R. W. Lloyd, F.E.S. ; Mr. W. J. Lucas, B.A., F.E.S. ; Mr. Robert McLachlan, F.R.S. ; the Rev. F. D. Morice, M.A., F.E.S. ; Mr. Percy Richards ; Mr. Edward Saunders, F.L.S. ; and Mr. Sydney Webb.—H. G.

of species known to occur and also to the localities in which the more interesting forms have been taken.

Of the twenty-six[1] species recorded in the following list, five are introduced, and established more or less permanently under artificial conditions, leaving the poor total of twenty-one indigenous forms. Species which should be most carefully sought for are *Apterygida albipennis*, Meg., recorded from Ashford and Norwich; *Ectobia panzeri*, Steph., which occurs more or less frequently in the southern counties; *Locusta viridissima*, L., in thickets, etc.; *Stenobothrus elegans*, Charp., on sandy heaths; *Mecostethus grossus*, L., and *Xiphidium dorsale*, Latr., in marshy places; *Platycleis grisea* on chalk hills, especially among Rest Harrow (*Ononis arvensis*); *Pl. roeselii*, Hagenb., in grassy fields; *Decticus verrucivorus*, L., the Wartbiter, on barren and arid spots, clearings in woods, etc. The Field Cricket (*Gryllus campestris*, L.) and the Mole Cricket (*Gryllotalpa gryllotalpa*, L.) may also be found in warm sandy commons, and the latter too in moist spots, where the soft ground permits it to make its well known burrows.

FORFICULARIA

Earwigs

Labia minor, L. The Lesser Earwig is by no means rare on warm evenings in the early summer, and has been found at Dormans, at Leatherhead by C. A. Briggs, and at Kew Gardens and Kingston-on-Thames by W. J. Lucas. The Common Earwig (*Forficula auricularia*, L.) is abundant everywhere. *Forficula lesnei*, Finot, is common at Box Hill and Reigate, and also close to Leatherhead, and should be found in other localities; it is best taken by sweeping flowery thickets and hedges. *Chelisoches morio*, Fabr., an exotic species, has been taken at Kew Gardens.

BLATTODEA

Cockroaches

Ectobiidæ. *Ectobia lapponica* has been taken at Horsley, Albury, Byfleet, Gomshall and Oakham Common. *Ectobia livida*, Fabr. This cockroach has been taken at Box Hill (C. A. Briggs) and Mickleham (W. J. Ashdown).

Phyllodromiidæ. *Phyllodromia germanica*, L., the German Cockroach, is an imported species, which is now abundant in many hotels, restaurants and warehouses.

Blattidæ. The common Cockroach or Black Beetle (*Blatta orientalis*, L.) is of course generally distributed. *Periplaneta australasiæ*, Fabr. This is a cosmopolitan species which is now so thoroughly established at Kew Gardens as to be a pest. It has also been taken in an orchid-house at Camberwell.

[1] There are thirty-six species recorded for Hampshire.—H. G.

Panchloridæ. Leucophæa surinamensis, L. This is a cosmopolitan species which has been taken at Kew Gardens. It is a tropical insect.

ACRIDIODEA

Grasshoppers

Truxalidæ. Stenobothrus lineatus, Panz., is a somewhat local form. It has been taken at Leatherhead and Box Hill. *Stenobothrus viridulus*, L., occurs everywhere on grassy places. *Stenobothrus rufipes*, Zett., has been taken at Box Hill, but it is by no means rare, and should be taken on grassy hills, especially by woodsides. *Stenobothrus bicolor*, Charp., and *Stenobothrus parallelus*, Zett., are our two commonest grasshoppers, and are numerous on almost every patch of grass in the later part of the summer. *Gomphocerus rufus*, L.,[1] is restricted in distribution : it is common at Reigate, Battersea Fields, Box Hill, Leatherhead, and on Bookham and Oxshott commons. *Gomphocerus maculatus*, Thunb. This little species is numerous on all commons and sandy heaths ; it has been taken on Blindley Heath near Godstone, Oxshott Heath, and certainly occurs in many other localities.

Tettigidæ. Tettix bipunctatus, L., our smallest grasshopper, is abundant everywhere in dry places throughout the year, and may even be taken in winter among dried leaves on mild days. *Tettix subulatus*, L., is less common than the above. It has occurred at Dormans.

The members of this family are known in America as ' grouse locusts.'

LOCUSTODEA

Grasshoppers

Phaneropteridæ. Leptophyes punctatissima, Bosc. Widely distributed and fairly common. It has been taken at Wimbledon, Surbiton, Dormans, Box Hill, Guildford and Bisley.

Meconemidæ. Meconema varium, Fabr. This delicate little ' grasshopper ' lives on trees, especially oaks, limes and elms. It is common, and often taken at ' sugar.' Box Hill, Richmond Park, Dormans, Leatherhead, Horsley, Kingston-on-Thames and Bisley are localities for it.

Conocephalidæ. Xiphidium dorsale, Latr., has been recorded by the early authors from ' near London.' It is a rare and local form, occurring only among reeds in marshy places.

Locustidæ. Locusta viridissima, L., the Great Green Grasshopper, has not been actually recorded from within the county, but it is almost certain to occur. It has been taken at various localities near the borders.

Decticidæ. Thamnotrizon cinereus, L., is common in late summer in dry thickets and hedges almost everywhere. Its short sharp chirp, ' *tss, tss, tss,*' is familiar to many collectors ; it is most frequently to be

[1] A specimen was recorded by Samouelle in the beginning of the nineteenth century from the Battersea Fields.

heard after dark on warm August and September evenings, especially before rain. *Platycleis brachyptera*, L. This is a local species. It is common at Esher and on Oxshott Heath, also at Wisley, Leith Hill, Woking and Pyrford.

GRYLLODEA

Crickets

Gryllidæ. The House Cricket, *Gryllus domesticus*, L., is abundant under artificial conditions. It can only live in warm places, and so is confined mainly to kitchens, bakehouses and restaurants.

NEUROPTERA

Psocids, Stone-flies, May-flies, Dragonflies, Lacewing-flies and Caddis-flies

Perhaps no group of the Insecta is better represented in Surrey than the Neuroptera. Several of the sub-orders (or orders), collected under Linnæus' comprehensive title, pass the early, or nymph, stage in the water. Such are the *Perlidæ* (stone-flies), *Ephemeridæ* (May-flies), *Odonata* (dragonflies), and *Trichoptera* (caddis-flies). All these are well represented and widely distributed, except perhaps the first, whose nymphs as a rule prefer swiftly flowing streams, which of course are not numerous in a district whose greatest elevation does not reach 1,000 feet. The *Psocidæ* and *Planipennia*, which complete the group, are well provided for in the numerous woods of oak and Scotch fir to be found throughout the county, the latter tree growing luxuriantly on the generally unproductive stretches of Bagshot Sand.

Until recently the first three groups, viz. the *Psocidæ*, the *Perlidæ* and the *Ephemeridæ*, have received but scanty attention at the hands of Surrey collectors since the days of Stephens, Curtis and Newman, by whom many species were recorded. Owing to the changes in nomenclature, the confusion then existing between allied species and the subsequent discovery of species new to our list, it is unsafe to rely on these old records without individual verification, and they therefore are not used in compiling the present list.

The first of these groups, the *Psocidæ*, is fairly well represented; and if collectors would but record the species they capture, the list would soon show how rich the county is in the group. Of the portion of it that is wingless, or only possessing the most rudimentary wings, *Atropos divinatoria*, Müll., so long supposed to be the cause of the noise familiarly known as the 'deathwatch,' is unfortunately common in houses among old papers, books, botanical and other collections, and is perhaps quite as common and destructive as *Clothilla pulsatoria*, Linn., which is so terrible an enemy to ill-kept collections. *Clothilla picea*, Mots., a species not so rare as formerly, and usually found indoors, has been recorded from Leatherhead, and would probably be found to be fairly common if search were made in cellars, old store-rooms and similar localities.

The winged section of the group is chiefly taken by beating or

sweeping, only one species, *Cæcilius pedicularius*, Linn., being taken also on the wing. The genus *Psocus* is represented by *Ps. longicornis*, Fabr., recorded from Mickleham and Box Hill (Ashdown) ; *Ps. nebulosus*, Steph., from Leatherhead (Ashdown) and Bookham Common (Briggs) ; *Ps. fasciatus*, Fabr., from Cobham and Ockham Common (Briggs) ; *Ps. sex-punctatus*, Linn., from Leatherhead (Ashdown) ; *Ps. major*, Kolbe, from Bookham Common (Briggs). *Stenopsocus immaculatus*, Steph., has been recorded from Wisley and Leatherhead (Briggs) ; *St. stigmaticus*, Imhoff, from Reigate and near Chertsey (McLachlan) ; *St. cruciatus*, Linn., near Ranmore (Lucas) and Leatherhead (Briggs). *Cæcilius pedicularius*, Linn., is frequent in houses, especially on windows, but occasionally flies in bright sunshine in great numbers ; *C. flavidus*, Steph., near Ranmore (Lucas), Bookham Common (Briggs) ; *C. atricornis*, McLach., Chertsey Bridge (McLachlan) ; *C. dalii*, McLach., from Weybridge (King) ; and *C. piceus*, Kolbe, Box Hill (King). *Peripsocus alboguttatus*, Dalm., was beaten in some numbers from heath at Weybridge in 1873, but does not seem to have been taken since. *Elipsocus unipunctatus*, Müll., occurs at Bookham Common (Briggs) and Esher Common (Lucas) ; *E. west-woodii*, McLach., and its variety, *abietis*, Kolbe, is not uncommon round Leatherhead ; *E. flaviceps* occurs sparingly at Bookham Common (Briggs) ; and *E. cyanops*, Rost., is found at Leith Hill.

Another much neglected group, the *Perlidæ*, seems to have been very little worked in the county, and records are practically non-existent. *Dictyopteryx microcephala*, Pict., is found on the Thames in spring. *Chloroperla grammatica*, Poda, occurs along the banks of the Mole in the Leatherhead district, where also *Isopteryx tripunctata*, Scop., and *I. torrentium*, Pict., are common. *Leuctra fusciventris*, Steph., is common in suitable localities ; *L. geniculata*, Steph., is found on the Thames. *Nemoura variegata*, Oliv., occurs in profusion at Wisley Pond, Esher, Byfleet, Bookham Common, etc. ; *N. meyeri*, Pict., is found sparingly at Leatherhead, Bookham Common, etc. ; a solitary specimen of *N. avicularis*, Morton, was whipped off a reed in the canal at Byfleet ; and *N. inconspicua*, Pict., has been taken (Lucas) at Esher in May and September. The *Ephemeridæ*, the third of the ' neglected ' groups, has been but little more worked or recorded than the others. *Ephemera vulgata*, Linn., and *E. danica*, Müll.—the May-flies *par excellence* of anglers—are of course in the utmost profusion, though not often together, the former requiring warmer water temperature than the latter. The scarce *E. lineata*, Eatn., has been taken near Kingston-on-Thames in 1901 (Lucas). *Potamanthus luteus*, Linn., has occurred at Weybridge (McLachlan). *Leptophlebia submarginata*, Steph., is not uncommon at the White Falls Leatherhead (Briggs) and Esher Common (Lucas), while *L. marginata*, L., occurs at Byfleet Canal (Lucas). *Habrophlebia fusca*, Curt., has been taken at Newark Abbey, Box Hill and the White Falls, at which place also *Cænis dimidiata*, Steph., *Ephemerella ignita*, Poda, *Baëtis vernus*, Curt., *B. rhodani*, Pictet, *Centroptilum pennulatum*, Eatn., and *Cloëon rufulum*, Müll., also occur. *Centroptilum luteolum*, Müll., at Esher (Lucas), *Cloëon simile*, Eatn.,

from Ockham Common (Lucas), *Heptagenia sulphurea*, Müll., from Walton-on-Thames (Annett), and *C. dipterum*, Linn., complete the scanty list.

Excepting perhaps Hampshire, no county probably has so rich a dragonfly fauna as Surrey. The numerous tributaries of the Thames, meandering through the county and on their way traversing a variety of geological formations, are the abode of the nymphs of many species, while the insects that throng the vicinity of their banks provide exhaustless provender for the perfect dragonflies to which the nymphs give birth. Even the Thames itself, before it becomes a tidal river, has a certain limited dragonfly fauna also. But the numerous lakes and ponds in park, wood, or common, that are found throughout the country are the happy hunting-ground of the odonatist. Those situated in fir woods seem to be most prolific, a little group near Ripley that has been well worked having produced twenty-three species, and a single one some six miles distant twenty-one, the total for the county being thirty, out of a total for the whole of the British Isles of forty-one. That there is plenty of scope for fresh workers nevertheless is quite evident, seeing that but a small minority of these lakes and ponds have been systematically worked in connection with their dragonfly inhabitants, even if some of them have been visited for that purpose at all. The Basingstoke Canal, which however is most uncanal-like in its surroundings, is another good locality, and no doubt other canals of a similar character would well repay the attention bestowed upon them.

Of the dragonflies not so far recorded for Surrey, four—*Leucorrhinia dubia*, Lind., *Somatochlora metallica*, Lind., *S. arctica*, Zett., and *Æschna cærulea*, Ström—are northern species, and therefore not likely to occur; but there seems to be no intrinsic reason why the others should not be found. Of the conspicuous species, *Oxygastra curtisii*, Dale, and *Æschna isosceles*, Müll., however, it is probably safe to say that they are absent. The case is different with *Libellula fulva*, Müll., *Lestes dryas*, Kirb., *Ischnura pumilio*, Charp., *Agrion hastulatum*, Charp., and *A. mercuriale*, Charp. Unless carefully examined they so closely resemble neighbouring species that they may very well have been passed over. Collectors therefore should always make it a point to look out for, and catch as suspects, all dragonflies that resemble them, especially in new localities.

Libellulinæ.—All the British species of the genus *Sympetrum* have been taken in the county. *S. striolatum*, Charp., is no doubt present everywhere in suitable localities from the end of June till as late as mid-November under favourable circumstances. Its very close relative, however, *S. vulgatum*, Linn., has been taken but twice—a male on Bookham Common in 1891 (Briggs), and another male in Richmond Park in 1898 (Lucas). Of *S. fonscolombii*, Selys, seventeen males were taken on Ockham Common in June, 1892 (Briggs), their presence being no doubt due to immigration. *S. flaveolum*, Linn., was met with in fair numbers on Ockham Common in 1898 (Lucas), and the species occurred again in 1899 and 1900, while one was seen (Lucas) in 1898 at Elstead. In each year all taken were males, and these again were probably immigrants. A few *S. sanguineum*, Müll., were taken on Ockham Common in 1898–1900 (Lucas), though they were not noticed there previously. *S. scoticum*, Don., is widely spread throughout the county in suitable localities — ponds and pools on swampy heaths. *Libellula depressa*, Linn., is a common, widely distributed insect flying in the spring, and here again no localities need be given. *L. quadrimaculata*, Linn., is more local, though usually common where it occurs. It

has been met with on Esher Common, Byfleet Canal, Ockham Common and Chobham Common (Lucas), Weybridge (J. E. Tarbat). Its variety, *prænubila*, Newm., is fairly common : the typical, absolutely unsuffused form, does not often occur. Both species of the genus *Orthetrum* occur, though neither species has been met with frequently. Localities for *O. cærulescens*, Fabr., are Chobham Common (E. Vincent), Bisley (A. Ficklin, jun.) and Weybridge (Stephens, 1842) ; for *O. cancellatum*, Linn., Ockham Common (Briggs), Merton (J. S. Brocklesby), near New Malden (Lucas), Chobham Common (Vincent), near Byfleet, probably (F. A. Walker).

Cordulinæ.—*Cordulia ænea*, Linn., is early on the wing, and has been met with at Esher Common, Ockham Common and Byfleet Canal (Lucas), Bookham Common (Briggs).

Gomphinæ.—*Gomphus vulgatissimus*, Linn., appears to be a Thames insect, and has occurred at Walton, 1900 (A. B. Higgs), Weybridge, 1871 (McLachlan).

Cordulegasterinæ.—So conspicuous an insect as *Cordulegaster annulatus*, Latr., must be uncommon, or more than two occurrences would have been noticed—at Ottershaw (A. Reed), and a straggler on Esher Common, 1900 (Lucas).

Æschninæ.—The truly majestic dragonfly, *Anax imperator*, Leach, is not uncommon in the county, and has occurred, sometimes plentifully, at Esher, Chobham and Bookham Commons (Lucas), Ockham Common (Briggs), Byfleet Canal (Tarbat), Crooksbury Common and near Worpleston (E. B. Bishop) ; it is comparatively seldom captured. The spring dragonfly, *Brachytron pratense*, Müll., has been taken at Byfleet Canal, Ockham Common, Esher Common and the Mole at Esher (Lucas), and at Leatherhead, Bisley and Egham (Briggs). Of the genus *Æschna* four of the six British species have been taken in Surrey. *Æ. mixta*, Latr., is generally a very uncommon species, and till a year or two ago but some eight or nine captures were known in England. During the last two or three seasons more have been noticed, and in 1900 it was decidedly common in places in the southern counties. Surrey localities are—Esher Common, Ockham Common and near Elstead (Lucas), near East Grinstead (Burr), Upper Norwood (S. Stevens). A nearly allied species, *Æ. juncea*, Linn., though not common, has been taken on Esher and Ockham Commons (Lucas), near Elstead (Bishop) and Weybridge (Tarbat) : it seems to have a liking for ponds in fir woods. *Æ. cyanea*, Müll., and *Æ. grandis*, Linn., are both widely distributed through the county, and to give localities would be superfluous.

Calopteryginæ.—Both species of the genus *Calopteryx* are found in the county, and occasionally, but not often, in or near the same locality. *C. virgo*, Linn., has been taken at R. Mole near Leatherhead (W. J. Ashdown), near Virginia Water (Tarbat), Chobham Common (Vincent), near Farnham, Puttenham Common and Crooksbury Common (Bishop). *C. splendens*, Harr., is more common, localities being—R. Mole at Esher, near Byfleet, Wisley, Newark Abbey, Ockham Common (wanderers), near Weybridge, Esher Common (wanderers), near Send (Lucas), White Falls Leatherhead (Briggs), near Farnham (Bishop), Walton-on-Thames (H. E. Annett).

Agrioninæ.—More localities could no doubt easily be found for *Lestes sponsa*, Hansem., than Esher Common (one specimen), Ockham Common and near Elstead (Lucas), Wendlesham (Tarbat), Chobham Common (Vincent). *Platycnemis pennipes*, Pall., has been met with in several localities, but generally not plentifully : it seems to like flowing water. Specimens have been captured at Newark Abbey, near Weybridge, and Esher Common, one specimen only at the last (Lucas), Ockham Common, near Cobham, and Mickleham Downs (Briggs). *Erythromma naias*, Hansem., is perhaps not usually a common dragonfly, but in Surrey it occurs plentifully at the Byfleet Canal (Lucas), and may be taken on Ockham Common (Lucas) and Chobham Common (Vincent); singularly enough a single specimen has been taken on Esher Common (Lucas) and in Richmond Park (Lucas). The common insect, *Pyrrhosoma nymphula*, Sulz., is no doubt distributed throughout the county in suitable localities, a considerable number having been already recorded. Its congener, *P. tenellum*, Vill., is plentiful on Esher Common (Lucas) : it used to be taken at Weybridge (McLachlan), and has been reported from Merton (Brocklesby). *Ischnura elegans*, Lind., is well distributed, and localities need not be specified. *Agrion pulchellum*, Lind., does not seem to be a common insect in Surrey. It occurs in a restricted spot by the Byfleet Canal (Lucas), and McLachlan has taken it commonly at Runnymede. *A. puella*, Linn., on the other hand is well distributed, while *Enallagma cyathigerum*, Charp., is perhaps even more common, it being, moreover, usually in swarms where it does occur. Though so common, it is an interesting little species, from the fact that it remains a long time on the wing and is subject to a good deal of variation in markings.

Except the *Odonata*, the Neuroptera *Planipennia* have been far better worked than any other group, and the results are very satisfactory. Of the first division—or *Sialina*—*Sialis lutaria*, Linn., is common everywhere in the neighbourhood of water ; while its rarer congener, *S. fuliginosa*, Pict., has been taken at Box Hill and Haslemere (McLachlan) and the White Falls (Briggs). The *Raphidiidæ* seem chiefly to frequent the neighbourhood of fir woods, but Mr. Morley and others have obtained them in the New Forest by beating flowers of hawthorn—a practice which Surrey entomologists have not yet tried, to the great benefit of the hawthorn blossoms. *Raphidia notata*, Fabr., is recorded from Croydon (McLachlan), Ockham Common (Briggs) and Esher Common (Lucas) ; *R. maculicollis*, Steph., from Haslemere (Barrett), Painswick Park (Briggs), Black Pond, Esher (Briggs), Esher Common and near Wisley (Lucas). *R. xanthostigma*, Schum., does not seem to be recorded, though it must have been taken ; while of the few known British specimens of the rare *R. cognata*, Ramb., two are from the cabinet of Mr. Bennett of Dorking, probably from the fir woods towards Leith Hill. The second division—or *Hemerobiina*—comprising the majority of the *Planipennia*, is very well represented. The handsome *Osmylus chrysops*, Linn., is not uncommon in summer about small and very shady streams and under bridges. It is very common at Byfleet (Briggs), and occurs at Chertsey (Lucas). The three species of *Sisyra* are plentiful where they occur, and may all be taken together at the White Falls Leatherhead (Briggs). *S. fuscata*, Fabr., is common on the Thames, and is also recorded from Reigate (McLachlan) and Ockham Common (Briggs), and is common on the Thames (McLachlan) ; *S. dalii*, McLach., is recorded from Reigate (McLachlan) ; and *S. terminalis*, Curt., from Reigate and Weybridge and between Kew and Richmond (McLachlan) and from Newark Abbey (Briggs). A solitary specimen of the rare *Micromus aphidivorus*, Schrank, was taken at Oxshott by Mr. Beaumont in 1900. *M. paganus*, Linn., is fairly common throughout the county ; but *M. variegatus*, Fabr., except the specimen from Box Hill (Briggs), does not seem to have been recorded since Mr. Stephens' captures at Coombe Wood. Of the genus *Hemerobius*, *H. elegans*, Steph., has been taken at Coombe Wood (Stephens) and Newark Abbey (Briggs) ; *H. inconspicuus*, McLach., at Addington (Wormald), Weybridge (Mc Lachlan) and Ockham Common (Briggs) ; *H. nitidulus*, Fabr., abundantly at Ockham Common, Esher Common and elsewhere in fir woods ; *H. micans*, Olivier, in Headley Lane, at Leatherhead, Horsley and Ockham Common. *H. humuli*, Linn., is common throughout the county ; but is usually mixed in collections with *H. lutescens*, Fabr., and *H. marginatus*, Steph., so that previous to Mr. McLachlan's differentiation of them in the tenth volume of the new series of the *Entomologist's Monthly Magazine*, records of these species can scarcely be relied upon. *H. stigma*, Steph., is abundant in fir woods, individuals occurring throughout the winter ; and of the two British specimens of *H. limbatellus*, Zett., one was taken at Leith Hill. *H. pini*, Steph., and *H. atrifrons*,

McLach., are recorded from Addington and Leith Hill, but these species are always confused and their distinction is doubtful. *H. subnebulosus*, Steph., so frequently found amongst fruit trees, is distributed over the county, and *H. nervosus*, Fabr., appears chiefly to frequent birch; it occurs on Esher Common (Lucas). *H. concinnus*, Steph., the largest of the group, is recorded from Addington (Wormald), and is common at Oxshott Common and Ockham Common. The three species of *Coniopteryx*—*C. aleyrodiformis*, Steph., *C. psociformis*, Curt., and *C. tineiformis*, Curt.—occur freely, but are much overlooked. *Chrysopa flava*, Scop., has occurred at Leatherhead, and probably throughout the county, but is always with the abundant *C. vittata*, Wesm. *C. alba*, Linn., occurs in the Esher Woods; *C. flavifrons*, Brau., at Box Hill, Weybridge and Merrow Downs; *C. tenella*, Schr., at Leatherhead, Ockham, Weybridge and Esher. *C. vulgaris*, Schr., and its winter condition, *carnea*, Steph., are commonly distributed. *C. septempunctata*, Wesm., the ill-savoured stink-fly, is also generally distributed. *C. aspersa*, Wesm., is in profusion on Ockham Common and generally common in the county. *C. ventralis*, Curt., occurs sparingly at Weybridge and Ockham Common, but is frequent on Bookham Common. *C. phyllochroma*, Wesm., is not rare in the neighbourhood of Newark Abbey and has been taken near Byfleet. *C. perla*, Linn., generally common, is particularly so at Byfleet. *C. dorsalis*, Burm., was recognized in 1900 for the first time as British, being taken by Mr. Beaumont at Oxshott. *Nothochrysa capitata*, Fabr., is found singly at Leith Hill, Esher, Ockham Common and other fir districts. Of the third division—or *Panorpina*—*Panorpa communis*, Linn., and *P. germanica*, Linn., are common throughout the county; but *P. cognata*, Ramb., common on the downs at Folkestone, has not yet been recorded from Surrey. *Boreus hyemalis*, Linn., occurred in 1867 at Shirley near Croydon (Douglas and Scott).

The Trichoptera, the fifth and last of the somewhat ill-assorted groups at present included in our list under the general name Neuroptera, are well represented in Surrey. Few counties indeed are better adapted to this water-loving group. Strong running streams and sluggish brooks, canals and large ponds, woodlands and moor, marsh and bog—all contribute their quota of species peculiar to the varying nature of the localities.

The *Phryganeidæ* and many of the *Limnophilidæ* frequent the more sluggish and even stagnant waters, and may be beaten from bushes about the edge of a pond, or swept from reeds or coarse herbage round its margin, or disturbed from the overhanging banks of a moorland drain. Some wander far from the place of their birth, and may be beaten out in woods, especially fir woods, or even taken at 'light' in towns or at the lepidopterist's 'sugar.'

Most of the long-horned *Leptoceridæ* love moving rather than stagnant waters, and may be disturbed from the overhanging trees and bushes or from reeds, or frequently may be seen in the daytime in countless myriads performing their mazy dances over the water, their

swift evolutions being frequently performed so close to the surface that capture without injury to the net becomes a matter of difficulty.

As a rule, the *Hydropsychidæ* and *Rhyacophilidæ* love still stronger waters, swift-running streams and waterfalls being their special haunts; while the active and minute *Hydroptilidæ* may frequently be swept in numbers from the herbage round springs or wet ditches in the neighbourhood of larger waters.

But in the Trichoptera, as in the rest of the Neuroptera, but little has been done in recording. Mr. McLachlan, our chief authority on the group, writing in 1861, says: 'in the old books "London district," "Ripley," "Hertford," "Devonshire," constantly and repeatedly occur as localities solely because these happened to be the hunting-grounds of Stephens, Curtis and Leach, and the rest of the country was then and is now almost unexplored,' and if we add a few localities such as Weybridge and Haslemere, worked by Messrs. McLachlan and Barrett; Kew, by Mr. P. Wormald; and the Leatherhead, Wisley and Esher districts, worked by Messrs. Briggs and Lucas, these words are nearly as true now as then. The occasional capture of a rarity is perhaps recorded, but not by its captor, while systematic records, especially of the commoner species, are wanting.

Of the *Phryganeidæ*, *Phryganea grandis*, Linn., has been recorded from Albury, Ripley, Byfleet Canal and Kingston-on-Thames; *P. striata*, Linn., from Byfleet; *P. varia*, Fabr., from the Black Pond at Esher; *P. minor*, Curt., from Haslemere. *Neuronia ruficrus*, Scop., occurs about pools and standing waters almost anywhere in May and June.

The *Limnophilidæ* are better represented. *Colpotaulius incisus*, Curt., has occurred at Merstham; *Grammotaulius atomarius*, Fabr., at the Hut Pond Wisley and at Oxshott; *Glyphotælius pellucidus*, Oliv., at Wisley, Kew, Oxshott and Chertsey; *Limnophilus rhombicus*, Linn., at Byfleet, Newark Abbey and Leatherhead; *L. flavicornis*, Fabr., at Bookham Common and Byfleet Canal; *L. marmoratus*, Curt., at the White Falls Leatherhead, the Hut Pond, Croydon, Kew, Esher Common (November 14) and near Thursley; *L. lunatus*, Curt., at the White Falls Leatherhead and the Hut Pond Wisley; *L. griseus*, Linn., at the Hut Pond, Esher, Leatherhead and near Ripley; *L. auricula*, Curt., at the Hut Pond and Ripley; *L. vittatus*, Fabr., at the Hut Pond, Coombe Wood and Oxshott; *L. centralis*, Curt., at the Hut Pond, Esher, Oxshott, Claygate and Box Hill; *L. ignavus*, Hag., at Ripley; *L. hirsutus*, Pict., at Bookham Common; *L. bipunctatus*, at Horsley; *L. luridus*, Curt., at the Hut Pond; *L. sparsus*, Curt., at the Hut Pond, Ripley, Esher Common and Coombe Wood; and *L. fuscicornis*, Ramb., near Byfleet; *Anabolia nervosa*, Curt., at Kingston-on-Thames, Kew and in profusion at Styfield, an autumnal species; *Stenophylax permistus*, McLach., at Leatherhead, Albury and Ripley; *S. stellatus*, Curt., at the White Falls Leatherhead and at Ripley; *S. vibex*, Curt., at Haslemere; *Micropterna sequax*, McLach., near Horsley; *M. lateralis*, Steph., at Ripley, New Malden, etc.; *Halesus digitatus*, Schr., at Leatherhead and Kingston-on-

Thames ; *H. radiatus*, Curt., at Leatherhead ; *Drusus annulatus*, Steph., between Leith Hill and Wotton (McLachlan), probably the most southerly locality in Britain ; *Chætopteryx villosa*, Fabr., at Leatherhead, Ripley, Guildford and Haslemere.

In the *Sericostomatidæ*, *Sericostoma personatum*, Spence, is abundant at the White Falls Leatherhead, Box Hill and Wisley ; *Notodobia ciliaris*, Linn., is frequent along the canal at Byfleet and equally so on the Thames, and on the Wye near Send ; *Goëra pilosa*, Curt., at Newark Abbey, Kew, the White Falls, Ripley and near Byfleet ; *Silo pallipes*, Fabr., at Haslemere ; *Lepidostoma hirtum*, Fabr., at Bookham Common and Ripley ; *Lasciocephala basalis*, Kol., at the White Falls Leatherhead ; and *Crunæcia irrorata*, Curt., at Haslemere and Leith Hill.

Of the long-horned *Leptoceridæ*, *Odontocerum albicorne*, Scop., is common at the White Falls Leatherhead ; *Molanna augustata*, Curt., has been taken at Byfleet and in profusion along the Thames ; *Leptocerus nigro-nervosus*, Fabr., at Battersea, Putney and Kew ; *L. alboguttatus*, Linn., at Newark Abbey, Kingston-on-Thames and Kew ; *L. annulicornis*, Steph., at Kew ; *L. cinereus*, Curt., in the utmost profusion about the Thames ; *L. aterrimus*, Steph., at the Hut Pond, Bookham Common and, with its variety, *perfusus*, Steph., at Kew ; *L. bilineatus*, Linn. (*bifasciatus*, Oliv.), at Kingston-on-Thames and Haslemere ; and *L. dissimilis*, Steph., at Kingston-on-Thames and Kew, where *L. albifrons*, Linn., is also taken. *Triænodes bicolor*, Curt., is recorded from Kew ; *Mystacides nigra*, Linn., from Newark Abbey ; *M. azurea*, Linn., from the White Falls Leatherhead, Byfleet Canal and Kew ; *M. longicornis*, from the Byfleet Canal. *Adicella reducta*, McLach., has occurred commonly at Haslemere, also between Leith Hill and Wotton ; *Œcetis lacustris*, Pict., is recorded from Burford Bridge ; *Œ. notata*, from Weybridge ; *Œ. testacea*, Curt., from Box Hill and Kew ; and *Setodes tineiformis*, Curt., from Weybridge and Kew.

The *Hydropsychidæ* are represented by *Hydropsyche pellucidula*, Curt., from Newark Abbey, abundant on the Thames ; *H. instabilis*, Curt., from Kew, Box Hill and Weybridge ; *H. angustipennis*, Curt., from Kew and Newark Abbey, abundant on the Thames ; *H. exocellata*, Dufour (*ophthalmica*, Ramb.), on the Thames ; *Wormaldia subnigra*, McLach., near Reigate and Dorking ; *H. guttata*, Pict., from Kew ; *H. lepida*, Hag., from Kingston-on-Thames and Kew ; *Polycentropus flavomaculatus*, Pict., from Kew and Burford Bridge ; *P. multiguttatus*, Curt., from Haslemere ; *Holocentropus dubius*, Ramb., from Haslemere and Kew ; *H. picicornis*, Steph., from Kew and near Ockham ; *Cyrnus trimaculatus*, Curt., from Box Hill, Ripley and near Weybridge ; *Ecnomus tenellus*, Ramb., from Ripley ; *Tinodes wæneri*, Kol., from the river Mole near Box Hill, the White Falls Leatherhead, the Hut Pond Wisley and the Thames ; *T. assimilis*, McLach., from Haslemere ; *Lype phæopa*, Steph., from Chertsey, Weybridge, Ripley and the river Mole near Box Hill ; *L. reducta*, Hag., from Weybridge ; and *Psychomyia pusilla*, Fabr., in swarms by the side of the Thames.

Of the *Rhyacophilidæ*, *Rhyacophila dorsalis*, Curt., is recorded from Haslemere, and is common at swift parts of a brook near Surbiton ; *Agapetus comatus*, Pict., from Ripley commonly ; *A. fuscipes*, Curt., from Ripley, Send and the White Falls Leatherhead.

The *Hydroptilidæ* are only represented by *Hydroptila sparsa*, Curt., from the river Mole near Box Hill ; by *Ithytrichia lamellaris*, Eaton, from Weybridge ; and by *Orthotrichia angustella*, McLach., from Kingston-on-Thames.

HYMENOPTERA ACULEATA

Bees, Wasps, Ants, etc.

This section of the *Hymenoptera* is exceedingly well represented in Surrey, 312 species being recorded out of the 384 which have hitherto occurred in Britain ; of these, three species have up to the present been recorded from this county only : *Psen concolor*, Dhlb. ; *Crabro scutellatus*, Schev. ; *Crabro clypeatus*, Linn. ; but in all probability they are not peculiar to Surrey, and will occur elsewhere, as other counties are more thoroughly worked. Surrey has perhaps had more attention paid to it entomologically than most counties, as many of its best localities are within easy reach of London, and have been the favourite hunting-grounds of entomologists for many years. The Bagshot Sands districts have been especially well worked, and curiously enough all the three species so far peculiar to the county are from localities on this formation. Four or five years ago several other species had Surrey records only, but they have been discovered elsewhere. *Pompilus minutulus*, for instance, which one might quite have expected to be peculiar at least to sandy localities, has been found in the chalky district of St. Margaret's Bay in Kent. In fact, in the present state of our knowledge, it is very dangerous to attempt to limit the distribution of the species of this order, and there is no doubt that it is much more general than in such orders as *Coleoptera* and *Hemiptera*, as may be inferred from the larger proportion of this order found in Surrey, though the collectors of *Coleoptera* and *Hemiptera* are more numerous than those of the *Hymenoptera*.

The *Chrysididæ* are added to this section as a supplement by the Rev. F. D. Morice, as although they are not generally included in the *Aculeata* they are more closely allied to them than to any other group.

HETEROGYNA

FORMICIDÆ

Formica, L.

— rufa, L. Not rare in sandy districts

— sanguinea, Latr. *Weybridge* (Morice), *Woking*, *Chobham* (Saunders), *Shirley* (Rothney)

— fusca, L. } Generally distributed

— do. race cunicularia }

Lasius, Fab.

— fuliginosus, Latr. } Generally distributed

— niger, L. }

FORMICIDÆ (*continued*)

Lasius do. race alienus. Less common than type, but generally distributed

— umbratus, Nyl. Generally distributed

— flavus, De Geer. Common and generally distributed

Tapinoma, Fœrst.

— erraticum, Latr. *Chobham*, *Weybridge*, *Guildford*, *Shirley*, and near *Croydon*

PONERIDÆ

Ponera, Latr.
— contracta, Latr. *Weybridge* (Billups), *Gomshall* (Butler), *Shiere* (Capron)

MYRMICIDÆ

Formicoxenus, Mayr.
— nitidulus, Nyl. *Weybridge*, *Guildford* (Smith), *Shiere* (Capron), *Esher* (Champion)

Myrmecina, Curt.
— latreillei, Curt. *Shiere* (Capron), *Gomshall* (Butler)

Tetramorium, Mayr.
— cæspitum, L. *Chobham* (Saunders)

Leptothorax, Mayr.
— acervorum, Fab. *Woking* (Saunders), *Shirley* (Rothney)
— tuberum, Fab.
— race nylanderi. *Chobham*, *Wimbledon* (Saunders), *Shirley* (Rothney)

Stenamma, West.
— westwoodi, West. *Chobham*, *Woking* (Saunders), *Shiere* (Capron)

Myrmica, Latr.
— rubra, L.
— do. race sulcinodis. *Chobham*, *Woking* (Saunders)
— race ruginodis
— race lævinodis } Generally distributed
— race scabrinodis
— race lobicornis, Nyl. *Chobham*, *Woking* (Saunders)

FOSSORES

MUTILLIDÆ

Mutilla, L.
— europæa, L. *Croydon* (Rothney), *Chobham* (Beaumont)
— rufipes, Latr. *Woking* (Saunders), *Weybridge* (Smith), *Ottershaw* (Morice)

Myrmosa, Latr.
— melanocephala, Fab. *Woking*, *Chobham* (Saunders), *Weybridge*, *Coombe Wood* (Smith), *Shiere* (Capron), *Shirley* (Rothney)

Methoca, Latr.
— ichneumonides, Latr. *Chobham*, *Woking* (Saunders), *Ripley* (Morice), *Weybridge* (Smith), *Oxshott* (Billups)

TIPHIIDÆ

Tiphia, Fab.
— minuta, V. de Lind. *Woking*, *Chobham* (Saunders)

SAPYGIDÆ

Sapyga, Latr.
— 5-punctata, Fab. *Godalming* (Latter), *Chobham* (Saunders), *Holmwood* (Mortimer)

POMPILIDÆ

Pompilus, Fab.
— unicolor, Spin. *Woking* (Saunders), *Box Hill* (Beaumont)
— bicolor, Lep. *Chobham*, *Woking* (Saunders), *Oxshott* (Beaumont)
— rufipes, L. *Woking* (Morice)
— cinctellus, Spin. *Chobham*, *Woking* (Saunders)
— niger, Fab. *Woking*, *Chobham* (Saunders)
— plumbeus, Fab. *Chobham* (Saunders), *Wisley* (Morice)
— viaticus, L. Generally distributed
— chalybeatus, Schiödte. *Chobham*, *Woking* (Saunders), *Wisley* (Morice)
— gibbus, Fab. Generally distributed
— unguicularis, Thoms. } *Chobham*, *Woking*
— wesmaeli, Thoms. } (Saunders)
— minutulus, Dhlb. *Wisley* (Morice), *Chobham*, *Woking* (Saunders), *Oxshott* (Beaumont)
— spissus, Schiödte. *Chobham*, *Woking* (Saunders), *Byfleet* (Morice)
— pectinipes, V. de Lind. *Chobham*, *Woking* (Saunders), *Holmwood* (Mortimer)

Salius, Fab.
— fuscus, L. *Woking*, *Chobham*, *Esher* (Saunders), *Godalming* (Latter)
— affinis, V. de Lind. *Chobham* (Saunders), *Woking*, *Ottershaw* (Morice), *Ripley*, *Weybridge* (Smith)
— exaltatus, Fab. Generally distributed
— notatulus, Saund. *Chobham* (Saunders), *Chertsey* (Billups), *Holmwood* (Mortimer)
— pusillus, Schiödte. *Chobham*, *Woking* (Saunders), *Holmwood* (Mortimer)
— parvulus, Dhlb. *Chobham*, *Woking* (Saunders), *Holmwood* (Mortimer)

Calicurgus, Lep.
— hyalinatus, Fab. *Woking*, *Charlwood* (Saunders), *Chobham* (Morice)

Pseudagenia, Kohl.
— punctum, Fab. *Chobham* (Billups)

Agenia, Schiödte.
— variegata, L. } *Coombe Wood* (Smith)
— hircana, Fab. }

Ceropales, Latr.
— maculatus, Fab. *Holmwood* (Mortimer), *Woking*, *Chobham* (Saunders), *Wisley* (Morice)
— variegatus, Fab. *Chobham* (Saunders), *Weybridge* (Smith), *Holmwood* (Mortimer)

SPHEGIDÆ

Astata, Latr.
— boops, Schr. *Chobham* (Saunders), *Coombe Wood*, *Reigate Heath* (Smith)

SPHEGIDÆ (*continued*)

Astata stigma, Panz. *Chobham*, *Woking* (Saunders)

Tachytes, Panz.

— pectinipes, L. Sandy commons, generally distributed

— unicolor, Panz. *Chobham* (Saunders), *Ripley* (Morice), *Weybridge* (Smith)

Miscophus, Jur.

— concolor, Dhlb. *Woking*, *Chobham* (Saunders), *Weybridge* (Smith), *Oxshott*, *Ottershaw* (Morice)

Trypoxylon, Latr.

— figulus, L. } Generally
— clavicerum, Lep. } distributed

— attenuatum, Sm. *Chobham*, *Woking*, *Reigate* (Saunders)

Ammophila, Kirb.

— sabulosa, L. *Godalming* (Latter), *Chobham*, *Woking*, *Weybridge* (Saunders), *Wisley* (Morice)

— campestris, Latr. *Godalming* (Latter), *Chobham*, *Woking*, *Weybridge* (Saunders), *Wisley* (Morice)

— hirsuta, Scop. *Chobham* (Saunders), *Godalming* (Latter)

— lutaria, Fab. *Chobham* (Saunders)

Spilomena, Shuck.

— troglodytes, V. de Lind. *Wimbledon*, *Woking*, *Charlwood* (Saunders), *Byfleet* (Morice)

Stigmus, Jur.

— solskyi, Mor. *Chobham* (Saunders), *Putney* (Swale), *Wimbledon*, *Byfleet* (Morice)

Pemphredon, Latr.

— lugubris, Fab. } Common and generally distributed
— shuckardi, Mor. }
— lethifer, Shuck. }

— morio, V. de Lind. *Ripley* (Morice)

Diodontus, Curt.

— minutus, Fab. Common and generally distributed

— luperus, Shuck. *Woking* (Saunders), *Chobham* (Morice)

— tristis, V. de Lind. Generally distributed

Passalœcus, Shuck.

— corniger, Shuck. *Holmwood* (Mortimer)

— insignis, V. de Lind. *Woking*, *Chobham* (Saunders)

— gracilis, Curt. *Woking*, *Chobham*, *Charlwood* (Saunders)

— monilicornis, Dbm. *Chobham*, *Dorking* (Saunders)

Mimesa, Shuck.

— Shuckardi, Wesm. *Woking*, *Chobham* (Saunders), *Oxshott* (Morice)

— bicolor, Jur. *Woking*, *Chobham* (Saunders)

SPHEGIDÆ (*continued*)

Mimesa equestris, Fab. *Woking* (Saunders), *Chobham* (Morice)

— unicolor, V. de Lind. *Woking*, *Chobham* (Saunders), *Ripley* (Morice), *Holmwood* (Mortimer)

— dahlbomi, Wesm. *Woking* (Morice), *Holmwood* (Mortimer)

Psen, Latr.

— pallipes, Panz. Generally distributed

— concolor, Dhlb. *Byfleet* (Morice)

Gorytes, Latr.

— tumidus, Panz. *Holmwood* (Mortimer), *Chobham*, *Woking* (Saunders)

— mystaceus, L. *Chobham* (Saunders), *Godalming* (Latter)

— campestris, L. *Wandsworth*, *Battersea* (Smith)

— quadrifasciatus, Fab. *Battersea fields* (Shuckard), *Woking*, *Ripley* (Morice)

— bicinctus, Rossi. *Woking* (Morice)

Nysson, Latr.

— spinosus, Fab. *Holmwood* (Mortimer), *Coombe Wood* (Shuckard), *Chobham* (Morice)

— trimaculatus, Rossi. *Battersea*, *Weybridge* (Smith), *Ripley* (Morice)

— dimidiatus, Jur. *Woking*, *Chobham*, *Clandon* (Saunders), *Weybridge* (Smith)

Mellinus, Fab.

— arvensis, L. *Woking* (Saunders), *Godalming* (Latter)

Philanthus, Fab.

— triangulum, Fab. *Byfleet* (Smith)

Cerceris, Fab.

— arenaria, L. *Woking*, *Chobham* (Saunders), *Wisley* (Morice), *Godalming* (Latter)

— interrupta, Panz. *Chobham* (Saunders)

— labiata, Fab. *Woking*, *Chobham* (Saunders), *Weybridge* (Smith), *Wisley* (Morice), *Godalming* (Latter)

— ornata, Fab. *Woking*, *Chobham*, *Dorking* (Saunders), *Battersea fields* (Shuckard), *Putney*, *Wandsworth* (Smith), *Godalming* (Latter)

Oxybelus, Latr.

— uniglumis, L. Generally distributed

— mandibularis, Dhlb. *Woking* (Saunders), *Chobham* (Morice), *Frensham* (Thornley)

Crabro, Fab.

— tibialis, Fab. *Ripley* (Morice) *Wandsworth* (Smith)

— clavipes, L. *Woking* (Morice)

— capitosus, Shuck. *Reigate*, *Chobham* (Saunders), *Battersea fields* (Shuckard), *Woking* (Morice)

— leucostomus, L. Generally distributed

SPHEGIDÆ (*continued*)

Crabro pubescens, Shuck. *Woking*, *Charlwood* (Saunders), *Box Hill* (Beaumont), *Ripley* (Morice)
— cetratus, Shuck. *Weybridge* (Smith), *Shiere* (Capron)
— podagricus, V. de Lind. *Woking*, *Chobham* (Saunders), *Cobham* (Morice)
— aphidum, Lep. *Ripley* (Morice)
— gonager, Lep. *Ripley* (Morice), *Putney* (Swale), *Streatham* (Mortimer)
— palmarius, Schreb. *Woking* (Saunders), *Wimbledon* (Smith), *Clandon* (Morice)
— palmipes, L. Generally distributed
— varius, Lep. } *Chobham* (Saunders)
— anxius, Wesm. }
— wesmaeli, V. de Lind. *Woking*, *Chobham* (Saunders)
— elongatulus, V. de Lind. Generally distributed
— dimidiatus, Fab. *Ripley* (Stephens)
— signatus, Panz. *Chobham* (Saunders)
— vagabundus, Panz. *Chobham* (Saunders), *Ripley* (Morice)
— 4-maculatus, Fab. } Generally distributed
— cribrarius, L. }
— peltarius, Schreb. }
— scutellatus, Schev. *Chobham*, *Woking* (Saunders), *Ripley* (Morice)
— vagus, L. *Chobham*, *Woking* (Saunders), *Ripley*, *Cobham* (Morice)
— cephalotes, Panz. Generally distributed
— chrysostomus, Lep. *Charlwood* (Saunders), *Ripley* (Morice)
— interruptus, De Geer. *Ripley* (Stephens), *Cobham* (Morice)
— clypeatus, L. *Weybridge* (Smith)
— albilabris, Fab. Generally distributed
— panzeri, V. de Lind. *Weybridge* (Smith), *Woking*, *Clandon* (Morice), *Tooting* (Mortimer)

Entomogathus, Dhlb.
— brevis, V. de Lind. Generally distributed

DIPLOPTERA

VESPIDÆ

Vespa, L.
— crabro, L. *Holmwood* (Mortimer), *Charlwood* (W. W. Saunders), *Woking* (Morice)
— vulgaris, L. } Generally distributed
— germanica, Fab. }
— rufa, L. }
— sylvestris, Scop. }
— norvegica, Fab. *Shirley* (Rothney), *Godalming* (Latter)

EUMENIDÆ

Odynerus, Latr.
— spinipes, L. *Godalming* (Latter), *Chobham*, *Woking* (Saunders)
— melanocephalus, Gmel. *Holmwood* (Mortimer)
— laevipes, Shuck. *Woking* (Morice)
— reniformis, Gmel. *Chobham* (Saunders), *Virginia Water* (Billups)
— callosus, Thoms. } Generally distributed
— parietum, L. }
— pictus, Curt. *Godalming* (Latter), *Holmwood* (Mortimer), *Wandsworth* (Saunders), *Weybridge* (Smith)
— trifasciatus, Oliv. *Chobham* (Saunders), *Cobham*, *Byfleet* (Morice)
— parietinus, L. *Charlwood*, *Chobham* (Saunders), *Godalming* (Latter)
— gracilis, Brullé. *Godalming* (Latter), *Chobham* (Saunders), *Woking*, *Cobham*, *Wisley* (Morice)
— sinuatus, Fab. *Ripley* (Morice), *Holmwood* (Mortimer), *Godalming* (Latter)

Eumenes, Latr.
— coarctata, L. *Woking*, *Chobham* (Saunders), *Weybridge* (Smith), *Godalming* (Latter)

ANTHOPHILA

COLLETIDÆ

Colletes, Latr.
— succincta, L. Generally distributed
— fodiens, Kirb. *Ripley* (Morice), *Godalming* (Latter)
— marginata, Sm. *Weybridge* (Marshall)
— daviesana, Sm. Generally distributed

Prosopis, Latr.
— cornuta, Sm. *Godalming* (Latter), *Reigate* (Saunders), *Woking* (Morice), *Shiere* (Capron)
— dilatata, Kirb. *Woking* (Morice)
— communis, Nyl. Generally distributed
— signata, Panz. *Reigate*, *Chobham* (Saunders), *Woking* (Morice)
— hyalinata, Sm. Generally distributed
— confusa, Nyl. *Charlwood*, *Chobham*, *Woking* (Saunders), *Ottershaw*, *Ripley* (Morice)
— brevicornis, Nyl. *Charlwood*, *Woking* (Saunders), *Wisley* (Morice)
— pictipes, Nyl. *Reigate*, *Chobham* (Saunders), *Ripley* (Morice)

ANDRENIDÆ

Sphecodes, Latr.
— gibbus, L. Generally distributed
— reticulatus, Thoms. *Chobham*, *Woking* (Saunders), *Ripley* (Morice)
— subquadratus, Sm. } Generally distributed
— pilifrons, Thoms. }
— similis, Wesm. }

ANDRENIDÆ (*continued*)

Sphecodes ferruginatus, Schk. *Clandon* (Morice)
— hyalinatus, Schk. *Clandon* (Morice), *Box Hill* (Beaumont)
— puncticeps, Thoms. *Reigate*, *Woking*, *Chobham* (Saunders)
— longulus, v. Hag. *Woking*, *Chobham* (Saunders), *Weybridge*, *Wisley* (Morice), *Godalming* (Latter)
— variegatus, v. Hag. *Chobham* (Saunders), *Weybridge* (Morice)
— dimidiatus, v. Hag. *Woking*, *Chobham* (Saunders), *Godalming* (Latter)
— affinis, v. Hag. Generally distributed

Halictus, Latr.
— rubicundus, Chr. Generally distributed
— maculatus, Sm. *Weybridge* (Smith)
— xanthopus, Kirb. *Shiere* (Capron), *Burford Bridge* (Marshall)
— leucozonius, Schr. Generally distributed
— zonulus, Sm. *Holmwood* (Mortimer), *Chobham*, *Woking* (Saunders), *Weybridge* (Smith), *Ripley* (Morice)
— quadrinotatus, Kirb. Generally distributed
— lævigatus, Kirb. *Reigate*, *Clandon* (Saunders), *Shiere* (Capron), *Cobham* (Morice)
— sexnotatus, Kirb. *Chobham*, *Woking* (Saunders), *Weybridge* (Smith)
— prasinus, Sm. *Chobham*, *Woking* (Saunders), *Ripley* (Morice)
— malachurus, Kirb. *Wandsworth*, *Chobham* (Saunders)
— cylindricus, Fab. } Generally distributed
— albipes, Kirb. }
— longulus, Sm. *Chobham* (Saunders)
— pauxillus, Schk. *Charlwood* (Saunders), *Shiere* (Capron)
— subfasciatus, Nyl. *Reigate* (Saunders), *Shiere* (Capron), *Clandon*, *Box Hill* (Morice), *Holmwood* (Mortimer)
— villosulus, Kirb. Generally distributed
— puncticollis, E. Saund. *Coombe Wood* (Brunetti)
— minutus, Kirb. *Woking*, *Chobham*, *Clandon* (Saunders), *Shiere* (Capron)
— nitidiusculus, Kirb. Generally distributed
— breviceps, E. Saund. *Woking*, *Chobham* (Saunders), *Clandon*, *Guildford* (Morice)
— punctatissimus, Schk. *Reigate*, *Chobham*, *Woking*, *Wandsworth* (Saunders)
— minutissimus, Kirb. } Generally
— tumulorum, L. } distributed
— smeathmanellus, Kirb. *Godalming* (Latter)
— morio, Fab. Generally distributed

ANDRENIDÆ (*continued*)

Halictus leucopus, Kirb. *Chobham*, *Woking* (Saunders), *Shiere* (Capron), *Godalming* (Latter)

Andrena, Fab.
— albicans, Kirb. Generally distributed
— pilipes, Fab. *Woodham* (Morice), *Chobham* (Saunders), *Godalming* (Latter), *Shirley* (Smith)
— tibialis, Kirb. Generally distributed
— bimaculata, Kirb. *Woking*, *Chobham* (Saunders), *Shirley* (Smith), *Ripley*, *Worplesdon* (Morice)
— florea, Fab. *Woking*, *Chobham* (Saunders), *Weybridge* (Smith)
— rosæ, Panz. Generally distributed
— cineraria, L. *Wandsworth* (Saunders)
— thoracica, Fab. Generally distributed
— nitida, Fourc. *Wandsworth*, *Woking* (Saunders), *Coombe Wood* (Smith), *Godalming* (Latter), *Cobham*, *Ottershaw* (Morice)
— fulva, Schr. }
— clarkella, Kirb. } Generally
— nigro-ænea Kirb. } distributed
— gwynana, Kirb. }
— angustior, Kirb. *Wandsworth*, *Reigate*, *Chobham*, *Woking*, *Clandon* (Saunders), *Godalming* (Latter)
— præcox, Scop. *Chobham*, *Woking* (Saunders), *Weybridge* (Smith), *Godalming* (Latter)
— varians, Rossi. *Wandsworth*, *Woking*, *Clandon* (Saunders)
— helvola, L. *Esher*, *Reigate* (Saunders), *Stoke d'Abernon* (Morice)
— fucata, Sm. *Chobham* (Saunders), *Oxshott*, *Ockham* (Morice)
— denticulata, Kirb. *Chobham*, *Woking* (Saunders), *Godalming* (Latter)
— fuscipes, Kirb. *Chobham*, *Woking* (Saunders), *Ripley* (Morice), *Holmwood* (Mortimer)
— fulvicrus, Kirb. Generally distributed
— bucephala, Steph. *Chobham* (Smith), *Box Hill* (Beaumont)
— cetii, Schr. *Chobham*, *Woking*, *Clandon* (Saunders), *Croydon* (Smith)
— cingulata, Fab. *Chobham*, *Woking* (Saunders), *Holmwood* (Mortimer)
— albicrus, Kirb. Generally distributed
— argentata, Sm. *Chobham* (Saunders), *Frensham*, *Ripley* (Morice)
— chrysosceles, Kirb. *Reigate*, *Charlwood*, *Chobham* (Saunders), *Ockham* (Morice)
— analis, Panz. *Chobham*, *Woking* (Saunders), *Weybridge* (Smith)
— coitana, Kirb. *Woking*, *Chobham* (Saunders)

ANDRENIDÆ (*continued*)

Andrena lucens, Imh. *Chobham*, *Woking* (Saunders), *Box Hill* (Ramsden)
— fulvago, Chr. *Chobham*, *Woking* (Saunders), *Weybridge* (Smith)
— humilis, Imh. *Reigate*, *Woking*, *Chobham* (Saunders), *Oxshott* (Morice)
— labialis, Kirb. } Generally distributed
— minutula, Kirb. }
— nana, Kirb. }
— proxima, Kirb. *Weybridge* (Smith)
— dorsata, Kirb. *Woking*, *Chobham* (Saunders), *Cobham* (Morice)
— afzeliella, Kirb. } Generally distributed
— wilkella, Kirb. }
— similis, Sm. *Wandsworth*, *Woking*, *Chobham* (Saunders), *Bisley*, *Oxshott* (Morice)
Macropis, Panz.
— labiata, Fab. *Woking* (Enock)
Dasypoda, Latr.
— hirtipes, Latr. *Godalming* (Latter), *Chobham*, *Woking* (Saunders)
Cilissa, Leach.
— hæmorrhoidalis, Fab. *Godalming* (Latter), *Shirley*, *Weybridge* (Smith), *Chobham* (Saunders)
— leporina, Panz. *Woking*, *Chobham* (Saunders)
Panurgus, Panz.
— calcaratus, Scop. *Godalming* (Latter), *Woking*, *Chobham* (Saunders)
— ursinus, Gmel. *Godalming* (Latter), *Woking*, *Chobham* (Saunders)
Dufourea, Lep.
— vulgaris, Schk. *Woking* (Billups), *Chobham* (Saunders)
Nomada, Fab.
— fucata, Panz. *Godalming* (Latter)
— solidaginis, Panz. Generally distributed
— sexfasciata, Panz. *Chobham* (Saunders)
— succincta, Panz. Generally distributed
— lineola, Panz. *Wandsworth*, *Woking* (Saunders)
— alternata, Kirb. Generally distributed
— jacobææ, Panz. *Clandon* (Saunders), *Woking*, *Chobham* (Morice)
— alboguttata, H.-S. *Chobham* (Saunders), *Ripley* (Morice), *Frensham* (Thornley)
— ruficornis, L. } Generally distributed
— borealis, Zett. }
— bifida, Thoms. }
— ochrostoma, Kirb. *Chobham*, *Woking* (Saunders)
— atrata, Smith. *Clandon* (Saunders), *Woking* (Morice)
— roberjeotiana, Panz. *Chobham*, *Woking* (Saunders)
— ferruginata, Kirb. *Chobham* (Morice), *Woking* (Saunders), *Redhill* (Smith)

ANDRENIDÆ (*continued*)

Nomada fabriciana, L. Generally distributed
— flavoguttata, Kirb. *Guildford* (Champion), *Cobham*, *Ottershaw*, *Woking* (Morice)
— furva, Panz. Generally distributed

APIDÆ

Epeolus
— rufipes, Thoms. *Woking*, *Chobham* (Saunders)
Ceratina, Latr.
— cyanea, Fab. *Weybridge* (Smith)
Chelostoma, Latr.
— florisomne, L. *Holmwood* (Mortimer), *Wandsworth*, *Chobham* (Saunders), *Godalming* (Latter)
— campanularum, Kirb. *Chobham*, *Woking* (Saunders)
Heriades, Spin.
— truncorum, L. *Weybridge* (Morice)
Melecta, Latr.
— luctuosa, Scop. *Chobham* (Saunders)
— armata, Panz. *Woking*, *Chobham* (Saunders), *Godalming* (Latter)
Cœlioxys, Latr.
— vectis, Curt. *Shirley*, *Wimbledon* (Smith)
— quadridentata, L. *Woking*, *Chobham* (Saunders), *Oxshott* (Morice)
— rufescens, Lep. *Chobham* (Saunders), *Holmwood* (Mortimer)
— elongata, Lep. *Woking*, *Chobham* (Saunders), *Oxshott*, *Ripley* (Morice)
— acuminata, Nyl. *Chobham* (Saunders)
Megachile, Latr.
— maritima, Kirb. *Chobham*, *Wimbledon* (Saunders)
— willughbiella, Kirb. Generally distributed
— circumcincta, Lep. *Chobham*, *Woking* (Saunders)
— ligniseca, Kirb. *Chobham*, *Woking*, *Surbiton* (Saunders)
— ericetorum, Lep. *Weybridge* (Smith)
— versicolor, Sm. *Woking* (Morice), *Weybridge* (Smith)
— centuncularis, L. Generally distributed
— argentata, Fab. *Weybridge* (Smith)
Anthidium, Fab.
— manicatum, L. *Godalming* (Latter), *Wimbledon* (F. S. Saunders), *Woking* (Morice), *Holmwood* (Mortimer)
Stelis, Panz.
— aterrima, Panz. *Holmwood* (Mortimer), *Weybridge* (Smith)
— phœoptera, Kirb. *Battersea* (Smith)
— octomaculata, Smith. *Mayford*, near *Woking* (Morice)
Osmia, Panz.
— rufa, L. Generally distributed
— pilicornis, Sm. *Shirley* (Rothney), *Holmwood* (Mortimer)

APIDÆ (*continued*)

Osmia cœrulescens, L. } Generally
— fulviventris, Panz. } distributed
— aurulenta, Panz. *Godalming* (Latter)
— bicolor, Schk. *Reigate* (Saunders), *Box Hill* (Morice)
— leucomelana, Kirb. *Charlwood*, *Woking*, *Chobham* (Saunders), *Weybridge*, *Ottershaw* (Morice)
— spinulosa, Kirb. *Reigate* (Saunders), *Croydon* (Smith)

Eucera, Scop.
— longicornis, L. *Godalming* (Latter), *Chobham*, *Woking* (Saunders)

Anthophora, Latr.
— retusa, L. *Chobham*, *Woking* (Saunders), *Godalming* (Latter)
— pilipes, Fab. Generally distributed
— furcata, Panz. *Chobham* (Saunders), *Godalming* (Latter)

Saropoda, Latr.
— bimaculata, Panz. *Chobham*, *Woking* (Saunders), *Weybridge*, *Coombe Wood* (Smith), *Godalming* (Latter)

Psithyrus, Lep.
— rupestris, Fab. Generally distributed

APIDÆ (*continued*)

Psithyrus vestalis, Fourc. } Generally
— barbutellus, Kirb. } distributed
— campestris, Panz. *Chobham* (Saunders), *Godalming* (Latter)
— quadricolor. Generally distributed

Bombus, Latr.
— venustus, Smith. *Woking* (Morice)
— agrorum, Fab. } Generally
— latreillellus, Kirb. } distributed
var. distinguendus. *Shirley*, *Norwood* (Smith)
— hortorum, L. } Generally
var. subterraneus. } distributed
var. harrisellus. }
— jonellus, Kirb. *Woking*, *Chobham* (Saunders), *Coombe Wood*, *Shirley*, *Purley Downs* (Smith)
— pratorum, L. } Generally
— sylvarum, L. } distributed
— derhamellus, Kirb. }
— soroënsis, Fab. *Croydon* (Rothney)
— lapidarius, L. } Generally distributed
— terrestris, L. }

Apis, L.
— mellifica. Generally distributed

CHRYSIDIDÆ

The Chrysids, or *Hymenoptera tubulifera*, are insects with brilliant (chiefly metallic) colours, 13-jointed antennæ in both sexes, and single-jointed trochanters, which last character they share with the *Aculeata*. The neuration of their wings, though very ill-developed or rather perhaps obsolescent, also connects them on the whole with that group. The apical segments of their abdomens are thinly membranous, nearly colourless, and so retracted one within another (telescope-fashion) into the body of the insect, that as a rule only the three basal segments are visible. The females are armed with a sting-like ovipositor, but, except in *Cleptes*, no poison-bag occurs. That genus is believed to be in some way parasitic on *Tenthredinidæ* (according to Lepelletier on *Nematus*), but scarcely anything is really known on the subject. Other Chrysids infest the cells of various *Aculeata*, depositing eggs, from which larvæ are produced, which devour the aculeate larvæ, and appear as *imagines* in their stead. *Ellampus* seems to attack in this way chiefly bramble-piercing genera like *Pemphredon*; *Hedychrum* and *Hedychridium* infest rather the genera that burrow in sand (e.g. *Cerceris*, *Tachysphex* and *Astatus*); *Chrysis ignita* attacks many solitary wasps and bees of various habits; *C. viridula* and *neglecta* are especially attached to *Odynerus spinipes*, while *C. cyanea* is to be found almost exclusively about old palings and the like which are riddled with the burrows of *Chelostoma*, *Trypoxylon*, etc.

We have but few species of Chrysids in England, perhaps not more than five-and-twenty, and I have myself taken most of these in Surrey. *Chrysis hirsuta*, Gerst, and *osmiæ*, Th., are probably confined to

more mountainous or more northern districts ; *C. pustulosa* comes as near to us as Reading, but I have not heard of it in Surrey ; nor has *C. ruddii* to my knowledge occurred in the county, though Smith says he has occasionally found it 'near London,' so that we may yet hope to find it here.

One species, *H. coriaceum*, is recorded from Surrey only ; and if *Holopyga gloriosa* be really a British insect, it also probably may be added to the Surrey list, but the evidence is not completely satisfactory.

The Chrysids which I know for certain to occur in Surrey are the following :—

LIST OF SURREY CHRYSIDS

Cleptes pallipes, Lep. *Clandon* (Morice)
Notozus panzeri, F. *Chobham* (Saunders), *Woking*, *Ripley* (Morice), *Byfleet* (Smith)
Ellampus auratus, L. Common everywhere (Morice)
— aenus, F. *Woking*, *Chobham* (Morice)
— cæruleus, Dhb. *Chobham* (Morice)
Hedychridium integrum, Dhlb. *Chobham* (Morice)
— coriaceum, Dhlb. *Ottershaw*, *Woking* (Morice)
— minutum, Lep. *Chobham*, *Woking*, etc. (Morice), *Weybridge* (Smith)
Hedychridium roseum, Rossi. *Chobham* (Morice)
Hedychrum nobile, Scop.? (=lucidulum, F.) *Woking* (Saunders)
Chrysis neglecta, Shuck. *Longcross* (Morice), *Chobham* (Saunders)
— cyanea, L. Generally distributed (Morice)
— viridula, L. (=bidentata, L.) *Longcross*, *Chobham*, etc. (Morice)
— fulgida, L. *Woking*, *Byfleet* (Morice), *Weybridge* (Smith)
— succincta, L. *Woking* and *Ripley* (Morice)
— ignita, L. Common everywhere (Morice)

PHYTOPHAGA

The Phytophagous *Hymenoptera*, i.e. sawflies, wood wasps and gall-flies, are abundant throughout Surrey. Several well known entomologists have worked in the county and have obtained good results. No doubt many species still remain to be discovered, for comparatively few naturalists take up this particular branch of entomology. Consequently much interesting work might be done in apportioning the larvæ to their imagos and elucidating their life histories. Sawflies can easily be bred and reared in captivity, and it is only by doing this in large numbers that we can hope to arrive at the laws which control that most mysterious phenomenon, parthenogenesis. In nearly all species the females far outnumber the males, and in many kinds the male is extremely rare, scarcely occurring in the proportions of one to a hundred, and in a few cases it is absolutely non-existent. *Pœcilosoma luteolum* may be given as an example of a common species which only produces females. Several thousands of these flies have been bred for six years in succession and all turned out to be females. On the other hand many of the smaller Nemati only produce males from unfertilized eggs ; others hatch out males and females in fairly equal proportions. No rule can as yet be given for this phenomenon, as one species will produce males only from virgin eggs while its near relation will persistently produce females ; such are *Abia sericea* and *A. fasciata*.

Some few of the larvæ are dimorphic, for example *Hylotoma gracilicornis*, the larva of which is generally green with black and yellow

markings, may sometimes have the green replaced by bright mulberry ; this is a very pretty variety. It is not known if the descendants of a mulberry coloured larva will also be mulberry or whether it is merely a 'sport,' but the two forms may be found feeding side by side. *Cimbex lutea* and *Nematus turgidus* also have occasional red forms ; these abnormally coloured larvæ are very delicate and difficult to rear.

Many species have brightly coloured larvæ which feed in company and are very conspicuous. They protect themselves from birds by their abdominal glands which emit a powerful and disagreeable odour and (probably) by a disagreeable taste. The *Crœsus* genus furnish good examples of this peculiarity, especially *C. septentrionalis*, which gives out a disgusting and fetid smell when disturbed. The *Dineura* genus, notably *D. stilata*, are protected in the same manner. *Nematus abdominalis* on the other hand, an inconspicuous green larva, is very fragrant, its scent resembling that of the lemon verbena.

Solitary feeding larvæ generally trust to protective colouring for their safeguard and are often very difficult to detect even when they are known to be on a given plant. Such is *Camponiscus luridiventris*, an absolutely flat green larva which lies stretched out on the undersides of alder leaves on which it feeds. It resembles some kind of scale insect rather than a caterpillar. Others imitate bird droppings, for instance *Eriocampa ovata*, which is covered with a white flaky substance disguising it very effectually. The flakes can easily be rubbed off and disclose a pale green larva, but they are renewed and intensified after each moult.

All these devices however effectual against birds seem powerless to repel the attacks of ichneumons and parasitic *Diptera* to which sawflies are exceedingly subject. Every species suffers from one or more of these parasites, and it is chiefly by their agency that in this country sawflies do not often multiply sufficiently to do serious damage, as has sometimes happened in Germany where swarms of *Lophyrus pini* have destroyed whole pine plantations.

Gallflies form a very large group of insects and much still remains to be discovered concerning their economy. Wherever oaks and roses thrive there will the gall makers and their inquilines and parasites abound. Galls vary infinitely in appearance, texture, structure and position ; they may be situated on any part of a plant including the roots, may contain one or many inhabitants, may drop off the plant in autumn or remain growing with the twig long after the fly has escaped. They may be smooth, spiny or warty ; green, white, brown, yellow, pink or purple ; regular or irregular, round or spindle shaped, globular or ovoid ; woody, succulent or stringy. Mr. Cameron in his *Monograph*, after mentioning the theories held by different authorities on the origin of galls and how they are produced, concludes that as regards the *Cynipidæ* 'there is no evidence that the venom emitted by the insect when laying has anything to do with the origin of the gall, and that as observation shows that the mechanical irritation produced by the birth and growth of the larva is the primary factor in gall genesis, we may fairly conclude that the theory

of mechanical irritation is more in consonance with observed facts than the infection one.'

Lists of species taken in the county have been supplied by Mr. Alfred Beaumont and the Rev. F. D. Morice, the latter having also most kindly revised and corrected the lists and arranged them according to Konows' system of nomenclature.

LIST OF THE PHYTOPHAGOUS HYMENOPTERA OCCURRING IN THE COUNTY

Lyda stellata, Christ. *Oxshott* (Beaumont)
Pamphilius silvarum, Steph. } *Woking* (Morice)
— inanitus, Vill. }
— silvaticus, L. *Chobham* (Morice)
— depressus, Schr. *Oxshott* (Beaumont)
Cephus arundinis, Gir. *Box Hill* (Beaumont)
— tabidus, F. *Ripley* (Morice)
— pallipes, Klg. *Woking* (Morice)
— pygmæus, L. } *Ripley* (Morice)
Macrocephus linearis, Schr. }
Xyela julii, Bréb. *Oxshott* (Beaumont)
Xyphydria dromedarius, F. *Ripley* (Morice)
Trichiosoma lucorum, L. *Woking* (Morice)
Abia sericea, L. *Oxshott* (Beaumont)
— loniceræ, L. } *Woking* (Morice)
Arge ustulata, L. }
— pagana, Pz. *Reigate* (Chawner)
— cyanella, Klg. *Oxshott* (Beaumont)
— cyanocrocea, Forst. *Woking* (Morice)
Lophyrus sertiferus, Cam. *Oxshott* (Beaumont)
Camponiscus apicalis, Brischke. *Weybridge* (Billups)
Cryptocampus saliceti, Fall. *Chobham* (Morice)
Pontania leucosticta, Htg. } *Oxshott* (Beaumont)
— nigrolineata, Cam. }
— salicis cinereæ, Retz. *Byfleet* (Beaumont)
— gallicola, Steph. *Oxshott* (Beaumont)
— bridgmanni, Cam. *Box Hill* (Beaumont)
Pteromus brevivalvis, Thoms. *Box Hill* (Morice)
— curtispinus, Thoms. *Woking* (Beaumont)
— virescens, Htg. *Oxshott* (Morice)
— myosotidis, F. *Box Hill* (Beaumont)
— croceus, Fall. *Byfleet* (Beaumont)
— ribesii, Scop. *Oxshott* (Beaumont)
— melanaspis, Htg. *Oxshott* (Beaumont)
Amauronematus hæmorrhoidalis, Cam. (Billups)
— amplus, Knw. *Oxshott* (Morice)
Crœsus septentrionalis, L. *Box Hill* (Beaumont)
Holcocneme lucida, Pz. *Guildford* (Morice)
Pachynematus rumicis, Fall. *Chobham* (Morice)
— albipennis, Htg. *Byfleet* (Morice)
— capreæ, Pz. }
— salicivorus, Cam. } *Box Hill* (Beaumont)
Lygæonematus mollis, Htg. }
— compressicornis, F. }
— biscalis, Forst. *Dorking* (Morice)
Pristiphora pallipes, Lep. *Woking* (Morice)
Pristiphora pallidiventris, Fall. *Box Hill* (Beaumont)
— fulvipes, Fall. *Byfleet* (Morice)
— betulæ, Retz. *Wimbledon* (Bridgman)
— n. sp. ? allied to subbifida, Th. *Cranleigh* (Morice)
Phyllotoma vagans, Fall. } *Oxshott* (Beaumont)
Eriocampoides rosæ, Harris. }
— cinxia, Klg. *Woking* (Morice)
— varipes, Klg. } *Oxshott* (Beaumont)
— annulipes, Klg. }
— limacina, Retz. *Reigate* (Chawner)
Hoplocampa rutilicornis, Klg. *Dorking* (Morice)
— plagiata, Klg. *Weybridge* (Billups)
— ferruginea, F. *Dorking* (Morice)
— cratægi, Klg. *Chobham* (Morice)
— pectoralis, Thoms. } *Oxshott* (Beaumont)
Mesonema opaca, F. }
Phymatocera atterima, Klg. *Putney* (Curtis)
Tomostethus nigritus, F. *Woking* (Beaumont)
— fuliginosus, Schr. *Oxshott* (Morice)
— funereus, Klg. }
— dubius, Grnl. } *Oxshott* (Beaumont)
— luteiventris, Klg. }
Scoleoneura vicina, Knw. }
— nana, Klg. } *Woking* (Morice)
Blennocampa assimilis, Fall. }
— alternipes, Kl. }
— subcana, Zadd. *Oxshott* (Beaumont)
Monophadnus albipes, Grnl. *Chobham* (Morice)
Kaliosyphinga ulmi, Cam. *Byfleet* (Beaumont)
— melanopoda, Cam. } *Oxshott* (Beaumont)
Fenusa albipes, Cam. }
Fenella nigrita, Westw. *Chobham* (Morice)
Athalia spinarum, F. *Woking* (Morice)
— lineolata, Sep. *Weybridge* (Beaumont)
— lugens, Kl. *Woking* (Morice)
— glabricollis, Thoms. *Oxshott* (Beaumont)
Selandria serva, F. *Woking* (Morice)
— stramineipes, Kl. *Box Hill* (Beaumont)
— morio, F. } *Woking* (Morice)
Strongylogaster cingulatus, F. }
Eriocampa ovata, Cam. *Byfleet* (Beaumont)
Pœcilosoma excisa, Th. } *Oxshott* (Morice)
— immersa, Klg. }
— klugi, Steph. *Box Hill* (Beaumont)
— submutica, Thoms. *Oxshott* (Beaumont)

Emphytus succinctus, Kl. *Woking* (Morice)
— cinctus, L. } *Box Hill* (Beaumont)
— togatus, F. }
— cingillum, Kl. *Woking* (Morice)
— calceatus, Kl. *Ripley* (Morice)
— tener, Fall. *Oxshott* (Beaumont)
— grossulariæ, Klg. *Weybridge* (Beaumont)
Taxonus glabratus, Fall. *Woking* (Morice)
— fletcheri, Cam. *Oxshott* (Beaumont)
Dolerus pratensis, Fall. *Box Hill* (Beaumont)
— æriceps, Thoms. } *Woking* (Morice)
— thomsoni, Knw. }
— anticus, Klg. *Ripley* (Stephens)
— puncticollis, Thoms. *Woking* (Morice)
— nigratus, Müll. *Box Hill* (Beaumont)
— picipes, Klg. *Oxshott* (Beaumont)
— rugosulus, V. Dalla Torre. } *Woking* (Morice)
Loderus palmatus, Kl. }
— vestigialis, Kl. }
— pratorum, Fall. }
Rhogogastera viridis, L. *Reigate* (Chawner)
— picta, Klg. } *Box Hill* (Beaumont)
— fulvipes, Scop. }
— aucupariæ, Kl. *Chobham* (Morice)

Tenthredopsis litterata, Geoff. *Virginia Water* (Morice)
— tiliæ, Pz. } *Oxshott* (Beaumont)
— dorsalis, Lep. }
— coqueberti, Klg. }
— campestris, L. *Box Hill* (Beaumont)
— var. fulviceps, Steph. } *Virginia Water* (Morice)
— excisa, Thoms. }
— nassata, L. sec. Konow. *Byfleet* (Morice)
— thornleyi, Knw. *Stoke d'Abernon* (Morice)
Pachyprotasis rapæ, L. *Box Hill* (Beaumont)
Macrophya ribis, Schr. *Cobham* (Morice)
— punctum album, L. *Box Hill* (Beaumont)
— rufipes, L. *Cobham* (Morice)
— blanda, F. *Chobham* (Morice)
— annulata, Geoff. *Reigate* (Chawner)
Allantus temulus, Scop. *Cranleigh* (Morice)
— scrophulariæ, L. *Woking* (Morice)
— flavipes, Four. *Battersea* (Curtis)
— distinguendus, V. Stein. *Byfleet* (Morice)
— arcuatus, Forst. } *Reigate* (Chawner)
Tenthredo livida, L. }
— solitaria, Scop. (*Surrey*, Cam. vol. i. p. 80)
— mesomela, L. *Reigate* (Chawner)

COLEOPTERA

Beetles

The following list includes all the species known to me as occurring in Surrey, or of which I can find any record. The county has, perhaps, next to Kent, been more worked than any other in England ; hence the list is a very long one, though even now there are not a few fairly common species, known to occur in Kent, Sussex, or Essex, of which there appears to be no Surrey record. The localities where the insects have chiefly been found may be grouped under four heads : (1) Godstone, Caterham, Purley, Merstham, Redhill, Reigate, Betchworth, Dorking, Mickleham, Gomshall, Shiere, Merrow, Guildford, etc., on the line of the North Downs between Farnham and Limpsfield ; (2) Dulwich, Norwood, Shirley, Addington, Wimbledon, Merton, Richmond, Claygate, Oxshott, Esher, Ashtead, Leatherhead, Clandon, Weybridge, Woking, Horsell, Chobham and Bagshot, as well as various places along the south bank of the Thames between Putney and Egham, to the north of the North Downs ; (3) Earlswood, Charlwood, Leith Hill, Chiddingfold, Haslemere and Frensham, to the south of the North Downs ; (4) South London and the various towns, which have furnished many cosmopolitan forms not usually found in the open country.

The published lists of *Carabidæ*, *Dytiscidæ*, *Hydrophilidæ*, *Staphylinidæ*, etc., of the Reigate district, by Mr. J. Linnell, as well as a MS. catalogue of the *Coleoptera* of Chiddingfold, kindly lent by Mr. H. Donisthorpe, have been of great service in compiling the present list. It may be noted that nearly three-fourths of the total number of species have been found by myself in Surrey. Those marked with an asterisk have been recorded from this county only in Britain.

CICINDELIDÆ

Cicindela campestris, L.
— sylvatica, L.

CARABIDÆ

Cychrina

Cychrus rostratus, L.

Carabina

Carabus catenulatus, Scop.
— nemoralis, Müll.
— violaceus, L.
— granulatus, L.
— monilis, F.
— arvensis, F.
Calosoma inquisitor, L.

Notiophilina

Notiophilus biguttatus, F.
— substriatus, Wat.
— 4-punctatus, Dej.
— aquaticus, L.
— palustris, Duft.
— rufipes, Curt.

Nebriina

Leistus spinibarbis, F.
— fulvibarbis, Dej.
— ferrugineus, L.
— rufescens, F.
Nebria brevicollis, F.

Elaphrina

Blethisa multipunctata, I.
Elaphrus riparius, L.
— cupreus, Duft.
— uliginosus, F.

Loricerina

Loricera pilicornis, F.

Scaritina

Clivina fossor, L.
— collaris, Herbst
Dyschirius politus, Dej.
— æneus, Dej.
— globosus, Herbst

Panagæina

Panagæus quadripustulatus, Sturm

Licinina

Badister unipustulatus, Bon.
— bipustulatus, F.
— sodalis, Duft.
Licinus silphoides, F.
— depressus, Payk.

Callistina

Callistus lunatus, F.

Chlæniina

Chlænius vestitus, Payk.
— nigricornis, F.

Oodina

Oodes helopioides, F.

Stenolophina

Stenolophus teutonus, Schr.
— vespertinus, Panz.
Acupalpus dorsalis, F.
— exiguus, Dej.
— brunnipes, Sturm
— meridianus, L.
— consputus, Duft.
Bradycellus distinctus, Dej.
— verbasci, Duft.
— harpalinus, Dej.
— similis, Dej.

Harpalina

Harpalus sabulicola, Panz.
— rotundicollis, Fairm.
— punctatulus, Duft.
— azureus, F.
— rupicola, Sturm
— puncticollis, Payk.
— rectangulus, Thoms.
— rufibarbis, F.
— ruficornis, F.
— æneus, F.
— consentaneus, Dej.
— rubripes, Duft.
— discoideus, F.
— caspius, Stev.
— latus, L.
— tardus, Panz.
— anxius, Duft.
— ignavus, Duft.

Anisodactylina

Anisodactylus binotatus, F.
— nemorivagus, Duft.

Zabrina

Zabrus gibbus, F.

Pterostichina

Stomis pumicatus, Panz.
Platyderus ruficollis, Marsh.
Pterostichus cupreus, L.
— versicolor, Sturm
— dimidiatus, Ol.
— lepidus, F.
— madidus, F.
— niger, Schall.
— vulgaris, L.
— anthracinus, Ill.
— nigrita, F.
— gracilis, Dej.
Pterostichus minor, Gyll.
— strenuus, Panz.
— diligens, Sturm
— picimanus, Duft.
— inæqualis, Marsh.
— vernalis, Gyll.
— striola, F.

Amarina

Amara fulva, Dej.
— apricaria, Sturm
— consularis, Duft.
— spinipes, auct.
— patricia, Duft.
— infima, Duft.
— rufocincta, Dej.
— bifrons, Gyll.
— famelica, Zimm.
— ovata, F.
— similata, Gyll.
— acuminata, Payk.
— tibialis, Payk.
— lunicollis, Schiöd.
— familiaris, Duft.
— lucida, Duft.
— trivialis, Gyll.
— communis, Panz.
— continua, Thoms.
— plebeia, Gyll.

Anchomenina

Calathus cisteloides, Panz.
— fuscus, F.
— flavipes, Fourc.
— melanocephalus, L.
— piceus, Marsh.
Taphria nivalis, Panz.
Pristonychus terricola, Herbst
Sphodrus leucophthalmus, L.
Anchomenus angusticollis, F.
— dorsalis, Müll.
— albipes, F.
— oblongus, Sturm
— livens, Gyll.
— marginatus, L.
— sexpunctatus, L.
— parumpunctatus, F.
— atratus, Duft.
— viduus, Panz.
— versutus, Gyll.
— micans, Nic.
— scitulus, Dej.
— fuliginosus, Panz.
— gracilis, Gyll.
— piceus, L.
— quadripunctatus, De G.
Olisthopus rotundatus, Payk.

Bembidiina

Tachys bistriatus, Duft.
Bembidium rufescens, Guér.

Bembidium quinquestriatum, Gyll.
— obtusum, Sturm
— guttula, F.
— mannerheimi, Sahl.
— biguttatum, F.
— assimile, Gyll.
— clarki, Daws.
— sturmi, Panz.
— articulatum, Panz.
— doris, Panz.
— gilvipes, Sturm
— lampros, Herbst
— nigricorne, Gyll.
— tibiale, Duft.
— nitidulum, Marsh.
— affine, Steph.
— quadriguttatum, F.
— quadrimaculatum, Gyll.
— testaceum, Duft.
— concinnum, Steph.
— femoratum, Sturm
— bruxellense, Wesm.
— littorale, Ol.
— bipunctatum, L.
— punctulatum, Drap.
— flammulatum, Clairv.
— obliquum, Sturm
Tachypus flavipes, L.

TRECHINA

Trechus discus, F.
— rubens, F.
— minutus, F.
— secalis, Payk.
Patrobus excavatus, Payk.

CYMINDINA

Cymindis axillaris, F.

ODACANTHINA

Odacantha melanura, Payk.

LEBIINA

Lebia cyanocephala, L.
— chlorocephala, Hoff.
— crux-minor, L.
Demetrias atricapillus, L.
Dromius linearis, Ol.
— agilis, F.
— meridionalis, Dej.
— quadrimaculatus, L.
— quadrinotatus, Panz.
— quadrisignatus, Dej.
— melanocephalus, Dej.
— nigriventris, Thoms.
— sigma, Rossi
— vectensis, Rye
Blechrus maurus, Sturm
Metabletus foveola, Gyll.
— truncatellus, L.
— obscuro-guttatus, Duft.

BRACHININA

Brachinus crepitans, L.

HALIPLIDÆ

Brychius elevatus, Panz.
Haliplus obliquus, F.
— confinis, Steph.
— flavicollis, Sturm
— fulvus, F.
— cinereus, Aubé
— ruficollis, De G.
— fluviatilis, Aubé
— lineatocollis, Marsh.
Cnemidotus impressus, F.

PELOBIIDÆ

Pelobius tardus, Herbst

DYTISCIDÆ

NOTERINA

Noterus clavicornis, De G.
— sparsus, Marsh.

LACCOPHILINA

Laccophilus obscurus, Panz.
— interruptus, Panz.

HYDROPORINA

Bidessus geminus, F.
Hyphydrus ovatus, L.
Cœlambus versicolor, Schall.
— quinquelineatus, Zett.
— inæqualis, F.
— decoratus, Gyll.
— confluens, F.
— impressopunctatus, Schall.
Deronectes assimilis, Payk.
— depressus, F.
— 12-pustulatus, F.
Hydroporus pictus, F.
— granularis, L.
— flavipes, Ol.
— lepidus, Ol.
— rivalis, Gyll.
— dorsalis, F.
— lineatus, F.
— umbrosus, Gyll.
— angustatus, Sturm
— gyllenhali, Schiöd.
— vittula, Er.
— palustris, L.
— erythrocephalus, L.
— rufifrons, Duft.
— longulus, Muls.
— melanarius, Sturm
— memnonius, Nic.
— obscurus, Sturm
— nigrita, F.
— pubescens, Gyll.
— planus, F.
— lituratus, F.

DYTISCINA

Agabus guttatus, Payk.
— biguttatus, Ol.
— paludosus, F.
— didymus, Ol.
— nebulosus, Forst.
— femoralis, Payk.
— sturmi, Gyll.
— chalconotus, Panz.
— bipustulatus, L.
Platambus maculatus, L.
Ilybius fuliginosus, F.
— fenestratus, F.
— ater, De G.
— obscurus, Marsh.
— subæneus, Er.
— ænescens, Thoms.
Copelatus agilis, F.
Rhantus grapii, Gyll.
— exoletus, Forst.
— pulverosus, Steph.
— notatus, Berg.
— bistriatus, Berg.
Colymbetes fuscus, L.
Dytiscus punctulatus, F.
— marginalis, L.
— circumflexus, F.
Hydaticus transversalis, Berg.
— seminiger, De G.
Acilius sulcatus, L.
— fasciatus, De G.

GYRINIDÆ

Gyrinus natator, Scop.
— marinus, Gyll.
Orectochilus villosus, Müll.

HYDROPHILIDÆ

HYDROPHILINA

Hydrophilus piceus, L.
Hydrous caraboides, L.
Hydrobius fuscipes, L.
Paracymus nigroæneus, Sahl.
Anacæna globulus, Payk.
— limbata, F.
— bipustulata, Steph.
Philydrus testaceus, F.
— nigricans, Zett.
— melanocephalus, Ol.
— minutus, F.
— coarctatus, Gredl.
Cymbiodyta ovalis, Thoms.
Enochrus bicolor, Gyll.
Helochares lividus, Forst.
— punctatus, Sharp
Laccobius sinuatus, Mots.
— alutaceus, Thoms.
— minutus, L.
— bipunctatus, F.
Berosus signaticollis, Charp.

Berosus luridus, L.
— affinis, Brull.
Limnebius truncatellus, Thoms.
— papposus, Muls.
— nitidus, Marsh.
Chætarthria seminulum, Herbst

HELOPHORINA

Helophorus rugosus, Ol.
— nubilus, F.
— aquaticus, L.
— dorsalis, Marsh.
— æneipennis, Thoms.
— laticollis, Thoms.
— mulsanti, Rye
— affinis, Marsh.
— brevicollis, Thoms.
— brevipalpis, Bedel
— arvernicus, Muls.
Hydrochus elongatus, Schall.
— angustatus, Germ.
Octhebius pygmæus, F.
— bicolon, Germ.
— æneus, Steph.
Hydræna testacea, Curt.
— riparia, Kug.

SPHÆRIDIINA

Cyclonotum orbiculare, F.
Sphæridium scarabæoides, F.
— bipustulatum, F.
Cercyon hæmorrhous, Gyll.
— hæmorrhoidalis, Herbst
— obsoletus, Gyll.
— aquaticus, Muls.
— flavipes, F.
— lateralis, Marsh.
— melanocephalus, L.
— unipunctatus, L.
— quisquilius, L.
— nigriceps, Marsh.
— pygmæus, Ill.
— terminatus, Marsh.
— analis, Payk.
— lugubris, Payk.
— granarius, Er.
— minutus, Muls.
Megasternum boletophagum, Marsh.
Cryptopleurum atomarium, F.

STAPHYLINIDÆ

ALEOCHARINA

Homœusa acuminata, Märk.
Aleochara ruficornis, Grav.
— fuscipes, F.
— lata, Grav.
— brevipennis, Grav.
Aleochara tristis, Grav.
— bipunctata, Ol.
— cuniculorum, Kr.
— maculata, Bris.
— lanuginosa, Grav.
— lygæa, Kr.
— mœsta, Grav.
— succicola, Thoms.
— mycetophaga, Kr.
— brunneipennis, Kr.
— nitida, Grav.
— v. bilineata, Gyll.
— morion, Grav.
— spadicea, Er.
Microglossa suturalis, Sahl.
— pulla, Gyll.
— nidicola, Fairm.
— gentilis, Märk.
Oxypoda spectabilis, Märk.
— lividipennis, Mann.
— vittata, Märk.
— opaca, Grav.
— alternans, Grav.
— exoleta, Er.
— lentula, Er.
— umbrata, Grav.
— pectita, Sharp
— nigrina, Wat.
— exigua, Er.
— mutata, Sharp
— longiuscula, Er.
— formiceticola, Märk.
— recondita, Kr.
— hæmorrhoa, Mann.
— waterhousei, Rye
— annularis, Sahl.
— brachyptera, Steph.
— misella, Er.
Thiasophila angulata, Er.
— inquilina, Märk.
Ischnoglossa prolixa, Grav.
— corticina, Er.
Ocyusa incrassata, Kr.
— maura, Er.
— picina, Aubé
Phlœopora reptans, Grav.
— corticalis, Grav.
Ocalea castanea, Er.
— badia, Er.
Ilyobates nigricollis, Payk.
— propinquus, Aubé
— forticornis, Lac.
— glabriventris, Rye
Calodera nigrita, Mann.
— riparia, Er.
— æthiops, Grav.
— umbrosa, Er.
Chilopora longitarsis, Steph.
Dinarda märkeli, Kies.
— dentata, Grav.
Atemeles emarginatus, Payk.
— paradoxus, Grav.
Myrmedonia haworthi, Steph.
— collaris, Payk.
— limbata, Payk.
— funesta, Grav.
— humeralis, Grav.
— cognata, Märk.
— lugens, Grav.
— laticollis, Märk.
Astilbus canaliculatus, F.
Callicerus obscurus, Grav.
— rigidicornis, Er.
Thamiaræa cinnamomea, Grav.
— hospita, Märk.
Nototheca flavipes, Grav.
— confusa, Märk.
— anceps, Er.
Alianta incana, Er.
Homalota languida, Er.
— insecta, Thoms.
— pavens, Er.
— planifrons, Wat.
— gregaria, Er.
— luteipes, Er.
— fallax, Kr.
— pruinosa, Kr.
— luridipennis, Mann.
— gyllenhali, Thoms.
— londinensis, Sharp
— hygrotopora, Kr.
— elongatula, Grav.
— volans, Scrib.
— oblongiuscula, Sharp
— silvicola, Fuss.
— vicina, Steph.
— pagana, Er.
— graminicola, Gyll.
— occulta, Er.
— fungivora, Thoms.
— monticola, Thoms.
— nigella, Er.
— æquata, Er.
— angustula, Gyll.
— linearis, Grav.
— pilicornis, Thoms.
— debilis, Er.
— deformis, Kr.
— cæsula, Er.
— circellaris, Grav.
— elegantula, Bris.
—*rufo-testacea, Kr.
—*hypogæa, Rey
— splendens, Kr.
— ægra, Heer
— immersa, Heer
— cuspidata, Er.
— gemina, Er.
— vilis, Er.

Homalota laticeps, Thoms.
— analis, Grav.
— soror, Kr.
— exilis, Er.
— palleola, Er.
— validiuscula, Kr.
— depressa, Gyll.
— hepatica, Er.
— exarata, Sharp
— aquatica, Thoms.
— æneicollis, Sharp
— xanthoptera, Steph.
— euryptera, Steph.
— trinotata, Kr.
— xanthopus, Thoms.
— triangulum, Kr.
— fungicola, Thoms.
— ignobilis, Sharp
— boletobia, Thoms.
— liturata, Steph.
— coriaria, Kr.
— sodalis, Er.
— gagatina, Baudi
— divisa, Märk.
— nigricornis, Thoms.
— ravilla, Er.
— palustris, Kies.
— corvina, Thoms.
— puberula, Sharp
— atomaria, Kr.
— perexigua, Sharp
— scapularis, Sahl.
— dilaticornis, Kr.
— testaceipes, Heer
— oblita, Er.
— autumnalis, Er.
— sericea, Muls.
— indubia, Sharp
— mortuorum, Thoms.
— atricolor, Sharp
— inquinula, Grav.
— nigra, Kr.
— germana, Sharp
— celata, Er.
— sordidula, Er.
— canescens, Sharp
— cauta, Er.
— setigera, Sharp
— lævana, Muls.
— cinnamoptera, Thoms.
— macrocera, Thoms.
— atramentaria, Gyll.
— cadaverina, Bris.
— marcida, Er.
— intermedia, Thoms.
— longicornis, Grav.
— sordida, Marsh.
— testudinea, Er.
— aterrima, Grav.
— pygmæa, Grav.
Homalota muscorum, Bris.
— pilosiventris, Thoms.
— laticollis, Steph.
— fusca, auct.
— subsinuata, Er.
— montivagans, Woll.
— orbata, Er.
— fungi, Grav.
— orphana, Er.
— cribrata, Kr.
Gnypeta labilis, Er.
Tachyusa constricta, Er.
— coarctata, Er.
— scitula, Er.
— flavitarsis, Sahl.
— umbratica, Er.
— atra, Grav.
— concolor, Er.
*Borboropora kraatzi, Fuss.
Falagria sulcata, Payk.
— sulcatula, Grav.
— thoracica, Curt.
— obscura, Grav.
Autalia impressa, Ol.
— rivularis, Grav.
Encephalus complicans, Westw.
Gyrophæna pulchella, Heer
— affinis, Mann.
— poweri, Crotch
— gentilis, Er.
— nana, Payk.
— fasciata, Marsh.
— minima, Er.
— lævipennis, Kr.
— strictula, Er.
Agaricochara lævicollis, Kr.
Placusa pumilio, Grav.
— infima, Er.
— denticulata, Sharp
Epipeda plana, Gyll.
Silusa rubiginosa, Er.
Euryusa laticollis, Heer
Leptusa fumida, Er.
Sipalia ruficollis, Er.
Bolitochara lucida, Grav.
— bella, Märk.
— obliqua, Er.
Hygronoma dimidiata, Grav.
Oligota inflata, Mann.
— parva, Kr.
— pusillima, Grav.
— atomaria, Er.
— punctulata, Heer
— granaria, Er.
— flavicornis, Lac.
— apicata, Er.
Myllæna dubia, Grav.
— intermedia, Er.
— minuta, Grav.
Myllæna kraatzi, Sharp
— elongata, Matth.
— gracilis, Matth.
— infuscata, Matth.
— brevicornis, Matth.
Gymnusa brevicollis, Payk.
Deinopsis erosa, Steph.

TACHYPORINA

Hypocyptus longicornis, Payk.
— læviusculus, Mann.
— ovulum, Heer
— seminulum, Er.
— punctum, Mots.
— apicalis, Bris.
— discoideus, Er.
Conosoma littoreum, L.
— pubescens, Grav.
— immaculatum, Steph.
— lividum, Er.
Tachyporus obtusus, L.
— formosus, Matth.
— solutus, Er.
— pallidus, Sharp
— chrysomelinus, L.
— humerosus, Er.
— tersus, Er.
— hypnorum, F.
— pusillus, Grav.
— brunneus, F.
— transversalis, Grav.
Lamprinus saginatus, Grav.
Cilea silphoides, L.
Tachinus flavipes, F.
— humeralis, Grav.
— scapularis, Steph.
— bipustulatus, F.
— rufipes, L.
— subterraneus, L.
— marginellus, F.
— laticollis, Grav.
— elongatus, Gyll.
Megacronus cingulatus, Mann.
— analis, F.
— inclinans, Grav.
— formosus, Grav.
Bolitobius lunulatus, L.
— trinotatus, Er.
— exoletus, Er.
— pygmæus, F.
Mycetoporus lucidus, Er.
— splendens, Marsh.
— punctus, Gyll.
— lepidus, Grav.
— longulus, Mann.
— nanus, Er.
— angularis, Rey
— clavicornis, Steph.

Mycetoporus splendidus, Grav.
— longicornis, Kr.
Habrocerus capillaricornis, Grav.

TRICHOPHYINA

Trichophya pilicornis, Gyll.

STAPHYLININA

*Acylophorus glabricollis, Boisd.
Euryporus picipes, Payk.
Heterothops dissimilis, Grav.
— quadripunctula, Gyll.
Quedius longicornis, Kr.
— microps, Grav.
— ventralis, Ar.
— lateralis, Grav.
— mesomelinus, Marsh.
— fulgidus, F.
— puncticollis, Thoms.
— brevicornis, Thoms.
— cruentus, Ol.
— scitus, Grav.
— cinctus, Payk.
— brevis, Er.
— fuliginosus, Grav.
— tristis, Grav.
— molochinus, Grav.
— picipes, Mann.
— nigriceps, Kr.
— fumatus, Steph.
— maurorufus, Grav.
— umbrinus, Er.
— suturalis, Kies.
— scintillans, Grav.
—*kraatzi, Bris.
— rufipes, Grav.
— attenuatus, Gyll.
— semiæneus, Steph.
— boops, Grav.
Creophilus maxillosus, L.
Emus hirtus, L.
Leistotrophus nebulosus, F.
— murinus, L.
Staphylinus pubescens, De G.
— stercorarius, Ol.
— latebricola, Grav.
— cæsareus, Ceder
Ocypus olens, Müll.
— similis, F.
— cyaneus, Payk.
— brunnipes, F.
— fuscatus, Grav.
— cupreus, Rossi
— ater, Grav.
— morio, Grav.
— compressus, Marsh.
Philonthus splendens, F.
— intermedius, Boisd.
— laminatus, Creutz
— æneus, Rossi
— proximus, Kr.
— addendus, Sharp
— carbonarius, Gyll.
— decorus, Grav.
— politus, F.
— lucens, Er.
— varius, Gyll.
— marginatus, F.
— albipes, Grav.
— cephalotes, Grav.
— fimetarius, Grav.
— sordidus, Grav.
— fuscus, Grav.
— umbratilis, Grav.
— ebeninus, Grav.
— corvinus, Er.
— fumigatus, Er.
— debilis, Grav.
— sanguinolentus, Grav.
— cruentatus, Gmel.
— longicornis, Steph.
— varians, Payk.
— agilis, Grav.
— ventralis, Grav.
— discoideus, Grav.
— quisquiliarius, Gyll.
— thermarum, Aubé
— nigrita, Nord.
— fumarius, Grav.
— micans, Grav.
— nigritulus, Grav.
— trossulus, Nord.
— fulvipes, F.
— puella, Nord.
Actobius cinerascens, Grav.
— signaticornis, Rey
— villosulus, Steph.
— procerulus, Grav.
Xantholinus fulgidus, F.
— glabratus, Grav.
— punctulatus, Payk.
— ochraceus, Gyll.
— atratus, Heer
— glaber, Nord.
— linearis, Ol.
— longiventris, Heer
Leptacinus parumpunctatus, Gyll.
— batychrus, Gyll.
— linearis, Grav.
— formicetorum, Märk.
Baptolinus alternans, Grav.
Othius fulvipennis, F.
— læviusculus, Steph.
— melanocephalus, Grav.
— myrmecophilus, Kies.

PÆDERINA

Lathrobium elongatum, L.
— boreale, Hoch.
— fulvipenne, Grav.
— brunnipes, F.
— longulum, Grav.
— punctatum, Zett.
— filiforme, Grav.
— quadratum, Payk.
— terminatum, Grav.
— multipunctum, Grav.
Achenium depressum, Grav.
— humile, Nic.
Cryptobium glaberrimum, Herbst
Stilicus fragilis, Grav.
— rufipes, Germ.
— orbiculatus, Er.
— similis, Er.
— subtilis, Er.
— affinis, Er.
— geniculatus, Er.
Scopæus sulcicollis, Steph.
Medon castaneus, Grav.
— brunneus, Er.
— fusculus, Mann.
— apicalis, Kr.
— propinquus, Bris.
— melanocephalus, F.
— obsoletus, Nord.
Lithocharis ochracea, Grav.
Sunius intermedius, Er.
— diversus, Aubé
— angustatus, Payk.
Pæderus littoralis, Grav.
— riparius, L.
— caligatus, Er.

EVÆSTHETINA

Evæsthetus scaber, Thoms.
— ruficapillus, Lac.
— læviusculus, Mann.

STENINA

Dianous cœrulescens, Gyll.
Stenus biguttatus, L.
— bipunctatus, Er.
— guttula, Müll.
— bimaculatus, Gyll.
— asphaltinus, Er.
— juno, F.
— ater, Mann.
— longitarsis, Thoms.
— speculator, Er.
— providus, Er.
— v. rogeri, Kr.
— lustrator, Er.
— buphthalmus, Grav.
— melanopus, Marsh.
— incrassatus, Er.

Stenus melanarius, Steph.
— morio, Grav.
— atratulus, Er.
— canaliculatus, Gyll.
— nitens, Steph.
— pusillus, Er.
— exiguus, Er.
— fuscipes, Grav.
— circularis, Grav.
— vafellus, Er.
— declaratus, Er.
— crassus, Steph.
— opticus, Grav.
— carbonarius, Gyll.
— argus, Grav.
— nigritulus, Gyll.
— brunnipes, Steph.
— subæneus, Ev.
— ossium, Steph.
— fuscicornis, Er.
— geniculatus, Grav.
— palustris, Er.
— impressus, Germ.
— ærosus, Er.
— erichsoni, Rye
— pallipes, Grav.
— flavipes, Steph.
— pubescens, Steph.
— binotatus, Ljun.
— canescens, Ros.
— pallitarsis, Steph.
— bifoveolatus, Gyll.
— nitidiusculus, Steph.
— picipennis, Er.
— picipes, Steph.
— foveicollis, Kr.
— kiesenwetteri, Ros.
— cicindeloides, Grav.
— similis, Herbst
— solutus, Er.
— tarsalis, Ljun.
— paganus, Er.
— latifrons, Er.
— oscillator, Rye
— fornicatus, Steph.

OXYPORINA

Oxyporus rufus, L.

OXYTELINA

Bledius pallipes, Grav.
— subterraneus, Er.
— longulus, Er.
— fracticornis, Payk.
— opacus, Block
Platystethus arenarius, Fourc.
— cornutus, Gyll.
— alutaceus, Thoms.
— capito, Heer
— nodifrons, Sahl.
Platystethus nitens, Sahl.
Oxytelus rugosus, Grav.
— insecatus, Grav.
— sculptus, Grav.
— laqueatus, Marsh.
— piceus, L.
— inustus, Grav.
— sculpturatus, Grav.
— nitidulus, Grav.
— complanatus, Er.
— clypeonitens, Pand.
— tetracarinatus, Block
— fairmairei, Pand.
Haploderus cœlatus, Grav.
Ancyrophorus aureus, Fauv.
Trogophlœus arcuatus, Steph.
— bilineatus, Steph.
— rivularis, Mots.
— elongatulus, Er.
— fuliginosus, Grav.
— corticinus, Grav.
— pusillus, Grav.
— tenellus, Er.
Syntomium æneum, Müll.
Coprophilus striatulus, F.
Acrognathus mandibularis, Gyll.
Compsochilus palpalis, Er.

OMALIINA

Deleaster dichrous, Grav.
Lesteva longelytrata, Goeze
— sicula, Er.
Acidota crenata, F.
— cruentata, Mann.
Olophrum piceum, Gyll.
Lathrimæum atrocephalum, Gyll.
— unicolor, Steph.
Philorhinum sordidum, Steph.
Coryphium angusticolle, Steph.
Omalium rivulare, Payk.
— allardi, Fairm.
— exiguum, Gyll.
— oxyacanthæ, Grav.
— excavatum, Steph.
— cæsum, Grav.
— tricolor, Rey
— pusillum, Grav.
— punctipenne, Thoms.
— rufipes, Fourc.
— salicis, Gyll.
— vile, Er.
— iopterum, Steph.
— planum, Payk.
— concinnum, Marsh.
— deplanatum, Gyll.
— striatum, Grav.
Hapalaræa pygmæa, Gyll.
Eusphalerum primulæ, Steph.
Anthobium minutum, F.
— ophthalmicum, Payk.
— torquatum, Marsh.
— sorbi, Gyll.

PROTEININA

Proteinus ovalis, Steph.
— brachypterus, F.
— macropterus, Gyll.
— atomarius, Er.
Megarthrus denticollis, Beck
— affinis, Mill.
— depressus, Lac.
— sinuatocollis, Lac.
— hemipterus, Ill.
Phlœobium clypeatum, Müll.

PHLŒOCHARINA

Phlœocharis subtilissima, Mann.
Pseudopsis sulcata, Newm.

PIESTINA

Prognatha quadricornis, Lac.

PSELAPHIDÆ

PSELAPHINA

Pselaphus heisei, Herbst
— dresdensis, Herbst
Tychus niger, Payk.
Bythinus puncticollis, Denny
— bulbifer, Reich.
— curtisi, Denny
— securiger, Reich.
— burrelli, Denny
Batrisus venustus, Reich.
Bryaxis sanguinea, L.
— fossulata, Reich.
— hæmatica, Reich.
— juncorum, Leach
— impressa, Panz.
Trichonyx markeli, Aubé
Bibloporus bicolor, Denny
Euplectus kunzei, Aubé
— karsteni, Reich.
— signatus, Reich.
— nanus, Reich.
— sanguineus, Denny
— piceus, Mots.
— ambiguus, Reich.

CLAVIGERINA

Claviger testaceus, Preyss.

SCYDMÆNIDÆ

Neuraphes elongatulus, Müll.
— angulatus, Müll.
— rubicundus, Muls.
— carinatus, Muls.
— sparshalli, Denny

Neuraphes longicollis, Mots.
Scydmænus scutellaris, Müll.
— collaris, Müll.
— pusillus, Müll.
— poweri, Fowler
— exilis, Er.
Euconnus denticornis, Müll.
— hirticollis, Ill.
— fimetarius, Chaud.
Eumicrus tarsatus, Müll.
— rufus, Müll.
Eutheia scydmænoides, Steph.
— schaumi, Kies.
— plicata, Gyll.
Cephennium thoracicum, Müll.

LEPTINIDÆ

Leptinus testaceus, Müll.

SILPHIDÆ

Clambina

Calyptomerus dubius, Marsh.
Clambus pubescens, Redt.
— armadillo, De G.
— minutus, Sturm

Anisotomina

Agathidium atrum, Payk.
— seminulum, L.
— lævigatum, Er.
— marginatum, Sturm
— confusum, Bris.
— varians, Beck
— convexum, Sharp
— rotundatum, Gyll.
— nigrinum, Sturm
Amphicyllis globus, F.
Liodes humeralis, Kug.
— orbicularis, Herbst
Cyrtusa pauxilla, Schmidt
Anisotoma cinnamomea, Er.
— grandis, Fairm.
— oblonga, Er.
— dubia, Kug.
— obesa, Schmidt
— badia, Sturm
— similata, Rye
— ovalis, Schmidt
— brunnea, Sturm
— punctulata, Gyll.
— calcarata, Er.
— curvipes, Schmidt
— nigrita, Schmidt
— curta, Fairm.
— lunicollis, Rye
— triepkei, Schmidt
— rugosa, Sahl.
— parvula, Sahl.
Colenis dentipes, Gyll.
Agaricophagus cephalotes, Schmidt
— conformis, Er.
Hydnobius punctatissimus, Steph.
— punctatus, Sturm
— strigosus, Schmidt
Triarthron märkeli, Schmidt

Silphina

Necrophorus humator, F.
— mortuorum, F.
— vestigator, Heer
— ruspator, Er.
— interruptus, Steph.
— vespillo, L.
Necrodes littoralis, L.
Silpha tristis, Ill.
— obscura, L.
— quadripunctata, L.
— opaca, L.
— thoracica, L.
— rugosa, L.
— sinuata, F.
— lævigata, F.
— atrata, L.

Cholevina

Choleva angustata, F.
— sturmi, Bris.
— cisteloides, Fröhl.
— intermedia, Kr.
— spadicea, Sturm
— agilis, Ill.
— velox, Spence
— wilkini, Spence
— anisotomoides, Spence
— fusca, Panz.
— nigricans, Spence
— coracina, Kell.
— moria, F.
— grandicollis, Er.
— nigrita, Er.
— tristis, Panz.
— kirbyi, Spence
— chrysomeloides, Panz.
— fumata, Spence
— watsoni, Spence
— colonoides, Kr.
Ptomaphagus sericeus, F.
— varicornis, Ros.
Colon viennense, Herbst
— serripes, Sahl.
— angulare, Er.
— rufescens, Kr.
— dentipes, Sahl.
— brunneum, Latr.
— appendiculatum, Sahl.
— latum, Kr.

HISTERIDÆ

Hister unicolor, L.
— merdarius, Hoff.
— cadaverinus, Hoff.
— succicola, Thoms.
— purpurascens, Herbst
— neglectus, Germ.
— carbonarius, Ill.
— 12-striatus, Schr.
— bimaculatus, L.
Carcinops minima, Aubé
— 14-striata, Steph.
Paromalus flavicornis, Herbst
Hetærius sesquicornis, Preys.
Dendrophilus punctatus, Herbst
— pygmæus, L.
Myrmetes piceus, Payk.
Gnathoncus nannetensis, Mars.
Saprinus nitidulus, Payk.
— æneus, F.
— virescens, Payk.
Teretrius picipes, F.
Abræus globosus, Hoff.
Acritus minutus, Herbst
— nigricornis, Hoff.
Onthophilus sulcatus, F.
— striatus, F.

SCAPHIDIIDÆ

Scaphidium quadrimaculatum, Ol.
Scaphisoma agaricinum, L.
— boleti, Panz.
— assimile, Er.

TRICHOPTERYGIDÆ

Pteryx suturalis, Heer
Ptinella denticollis, Fairm.
— aptera, Guér.
Trichopteryx thoracica, Matth.
— atomaria, De G.
— anthracina, Matth.
— grandicollis, Mann.
— lata, Mots.
— cantiana, Matth.
— fascicularis, Herbst
— attenuata, Gill.
— bovina, Mots.
— brevipennis, Er.
— edithia, Matth.
— longula, Matth.
— chevrolati, All.
— ambigua, Matth.
— variolosa, Muls.
Nephanes titan, Newm.
Ptilium kunzei, Heer
— spencei, All.

Ptilium marginatum, Aubé
Nossidium pilosellum, Marsh.
Ptenidium fuscicorne, Er.
— nitidum, Heer
— evanescens, Marsh.
— atomaroides, Mots.
— formicetorum, Kr.

CORYLOPHIDÆ

Orthoperus kluki, Wank.
— corticalis, Redt.
— atomus, Gyll.
Corylophus cassidioides, Marsh.
Sericoderus lateralis, Gyll.

COCCINELLIDÆ

Subcoccinella 24-punctata, L.
Hippodamia 13-punctata, L.
— variegata, Goeze
Anisosticta 19-punctata, L.
Adalia obliterata, L.
— bipunctata, L.
Mysia oblongoguttata, L.
Anatis ocellata, L.
— v. hebræa, L.
Coccinella 10-punctata, L.
— hieroglyphica, L.
— 11-punctata, L.
— 7-punctata, L.
— distincta, Fald.
Halyzia 16-guttata, L.
— 14-guttata, L.
— 18-guttata, L.
— conglobata, L.
— 22-punctata, L.
Micraspis 16-punctata, L.
Hyperaspis reppensis, Herbst
Scymnus redtenbacheri, Muls.
— nigrinus, Kug.
— pygmæus, Fourc.
— frontalis, F.
— suturalis, Thunb.
— testaceus, Mots.
— hæmorrhoidalis, Herbst
— capitatus, F.
— ater, Kug.
— minimus, Rossi
Platynaspis luteorubra, Goeze
Chilocorus similis, Rossi
— bipustulatus, Ill.
Exochomus quadripustulatus, L.
Rhizobius litura, F.
Coccidula rufa, Herbst
— scutellata, Herbst

ENDOMYCHIDÆ

Symbiotes latus, Redt.
Mycetæa hirta, Marsh.
Alexia pilifera, Müll.
Lycoperdina bovistæ, F.
Endomychus coccineus, L.

EROTYLIDÆ

Dacne humeralis, F.
— rufifrons, F.
Triplax russica, L.
— ænea, Schall.
— lacordairei, Cr.
Cyrtotriplax bipustulata, F.

PHALACRIDÆ

Phalacrus corruscus, Payk.
— v. humberti, Tourn.
— caricis, Sturm
Olibrus corticalis, Panz.
— æneus, F.
— bicolor, F.
— particeps, Muls.
— flavicornis, Sturm
— millefolii, Payk.
— pygmæus, Sturm
Eustilbus testaceus, Panz.

MICROPEPLIDÆ

Micropeplus porcatus, Payk.
— staphylinoides, Marsh.
— margaritæ, Duv.

NITIDULIDÆ

Brachypterus gravidus, Ill.
— pubescens, Er.
— urticæ, F.
Cercus pedicularius, L.
— bipustulatus, Payk.
— rufilabris, Latr.
Carpophilus hemipterus, L.
Epuræa decemguttata, F.
— diffusa, Bris.
— æstiva, L.
— melina, Er.
— oblonga, Herbst
— longula, Er.
— florea, Er.
— deleta, Er.
— parvula, Sturm
— obsoleta, F.
— neglecta, Sturm
— pusilla, Er.
— angustula, Er.
Omosiphora limbata, F.
Micrurula melanocephala, Marsh.
Nitidula bipustulata, L.
— rufipes, L.
— quadripustulata, F.
Soronia punctatissima, Ill.
— grisea, L.
Amphotis marginata, Er.
Omosita depressa, L.
— colon, L.
— discoidea, F.
Thalycra sericea, Sturm
Pocadius ferrugineus, F.
Pria dulcamaræ, Scop.
Meligethes rufipes, Gyll.
— lumbaris, Sturm
— corvinus, Er.
— æneus, F.
— viridescens, F.
— difficilis, Heer
— kunzei, Er.
— memnonius, Er.
— ochropus, Sturm
— brunnicornis, Sturm
— viduatus, Sturm
— pedicularius, Gyll.
— bidens, Bris.
— umbrosus, Sturm
— ovatus, Sturm
— flavipes, Sturm
— picipes, Sturm
— rotundicollis, Bris.
— symphyti, Heer
— nanus, Er.
— serripes, Gyll.
— murinus, Er.
— lugubris, Sturm
— obscurus, Er.
— erythropus, Gyll.
— bidentatus, Bris.
— solidus, Sturm
Cychramus luteus, F.
Cryptarcha strigata, F.
— imperialis, F.
Ips quadripunctata, Herbst
Pityophagus ferrugineus, F.

TROGOSITIDÆ

Nemosoma elongatum, L.
Tenebrioides mauritanicus, L.

COLYDIIDÆ

Aglenus brunneus, Gyll.
Oxylæmus variolosus, Duft.
Orthocerus muticus, L.
Ditoma crenata, F.
Cicones variegatus, Hellw.
Cerylon histeroides, F.
— fagi, Bris.
— v. excavatum, Fowler
Murmidius ovalis, Beck

CUCUJIDÆ

Rhizophagus cribratus, Gyll.
— depressus, F.

Rhizophagus perforatus, Er.
— parallelocollis, Er.
— ferrugineus, Payk.
— bipustulatus, F.
Læmophlœus bimaculatus, Payk.
— duplicatus, Waltl
— ferrugineus, Steph.
— ater, Ol.
Brontes planatus, L.
Psammœchus bipunctatus, F.
Nausibius dentatus, Marsh.
Silvanus surinamensis, L.
— unidentatus, F.
— similis, Er.
Cathartus advena, Waltl

MONOTOMIDÆ

Monotoma conicicollis, Aubé
— formicetorum, Thoms.
— spinicollis, Aubé
— brevicollis, Aubé
— picipes, Herbst
— quadricollis, Aubé
— rufa, Redt.
— sub-4-foveolata, Wat.
— longicollis, Gyll.

LATHRIDIIDÆ

Anommatus 12-striatus, Müll.
Lathridius lardarius, De G.
— angulatus, Humm.
Coninomus nodifer, Westw.
— constrictus, Humm.
— carinatus, Gyll.
Enicmus minutus, L.
— transversus, Ol.
— testaceus, Steph.
Cartodere ruficollis, Marsh.
— elongata, Curt.
Corticaria pubescens, Gyll.
— crenulata, Gyll.
— denticulata, Gyll.
— serrata, Payk.
— umbilicata, Beck
— fulva, Com.
— *obscura, Bris.
— elongata, Humm.
— fenestralis, L.
Melanophthalma gibbosa, Herbst
— fuscula, Humm.

CRYPTOPHAGIDÆ

Diphyllus lunatus, F.
Telmatophilus sparganii, Ahr.
— caricis, Ol.
— typhæ, Fall.
Antherophagus nigricornis, F.
— pallens, Gyll.
— silaceus, Herbst
Cryptophagus lycoperdi, Herbst
— setulosus, Sturm
— pilosus, Gyll.
— punctipennis, Bris.
— populi, Payk.
— saginatus, Sturm
— scanicus, L.
— badius, Sturm
— dentatus, Herbst
— distinguendus, Sturm
— acutangulus, Gyll.
— cellaris, Scop.
— affinis, Sturm
— pubescens, Sturm
— bicolor, Sturm
Micrambe vini, Panz.
— *abietis, Payk.
Henoticus serratus, Gyll.
Paramecosoma melanocephalum, Herbst
Myrmecoxenus vaporariorum, Guér.
Cœnoscelis pallida, Woll.
Atomaria fimetarii, Herbst
— fumata, Er.
— nigriventris, Steph.
— umbrina, Er.
— linearis, Steph.
— elongatula, Er.
— badia, Er.
— fuscipes, Gyll.
— peltata, Kr.
— nigripennis, Payk.
— munda, Er.
— fuscata, Schön.
— atra, Herbst
— pusilla, Payk.
— atricapilla, Steph.
— berolinensis, Kr.
— basalis, Er.
— mesomelas, Herbst
— gutta, Steph.
— apicalis, Er.
— analis, Er.
— ruficornis, Marsh.
— versicolor, Er.
Ephistemus globosus, Waltl
— gyrinoides, Marsh.

MYCETOPHAGIDÆ

Typhæa fumata, L.
Triphyllus suturalis, F.
— punctatus, F.
Litargus bifasciatus, F.
Mycetophagus quadripustulatus, L.
Mycetophagus piceus, F.
— atomarius, F.
— quadriguttatus, Müll.
— multipunctatus, Hellw.

BYTURIDÆ

Byturus sambuci, Scop.
— tomentosus, F.

DERMESTIDÆ

Dermestes vulpinus, F.
— frischi, Kug.
— murinus, L.
— lardarius, L.
Attagenus pellio, L.
Megatoma undata, Er.
Tiresias serra, F.
Anthrenus varius, F.
— musæorum, L.
— claviger, Er.
Trinodes hirtus, F.

BYRRHIDÆ

Syncalypta spinosa, Rossi
— hirsuta, Sharp
Byrrhus pilula, L.
— v. dennyi, Steph.
— fasciatus, F.
— dorsalis, F.
— murinus, F.
Cytilus varius, F.
Simplocaria semistriata, F.
Aspidiphorus orbiculatus, Gyll.

PARNIDÆ

Elmis æneus, Müll.
— volkmari, Panz.
— cupreus, Müll.
Limnius tuberculatus, Müll.
— troglodytes, Gyll.
— rivularis, Ros.
Potaminus substriatus, Müll.
Parnus prolifericornis, F.
— auriculatus, Panz.
— algiricus, Lucas

HETEROCERIDÆ

Heterocerus marginatus, F.
— lævigatus, Panz.

LUCANIDÆ

Lucanus cervus, L.
Dorcus parallelopipedus, L.
Sinodendron cylindricum, L.

SCARABÆIDÆ

Coprina

Copris lunaris, L.
Onthophagus ovatus, L.
— cœnobita, Herbst

Onthophagus vacca, L.
— fracticornis, Payk.
— nuchicornis, L.
Aphodius erraticus, L.
— subterraneus, L.
— fossor, L.
— hæmorrhoidalis, L.
— fœtens, F.
— fimetarius, L.
— scybalarius, F.
— ater, De G.
— granarius, L.
— nitidulus, F.
— sordidus, F.
— rufescens, F.
— putridus, Sturm
— lividus, Ol.
— porcus, F.
— tristis, Panz.
— pusillus, Herbst
— quadrimaculatus, L.
— merdarius, F.
— inquinatus, F.
— tessulatus, Payk.
— sticticus, Panz.
— punctato-sulcatus, Stm.
— prodromus, Brahm
— contaminatus, Herbst
— obliteratus, Panz.
— zenkeri, Germ.
— luridus, F.
— rufipes, L.
— depressus, Kug.
Plagiogonus arenarius, Ol.
Heptaulacus testudinarius, F.
— villosus, Gyll.
Oxyomus porcatus, F.
Odontæus mobilicornis, F.
Geotrupes typhœus, L.
— spiniger, Marsh.
— stercorarius, L.
— mutator, Marsh.
— sylvaticus, Panz.
— vernalis, L.
— pyrenæus, Charp.
Trox sabulosus, L.
— scaber, L.

MELOLONTHINA

Hoplia philanthus, Füss.
Homaloplia ruricola, F.
Serica brunnea, L.
Rhizotrogus solstitialis, L.
Melolontha vulgaris, F.

RUTELINA

Phyllopertha horticola, L.
Anomala frischi, F.

CETONIINA

Cetonia aurata, L.
Gnorimus variabilis, L.
— nobilis, L.

BUPRESTIDÆ

Agrilus laticornis, Ill.
— angustulus, Ill.
Aphanisticus pusillus, Ol.
Trachys minuta, L.
— pumila, Ill.
— troglodytes, Gyll.

THROSCIDÆ

Throscus dermestoides, L.
— carinifrons, Bonv.
— obtusus, Curt.

EUCNEMIDÆ

Melasis buprestoides, L.

ELATERIDÆ

Lacon murinus, L.
Cardiophorus asellus, Er.
Cryptohypnus riparius, F.
— quadripustulatus, F.
Elater lythropterus, Germ.
— sanguinolentus, Schr.
— balteatus, L.
— nigrinus, Payk.
Ischnodes sanguinicollis, Pz.
Megapenthes lugens, Redt.
— tibialis, Lac.
Ludius ferrugineus, L.
Melanotus rufipes, Herbst
Athous rhombeus, Ol.
— niger, L.
— longicollis, Ol.
— hæmorrhoidalis, F.
— vittatus, F.
Limonius cylindricus, Payk.
— minutus, L.
Sericosomus brunneus, L.
Synaptus filiformis, F.
Adrastus limbatus, F.
Agriotes sputator, L.
— obscurus, L.
— lineatus, L.
— sordidus, Ill.
— sobrinus, Kies.
— pallidulus, Ill.
Dolopius marginatus, L.
Corymbites tessellatus, F.
— quercus, Gyll.
— holosericeus, F.
— metallicus, Payk.
— bipustulatus, L.
Campylus linearis, L.

DASCILLIDÆ

Dascillus cervinus, L.
Helodes minuta, L.
Microcara livida, F.
Microcara livida, v. bohemani, Mann.
Cyphon coarctatus, Payk.
— nitidulus, Thoms.
— variabilis, Thunb.
— pallidulus, Boh.
— padi, L.
Prionocyphon serricornis, Müll.
Scirtes hemisphæricus, L.
— orbicularis, Panz.

MALACODERMIDÆ

LYCINA

Platycis minutus, F.

LAMPYRINA

Lampyris noctiluca, L.

DRILINA

Drilus flavescens, Rossi

TELEPHORINA

Podabrus alpinus, Payk.
Telephorus fuscus, L.
— rusticus, Fall.
— lividus, L.
— pellucidus, F.
— nigricans, Müll.
— lituratus, F.
— figuratus, Mann.
— bicolor, F.
— hæmorrhoidalis, F.
— oralis, Germ.
— flavilabris, Fall.
— thoracicus, Ol.
Rhagonycha unicolor, Curt.
— fuscicornis, Scop.
— testacea, L.
— limbata, Thoms.
— pallida, F.
Malthinus punctatus, Fourc.
— fasciatus, Ol.
— balteatus, Suff.
— frontalis, Marsh.
Malthodes marginatus, Latr.
— guttifer, Kies.
— dispar, Germ.
— pellucidus, Kies.
— minimus, L.
— fibulatus, Kies.
— nigellus, Kies.
— atomus, Thoms.

MELYRINA

Malachius æneus, L.
— bipustulatus, L.
— viridis, F.
Axinotarsus pulicarius, F.
— ruficollis, Ol.

Anthocomus fasciatus, L.
Dasytes flavipes, F.
— ærosus, Kies.
— niger, L.
Haplocnemus impressus, Marsh.
Phlœophilus edwardsi, Steph.

CLERIDÆ

Tillus elongatus, L.
— unifasciatus, F.
Opilo mollis, L.
Thanasimus formicarius, L.
Necrobia ruficollis, F.
— violacea, L.
— rufipes, De G.
Corynetes cœruleus, De G.

PTINIDÆ

Ptinina

Ptinus germanus, F.
— sexpunctatus, Panz.
— lichenum, Marsh.
— fur, L.
Niptus hololeucus, Fald.
— crenatus, F.
Hedobia imperialis, L.
Mezium affine, Boield.
Gibbium scotias, F.

Anobiina

Dryophilus pusillus, Gyll.
— anobioides, Chevr.
Priobium castaneum, F.
Anobium denticolle, Panz.
— domesticum, Fourc.
— fulvicorne, Sturm
— paniceum, L.
Xestobium tessellatum, F.
Ernobius mollis, L.
Ptilinus pectinicornis, L.
Ochina hederæ, Müll.
Xyletinus ater, Panz.
Lasioderma serricorne, F.
Cœnocara bovistæ, Hoff.
Dorcatoma chrysomelina, Sturm
— flavicornis, F.
Anitys rubens, Hoff.

BOSTRICHIDÆ

Rhizopertha pusilla, F.

LYCTIDÆ

Lyctus canaliculatus, F.
— brunneus, Steph.

SPHINDIDÆ

Sphindus dubius, Gyll.

CISSIDÆ

Cis boleti, Scop.
— v. rugulosus, Mell.
— villosulus, Marsh.
— micans, F.
— hispidus, Payk.
— bidentatus, Ol.
— alni, Gyll.
— nitidus, Herbst
— pygmæus, Marsh.
— festivus, Panz.
— vestitus, Mell.
— fuscatus, Mell.
Rhopalodontus fronticornis, Panz.
Ennearthron affine, Gyll.
— cornutum, Gyll.
Octotemnus glabriculus, Gyll.

CERAMBYCIDÆ

Prionina

Prionus coriarius, L.

Cerambycina

Aromia moschata, L.
Asemum striatum, L.
Hylotrupes bajulus, L.
Callidium violaceum, L.
— variabile, L.
— alni, L.
Clytus arietis, L.
— mysticus, L.
Gracilia minuta, F.
Molorchus minor, L.
— umbellatarum, L.
Rhagium inquisitor, F.
— bifasciatum, F.
Toxotus meridianus, Panz.
Pachyta cerambyciformis, Schr.
— collaris, L.
Leptura livida, F.
Strangalia quadrifasciata, L.
— armata, Herbst
— nigra, L.
— melanura, L.
Grammoptera tabacicolor, De G.
— ruficornis, F.

Lamiina

Leiopus nebulosus, L.
Pogonochærus bidentatus, Thoms.
— dentatus, Fourc.
Mesosa nubila, Ol.
Saperda populnea, L.
Tetrops præusta, L.
Phytœcia cylindrica, L.

BRUCHIDÆ

Bruchus cisti, F.
— canus, Germ.
— pisi, L.
— rufimanus, Boh.
— atomarius, L.
— v. fahræi, Gyll.
— rufipes, Herbst
— loti, Payk.
— villosus, F.

CHRYSOMELIDÆ

EUPODA

Orsodacna lineola, Panz.
— v. humeralis, Latr.
Donacia crassipes, F.
— dentata, Hoppe
— versicolorea, Brahm
— sparganii, Ahr.
— dentipes, F.
— limbata, Panz.
— bicolora, Zsch.
— thalassina, Germ.
— simplex, F.
— vulgaris, Zsch.
— clavipes, F.
— semicuprea, Panz.
— cinerea, Herbst
— sericea, L.
— discolor, Panz.
— braccata, Scop.
— affinis, Kunze
Zeugophora subspinosa, F.
Lema cyanella, L.
— lichenis, Voet
— melanopa, L.
Crioceris lilii, Scop.
— asparagi, L.

CAMPTOSOMATA

Labidostomis tridentata, L.
Clythra quadripunctata, L.
Cryptocephalus coryli, L.
— bipunctatus, L.
— v. thomsoni, Weise
— aureolus, Suffr.
— hypochæridis, L.
— ochrostoma, Har.
— parvulus, Müll.
— moræi, L.
— bilineatus, L.
— fulvus, Goeze
— pusillus, F.
— labiatus, L.

CYCLICA

Lamprosoma concolor, Sturm
Timarcha tenebricosa, F.
— violaceonigra, De G.
Chrysomela marginalis, Duft.

Chrysomela banksi, F.
— staphylea, L.
— polita, L.
— orichalcia, Müll.
— varians, Schall.
— goettingensis, L.
— fastuosa, Scop.
— didymata, Scriba
— hyperici, Forst.
Melasoma populi, L.
— longicolle, Suffr.
Phytodecta rufipes, De G.
— viminalis, L.
— olivacea, Forst.
— pallida, L.
Gastroidea viridula, De G.
— polygoni, L.
Plagiodera versicolora, Laich.
Phaedon tumidulus, Germ.
— armoraciæ, L.
— cochleariæ, F.
Phyllodecta vulgatissima, L.
— cavifrons, Thoms.
— vitellinæ, L.
Hydrothassa aucta, F.
— marginella, L.
Prasocuris junci, Brahm.
— phellandrii, L.
Phyllobrotica quadrimaculata, L.
Luperus nigrofasciatus, Goez.
— rufipes, Scop.
— flavipes, L.
Lochmæa capreæ, L.
— suturalis, Thoms.
— cratægi, Forst.
Galerucella viburni, Payk.
— nymphææ, L.
— sagittariæ, Gyll.
— lineola, F.
— calmariensis, L.
— tenella, L.
Adimonia tanaceti, L.
Sermyla halensis, L.
Longitarsus pulex, Schr.
— anchusæ, Payk.
— ater, F.
— holsaticus, L.
— dorsalis, F.
— luridus, Scop.
— brunneus, Duft.
— agilis, Rye.
— suturellus, Duft.
— atricillus, L.
— patruelis, All.
— melanocephalus, All.
— atriceps, Kuts.
— distinguendus, Rye
— nasturtii, F.
— piciceps, Steph.
Longitarsus lycopi, Foudr.
— abdominalis, Duft.
— membranaceus, Foudr.
— ballotæ, Marsh.
— waterhousei, Kuts.
— ferrugineus, Foudr.
— cerinus, Foudr.
— flavicornis, Steph.
— femoralis, Marsh.
— pusillus, Gyll.
— tabidus, F.
— v. thapsi, Marsh.
— jacobææ, Wat.
— ochroleucus, Marsh.
— gracilis, Kuts.
— lævis, Duft.
— pellucidus, Foudr.
Haltica lythri, Aubé
— ericeti, All.
— coryli, Brit. coll.
— oleracea, L.
— palustris, Weise
— pusilla, Duft.
Hermæophaga mercurialis, F.
Phyllotreta nodicornis, Marsh.
— nigripes, F.
— consobrina, Curt.
— punctulata, Marsh.
— atra, Payk.
— cruciferæ, Goeze
— vittula, Redt.
— undulata, Kuts.
— nemorum, L.
— ochripes, Curt.
— tetrastigma, Com.
— exclamationis, Thunb.
Aphthona lutescens, Gyll.
— nonstriata, Goeze
— venustula, Kuts.
— atrocœrulea, Steph.
— virescens, Foudr.
— atratula, All.
— herbigrada, Curt.
Batophila rubi, Payk.
— ærata, Marsh.
Sphæroderma testaceum, F.
— cardui, Gyll.
Apteropeda orbiculata, Marsh.
— globosa, Ill.
Mniophila muscorum, Koch
Podagrica fuscipes, L.
— fuscicornis, L.
Mantura rustica, L.
— obtusata, Gyll.
— matthewsi, Curt.
Ochrosis salicariæ, Payk.
Crepidodera transversa, Marsh.
Crepidodera ferruginea, Scop.
— rufipes, L.
— ventralis, Ill.
— helxines, L.
— chloris, Foudr.
— aurata, Marsh.
— smaragdina, Foudr.
Hippuriphila modeeri, L.
Epitrix atropæ, Foudr.
Chætocnema subcœrulea, Kuts.
— aridula, Gyll.
— confusa, Boh.
— hortensis, Fourc.
Plectroscelis concinna, Marsh.
Psylliodes attenuata, Koch
— chrysocephala, L.
— napi, Koch
— cuprea, Koch
— instabilis, Foudr.
— affinis, Payk.
— dulcamaræ, Koch
— chalcomera, Ill.
— picina, Marsh.

CRYPTOSOMATA

Cassida fastuosa, Schall.
— nebulosa, L.
— vibex, F.
— sanguinolenta, F.
— nobilis, L.
— flaveola, Thunb.
— equestris, F.
— viridis, F.
— hemisphærica, Herbst

TENEBRIONIDÆ

Blaps mucronata, Latr.
— similis, Latr.
Microzoum tibiale, F.
Heledona agaricola, F.
Scaphidema metallicum, F.
Alphitophagus bifasciatus, Say
Tenebrio molitor, L.
— obscurus, F.
Alphitobius diaperinus, Panz.
— piceus, Ol.
Gnathocerus cornutus, F.
Tribolium ferrugineum, F.
— confusum, Duv.
Palorus ratzeburgi, Wissm.
Hypophlœus bicolor, Ol.
— *linearis, F.
Helops cœruleus, L.
— striatus, Fourc.

CISTELIDÆ

Cistela luperus, Herbst
— ceramboides, L.
— murina, L.

Eryx ater, F.
Mycetochares bipustulata, Ill.

LAGRIIDÆ

Lagria hirta, L.

MELANDRYIDÆ

Tetratoma fungorum, F.
— desmaresti, Latr.
— ancora, F.
Clinocara tetratoma, Thoms.
Hallomenus humeralis, Panz.
Conopalpus testaceus, Ol.
Melandrya caraboides, L.
Anisoxya fuscula, Ill.
Abdera quadrifasciata, Steph.
— bifasciata, Marsh.
Phlœotrya rufipes, Gyll.
Hypulus quercinus, Quens.

PYTHIDÆ

Salpingus castaneus, Panz.
— æratus, Müll.
— *mutilatus, Beck
Lissodema quadripustulatum, Marsh.
— cursor, Gyll.
Rhinosimus ruficollis, L.
— viridipennis, Steph.
— planirostris, F.

ŒDEMERIDÆ

Oedemera nobilis, Scop.
— lurida, Marsh.
Oncomera femorata, F.
Nacerdes melanura, Schmidt
Ischnomera cœrulea, L.
— sanguinicollis, F.

PYROCHROIDÆ

Pyrochroa serraticornis, Scop.

SCRAPTIIDÆ

Scraptia fuscula, Müll.

MORDELLIDÆ

Mordella fasciata, F.
Mordellistena abdominalis, F.
— humeralis, L.
— brunnea, F.
— pumila, Gyll.
— brevicauda, Boh.
— parvula, Gyll.
Anaspis frontalis, L.
— garneysi, Fowler
— pulicaria, Costa
— rufilabris, Gyll.
— geoffroyi, Müll.
— ruficollis, F.
— v. alpicola, Emery
— costæ, Emery
Anaspis subtestacea, Steph.
— maculata, Fourc.
— latipalpis, Schilsky

RHIPIDOPHORIDÆ

Metœcus paradoxus, L.

ANTHICIDÆ

Notoxus monoceros, L.
Anthicus floralis, L.
— antherinus, L.

XYLOPHILIDÆ

Xylophilus populneus, F.
— brevicornis, Perris
— oculatus, Gyll.

MELOÏDÆ

Meloe proscarabæus, L.
— violaceus, Marsh.
— brevicollis, Panz.

ANTHRIBIDÆ

Brachytarsus fasciatus, Forst.
— varius, F.
Anthribus albinus, L.
Tropideres niveirostris, F.
Choragus sheppardi, Kirby

CURCULIONIDÆ

ATTELABINA

Apoderus coryli, L.
Attelabus curculionoides, L.

RHYNCHITINA

Byctiscus betuleti, F.
— populi, L.
Rhynchites æquatus, L.
— æneovirens, Marsh.
— cœruleus, De G.
— minutus, Herbst
— interpunctatus, Steph.
— pauxillus, Germ.
— nanus, Payk.
— uncinatus, Thoms.
— sericeus, Herbst
— pubescens, F.
Deporaüs megacephalus, Germ.
— betulæ, L.

APIONINA

Apion pomonæ, F.
— craccæ, L.
— subulatum, Kirby
— ulicis, Forst.
— genistæ, Kirby
— fuscirostre, F.
— malvæ, F.
— urticarium, Herbst
Apion vernale, F.
— miniatum, Germ.
— cruentatum, Walt.
— hæmatodes, Kirby
— rubens, Steph.
— sanguineum, De G.
— pallipes, Kirby
— rufirostre, F.
— viciæ, Payk.
— difforme, Germ.
— dissimile, Germ.
— varipes, Germ.
— lævicolle, Kirby
— schönherri, Boh.
— apricans, Herbst
— trifolii, L.
— dichroum, Bedel
— nigritarse, Kirby
— confluens, Kirby
— stolidum, Germ.
— hookeri, Kirby
— æneum, F.
— radiolus, Kirby
— onopordi, Kirby
— carduorum, Kirby
— flavimanum, Gyll.
— annulipes, Wenck.
— vicinum, Kirby
— atomarium, Kirby
— minimum, Herbst
— virens, Herbst
— punctigerum, Payk.
— pisi, F.
— æthiops, Herbst
— ebeninum, Kirby
— filirostre, Kirby
— striatum, Kirby
— immune, Kirby
— ononis, Kirby
— spencei, Kirby
— ervi, Kirby
— vorax, Herbst
— unicolor, Kirby
— platalea, Germ.
— meliloti, Kirby
— scutellare, Kirby
— livescerum, Gyll.
— waltoni, Steph.
— loti, Kirby
— seniculum, Kirby
— tenue, Kirby
— simile, Kirby
— pubescens, Kirby
— curtisi, Walt.
— sedi, Germ.
— marchicum, Herbst
— affine, Kirby
— violaceum, Kirby
— hydrolapathi, Kirby
— humile, Germ.

OTIORRHYNCHINA

Otiorrhynchus tenebricosus, Herbst
— fuscipes, Walt.
— raucus, F.
— scabrosus, Marsh.
— ligneus, Ol.
— picipes, F.
— sulcatus, F.
— ligustici, L.
— ovatus, L.
— muscorum, Bris.
Peritelus griseus, Ol.
Trachyphlœus aristatus, Gyll.
— squamulatus, Ol.
— scaber, L.
— scabriculus, L.
— spinimanus, Germ.
— alternans, Gyll.
Cænopsis fissirostris, Walt.
— waltoni, Schön.
Strophosomus coryli, F.
— capitatus, De G.
— fulvicornis, Walt.
— retusus, Marsh.
— faber, Herbst
— lateralis, Payk.
Exomias araneiformis, Schr.
Brachysomus echinatus, Bonsd.
— hirtus, Boh.
Sciaphilus muricatus, F.
Tropiphorus carinatus, Müll.
— tomentosus, Marsh.
Liophlœus nubilus, F.
Polydrusus micans, F.
— tereticollis, De G.
— pterygomalis, Boh.
— flavipes, De G.
— cervinus, L.
— confluens, Steph.
Phyllobius oblongus, L.
— calcaratus, F.
— urticæ, De G.
— pyri, L.
— argentatus, L.
— maculicornis, Germ.
— pomonæ, Ol.
— viridiæris, Laich.
Tanymecus palliatus, F.
Philopedon geminatus, F.
Atactogenus exaratus, Marsh.
Barynotus obscurus, F.
— elevatus, Marsh.
Alophus triguttatus, F.

CURCULIONINA

Sitones griseus, F.
— cambricus, Steph.
— regensteinensis, Herbst
Sitones waterhousei, Walt.
— crinitus, Herbst
— tibialis, Herbst
— hispidulus, F.
— humeralis, Steph.
— meliloti, Walt.
— flavescens, Marsh.
— puncticollis, Steph.
— suturalis, Steph.
— lineatus, L.
— sulcifrons, Thunb.
Gronops lunatus, L.
Limobius dissimilis, Herbst
Hypera punctata, F.
— rumicis, L.
— pollux, F.
— alternans, Steph.
— polygoni, L.
— suspiciosa, Herbst
— variabilis, Herbst
— murina, F.
— plantaginis, De G.
— meles, F.
— trilineata, Marsh.
— nigrirostris, F.
Cleonus nebulosus, L.
Lixus paraplecticus, L.
Larinus carlinæ, Ol.
Lepyrus binotatus, Payk.
Liosoma ovatulum, Clairv.
— v. collare, Rye
— oblongulum, Boh.
— pyrenæus, Bris.
— troglodytes, Rye
Liparus coronatus, Goeze
Hylobius abietis, L.
Plinthus caliginosus, F.
Pissodes notatus, F.
Orchestes quercus, L.
— scutellaris, Gyll.
— v. semirufus, Gyll.
— alni, L.
— v. ferrugineus, Marsh.
— ilicis, F.
— v. nigripes, Fowler
— avellanæ, Don.
— fagi, L.
— pratensis, Germ.
— rusci, Herbst
— iota, F.
— stigma, Germ.
— salicis, L.
— saliceti, Payk.
Rhamphus flavicornis, Clairv.
Orthocætes setiger, Beck
Pseudostyphlus pilumnus, Gyll.
Procas armillatus, F.
Grypidius equiseti, F.
Erirrhinus scirpi, F.
Erirrhinus bimaculatus, F.
— acridulus, L.
Thryogenes festucæ, Herbst
— nereis, Payk.
— scirrhosus, Gyll.
Dorytomus vorax, F.
— tortrix, L.
— hirtipennis, Bedel
— validirostris, Gyll.
— maculatus, Marsh.
— melanophthalmus, Payk.
— pectoralis, Gyll.
— salicis, Walt.
Smicronyx reichei, Gyll.
— jungermanniæ, Reich.
Tanysphyrus lemnæ, F.
Bagous alismatis, Marsh.
— nodulosus, Gyll.
— lutulosus, Gyll.
— frit, Brit. coll.
— brevis, Schön.
— glabrirostris, Herbst
Anoplus plantaris, Naez.
— roboris, Suffr.
Elleschus bipunctatus, L.
Tychius venustus, F.
— squamulatus, Gyll.
— schneideri, Herbst
— meliloti, Steph.
— junceus, Reich.
— tomentosus, Herbst
— tibialis, Boh.
— pygmæus, Bris.
Miccotrogus picirostris, F.
Sibinia potentillæ, Germ.
— primita, Herbst
Miarus campanulæ, L.
— graminis, Gyll.
— plantarum, Germ.
Gymnetron villosulus, Gyll.
— beccabungæ, L.
— melanarius, Germ.
— rostellum, Herbst
— pascuorun, Gyll.
— labilis, Herbst
— antirrhini, Payk.
Mecinus pyraster, Herbst
— circulatus, Marsh.
Anthonomus ulmi, De G.
— rosinæ, Des Gozis.
— pedicularius, L.
— chevrolati, Desbr.
— pomorum, L.
— rubi, Herbst
— comari, Crotch
Nanophyes lythri, F.
— gracilis, Redt.
Cionus scrophulariæ, L.
— tuberculosus, Scop.
— thapsus, F.

Cionus hortulanus, Marsh.
— blattariæ, F.
— pulchellus, Herbst
Orobitis cyaneus, L.
Cryptorrhynchus lapathi, L.
Acalles ptinoides, Marsh.
— turbatus, Boh.
Cœliodes rubicundus, Herbst
— quercus, F.
— ruber, Marsh.
— erythroleucus, Gmel.
— cardui, Herbst
— quadrimaculatus, L.
— exiguus, Ol.
Poophagus sisymbrii, F.
Ceuthorrhynchus assimilis, Payk.
— setosus, Boh.
— constrictus, Marsh.
— cochleariæ, Gyll.
— ericæ, Gyll.
— erysimi, F.
— contractus, Marsh.
— cyanipennis, Germ.
— chalybæus, Germ.
— pilosellus, Gyll.
— quadridens, Panz.
— geographicus, Goeze
— pollinarius, Forst.
— viduatus, Gyll.
— pleurostigma, Marsh.
— alliariæ, Bris.
— rapæ, Gyll.
— punctiger, Gyll.
— marginatus, Payk.
— urticæ, Boh.
— rugulosus, Herbst
— melanostictus, Marsh.
— asperifoliarum, Gyll.
— arcuatus, Herbst
— euphorbiæ, Bris.
— chrysanthemi, Germ.
— campestris, Gyll.
— litura, F.
— trimaculatus, F.
Ceuthorrhynchidius floralis, Payk.
— hepaticus, Gyll.
Ceuthorrhynchidius pyrrhorhynchus, Marsh.
— nigrinus, Marsh.
— melanarius, Steph.
— posthumus, Germ.
— terminatus, Herbst
— horridus, F.
— distinctus, Bris.
— quercicola, Payk.
— troglodytes, F.
— chevrolati, Bris.
Rhytidosomus globulus, Herbst
Amalus hæmorrhous, Herbst.
Rhinoncus pericarpius, L.
— gramineus, Herbst
— perpendicularis, Reich.
— castor, F.
— bruchoides, Herbst
— quadrinodosus, Gyll.
Eubrychius velatus, Beck
Litodactylus leucogaster, Marsh.
Phytobius comari, Herbst
— waltoni, Boh.
— quadrituberculatus, F.
— canaliculatus, Fahr.
— quadricornis, Gyll.
Limnobaris T-album, L.
Baris laticollis, Marsh.
— picicornis, Marsh.
— lepidii, Germ.
Balaninus venosus, Grav.
— nucum, L.
— turbatus, Gyll.
— betulæ, Steph.
— rubidus, Gyll.
— villosus, F.
— salicivorus, Payk.
— pyrrhoceras, Marsh.
Magdalis armigera, Fourc.
— cerasi, L.
— pruni, L.
— barbicornis, Latr.

CALANDRINA

Calandra granaria, L.
— oryzæ, L.

COSSONINA

Cossonus ferrugineus, Clairv.
Rhyncolus lignarius, Marsh.
— gracilis, Ros.
— ater, L.

SCOLYTIDÆ

Scolytus destructor, Ol.
— pruni, Ratz.
— intricatus, Ratz.
— rugulosus, Ratz.
— multistriatus, Marsh.
Hylastes ater, Payk.
— cunicularius, Er.
— opacus, Er.
— angustatus, Herbst
— palliatus, Gyll.
Hylastinus obscurus, Marsh.
Hylesinus crenatus, F.
— oleiperda, F.
— fraxini, Panz.
— vittatus, F.
Myelophilus piniperda, L.
Cissophagus hederæ, Schmidt
Phlœophthorus rhododactylus, Marsh.
Cryphalus binodulus, Ratz.
— *granulatus, Ratz.
— abietis, Ratz.
— piceæ, Ratz.
— fagi, Nord.
Pityophthorus pubescens, Marsh.
Xylocleptes bispinus, Duft.
Dryocætes villosus, F.
— alni, Georg.
— coryli, Perris.
Tomicus laricis, F.
Pityogenes chalcographus, L.
— bidentatus, Herbst
Trypodendron domesticum, L.
Xyleborus dispar, F.
— dryographus, Ratz.
— saxeseni, Ratz.
Platypus cylindrus, F.

ABNORMAL COLEOPTERA

STYLOPIDÆ

Stylops melittæ, Kirby
Elenchus tenuicornis, Kirby

LEPIDOPTERA

Butterflies and Moths

With the possible exception of its southern portion and its extreme south-western and western limits bordering on Sussex and Hampshire, probably no county in England—except perhaps Kent—has been more

thoroughly worked by collectors of the Lepidoptera than Surrey, and it is unlikely that many rare or local species have been overlooked. Whatever number of species may have occurred therein in the beginning or middle of the last century, there can be no doubt that the Rhopalocera (Butterflies) throughout the greater portion of the county are, and have been for many years past, poorly represented both as to species and the quantity of specimens. The number of species occurring in Surrey does not equal the number recorded for either Kent, Sussex, Hampshire, Dorsetshire, Devonshire, Gloucestershire or Northamptonshire. All the counties named contain local species of considerable interest ; but no butterfly is found in Surrey which does not occur in most of the southern, eastern, western and midland counties. The greater part of the north-eastern portion of the county is absorbed by south London, while the suburbs extend to Croydon and Reigate on the south, and to Surbiton, Epsom, Leatherhead, Molesey, Esher, Walton-on-Thames, Weybridge and Woking on the west and south-west. In this more or less suburban district the butterflies—with the exception of the commonest and most widely distributed species, or species which occur sporadically, like *Colias edusa*, *C. hyale* and *Vanessa cardui*—are conspicuous by their absence or extreme rarity. This may to some extent be accounted for by drainage and building operations, by London smoke, or by the extermination of local species by over-collecting.

No one accustomed to the woods of Hampshire, Sussex, Northamptonshire, Gloucestershire and many of the other English counties can fail to be struck by the rarity, and in some cases the entire absence, of sylvan species—such as the Fritillaries—in localities like Coombe Wood near Kingston, the Prince's Covers near Claygate, Ashtead Woods between Surbiton and Leatherhead, or Bookham Common between Stoke d'Abernon and Bookham. Even further from London, in the woods between Effingham and Ockham, or in the wild moor and woodland country extending from Ranmore Common on the east to near Guildford on the west and from Horsley on the north to Shiere on the south, the scarcity, or entire absence, of more or less local butterflies is astonishing. On the other hand the list of the Heterocera (moths) found in Surrey is a fairly good one, though it is not equal to the lists for Hampshire or Sussex.

RHOPALOCERA

Butterflies[1]

The Wood White (*Leucophasia sinapis*, L.) is recorded by Mr. Barrett as formerly common at Haslemere, but the writer has never met with it in the county, or received any notes of its occurrence from any of his other numerous correspondents. If it ever occurred in any of the Surrey woods in addition to the Haslemere locality, it has probably been extinct for some years as it has been in many of its former localities in adjoining counties.

[1] The caterpillars of the Swallow-tail (*Papilio machaon*, L.) are recorded by the late G. Austin as having been taken fifty years ago in the osier beds in the Battersea fields.—H. G.

The Large Cabbage White (*Pieris brassicæ*, L.), the Small Cabbage White (*P. rapæ*, L.) and the Green-veined White (*P. napi*, L.) are generally distributed throughout the county and are usually abundant. The Bath White (*P. daplidice*, L.) has been recorded by Mr. Sydney Webb as having been taken singly at the Hilly Field, Headley and near Box Hill, but no captures have been reported since 1860. The Orange Tip (*Anthocharis cardamines*, L.) is generally distributed in lanes, fields and woods and is often abundant. The Brimstone (*Gonepteryx rhamni*, L.) is generally distributed throughout the county and is common in many places where its food plant is plentiful, but I have never seen it as common in Surrey as it is in the New Forest and in many of the Sussex woods.

The Clouded Yellow (*Colias edusa*, Fb.) is generally distributed in the county in favourable seasons, and has been taken commonly in the suburban districts about Reigate, Croydon, Surbiton, Hook, Chessington and elsewhere. It was plentiful in clover and lucerne fields close to Surbiton in 1877, 1888, 1893 and 1900. Mr. T. H. Briggs also records it from Betchworth, Ranmore and Leatherhead. The white variety of the female (var. *helice*) generally occurs with the type more or less commonly. Mr. Sydney Webb says that in the great *edusa* year of 1877 the var. *helice* occurred at the rate of about 20 per cent to the type. In some seasons it averages only about 5 per cent to the type. The Pale Clouded Yellow (*C. hyale*, L.) is generally distributed in the county in certain seasons. The late Edward Newman recorded it as being common at New Cross in 1835. Mr. Barrett recorded it from Haslemere in 1868 and Mr. Sydney Webb says it was common on the railway bank at Buckland in 1876. It occurred sparingly about Surbiton, Hook and Chessington in 1893 and commonly in clover fields in the same localities in 1900. The Silver Washed Fritillary (*Argynnis paphia*, L.) occurs sparingly in most of the woods in the county, but is very rare in the metropolitan district. It has been recorded by Mr. Sydney Webb from Tilburstow and Clutton's Wood south of Redhill, by Mr. J. G. Hewat from the Prince's Covers near Claygate,[1] by Mr. T. H. Briggs from Headley Lane and Mickleham. The writer has taken it occasionally in Headley Lane by the side of Sir Lucas Pepys' wood, and in the wooded valleys between the locality last named and Betchworth. It also occurs sparingly about the Sheep Leas, West Horsley, and in the woods on Shiere Common; but it is not, apparently, abundant in Surrey as it is in the New Forest and in many other Hampshire woods, or in the Forest of Dean, Gloucestershire, and in some of the Sussex woods. I have never seen in Surrey the greenish black variety of the female —*valezina*—which is so common in the New Forest. The Dark Green Fritillary (*A. aglaia*, L.) is generally distributed on the chalk downs in the centre of the county, especially at the base of the hills

[1] It must be very rare in this locality, as I have never seen more than one or two in a season.—H. G.

about Reigate, Betchworth and Dorking. I have taken a few specimens near West Horsley, and it is sometimes common in the woods and on the downs to the east of Newlands Corner. The High Brown Fritillary (*A. adippe*, L.) has been recorded by Mr. Barrett as occurring sparingly at Haslemere. Mr. Sydney Webb says it occurs in similar localities to *A. aglaia* and also in woods. I have taken a few specimens near the Sheep Leas, West Horsley, on Shiere Common between Horsley and Shiere, between Mickleham and Headley, and in some of the wooded valleys to the east of Box Hill. This species, like *A. paphia* and *A. aglaia*, is almost entirely absent from the neighbourhood of London, and even in the centre and south-west of the county occurs very sparingly. The Queen of Spain Fritillary (*A. lathonia*, L.) has been recorded by the late Edward Newman from Croydon. Mr. Webb tells me that it has been also taken near Headley, Betchworth and Redstone, but that no captures have been reported since 1851. The Pearl Bordered Fritillary (*A. euphrosyne*, L.) has been recorded as abundant about Haslemere by Mr. Barrett. It is also recorded from Reigate by Mr. Sydney Webb, from Crohamhurst near Croydon and from Leatherhead by Mr. T. H. Briggs, and from Claygate and Horsley by Mr. J. G. Hewat. I have known the Claygate Woods for twenty-six years, but have never seen more than three or four specimens there in one season. It is not uncommon in the woods near the Sheep Leas between West Horsley and Shiere, but it is apparently absent from, or very rare in, the woods in the suburban district. The Small Pearl Bordered Fritillary[1] (*A. selene*, Schiff.) seems to be rare in the county. Mr. T. H. Briggs says he found it on Wimbledon Common about forty years ago and at Byfleet as recently as 1896. Mr. Webb refers to its occurrence near Reigate. Mr. Barrett also records this species as common near Haslemere, but I have never seen a specimen in the county, although it is abundant in many parts of the adjoining counties of Hampshire, Sussex and Kent. The Greasy Fritillary (*Melitæa artemis*, L.) is, or was, locally common near Haslemere. Mr. Barrett says: 'It occurs irregularly in numbers, but is occasionally abundant.' It does not seem to have been noticed lately and has probably disappeared from Surrey, as it has from so many English counties. I have never met with the species in the county, and with the exception of Mr. Barrett's record of its Haslemere locality I have never heard of its occurrence from any of my numerous friends and correspondents in any part of the county. The Large Tortoiseshell (*Vanessa polychloros*, L.) is generally distributed throughout the county, but I have never seen it in abundance as it is in the New Forest.

[1] The capture of a specimen of a continental species of Fritillary, *Argynnis dia*, was reported by the late Mr. Arnold Lewis in the *Ent. Monthly Magazine*, March, 1876, vol. xii. p. 229, as having been made by Master Wallace Smith, a relative of his, at Worcester Park in 1872. This report was no doubt due to an error. *A. dia* has never, either before or since 1872, been recorded from Worcester Park, nor do the common species of *Argynnis*—*euphrosyne* and *selene*, or either of them—occur at Worcester Park. Mr. Arnold Lewis went to Switzerland every year and no doubt the specimen had been caught by him on the continent and given to his young relation, who after a time mixed it up with his British specimens and fancied he had caught it in Worcester Park.—H. G.

Mr. Barrett says it is not uncommon near Haslemere. I have noticed it as being not uncommon, after hybernation, about Cranleigh and other parts of south Surrey on the borders of Sussex. It is also not uncommon near the farmhouses on Abrook and Esher Commons between Oxshott and Esher, and has been recorded from Claygate, Chiddingfold, Worcester Park, Kingston, Leatherhead and West Horsley by Mr. J. G. Hewat, Mr. Kaye, Major Ficklin, and Mr. T. H. Briggs. Considering the amount of elm timber in the county it ought to occur plentifully, but with the exception of the commonest species Surrey does not seem to produce any butterflies in abundance. The rare Camberwell Beauty (*V. antiopa*, L.) has been taken in the county. Mr. Sydney Webb records the capture of a specimen at Copthorne on August 24, 1872, by Mr. Gilbert, who had also taken one a week earlier at Box Hill, Mr. J. G. Hewat informs me that he saw a specimen near Oxshott on the 20th April, 1900, and Mr. Edward Saunders reports[1] the capture of a specimen in August, 1900, by a friend of his, near Woking. The Peacock (*V. io*, L.), the Red Admiral (*V. atalanta*, L.) and the Painted Lady (*V. cardui*, L.) are generally distributed throughout the county. *V. io* is much scarcer than formerly. *V. atalanta* is a common insect in autumn, especially in gardens, even in the London suburbs, and *V. cardui* occurs plentifully in favourable seasons all over the county, especially in clover and lucerne fields.[2] The Purple Emperor (*Apatura iris*, L.) was recorded by the late Mr. Edward Newman as being formerly abundant near Godalming. It may have been so in the beginning or middle of the last century, but I am afraid it has now disappeared from Surrey as it has from the suburban portions of Kent, Essex and other metropolitan counties. Mr. Sydney Webb found this species about forty years ago not uncommonly in a small wood near Colley Farm, Reigate, and he also occasionally caught or saw specimens at Hightrees and Redstone Wood near Redhill, but the last specimen he observed was in 1864. Mr. Barrett informs me that he has only twice seen *A. iris* in Surrey, viz. in a wood near Haslemere. Both specimens were females and they were apparently looking for sallow bushes on which to deposit their ova. He thinks that they were, probably, mere stragglers from the Sussex woods from four to ten miles away. A tradition exists that the species occurred in the early part of the last century in the oak woods known as the Prince's Covers between Claygate and Stoke d'Abernon Chase. The Marbled White (*Arge galathea*, L.), which, although local, is so abundant in many localities in Kent, Sussex, Hampshire, Dorsetshire, Devonshire, Northamptonshire, Gloucestershire and

[1] A few specimens of the White Admiral (*Limenitis sybilla*, L.) have been reported by Mr. H. Maxwell of Surbiton, as having been taken by him in the woods near Horsley in July, 1901. I have never met with the species in any part of Surrey, nor am I aware that its capture has been previously recorded from any part of the county. It seems possible that the specimens of *L. sybilla* taken by Mr. Maxwell may have been purposely introduced into the Horsley Woods in the pupal state, or that they may have immigrated from the neighbourhood of Liphook and Woolmer Forest in east Hampshire, where the species occurs commonly.

[2] *Ent. Mo. Magazine*, April, 1901, p. 100.—H. G.

other southern and midland counties, only occurs sparingly in a few localities in Surrey. It has been recorded by the late Edward Newman from between Busbridge and Highdown's Ball, near Godalming, and in one field adjoining Headley Lane, Mickleham. Mr. Sydney Webb has taken it at Gomshall and about Ranmore Common near Dorking. I have never met with the species in Surrey except in the woods adjoining the Sheep Leas, West Horsley. Mr. Barrett reports it as occurring rarely near Haslemere. The Wood Argus (*Satyrus egeria*, L.) is generally common in woods and lanes, and the Wall (*S. megæra*, L.) is common everywhere by roadsides throughout the county. The Grayling (*S semele*, L.) is locally common on the chalk hills, also at Leith Hill on the greensand, and in most places on the Bagshot Sand district, such as Oxshott, Chobham, Woking, Worplesdon, etc. The Meadow Brown (*S. ianira*, L.) is abundant everywhere in meadows and on hillsides, and the Large Heath (*S. tithonus*, L.) is common throughout the county by hedgerows and roadsides and also in woods. The Ringlet (*S. hyperanthes*, L.) is not so generally distributed as its congeners, but is common in many woods throughout the county. The Small Heath (*Chortobius pamphildus*, L.) is everywhere common in fields, and on roadsides, heaths and hillsides. The Green Hairstreak (*Thecla rubi*, L.) is not uncommon in woods and lanes throughout the county. I have found it abundantly in some years about whitethorn hedges and bushes on the borders of the Sheep Leas, West Horsley, and between Horsley and Shiere, but I have never found it commonly in the north-eastern or metropolitan district of the county. The Purple Hairstreak (*T. quercus*, L.) is generally distributed in the oak woods of the county and Mr. J. G. Hewat has found it commonly, in some seasons, in the Prince's Covers near Claygate. The White Letter Hairstreak (*T. w-album*, Knoch) has been recorded by the late Edward Newman from the neighbourhood of Guildford, Godalming, Witley and Cobham, and the late J. F. Stephens found it in thousands in the vicinity of Ripley some sixty or seventy years ago. Since then it has been a very rare species in Surrey until in July, 1900, it again appeared in some numbers about Ripley, Cobham,[1] Esher and Claygate. The Brown Hairstreak (*T. betulæ*, L.) is recorded by Mr. Sydney Webb from Dorking and Reigate, and as occurring in some years along hedgerows between Redhill and Nutfield, always singly. I have heard of the occurrence of the larvæ on the blackthorns in Ashtead Woods and elsewhere near Epsom, but I have never seen the species in the county. The Small Copper (*Polyommatus phlæas*, L.) is of course generally distributed all over the county in fields, meadows and on hillsides and in the rides of woods. I have never met with the Silver Studded Blue (*Lycæna ægon*, Schiff.) on the chalk hills of Surrey, but it is abundant on nearly all the heaths on the Bagshot Sands, such as Abrook Common, Oxshott, Whitemoor Common Worplesdon, about Wisley, Byfleet, Woking and Chobham, and

[1] Mr. Percy Richards informs me that he and his father beat about 500 larvæ of this species off one wych elm, near Esher, in 1900.—H. G.

Mr. Barrett reports it from Haslemere. The Brown Argus (*L. agestis*, Hb.) occurs all along the chalk range about Guildford, Horsley, Betchworth, Buckland, Reigate, Box Hill and Croydon. I have not noticed it on the Bagshot Sands or London Clay.

The Common Blue (*Lycæna alexis*, Hb.) is generally distributed throughout the county on chalk, sand and clay, and is often plentiful in meadows and fields. The Adonis or Clifden Blue (*L. adonis*, Fb.) is very local, but common in several localities on the chalk hills and in chalk pits about Gomshall, Betchworth, and especially in the chalk pits and on the upper slopes of Reigate Hill, close to the Suspension Bridge. It also occurs in certain localities on the south of the Hog's Back and in one spot near Guildford. Mr. Sydney Webb says that it had become extinct on Reigate Hill more than twenty-six years ago, but was successfully re-established there by him in 1876 by the introduction of a number of living fertile females from Folkestone, which were set at liberty on the hillsides and in the adjoining chalk pits. The species is certainly now abundant in the last-named localities, where early in June, 1900, I saw hundreds of specimens. Although the food plants are generally distributed throughout the chalk district, the species is absent from the majority of suitable localities. The Chalk Hill Blue (*Lycæna corydon*, Fb.) is less local than the last species, and is more or less abundant throughout the chalk district from the Hog's Back on the west to the borders of Kent on the east. It is especially plentiful in the Sheep Leas, West Horsley, and about Reigate. It also occurs about Riddlesdown and Kenley. The Mazarine Blue (*L. acis*, Fb.) is reported by the late Mr. Brewer to have been taken on Reigate Hill and near Headley, but I know of no captures within the last thirty years. The Small Blue (*L. alsus*, Fb.) is common in many places in the chalk district, both in chalk pits and on the slopes of the hills. The Holly Blue (*L. argiolus*, L.) is generally distributed throughout the county along hedgerows and wood sides and also in gardens, especially where holly and ivy are plentiful. It is generally abundant amongst the hollies on Holmwood Common, between Dorking and Leith Hill, and also amongst the hollies on Bookham Common, and about ivy on old buildings and ruins. In the spring of 1900 it occurred abundantly all over the county, especially in the metropolitan district about Weybridge, Claygate, Esher, Thames Ditton, Long Ditton, Surbiton and Wimbledon. It seemed especially to affect the flowers of certain species of laurels and laurustinus, and was most abundant in the suburban gardens of Surbiton and Kingston.

The Duke of Burgundy (*Nemeobius lucina*, L.) is sometimes common in the beech woods adjoining the Sheep Leas, West Horsley. It also occurs sparingly in Sir Lucas Pepys' wood between Mickleham and Headley, and according to Mr. T. H. Briggs, near Effingham. Mr. Sydney Webb reports it as occurring very sparingly on Margery Hill near Reigate, and Mr. Barrett says it is to be found near Haslemere, but that it is very local and uncommon in point of numbers.

The Grizzled Skipper (*Syrichthus alveolus*, Hb.) is generally distributed and common in some of the woods of the county. It is however rare in the metropolitan district. Mr. Sydney Webb informs me that the variety *fritillum* of this species occurred commonly in 1869 at Tilburstow Hill near Godstone and that they, with intermediates, were that year in the proportion of about five to twelve of the type. The Dingy Skipper (*Thanaos tages*, L.) is generally distributed throughout the county and is common in the chalk district, and in some seasons it is abundant on the slopes of the North Downs, especially about Box Hill and the valleys to the east of it. The Small Skipper (*Hesperia linea*, Fb.) and the Large Skipper (*H. sylvanus*, Esp.) are generally distributed. The Silver-spotted Skipper (*H. comma*, L.) is very local, but occurs commonly in many places about the chalk hills from Croydon to Betchworth and Box Hill and thence westwards. It is plentiful in the Sheep Leas near West Horsley, but I have never seen it so abundant in Surrey as it is in many Sussex localities.

HETEROCERA

Moths

NOCTURNI

The Forester (*Procris statices*, L.) has been recorded by Mr. Sydney Webb as occurring in damp meadows at the foot of Leith Hill, and one or two specimens have been taken on Reigate Hill. I have only found it in one meadow near Telegraph Hill, Claygate. Mr. Barrett reports it from Haslemere, but it seems very local in the county. The Five-spotted Burnet (*Zygæna trifolii*,[1] Esp.) occurs in damp meadows at the foot of Leith Hill; also, according to Mr. Webb, in one corner of Reigate Heath. Mr. T. H. Briggs says it formerly occurred on Wimbledon Common. It is mentioned by Mr. Barrett in his list of Haslemere insects, and Major Ficklin and Mr. Kaye include it amongst their Surrey species. The Six-spotted Burnet (*Z. filipendulæ*, L.) is generally common along the chalk range about Guildford, Horsley, Gomshall, Box Hill, Dorking, Reigate Hill and eastwards. It is also common at Leith Hill and many other parts of the county. The Eyed Hawk Moth (*Smerinthus ocellatus*, L.) is common throughout the county and is mentioned by Mr. Sydney Webb as occurring near Redhill, by Mr. T. H. Briggs as being not uncommon at Leatherhead. Mr. Barrett records it from Haslemere, it is included by Messrs. J. G. Hewat and W. J. Kaye in their lists for Surbiton and Worcester Park respectively, and I have taken the larvæ on willow by the Thames side near Kingston. The Poplar Hawk Moth (*S. populi*, L.) is very widely distributed and much commoner than the preceding. The Lime Hawk Moth (*S. tiliæ*, L.) is also a widely distributed species amongst limes and elms. It is very common about Surbiton, Worcester Park, Leatherhead, Wimbledon

[1] Major Ficklin and Mr. Kaye also include *Zygæna loniceræ*, Esp., in their Surrey lists, but give no localities. I have found the last-named species plentifully in certain localities in Kent, but I never saw it in Surrey.—H. G.

and elsewhere in the metropolitan district. The Death's Head Hawk Moth (*Acherontia atropos*, L.) is not uncommon throughout the county, especially in the larval state. It is more frequently met with in the chalk districts than on the clay or sands. The Convolvulus Hawk Moth (*Sphinx convolvuli*, L.) is not uncommon in some years. Mr. Sydney Webb records it from Redhill, Mr. Briggs from Leatherhead, Mr. Barrett from Haslemere, and Mr. J. G. Hewat and I have taken it at Surbiton. I have received it from Molesey, and Major Ficklin and Mr. Kaye include it in their lists of Surrey species. The Privet Hawk Moth (*S. ligustri*, L.) is generally distributed throughout the county and is common in most places, especially in the larval state, more frequently on lilac than on privet. The Bedstraw Hawk Moth (*Deilephila*[1] *galii*, Schiff.) is a rare species, but has been occasionally found about Box Hill and elsewhere on the chalk range. The Small Elephant (*Chærocampa porcellus*, L.) is common all along the chalk range, and may be found at dusk hovering over the flowers of viper's bugloss (*Echium vulgare*). It is generally confined to the chalk district, but Mr. Briggs has taken it on yellow bedstraw (*Galium verum*) on Wimbledon Common, and Mr. J. G. Hewat has taken it on Tolworth Common, Surbiton. The larvæ are common in many places, especially in the Sheep Leas, West Horsley, on *Galium verum*. The Large Elephant (*C. elpenor*, L.) is common in many parts of the county. Mr. Webb says it often occurs in gardens at honeysuckle and other flowers, about Redhill, Reigate and Dorking. Mr. Barrett and Major Ficklin include it in their lists, and I have bred large numbers of specimens from larvæ collected by myself on the banks of the Weybridge Canal about Byfleet, feeding on yellow balsam (*Impatiens fulva*). The Humming-bird Hawk Moth (*Macroglossa stellatarum*, L.) is generally distributed and in some seasons is common throughout the county, but especially in the chalk districts. The Broad-bordered Bee Hawk (*Sesia fuciformis*, L.) is reported by Mr. Barrett from Haslemere, and by Mr. Webb from Reigate Hill. I have found it about the Sheep Leas, West Horsley, flying over the common bugle (*Ajuga reptans*), and more plentifully on Shiere Common at the flowers of rhododendrons. Major Ficklin says it is abundant some years on rhododendron flowers at St. George's Hill, Weybridge. The Narrow-bordered Bee Hawk (*S. bombyiformis*, L.) occurred on Wimbledon Common about forty years ago according to Mr. T. H. Briggs, and has also been reported from Haslemere and Leith Hill. I have never seen it in the county. *S. myopiformis*, Bork., is generally distributed in orchards. *S. culiciformis*, L., has been recorded by Mr. Webb from Redstone Wood, Nutfield, and elsewhere in the county. *S. ichneumoniformis*,[2] Fb., occurs throughout the chalk district at Guild-

[1] *Deilephila lineata*, Esp., and *Chærocampa celerio*, L., have been reported from the Reigate district, but neither I or Mr. Sydney Webb know of any recent captures.—H. G.

[2] *Sesia sphegiformis*, Fb. This species probably occurs in Surrey. It has been taken commonly in Tilgate Forest, Sussex, just outside the southern border of the county.—H. G.

ford, Buckland, Box Hill and Reigate, and also on the greensand between Redstone Hill and Nutfield. *S. cynipiformis*, Esp., is sparingly distributed and has been recorded by Mr. Webb from Redstone and Nutfield. Mr. Kaye also includes it in his list of Surrey species. *S. tipuliformis*, Clerck, is generally distributed in old gardens, and is recorded by nearly all my correspondents from every district. *S. bembeciformis*, Hb., is generally distributed, but is more often found in the larval state. It is recorded from Godstone, Redhill, Haslemere and elsewhere. *S. apiformis*, Clerck, also occurs in the county and is included by Major Ficklin in his list of species taken in the Kingston district. The Leopard (*Zeuzera æsculi*, L.) is generally distributed, especially in the metropolitan district. Mr. Webb says it is much more frequently seen in its larval condition and is more polyphagous than is generally supposed. The Goat (*Cossus ligniperda*, Fb.) is generally distributed, but is not often observed in the perfect state. The larvæ are most destructive to willows and oaks, and also sometimes attack elm, ash and poplar trees. The Golden Swift (*Hepialus hectus*, L.) is locally abundant in many woods. It has been recorded from Redhill, Nutfield, Betchworth and other parts of the county. The Common Swift (*H. lupulinus*, L.) is abundant everywhere in fields and meadows. *H. sylvinus*, L., is not uncommon throughout the county, including the Haslemere district, and comes freely to 'light.' The Northern Swift (*H. velleda*, Hb.) occurs near Redhill, Reigate, Haslemere and in many other parts of the county. Its English name, the 'Northern Swift,' seems inappropriate. The Ghost (*H. humuli*, L.) is a common insect throughout the county, especially in damp meadows and waste ground. *Nola cucullatella*, L., is generally distributed and is nowhere uncommon. *N. cristulalis*, Dap., is more local than the last species, but is recorded from Croham Hurst, Croydon, Betchworth, Reigate, Dorking, Guildford, Redhill, Nutfield and Haslemere. *N. strigula*, Schiff., is a local species and generally rare. It has been recorded from Redstone Wood, Reigate Hill, Gomshall and Haslemere. *Nudaria senex*, Hb., is recorded by Mr. Webb from swamps near Redhill Station and also from Nutfield, where it was formerly abundant. *N. mundana*, L., is reported from Reigate Hill, and Mr. Barrett includes it in his list of Haslemere species. *Setina irrorella*, Clerck, occurs at Box Hill and Reigate Hill. I have found it plentifully in some of the valleys to the north and east of Box Hill. *Calligenia miniata*, Forst., is recorded by Mr. Barrett from Haslemere, by Mr. Kaye from Box Hill and by Mr. T. H. Briggs from Crohamhurst. I have not myself taken it in the county, though it is abundant in many parts of the adjoining counties of Hampshire and Sussex. *Lithosia mesomella*, L., occurs more or less commonly on heaths and in woods about Gomshall, Leith Hill and the back of Box Hill. *L. aureola*, Hb., is found sparingly at Box Hill and Reigate Hill. *L. helveola*, Hb., occurs at Box Hill and on the fir trees in Sir Lucas Pepys' wood by the side of Headley Lane. *L. complanula*, Bdv., and *L. complana*, L., are distributed throughout the county but occur chiefly upon the chalk. *L. griseola*, Hb., occurs in damp

woods, fields and lanes. It used to be common on Tolworth Common, Surbiton, and by the bridle path between Surbiton and New Malden. *L. quadra*, L., has occurred rarely near Gomshall. *L. rubricollis*, L., was formerly abundant at Buckland Hill among the yew trees, also near Haslemere and elsewhere. The Cinnabar (*Euchelia jacobææ*, L.) is found nearly everywhere throughout the county where ragwort is plentiful, but is not so common as formerly. The Scarlet Tiger (*Callimorpha dominula*, L.) occurs, according to Mr. Webb, very sparingly at Redhill. It also probably occurs on the eastern boundary of the county near Edenbridge. The Clouded Buff (*Euthemonia russula*, L.) has been reported by Mr. Webb from Reigate Hill and Betchworth, and is common near Woking, at Oxshott, and on Shiere Common, Headley Heath, Walton Heath and on most other heaths among bracken. The Wood Tiger (*Chelonia plantaginis*, L.) occurs sparingly in the woods near Horsley and elsewhere on the North Downs. The Garden Tiger (*C. caja*, L.) is generally distributed, but is not nearly as common as formerly. The Cream Spot Tiger (*C. villica*, L.) occurs in many places on the chalk, as at Reigate Hill, Betchworth and Gomshall, and the Ruby Tiger (*Arctia fuliginosa*, L.) is generally distributed and often comes to 'light.' *A. mendica*, Clerck, is generally distributed and not rare. The Buff Ermine (*A. lubricepeda*, Esp.) and the White Ermine (*A. menthastri*, Esp.) are both common everywhere. The Brown Tail (*Liparis chrysorrhœa*, L.) occurs in the county, but is generally rare. Mr. Percy Richards informs me that he has taken it at Kingston Hill, and that the larvæ were found in great numbers near Ashtead in 1901. The Gold Tail (*L. auriflua*, Fb.) is common throughout the county. The White Satin (*L. salicis*, L.) is common everywhere on sallow, willow and poplar. The Black Arches (*L. monacha*, L.) is widely distributed, but not abundant as it is in the New Forest. *Orgyia pudibunda*, L., occurs everywhere but is most common in the hop gardens. The Scarce Vapourer (*O. gonostigma*, Fb.) was formerly common near Veitch's Nursery, on Wimbledon Common, but has not been seen for many years. The Common Vapourer (*O. antiqua*, L.) is found everywhere and is sometimes common in the southern suburbs of London. *Demas coryli*, L., is reported from Haslemere. *Trichiura cratægi*, L., occurs very sparingly, as a rule, in the county. *Pœcilocampa populi*, L., is generally distributed and Mr. Webb says it comes very freely to gas lamps at Reigate. I have taken it at Surbiton and Mr. Barrett reports it from Haslemere. The Small Eggar (*Eriogaster lanestris*, L.) is common locally in the county. As the larvæ are gregarious the species is usually abundant where it occurs. Mr. Webb reports it from Epsom and Sutton, and Mr. Barrett from Haslemere. The Lackey (*Bombyx neustria*, L.) is generally distributed throughout the county and the larvæ are often a pest in gardens and orchards. It is recorded from Wandsworth, Wimbledon, Leatherhead, Surbiton, Claygate, Redhill, Reigate and Haslemere. The Fox (*B. rubi*, L.) occurs in many places on the North Downs about Reigate, Buckland and Betchworth, and is generally common on heaths and moors.

I have seen it frequently about Oxshott and Esher, from which localities it is also recorded by Mr. Kaye and Mr. Hewat. Mr. Briggs has also taken it at Wimbledon and Leatherhead, and Mr. E. B. Bishop reports it from Chobham. As a rule it is more plentiful in the larval state. The Oak Eggar (*B. quercus*, L.) is generally distributed and sometimes plentiful in the larval state. The Drinker (*Odonestis potatoria*, L.) is very common throughout the county, especially in the larval state, even in the metropolitan district. The Lappet (*Lasiocampa quercifolia*, L.) is widely distributed, but much less common than the five last-named species. Mr. Webb records it as being scarce about Redhill and Reigate, Mr. Kaye mentions its occurrence at Worcester Park, and Mr. Bishop reports it from Effingham. I have never met with it in the county. The Emperor (*Saturnia carpini*, Schiff.) is generally distributed on heaths and is often common on Oxshott Heath, Abrook Common and other similar localities near Esher, and by the aid of bred females a large number of males may be assembled. I have myself seen numbers of males flying about in the beginning of May in the localities mentioned, and Mr. Kaye and Mr. Hewat also record the species from the same places. It is also included by Mr. Barrett in his list for Haslemere, and is doubtless common in that district. Mr. Briggs says it formerly occurred on Wandsworth and Wimbledon Commons and at Riddlesdown.

GEOMETRÆ

The Swallow-tail Moth (*Uropteryx sambucata*, Dup.) is generally distributed and usually abundant. *Epione apiciaria*, Schiff., was formerly plentiful, according to Mr. Webb, in low marsh lands near Redhill railway station, and it used to be abundant on Tolworth Common, Surbiton, before the locality was destroyed by builders and land grabbers. It still occurs near Surbiton, and is pretty generally distributed throughout the county. That local species *E. advenaria*, Hb., is reported from Leith Hill, and Mr. Webb says it was formerly abundant near Gomshall. I have found it commonly amongst bilberry in a wood close to St. Martha's Chapel near Chilworth. The Brimstone (*Rumia cratægata*, L.) is of course abundant everywhere as in other counties. *Venilia maculata*, Schiff., is generally distributed in woods and thickets and is common about Redhill, Leith Hill, Buckland Hill, West Horsley, Merrow Downs, the Claygate Woods and elsewhere. *Angerona prunaria*, L., is very local in the county but has been recorded from Reigate, Gomshall and several other localities.

The Light Emerald (*Metrocampa margaritata*, L.) is generally distributed throughout the county, and is common in many places. The Barred Red (*Ellopia fasciaria*, Schiff.) is not uncommon in fir woods, and I have taken it at Oxshott and Esher. Mr. Briggs records it from Wisley, Mr. Barrett from Haslemere, and Mr. Webb says he has taken it everywhere amongst fir trees. The Scorchwing (*Eurymene dolobraria*, L.) is widely distributed, and occurs sparingly at Haslemere, Redstone, Box Hill, Gomshall, Dorking, Godstone, Bentley, Oxshott, and elsewhere

on heaths. The Lilac Beauty (*Pericallia syringaria*, L.) occurs rather sparingly, and is not generally distributed. I have taken it in the Prince's Covers, Claygate, Mr. Kaye reports it from Worcester Park, Mr. Webb says it is uncommon at Redstone, Reigate and Dorking, and Mr. Briggs records it from Leatherhead. The Early Thorn (*Selenia illunaria*, Hb.) is generally common and sometimes abundant in many places. *S. lunaria*, Schiff., is much more local but has occurred at Redhill, Worcester Park and Leatherhead. *S. illustraria*, Hb., has been recorded from the county but is not common. Mr. Kaye reports it from Oxshott. *Odontopera bidentata*, Clerck., and *Crocallis elinguaria*, L., are common everywhere. The Canary-shouldered Thorn (*Ennomos tiliaria*, Bork.) is common throughout the county, and comes freely to gas lamps at Reigate, Redhill, Surbiton and elsewhere. *E. fuscantaria*, Haw., is not so generally distributed as the last species, but is sometimes common at 'light' at Surbiton, Reigate, Redhill and Worcester Park. *E. erosaria*, Bork., is not uncommon in the county, and has been reported from Epsom, Redhill, Redstone, Reigate, Worcester Park and Haslemere. *E. angularia*, Bork., the commonest species of the genus, is generally distributed, and is usually common at 'light' at Surbiton, Worcester Park, Croydon, Sutton, Abinger, Guildford, Reigate, Redhill and the south London suburbs. The Feathered Thorn (*Himera pennaria*, L.) is a common species at 'light' at Surbiton, Worcester Park, Redhill, Reigate and Dorking, and is no doubt generally distributed in the county. *Phigalia pilosaria*, Hb., is very common throughout the county, especially at gas lamps. *Nyssia hispidaria*, Fb., is generally considered a very local species, but has been recorded from Dorking, Ewell, Gatton, Betchworth, Norbury and Bletchingley. Richmond Park is its favourite locality in the metropolitan district. *Biston hirtaria*, Clerck., is a common species in the metropolitan district, and occurs in plenty at Surbiton, Dulwich, Wimbledon and other suburban places. In the country it appears to be less common. It is not included in Mr. Barrett's list of Haslemere insects, and Mr. Webb says he has only twice met with it at Redstone and Redhill. *Amphidasis prodromaria*, Schiff., is common at 'light' in most places, and is recorded from Worcester Park, Redhill and many other localities. I have often found it at rest on fences and palings at Surbiton. The Pepper Moth (*A. betularia*, L.) occurs sparingly at Haslemere, Redhill, Surbiton and in most of the London suburbs. *Hemerophila abruptaria*, Thunb., is generally common throughout the county sitting on palings and coming freely to 'light.' *Cleora lichenaria*, Hufn., is recorded by Mr. Webb from Gomshall, Box Hill and Redhill, by Mr. Kaye from Ashtead, and by Mr. Barrett from Haslemere. *Boarmia repandata*, L., and *B. rhomboidaria*, Hb., are common everywhere, both in the country and in the metropolitan district. *B. abietaria*, Hb., is very local, but has been recorded by Mr. Webb from Leith Hill, Redhill and Godstone, and by Mr. Kaye from Box Hill. I know it to be common on fir trees in several places between Box Hill and Headley, and between Headley Lane and Betchworth. The Great Oak Beauty (*B. roboraria*, Schiff.) seems very rare in

the county, but has been recorded from Redstone by Mr. Webb, from Losely Park near Godalming by Mr. Bishop, and from Haslemere by Mr. Barrett. *B. consortaria*, Fb., occurs rarely at Redhill and Godstone, and is also reported from Haslemere. *Tephrosia consonaria*, Hb., *T. crepuscularia*, Hb., *T. biundularia*, Bork., *T. extersaria*, Hb., and *T. punctulata*, Hb., are all included by Mr. Barrett in his Haslemere list and most of them are pretty generally distributed except in the metropolitan district. *T. punctulata* is common amongst the fir trees and birches about Esher and Oxshott. *Gnophos obscurata*, Hb., is common at Haslemere, Oxshott, Esher and elsewhere on the heaths and the pale form (*calceata*) occurs on the chalk. *Pseudoterpna cytisaria*, Schiff., is generally common on heaths. The Large Emerald (*Geometra papilionaria*, L.) is local and not plentiful, but Mr. Webb records it from Dorking, Reigate and Redstone. Mr. Kaye and Mr. Hewat have taken it at Oxshott and Mr. Barrett includes it in his list of Haslemere insects. *Iodis vernaria*, Hb., is generally distributed in the chalk districts, and Mr. Kaye reports it from Worcester Park, where it may have been introduced with clematis. *I. lactearia*, L., is common everywhere, even in the metropolitan district. The Blotched Emerald (*Phorodesma bajularia*, Schiff.) is a local species, but plentiful in some oak woods. I have found it in abundance in the Prince's Covers near Claygate, and it is reported by Mr. Webb from Guildford, by Mr. Kaye from Worcester Park, and by Mr. Barrett from Haslemere and also from the south London suburbs. *Hemithea thymiaria*, Linn., is generally distributed throughout the county and occurs about Esher, Oxshott, Claygate and elsewhere. *Ephyra porata*, Fb., and *E. punctaria*, L., are generally distributed and occur about Haslemere, Reigate, Redhill, Dorking, Esher, Oxshott, Horsley and elsewhere. *E. trilinearia*, Bork., occurs in beech woods and is very common between West Horsley and Shiere. *E. omicronaria*, Hb., occurs generally amongst maple and is recorded from Haslemere and Horsley. *E. orbicularia*, Hb., is rarer than its congeners, but is recorded from Redstone by Mr. Webb and by Mr. Barrett from Haslemere. *E. pendularia*, Clerck., is not uncommon amongst birch trees, Mr. Hewat and I have frequently taken it at Esher, Oxshott and Claygate. Mr. T. H. Briggs has found it at Crohamhurst and Byfleet. Mr. Barrett reports it from Haslemere and Mr. Kaye from Worcester Park. *Asthena luteata*, Schiff., is apparently not very common, but Mr. Briggs says it has occurred on Wimbledon Common and at Leatherhead, and Mr. Bishop reports it from Horsley. Mr. Webb has taken it occasionally at Redhill, Gomshall and Tilburstow. Mr. Kaye gives Worcester Park as a locality, and Mr. Barrett records it from Haslemere. *A. candidata*, Schiff., is generally distributed and often abundant in suitable localities. It is very common about Oxshott and Claygate. *A. sylvata*, Hb., occurs sparingly. It is mentioned in Mr. Barrett's list of Haslemere insects, Mr. Kaye includes it in his list of Surrey species, and Mr. Webb records the capture of one specimen at Redstone Wood. *Eupisteria heparata*, Haw., is common

in most suitable localities amongst alder. I have found it plentifully near Esher and Oxshott, Mr. Kaye reports it from Byfleet, Mr. Barrett from Haslemere, and Mr. Webb says it occurs at Redhill and Nutfield, Reigate, near Guildford and on marshy ground about Gomshall. *Acidalia scutulata*, Bork., *A. bisetata*, Hufn., *A. dilutaria*, Hb., *A. incanaria*, Hb., *A. remutata*, Hb., and *A. aversata*, L., occur everywhere and are generally common. *A. subsericeata*, Haw., is often common in woods, and the beautiful *A. ornata*, Scop., is common on the chalk hills about Dorking, Box Hill, Betchworth, Buckland and Reigate. Two specimens of that great rarity *A. perochraria*, Fisch., have been taken in Surrey, one by Mr. Webb at Leigh near Reigate, and one by the late Mr. Weston, either on Reigate Heath or in Redstone Wood. One specimen of *A. strigilata*, Hb., is recorded by Mr. Webb as having been taken near the Engine Pond, Gatton. *A. imitaria*, Hb., is pretty generally distributed and is often common in gardens at Haslemere, Reigate, Bletchingley, Godstone, Worcester Park, Surbiton and elsewhere. Mr. Barrett records the local *A. straminata*, Tr., from Haslemere, and *A. inornata*, Haw., is not uncommon about Buckland, Reigate, Headley and Leith Hill. *A. emarginata*, L., is rather local but not uncommon near Haslemere, Redhill, Reigate, Leigh, Gomshall, Wimbledon, Kingston and elsewhere in the county. *Timandra amataria*, L., occurs nearly everywhere. Mr. Hewat and I have taken it near Surbiton and Kingston, and it is included by Major Ficklin and by Messrs. Barrett, Kaye, Briggs and Webb in their lists of Surrey species. *Cabera pusaria*, L., and *C. exanthemaria*, Scop., are generally distributed and common in most places. *Corycia temerata*, Hb., is common nearly everywhere. Mr. Barrett records it from Haslemere, Mr. Kaye from Ashtead, Mr. Hewat from Oxshott, Mr. Briggs from Ranmore, and Mr. Webb says that it is generally distributed. *C. taminata*, Hb., is much more local than the last species, but I have taken it commonly at West Horsley, Mr. Kaye records it from Ashtead, Mr. Briggs from Leatherhead, and Mr. Barrett gives Haslemere as a locality. *Aleucis pictaria*, Curt., is very local in the county, but has been recorded from Ashtead, Reigate and Redstone. *Macaria alternata*, Hb., is local. Mr. Webb says it occurs sparingly at Gomshall and Reigate, but Major Ficklin records it as formerly plentiful at Coombe Wood, near Kingston. *M. notata*, L., occurs sparingly in many places, and *M. liturata* is not uncommon in fir woods at Gomshall, Redstone, Esher and Oxshott. *Halia wavaria*, Fb., is generally distributed and usually common in gardens and on fences and palings. *Strenia clathrata*, L., is not uncommon in clover fields and sometimes on heaths. *Panagra petraria*, Hb., is common everywhere on heaths. *Numeria pulveraria*, L., is not uncommon near Haslemere, Gomshall, Leith Hill, Reigate and Addiscombe. *Scodiona belgiaria*, Hb., is a local species, but Mr. Hewat takes it at Oxshott and Mr. Webb records it from Addington. *Selidosema plumaria*, Hb., occurs commonly at Oxshott, Mr. Briggs records it from Wisley, and Mr. Webb says it was formerly common on

Putney Heath and Wimbledon Common. I have never seen it so plentiful on the Surrey heaths as it is in the New Forest. *Fidonia atomaria*, L., is abundant everywhere on heaths, and *F. piniaria*, L., is common in fir woods especially at Esher and Oxshott. Mr. Webb says the white variety, or northern form, occurs not uncommonly at Abinger and Shiere. *Minoa euphorbiata*, Fb., is generally distributed in woods and is sometimes common amongst spurge. Mr. Briggs records it from Crohamhurst and Wimbledon Common. Mr. Barrett informs me that forty years ago he captured a specimen of *Sterrha sacraria*, L., at Dulwich. *Aspilates strigillaria*, Hb., is plentiful on all the heaths of the county and *A. gilvaria* is common on the chalk downs. *Abraxas grossulariata*, L., is of course everywhere common, especially in gardens, and the local *A. ulmata*, Fb., has been recorded from Abinger by Mr. Webb, from Horsley by Mr. Hewat,[1] and from Addington by Mr. Briggs. *Ligdia adustata*, Schiff., is not very common, but has been taken at Haslemere, Reigate, Leatherhead and Wimbledon. *Lomaspilis marginata*, L., is generally distributed throughout the county. *Pachycnemia hippocastanaria*, Hb., is common on heaths, Mr. Webb records it from Abinger, Mr. Briggs from the Addington Hills and Wisley, and I have found it commonly about Oxshott and Esher. *Hybernia rupicapraria*, Hb., *H. progemmaria*, Hb., and *H. defoliaria*, Clerck., are generally distributed and often abundant. *H. leucophearia*, Schiff., is according to Mr. Webb scarce in the chalk district but common to the north of the Downs, especially on the clay. It is common in Richmond Park and about Surbiton, Ashtead, Claygate, Bookham, Leatherhead and elsewhere. *H. aurantiaria*, Esp., is generally distributed but not so common as other species in the genus. *Anisopteryx æscularia*, Schiff., is generally distributed and common in many places. *Cheimatobia brumata*, L., is common everywhere and generally abundant, but its congener *Oporabia boreata*, Hb., appears to be very scarce in Surrey. Mr. Webb however records it from Shirley. *O. dilutata*, Bork., is generally common everywhere in the county. *Larentia didymata*, L. and *L. pectinitaria*, Fuess., are generally distributed and often abundant. *L. multistrigaria*, Haw., is more local, but it is reported by Mr. Barrett from Haslemere, by Mr. Webb from Buckland, Reigate and Redhill, and by Mr. Briggs from Richmond. It is common about Claygate, Surbiton and many other places. *Emmelesia affinitata*, St., and *E. alchemillata*, L., are recorded from Haslemere, Reigate, Gomshall, Redhill and Wimbledon Common. *E. albulata*, Schiff., is frequently abundant, especially in pasture fields where the yellow rattle (*Rhinanthus crista-galli*) is plentiful. It is generally very common in certain meadows by the side of a footpath leading from Long Ditton to Claygate. Mr. Barrett records it from Haslemere and Mr. Briggs from Leatherhead. *E. decolorata*, Hb., is much scarcer than the last, but Mr. Webb says it occurs in Redstone Wood and most damp situations, and Mr. Barrett has taken it at Haslemere. The local *E. unifasciata*, Haw., occurs near

[1] One specimen is reported by Mr. Hewat as having been taken in his garden at Surbiton.—H. G.

Croydon, at Wray Common near Reigate and at Redstone, and Mr. Barrett records it from Dulwich. The 'Pugs' (*Eupitheciæ*) are well represented by over thirty species, including *Eupithecia venosata*, Fb.; *E.* [1]*consignata*, Bork.; *E. pulchellata*, St.; *E. centaureata*, Fb.; *E.* [2]*succenturiata*, L.; *E. subfulvata*, Haw.; *E. subumbrata*, Gn.; *E. isogrammata*, H.S.; *E. satyrata*, Hb.; *E. castigata*, Hb.; *E. trisignata*, H.S.; *E. lariciata*, Frr.; *E.* [3]*pusillata*, Fb.; *E. pimpinellata*, Hb.; *E. fraxinata*, Crewe; *E. nanata*, Hb.; *E. subnotata*, Hb.; *E. campanulata*, H.S.; *E. vulgata*, Haw.; *E. expallidata*, Gn.; *E. absynthiata*, Clerck; *E. minutata*, Gn.; *E. assimilata*, Gn.; *E. subciliata*, Gn.; *E. dodoneata*, Gn.; *E. abbreviata*, St.; *E. exiguata*, Hb.; *E. sobrinata*, Hb.; *E. pumilata*, Hb.; *E. coronata*, Hb., and *E. rectangulata*, L.[4] *Lobophora sexalisata*, Hb., occurs in the Prince's Covers, Claygate, where I have found it not uncommonly, and it is also recorded by Mr. Barrett as being common at Haslemere. *L. hexapterata*, Schiff., has been taken in alder swamps near Redhill. *L. viretata*, Hb., occurs near Haslemere, and *L. lobulata*, Hb., has been found near Redhill and Dorking and about Esher and Oxshott. *Thera juniperata*, L., occurs at Redhill and Dorking and commonly at Box Hill, on the Caterham Downs, and at Purley and Oxshott. *T. variata*, Schiff., is common at Haslemere, Redhill, Reigate, Merstham, Gomshall, Dorking, Guildford and Oxshott. *T. firmata*, Hb., is generally distributed but less common than the last species. It occurs, amongst other places, at Haslemere and Oxshott. *Hypsipetes ruberata*, Frr.; *H. impluviata*, Hb., and *H. elutata*, Hb., are recorded by Mr. Barrett from Haslemere, and the two latter occur at Redhill, Reigate, Dorking, Gomshall and Byfleet. *Melanthia rubiginata*, Fb., is recorded by Mr. Barrett from Haslemere and occurs in many other places. *M. ocellata*, L., is common everywhere; and *M. albicillata*, L., is not uncommon, and is recorded by Mr. Barrett from Haslemere, by Mr. Kaye from Oxshott, and by Major Ficklin from the Kingston district. The beautiful *Melanippe hastata*, L., is recorded by Mr. Webb from near Croydon and by Mr. Barrett from Haslemere. *M. procellata*, Fb., is common everywhere in the chalk district amongst clematis. *M. unangulata*, Haw., occurs at Haslemere, Gomshall, Oxshott and many other places. *M. rivata*, Hb., occurs at Haslemere, and is generally distributed in the chalk district. *M. subtristata*, Haw., and *M. montanata*, Bork., are generally distributed in woods throughout the county. *M. galiata*, Hb., occurs in the county but is not generally common. *M. fluctuata*, L., is a common garden species everywhere. *Anticlea sinuata*, Hb.,[5] is a very scarce species in Surrey, but Mr. Webb says that he has taken specimens

[1] This local species is unknown to me in Surrey. I have received it from Herefordshire.—H. G.

[2] This rather rare species is not uncommon in the Prince's Covers near Claygate.—H. G.

[3] Tolerably common amongst fir trees in Sir Lucas Pepys' wood, and by the side of Headley Lane near Mickleham.—H. G.

[4] *E. togata* has been recorded from Surrey, but with the exception of one specimen taken by Mr. Sydney Webb near Buckland Hill I know of no captures in the county.—H. G.

[5] In my experience this species is almost confined to south-east Cambridgeshire and the neighbourhood of Barton Mills, Mildenhall, Tuddenham and other parts of west Suffolk.—H. G.

occasionally on the banks of the Mole about Box Hill, Flachford and elsewhere. *A. rubidata*, Fb., is recorded by Mr. Kaye from Chiddingfold and by Mr. Barrett from Haslemere. *A. badiata*, Hb., is common everywhere, even in the metropolitan district. *A. derivata*, Bork., is not common, but Mr. Barrett records it from Haslemere, and Mr. Webb thinks it is generally distributed, but much scarcer than its congener. *Coremia propugnata*, Fb. ; *C. ferrugata*, Clerck, and *C. unidentaria*, Haw., are generally distributed and abundant in many localities. *C. quadrifasciaria*, Clerck, is rare in the county, but Mr. Webb says it was formerly common about Gomshall and Guildford and Mr. Barrett reports it from Witley. *Camptogramma bilineata*, L., is of course generally abundant as it is in every other county, and *C. fluviata*, Hb., is said by Mr. Webb to be common at 'light,' but I have never seen it in the county. Mr. Barrett records it from Haslemere and also from the metropolitan district. *Phibalapteryx tersata*, Hb., is common everywhere on the chalk amongst clematis. *P. lignata*, Hb., is recorded by Mr. Kaye from Byfleet. *Scotosia dubitata*, L., is not uncommon at Haslemere and elsewhere. *S. rhamnata*, Schiff., and *S. certata*, Hb., are reported by Mr. Kaye from Worcester Park and occur in many other parts of the county. *S. certata*, according to Mr. Barrett, is a common species in the south London suburbs. *S. undulata*, L., occurs at Haslemere and was formerly abundant at Leith Hill. *Cidaria psitticata*, Schiff.; *C. miata*, L.; *C. picata*, Hb.; *C. corylata*, Thunb.; *C. russata*, Bork.; *C. immanata*, Haw.; *C. suffumata*, Hb. ; *C. silaceata*, Hb. ; *C. prunata*, L. ; *C. testata*, L. ; *C. fulvata*, Fort. ; *C. pyraliata*, Fb., and *C. dotata*, L., are all recorded by Mr. Barrett from the Haslemere district, and many of them are generally distributed in the county. *Pelurga comitata*, L., is common at Surbiton, Wimbledon and elsewhere in the Thames basin. *Eubolia cervinaria*, Schiff. ; *E. mensuraria*, Schiff. ; and *E. palumbaria*, Fb., are generally distributed and often abundant. *E. mensuraria* and *E. bipunctaria*, Schiff., are more abundant on the chalk, and *E. palumbaria* is common on heaths. *Anaitis plagiata*, L., occurs on the sand, clay and chalk, but is more abundant on the latter formation. *Chesias spartiata*, Fuess., is generally common amongst broom, but *C. obliquaria*, Bork., is very local. Mr. Barrett reports it from Haslemere, and Mr. Webb says it has occurred very sparingly at Dorking and Redstone. *Tanagra chærophyllata*, L., is not uncommon amongst bracken (*Pteris aquilina*) and is reported from Haslemere by Mr. Barrett and from Dorking by Mr. Webb. I have found it in many places in the county.

DREPANULIDÆ

Platypteryx lacertula, Schiff., is generally distributed in the county amongst birch, and occurs commonly at Haslemere, Oxshott, Addington and Crohamhurst. *P. falcula*, Schiff., is also common amongst birch at Haslemere, Oxshott, Crohamhurst and elsewhere. *P. hamula*, Esp., is not uncommon in oak woods, and has been taken at Haslemere, Oxshott, Claygate and in the Reigate district, and Mr. Barrett has taken it at

Dulwich. *P. unguicula*, Hb., occurs in beech woods, and is common in, amongst other localities, the woods adjoining the Sheep Leas, West Horsley, and between there and Shiere. *Cilix spinula*, Schiff., has been taken on Wimbledon Common and at Oxshott, Claygate, Haslemere and in the Reigate district. It is generally distributed.

PSEUDO-BOMBYCES

Dicranura furcula, L., is recorded by Mr. Webb from Epsom, Redstone, Reigate, Dorking and Godstone, by Mr. Bishop from Losely Park, and Mr. Kaye mentions Worcester Park as a locality. *D. bifida*, Hb., is usually commoner than the last species, but Mr. Webb says it is the rarer of the two about Redhill, Reigate and Dorking. Mr. Kaye records it from Worcester Park, Mr. Briggs has found it on Lombardy poplars on Mitcham Common and Wimbledon Common, and Mr. Barrett reports it from South London. *D. vinula*, L., is generally common on poplars and willows throughout the county, even in the metropolitan district. The Lobster (*Stauropus fagi*, L.) is reported by Mr. Webb as having occurred very sparingly at Reigate. I have never met with it in the county nor have I received any records of its capture from any other part of Surrey. *Petasia cassinea*, Hb., is stated by Mr. Webb to have been formerly common at gas lamps at Croydon, Guildford, Dorking, Reigate and Redhill ; Mr. Hewat records it from Oxshott, and it also occurs at 'light' at Kingston, Surbiton and elsewhere in the metropolitan district. The Buff Tip (*Pygæra bucephala*, L.) is generally distributed and often abundant. In the larval state it sometimes does mischief to lime, elm and other trees. The Chocolate Tip (*Clostera curtula*, L.) seems to be very uncommon in the county. Mr. Kaye records it from Worcester Park and Mr. Webb says he once saw it in the Reigate district. The Small Chocolate Tip (*C. reclusa*, Fb.) is also uncommon in the county, but Mr. Barrett records it from Haslemere and Mr. Webb refers to its occurrence in swamps near Redhill Station. *Ptilodontis palpina*, L., occurs on palings at Surbiton and also comes to 'light.' It is recorded by Mr. Kaye from Worcester Park, by Mr. Barrett from Haslemere, by Mr. Briggs from Mitcham and by Mr. Webb from Croydon, Reigate and Redhill. The Coxcomb Prominent (*Notodonta camelina*, L.)[1] is generally distributed and is reported from Wimbledon and Crohamhurst by Mr. Briggs, by Mr. Kaye from Worcester Park, by Mr. Barrett from Haslemere, and I have taken it at Surbiton and Claygate. *N. dictæa*, L., is said by Mr. Webb to be not rare at Reigate and Redhill, Mr. Kaye has taken it at Worcester Park, Mr. Briggs records it from Wimbledom Common, and I have taken it in Surbiton at 'light.' *N. dictæoides*, Esp., is not common in the county, but Mr. Webb records it from Reigate, Redhill, Dorking and Croydon. *N. dromedarius*, L., is recorded by Mr. Webb from near Redhill, by

[1] The rare *N. carmelita*, Esp., occurs commonly amongst the birch trees of Tilgate Forest, Sussex, but I have never found it in Surrey. Mr. Barrett reports it as having been taken at Haslemere ; and Mr. Kaye says it has been taken near Weybridge, but I know nothing of the locality or the date of capture.—H. G.

Mr. Briggs from Wisley and by Mr. Kaye from Worcester Park. *N. ziczac*, L., has been taken at Godstone, Redhill, Reigate, Leatherhead and Horsley. *N. trepida*, Esp., seems very rare in the county, but has been taken at Haslemere and Redstone Hill, and also at Shiere. *N. chaonia*, Hb., is rare, but Mr. Webb reports it from Redstone Wood and a wood at Colley. *N. dodonea*, Hb., is also very rare in the county, but has been taken at Haslemere, Colley and Redstone. *Diloba cæruleocephala*, L., is generally distributed and sometimes common about Haslemere, Reigate, Brockham, Dorking, Gomshall, Woking, Bookham Common and Surbiton.

NOCTUÆ

The Buff Arches (*Thyatira derasa*, L.) is not uncommon in woods at Haslemere and Reigate, and is also found sparingly at Surbiton and Kingston and elsewhere in the suburban district. The Peach Blossom (*T. batis*, L.) is common at 'sugar' in many places, and is recorded from Haslemere, Reigate and Oxshott. *Cymatophora duplaris*, L.; *C. fluctuosa*, Hb.; *C. diluta*, Fb.; *C. or*, Fb.; *C. flavicornis*, L., and *C. ridens*, Fb., are all recorded by Mr. Barrett from Haslemere, and all of them except *C. or* also occur in the Reigate district. *C. flavicornis* also occurs amongst the birches and firs at Oxshott and Esher. *Bryophila perla*, Fb., is generally distributed in suitable places and has been taken at Haslemere, Reigate, Leatherhead, Worcester Park and Surbiton. *Acronycta tridens*, Schiff.; *A. psi*, L.; *A. leporina*, L.; *A. aceris*, L.; *A. megacephala*, Fb.; *A. alni*, L.; *A. ligustri*, Fb., and *A. rumicis*, L., are all recorded by Mr. Barrett from Haslemere and by Mr. Webb from the Reigate district. *A. alni* has also been reported from Wimbledon and Richmond Park. *A. psi*, *A. leporina*, *A. aceris* and *A. rumicis* are also reported by Mr. Kaye from Worcester Park and by Mr. Hewat from Surbiton. *A. leporina* is also recorded from Shirley. *Leucania conigera*, Fb.; *L. lithargyria*, Esp.; *L. comma*, L.; *L. impura*, Hb., and *L. pallens*, L., are generally common throughout the county. The local *L. turca*, L., is included by Mr. Webb in his Reigate list. Major Ficklin has taken it in or near Richmond Park, Mr. Briggs records one specimen from Leatherhead and Mr. Kaye has taken it at Ashtead. *Nonagria despecta*, Tr.; *N. fulva*, Hb., and *N. typhæ*, Esp., occur in the county. *N. despecta* has been taken at Wimbledon by Dr. Buckell. *N. geminipuncta*, Hatch, and *N. lutosa*, Hb., probably occur in the county, but I have no records of their capture. *Gortyna flavago*, Esp., is generally distributed where *Carduus palustris* is abundant; and *Hydræcia nictitans*, Bork.; *H. micacea*, Esp.; *Axylia putris*, L.; *Xylophasia rurea*, Fb.; *X. lithoxylea*, Fb.; *X. polyodon*, L.; *X. hepatica*, L., and *X. scolopacina*, Esp., are all recorded from Haslemere, Reigate or Shirley, and most of them are common everywhere. *X. sublustris*, Esp., has been taken at Shirley by Mr. Sheldon. *Dipterygia pinastri*, L., occurs in many places and is reported from Haslemere, Reigate, Leatherhead, Wimbledon, Worcester Park and Surbiton. *Neuria saponariæ*, Bork., is reported from

Haslemere, Reigate, Worcester Park and Croydon. *Heliophobus popularis*, Fb., occurs commonly at 'light' at Haslemere, Dorking, Reigate, Leatherhead, Surbiton, Worcester Park and many other places. *Charæas graminis*, L., is common in many places in the Reigate district, on Wimbledon Common and about Kingston and Richmond Park. The rare *Pachetra leucophæa*, View, used to be taken on the Mickleham[1] Downs and probably still occurs there. *Cerigo cytherea*, Fb., is generally distributed and so is *Luperina testacea*, Hb., but *L. cespitis*, Fb., is very local. I have taken it on Tolworth Common, Surbiton. Mr. Kaye reports it from Worcester Park. Mr. Briggs records it from Leatherhead and Major Ficklin from Wimbledon and Richmond Park. *Mamestra anceps*, Hb.; *M. brassicæ*, L., and *M. persicariæ*, L., all occur in the Reigate district, and are generally abundant everywhere. *Apamea basilinea*, Fb.; *A. gemina*, Hb.; *A. unanimis*, Fr.; *A. fibrosa*, Hb., and *A. oculea*, Gn., are generally distributed and usually abundant at 'sugar' or 'light.' *A. ophiogramma*, Esp., is much more local than its congeners, but it is not uncommon in the London district amongst willows and that handsome grass *Phalaris arundinacea*, which is so plentiful on the islands and on the banks of the Thames. *Miana strigilis*, Clerck; *M. fasciuncula*, Haw.; *M. literosa*, Haw., and *M. furuncula*, Tr., are common everywhere, and *M. arcuosa*, Haw., has been recorded from many places in the county. *Grammesia trilinea*, Bork.; *Caradrina morpheus*, Hufn.; *C. blanda*, Tr.; *C. alsines*, Brahm; *C. cubicularis*, Bork., and *Rusina tenebrosa*, Bork., are everywhere common. *Caradrina ambigua* has been taken at Worcester Park. *Agrotis puta*, Hb.; *A. suffusa*, Hb.; *A. saucia*, Hb.; *A. segetum*, Schiff.; *A. exclamationis*, L.; *A. nigricans*, L.; *A. tritici*, L.; *A. aquilina*, Hb.; *A. porphyrea*, Hb., and *A. ravida*, Hb., are all recorded by Mr. Webb from the Reigate and Dorking district, and many of them are common at Leatherhead, Oxshott, Surbiton, Kingston, Wimbledon, Richmond and elsewhere in the metropolitan district. Mr. Webb also reports the local *A. cinerea*, Hb., from Box Hill and Reigate Hill, but the species is much commoner on the downs about Brighton and Lewes than in Surrey. *A. agathina*, Dap., occurs commonly, especially in the larval state, about Shirley, Oxshott Heath and in other similar localities in the county. *Tryphæna ianthina*, Esp.; *T. fimbria*, L.; *T. interjecta*, Hb.; *T. orbona*, Fb., and *T. pronuba*, L., are all reported by Mr. Barrett from Haslemere, by Mr. Webb from the Reigate district and by Major Ficklin from the neighbourhood of Kingston and Richmond. *T. ianthina*, *T. orbona* and *T. pronuba* are common everywhere. *T. fimbria* also occurs at Ashtead and Wimbledon, but is generally much more local than its congeners, and *T. interjecta* is not of universal distribution. *Noctua glareosa*, Esp.; *N. augur*, Fb.; *N. plecta*, L.; *N. c-nigrum*, L.; *N. triangulum*, Hufn.; *N. brunnea*, Fb.; *N. festiva*, Hb.; *N. rubi*, View; *N. umbrosa*, Hb.; *N. baja*, Fb.; *N. neglecta*, Hb., and *N. xanthographa*, Fb., are all recorded by Mr. Webb

[1] Mr. Barrett informs me that Mr. Adkin found *P. leucophæa* on Box Hill a few years ago.—H. G.

from the Reigate district, by Mr. Barrett from Haslemere, and many of them are abundant everywhere. That local species *N. ditrapezium*, Bork., is also recorded by Mr. Barrett from Haslemere, and Major Ficklin states that it has recently been taken in plenty at 'sugar' in Richmond Park. Mr. Kaye also records it from Wimbledon. *N. rhomboidea*, Tr., is recorded from Croydon by Mr. Sheldon and *N. neglecta* occurs at Shirley. *Trachea piniperda*, Panz., is generally distributed in fir woods. I have found it on the stems of fir trees at Oxshott and Esher. Mr. Briggs has taken it at Wisley; Mr. Barrett records it from Haslemere and Mr. Webb includes it in his Reigate list. *Tæniocampa gothica*, L.; *T. rubricosa*, Fb.; *T. instabilis*, Esp.; *T. stabilis*, View; *T. gracilis*, Fb.; *T. miniosa*, Fb.; *T. munda*, Esp., and *T. cruda*, Tr., all occur at Haslemere and in the Reigate district and most of them are generally distributed. Mr. Kaye records *T. populeti*, Fb., from Worcester Park and Wimbledon, and the local *T. leucographa*, Hb., has been recorded from Leith Hill. Mr. Barrett includes it in his Haslemere list, and Mr. Briggs informs me that it formerly occurred on Wimbledon Common. *Orthosia suspecta*, Hb., is generally a scarce species in the south, but Mr. Kaye records it from Wimbledon and Dulwich, and Major Ficklin reports it as occurring in plenty in Richmond Park in the same locality as *Noctua ditrapezium*. Mr. Webb also includes it with *Orthosia upsilon*, Bork.; *O. lota*, Clerck, and *O. macilenta*, Hb., in his list of species found near Reigate. The two species last mentioned, *O. lota* and *O. macilenta*, are generally distributed and often abundant at 'sugar' and ivy bloom. *Anchocelis rufina*, L.; *A. pistacina*, Fb., and *A. litura*, L., are generally distributed and often abundant. *A. lunosa*, Haw., is not an uncommon species, but is not in my experience quite as abundant as *A. pistacina* and *A. litura*. *Cerastis vaccinii*, L., and *C. spadicea*, Hb., are both generally distributed and often common, especially in the metropolitan district. *Scopelosoma satellitia*, L., is also usually abundant everywhere. *Dasycampa rubiginea*, Fb., is a scarce species, but is reported from Haslemere by Mr. Barrett, from Reigate by Mr. Webb, and it has also been recorded from Box Hill, Mickleham and Norbury Park. *Oporina croceago*, Fb., is not common, but has been taken at Haslemere, Box Hill and Reigate. The beautiful species of the genus *Xanthia*—*X. citrago*, L.; *X. cerago*, Fb.; *X. silago*, Hb.; *X. aurago*, Hb.; *X. gilvago*, Esp., and *X. ferruginea*, Esp.—all occur in the county and most of them are generally distributed, but *X. aurago* is very local and *X. gilvago* is usually a scarce species. Major Ficklin reports the last-named as having been common of late years at 'sugar' in gardens about Kingston Hill and Surbiton. Mr. Kaye has taken it at Worcester Park and Mr. Hewat and I have taken it at Surbiton. With the exception of *X. aurago* which occurs at Horsley and that great rarity, *X. ocellaris*, which has been taken two or three times in Surrey, all the species of the genus can be taken about Claygate, Surbiton and on Wimbledon Common. *Cirrhædia xerampelina*, Hb., is generally rare in the county, but Mr. Webb records it from the Reigate district and Mr. Hewat says he has taken it in Surbiton. *Tethea subtusa*,

Fb., is reported by Mr. Kaye from Worcester Park and by Mr. Webb from the Reigate district. Mr. Briggs says he took specimens of it on Wandsworth Common in the years 1860–2. *T. retusa*, L., is recorded by Mr. Barrett from Dulwich. *Dicycla oo*, L., is a very rare species, but Major Ficklin says it is found occasionally in the wooded hollows on Wimbledon Common, and that one specimen was taken by his son last year at 'sugar' in Richmond Park. *Cosmia trapezina*, L., is everywhere too common. *C. pyralina*, View, is a rare species, but Mr. Kaye has taken it singly at Worcester Park and Kingston Hill, and Major Ficklin says it occurs occasionally in the Oxshott woods. *C. diffinis*, L., and *C. affinis*, L., are generally distributed amongst elm timber and are common at Worcester Park, Surbiton, Kingston and elsewhere in the metropolitan district. *Eremobia ochroleuca*, Esp., has been taken near Croydon and is reported by Mr. Briggs as having occurred near Leatherhead. I have not seen it in Surrey, but it probably occurs about Mickleham, Box Hill and elsewhere on the chalk from Guildford to Reigate and thence eastwards to the borders of Kent. *Dianthecia carpophaga*, Bork.; *D. capsincola*, Hb.; *D. cucubali*, Fuess., and *D. conspersa*, Esp., are recorded from Haslemere and the Reigate district, and also from Croydon, Leatherhead, Box Hill, Epsom and Tooting. *Hecatera serena*, Fb., occurs sparingly in several localities such as Haslemere, Reigate, Leatherhead, Croydon and Crohamhurst. *P. flavocincta*, Fb., is generally distributed. It has been recorded from Reigate and Redhill, and is common at 'sugar' about Leatherhead, Surbiton, Kingston and elsewhere in the metropolitan district. *Epunda nigra*, Haw., and *E. viminalis*, Fb., are both recorded from Reigate and Haslemere, and the latter species is also found at Leatherhead, Surbiton and Kingston. *Miselia oxycanthæ*, L., is generally common everywhere. I have taken it at 'sugar' at Claygate, Oxshott, Long Ditton and Surbiton. *Agriopis aprilina*, L., is also generally distributed. *Phlogophora meticulosa*, L., and *Euplexia lucipara*, L., occur everywhere and are usually abundant. *Aplecta herbida*, Hb.; *A. nebulosa*, Hufn.; *A. tincta*, Brahm; *A. advena*, Fb., are all recorded by Mr. Barrett from Haslemere and by Mr. Webb from the Reigate district.[1] *A. nebulosa* is common everywhere but the other species are not generally distributed. *A. tincta* has also been reported from Croydon and Wimbledon. *Hadena adusta*, Esp.; *H. protea*, Bork.; *H. glauca*, Hb.; *H. dentina*, Esp.; *H. chenopodii*, Fb.; *H. suasa*, Bork.; *H. oleracea*, L.; *H. pisi*, L.; *H. thalassina*, Rott.; *H. contigua*, Vill., and *H. genistæ*, Bork., are all recorded by Mr. Webb from the Reigate district, and all of them except *H. glauca*, *H. chenopodii*, and *H. suasa* are included by Mr. Barrett in his list of Haslemere species, and such species as *protea*, *chenopodii*, *oleracea*, *pisi* and *thalassina* are generally distributed. *Xylocampa lithoriza*, Bork., is generally distributed in suitable localities and is in my experience

[1] *A. occulta*, L., has been reported from Wimbledon, and as it has been taken in Sussex, Berks, Essex and Middlesex, its occurrence in Surrey is not impossible, but it is chiefly a northern species.—H. G.

not uncommon on the trunks of fir trees at Oxshott and Esher. The Sword Grasses (*Calocampa vetusta*, Hb., and *C. exoleta*, L.) are both mentioned by Mr. Webb as occurring near Reigate, Mr. Barrett records *vetusta* from Haslemere, they are both included in Mr. Kaye's and Major Ficklin's lists for Surrey and both have occurred at Wimbledon. *Xylina rhizolitha*, Fb.; *X. semibrunnea*, Haw., and *X. petrificata*, Fb., are included by Mr. Webb in his list of Reigate species. *X. semibrunnea*, according to Major Ficklin, is not uncommon at ivy bloom near Molesey and Kingston; and *rhizolitha* and *petrificata* are reported from Haslemere. *X. rhizolitha* also occurs at Worcester Park, Surbiton and nearly everywhere in the county. *Cucullia verbasci*, L.; *C. lychnitis*, Rbr.; *C. asteris*, Schiff.; *C. chamomillæ*, Schiff., and *C. umbratica*, L., are reported by Mr. Barrett from Haslemere, and with the exception of *C. asteris* (which is reported from Croydon) they have all been taken about Box Hill and in the Reigate district. *C. verbasci*, *C. chamomillæ* and *C. umbratica* are frequently taken at Worcester Park, Surbiton, Kingston, Leatherhead, Wimbledon, Croydon and elsewhere in the metropolitan district. *Heliothis marginata*, Fb.; *H. peltigera*, Schiff., and *H. dipsacea*, L., are recorded by Mr. Barrett from Haslemere; the first species is included by Mr. Webb in his Reigate list and he also mentions *H. armigera*, Hb. *H. dipsacea* probably occurs on the heaths and in clover fields in many other parts of the county but I have not met with it in Surrey. The Beautiful Yellow Underwing (*Anarta myrtilli*, L.) is frequent everywhere on heaths throughout the county, and *Heliodes arbuti*, Fb., is often plentiful in meadows. I have seen it in abundance at Horsley, Surbiton and Kingston. The lovely *Acontia luctuosa*, Esp., has been taken near Croydon and Horsley. *Erastria fuscula*, Bork., occurs in many woods throughout the county and was abundant in 1900 on the trunks of the fir trees near Esher and Oxshott. *Brephos parthenias*, L., is generally distributed in birch woods. Mr. Barrett records it from Haslemere, Mr. Webb from the Reigate district, and I have found it commonly amongst the birch trees on Abrook Common between Esher and Oxshott, and have also seen it years ago on Tolworth Common, Surbiton. *Abrostola urticæ*, Hb., and *A. triplasia*, L., are not uncommon throughout the county. *Plusia chrysitis*, L.; *P. festucæ*, L.; *P. iota*, L.; *P. v-aureum*, Gn., and *P. gamma*, L., are recorded from Haslemere by Mr. Barrett, and with the exception of *v-aureum* they are also recorded from the Reigate district. Mr. Webb also mentions *P. interrogationis*, L., as occurring near Reigate, but in my experience this species is[1] almost confined to the north of England and Scotland. *P. gamma* is of course as abundant everywhere in Surrey as in other counties. *P. moneta*, which has only been found in the United Kingdom of recent years, has been lately taken in all parts of the county. Mr. Briggs records it from Leatherhead, Mr. N. P. Fenwick informs me that he has taken it in his garden at Esher, and Mr. Richards says he caught six specimens in his

[1] Mr. Barrett reminds me that one specimen has been taken at Battle, Sussex. Two specimens have been reported from Devon, and one from Cambridge.—H. G.

garden at Kingston Hill in 1901. *Gonoptera libatrix*, L., is common everywhere. The Copper Underwing (*Amphipyra pyramidea*, L.) and the Mouse (*A. tragopogonis*, L.) are common in most places. They are both frequent at 'sugar' about Claygate, Worcester Park, Surbiton and elsewhere in the metropolitan district. *Mania typica*, L., and *M. maura*, L., are generally distributed and often abundant. *Toxocampa pastinum*, Tr., is a local species, but occurs at Haslemere, West Horsley and in the Reigate district. *Stilbia anomala*, Haw., has been reported from Croydon by Mr. Sheldon. The Red Underwing (*Catocala nupta*, L.)[1] is generally distributed amongst willows, and is abundant at 'sugar' and at rest on fences and palings about Worcester Park, Surbiton, Kingston and elsewhere in the metropolitan district. *Euclidia mi*, Clerck, and *E. glyphica*, L., are generally distributed and usually abundant on pastures and commons, and the pretty little *Phytometra ænea*, Hb., is generally distributed and often plentiful on heaths and hillsides.

DELTOIDES

Madopa salicalis, Schiff., is a very local species, but has been frequently taken by Mr. Barrett about Haslemere and the neighbourhood, and he also reports the capture of a specimen from Dulwich. *Hypena proboscidalis*, L., is generally distributed and usually abundant. *H. rostralis*, L., is recorded from Haslemere and the London suburbs by Mr. Barrett; and Mr. Webb says it is distributed in the county from Gomshall on the west to Oxted on the east, and from Norwood on the north to the Sussex border on the south. *Hypena crassalis*, Fb., is reported from Haslemere, Leith Hill, Dorking, Gomshall and Shiere, and I have taken it commonly in the wood north of St. Martha's Chapel near Chilworth. *Hypenodes albistrigalis*, Haw., and *H. costæstrigalis*, St., are included in Mr. Barrett's Haslemere list. *Rivula sericealis*, Scop., is recorded from Haslemere and from Redstone Wood. Mr. Webb says it is generally distributed in the county in damp woods and thickets. *Herminia barbalis*, Clerck, occurs at Haslemere, Dorking, Reigate, Worcester Park and many other places. *H. tarsipennalis*, Tr., is recorded from Haslemere, Guildford, Chobham, Gomshall, Dorking and Redstone. *H. grisealis*, Hb., is generally common, and is reported from Haslemere, Gomshall, Reigate, Box Hill, Wisley, Redstone and Nutfield. *H. cribralis*, Hb., is reported by Mr. Webb from Guildford, Dorking, Nutfield, Gatton and marshes near Redhill.

PYRALIDES

Pyralis fimbrialis, Schiff., is common in many places, and Mr. Webb mentions Redstone Wood, Reigate and Dorking; Mr. Kaye gives Worcester Park as a locality, and it occurs in most of the London suburbs. *P. farinalis*, L., is generally distributed. *P. glaucinalis*, L., occurs at Haslemere, Guildford, Dorking, Reigate, Redstone,

[1] Mr. Webb says that *C. fraxini*, L., has been taken in Surrey, but I have no details as to dates or localities. *C. sponsa*, L., is also reported to have once been taken near Croydon by Mr. Hall.—H. G.

Leatherhead, Worcester Park and elsewhere. *Aglossa pinguinalis*, L., is generally common. *A. cuprealis*, Hb., is a local species, but Mr. Briggs records it from Leatherhead. *Cledeobia angustalis*, Schiff., occurs at Box Hill, and is generally distributed in the chalk district, but Mr. Barrett does not include it amongst his Haslemere species. *Pyrausta punicealis*, Schiff., occurs at Dorking and Box Hill, and is recorded by Mr. Webb from Guildford and Betchworth, by Mr. Briggs from Leatherhead, and by Mr. Kaye from Caterham. *P. purpuralis*, L., is much commoner, and is widely distributed both on the chalk and sand, and occurs nearly everywhere. *P. ostrinalis*, Hb., is a local species, but reported from Haslemere, Horsley and Leatherhead. *Herbula cespitalis*, Schiff., is common everywhere. *Ennychia cingulalis*, Schiff., is not uncommon on the chalk between Guildford and Reigate, especially at Betchworth and Box Hill ; and Mr. Briggs records it from Riddlestown. *E. anguinalis*, Hb., is generally distributed along the chalk range, and also occurs at Cobham. *E. octomaculalis*, Tr., is recorded from Haslemere, Farnham and Betchworth Hill, but is a much rarer species in Surrey than in Hampshire and Sussex. *Endotricha flammealis*, Schiff., is recorded by Mr. Barrett from Haslemere and also from the metropolitan district, by Mr. Kaye from Oxshott, and by Mr. Briggs from the Addington hills. It also occurs at Farnham and Weybridge. Mr. Webb says it was formerly plentiful on every open heath or common in the county, but of late years has become comparatively rare. *Cataclysta lemnalis*, Schiff., is generally distributed about weedy pools. *Paraponyx stratiotalis*, Schiff., occurs at Farnham, Haslemere, Gomshall and Redhill, and Mr. Webb records it as often abundant at Gatton. *Hydrocampa nymphealis*, Schiff., and *H. stagnalis*, Gn., are recorded from Haslemere, Bookham, Byfleet and Wisley, and Mr. Webb says they are generally distributed throughout the Reigate district. In my experience they are common everywhere. *Acentropus niveus*, Oliv., is recorded by Mr. Barrett from Frensham Pond. *Botys pandalis*, Hb., is recorded from Haslemere, Guildford, Headley, Box Hill and Leatherhead. *B. flavalis*, Schiff., is reported from Leatherhead by Mr. Briggs. *H. hyalinalis*, Hb., occurs at Guildford, Dorking, Box Hill, Reigate and Leatherhead. *B. verticalis*, Schiff., is common nearly everywhere amongst nettles. *B. lancealis*, Schiff., is a rare species, but has been recorded by Mr. Barrett from Haslemere and by Mr. Webb from Leith Hill. *B. fuscalis*, Schiff., is generally distributed ; and *B. urticalis*, Schiff., is everywhere common. *Ebulea crocealis*, Hb., is recorded by Mr. Barrett from Haslemere, but it is not common in Surrey. *E. verbascalis*, Schiff., occurs at Box Hill, Betchworth, Reigate Hill and Leatherhead. *E. sambucalis*, Schiff., is generally distributed. *Pionea forficalis*, L., is generally distributed and often abundant. *P. stramentalis*, Hb., is recorded from Haslemere, and Mr. Webb says it was formerly abundant near Redhill. *Spilodes sticticalis*, L., occurs very rarely in Surrey. Mr. Webb says he has taken one specimen at Box Hill, and Mr. Barrett records the capture of a specimen at 'light' at Dulwich. *S. palealis*, Schiff., is also a very

rare species in the county. It was taken by the writer at Reigate in 1874, and again in 1897; and Mr. Kaye records the capture of a specimen at Worcester Park in 1900. *S. cinctalis*, Tr., is recorded by Mr. Barrett from Haslemere and Dulwich, by Mr. Webb from Betchworth, and by Mr. Kaye from Epsom. It also occurs at Farnham and Guildford. *Scopula lutealis* is generally distributed; and *S. olivalis*, Schiff.; *S. prunalis*, Schiff.; and *S. ferrugalis*, Hb., are recorded by Mr. Barrett from Haslemere, by Mr. Briggs from Leatherhead, and Mr. Webb reports them as common throughout the Reigate district. *S. ferrugalis* is also reported from Worcester Park, Dulwich and elsewhere in the metropolitan district. *Stenopteryx hybridalis*, Hb., is recorded from Haslemere, and Mr. Webb says it is common throughout the Reigate district. It also occurs in the London suburbs. *Scoparia ambigualis*, Tr., *S. cembræ*, Haw.; *S. dubitalis*, Hb.; *S. mercurella*, L.; *S. cratægella*, Hb.; *S. angustea*, St., and *S. pallida*, St., are all recorded by Mr. Webb as being common throughout the Reigate district; they occur about Oxshott, Ranmore, Wisley and Purley, and most of them are also included by Mr. Barrett in his Haslemere list, in addition to *S. basistrigalis*, Knaggs; *S. resinea*, Haw., and *S. truncicolella*, Sta.

CRAMBITES

Platytes cerusellus, Schiff., is reported from Betchworth by Mr. Webb, and by Mr. Briggs from Box Hill. *Crambus falsellus*, Schiff., is recorded from Haslemere, and Mr. Webb has taken it at Redstone Wood, but it is not a common species. *C. pratellus*, L., occurs everywhere. *C. dumetellus*, Hb.,[1] is a very local species, but recorded from Haslemere by Mr. Barrett, from Byfleet by Mr. Adkin, and from Box Hill by Mr. Briggs. *C. pascuellus*, L., is generally distributed and common. *C. uliginosellus*, Zell., is recorded by Mr. Webb from wet swamps near Reigate. *C. pinellus* occurs at Haslemere, and sparingly about Wray Lane near Redhill, and at Redstone Hill. *C. latistrius*, Haw., is included by Mr. Barrett in his list of Haslemere species, and the late Mr. Stainton records it from Weybridge. *C. perlellus*, Scop.; *C. tristellus*, Fb.; *C. inquinatellus*, Schiff.; *C. geniculeus*, Haw., *C. hortuellus*, Hb., and *C. culmellus*, L., are common nearly everywhere; and *C. selasellus*, Hb., is recorded from Haslemere and Leatherhead. *C. tristellus*, Fb., *C. culmellus* and *C. hortuellus* are generally distributed and are reported by Mr. Barrett even from the south London suburbs. *C. chrysonuchellus*, Scop., occurs at Reigate Hill, Box Hill, Banstead, Purley and Leatherhead. *Schœnobius forficellus*, Thunb., is recorded by Mr. Barrett from Dulwich. *Ilithyia carnella*, L., occurs in the Sheep Leas, West Horsley, and Mr. Webb reports it from Headley Heath and Box Hill. *Homœosoma sinuella*, is recorded by Mr. Webb from Betchworth; and Mr. Barrett has taken *H. nimbella*, Zell., in the suburbs of London. *Ephestia elutella*, Hb., is generally common; and *E. pinguis*, Haw., is reported

[1] This species is common in Abbots Wood, Sussex, but I have never seen it in Surrey.—H. G.

by Mr. Webb from Redhill, and it also occurs in the south London suburbs. *Crytoblabes bistriga*, Haw., occurs at Haslemere and Redstone Wood. *Phycis betulella* is recorded by Mr. Webb from Redstone Wood and Horsley. *P. carbonariella*, Fisch., occurs at Haslemere, Shalford, Shiere and elsewhere ; and *P. adornatella*, Tr., and *P. ornatella*, Schiff., occur in the chalk district from Guildford to Reigate. *P. roborella*, Zinck., is recorded from Haslemere. *Pempelia palumbella*, Fb., occurs at Haslemere, Leith Hill and Gomshall. *Rhodophæa consociella*, Hb., is reported by Mr. Webb as occurring sparingly at Croydon, Box Hill and Redhill. Mr. Briggs has taken it at Box Hill, and Mr. Barrett includes it in his list of Haslemere species, and says he has also taken it at Dulwich. *R. advenella*, Zinck., has been taken at Haslemere and in the Reigate district. *R. suavella*, Zinck., is reported from Dorking and Holmwood. *R. tumidella*, Zinck., has been taken at Haslemere ; and *R. rubrotibiella*, Fisch., has been found near the railway embankment near Forest Hill[1] and Sydenham. *Oncocera ahenella*, Zinck., is reported by Mr. Barrett from Haslemere, by Mr. Briggs from Box Hill, and by Mr. Webb from Betchworth and Reigate Hills. *Melia sociella*, L., is generally distributed ; and *Meliphora alveariella*, Gn., is recorded by Mr. Barrett from Haslemere.

MICRO-LEPIDOPTERA

In drawing up a list of the Micro-lepidoptera of Surrey some use has been made of the records of Mr. J. F. Stephens in his *Illustrations of British Entomology*, and of those of Mr. H. T. Stainton in his *Manual of British Moths* ; also of the numerous records in early volumes of the *Zoologist*, in the *Entomologist's Weekly Intelligencer*, the *Entomologist's Monthly Magazine*, the *Entomologist*, and other periodicals.

A long and valuable manuscript list has been supplied by Mr. Sydney Webb of species collected by him during his residence of many years at Redhill, whence he collected extensively from Guildford in the west to the eastern boundary of the county at Oxted, and from the southern slopes of the North Downs to the borders of Sussex. Further lists for portions of the same districts and from the chalk region about Croydon, Mickleham and Leatherhead have been furnished by Messrs. R. Adkin, H. J. Turner and A. H. Jones.

My own contribution consists of the species collected at different times during the last forty years in the southern suburbs of London, where gardens were extensively examined and the street gas-lamps laid under contribution ; and also of the species found during seven years' residence in the extreme south of the county ; at Haslemere, Chiddingfold, Witley, Thursley, Hindhead and Churt.

[1] Mr. Barrett says that these were the original, and almost the only, captures of this species in the United Kingdom.—H. G.

CHLOEPHORIDÆ

Halias prasinana, Linn. *Croydon*, *Reigate*, *Sutton*, *Haslemere*; probably in all oak woods

— quercana, Schiff.; bicolorana, Fuesl. *Reigate*, *Redstone Wood*, *Haslemere*; also in oak woods

Earias chlorana, Linn. *South London*, suburbs and parks, swamps near *Redhill*; among willows and osiers

SARROTHRIPIDÆ

Sarrothripa revayana, Schiff.; undulana, Hüb. *Redhill*, *Haslemere*, *Witley*; beaten from firs at *Shalford*

TORTRICIDÆ

Tortrix podana, Scop.; pyrastrana, Hb. Generally common

— piceana, Linn. Taken at *Oxshott* by Messrs. Adkin and South; *Shalford*, one or two specimens

— cratægana, Hb. *Redhill*, *Haslemere*; in oak woods, not common

— xylosteana, Linn. Generally common

— sorbiana, Hb. *Reigate*, *Redhill*, *Godstone*, *Haslemere*; in woods; occasionally in *South London* suburbs

— rosana, Linn. Everywhere abundant

— diversana, Hb.; transitana, Gn. *Redstone Hill*, *Norbiton*, *Oxshott*; among elm, very local

— cinnamomeana, Tr. *Haslemere*, among oak; *Box Hill*, among larch; *Mickleham*; very local

— heparana, Schiff. Generally common in woods and gardens

— ribeana, Hb. Abundant everywhere

— corylana, Hb. *Redhill*, *Reigate*, *Box Hill*, *Haslemere*; probably in woods generally

— unifasciana, Dup. Abundant everywhere, especially in gardens among privet

— semialbana, Gn. Formerly to be found near *Mickleham*, on the chalk

— costana, Schiff. *Reigate*, *Redhill*, *Nunhead*; formerly on *Barnes Common*, usually occurring in marshy places

— viburnana, Schiff. *Claremont*, *Churt*, on boggy heaths; occasionally near *Nunhead* in *South London* suburbs

— viridana, Linn. Abundant everywhere among oaks

— ministrana, Linn. Generally common in woods

— adjunctana, Tr.; Forsterana, Fab. Common everywhere in woods; also in gardens among ivy. Its larva sometimes terribly disfigures ornamental ivy

Dichelia grotiana, Fab. *Haslemere*, *Churt*, *Reigate*, *Redhill*

Leptogramma literana, L. *Reigate*, *Redhill*, *Haslemere*; on oaks

Peronea sponsana, Fab.; favillaceana, Hb. *Reigate*, *Redhill*, *Haslemere*; probably everywhere among beech

— rufana, Schiff.; autumnana, Hb. Formerly at *Wimbledon*, *Sutton* and *Birchwood*; not common, if still existing

— mixtana, Hb. *Guildford*, *Shalford*, *Haslemere*, *Hindhead*; on all large heaths

— schalleriana, Linn. Generally distributed among sallow

— comparana, Hb. Also generally distributed in lanes and hedges

— permutana, Dup. Formerly to be found on *Barnes Common*

— variegana, Schiff. Common everywhere in hedges

— cristana, Schiff. *Redhill*, *Reigate*, rare; *Haslemere*, *Leatherhead*, *Fetcham Down*; formerly at *Wimbledon*, *Coombe Wood* and *Ripley*

— hastiana, Linn. *Redhill*, *Reigate*, *Haslemere*, *Wimbledon*; among sallow

— umbrana, Hb. Has formerly been taken at *Sanderstead*, *Mickleham*, *Coombe Wood*, *Fetcham Down* and *Leatherhead*; now very scarce

— ferrugana, Schiff. In oak woods generally

— tristana, Hb.; logiana, Steph. *Redhill*, *Reigate*, *Haslemere*; formerly at *Wimbledon*

— aspersana, Hb. *Reigate*, *Mickleham*, *Box Hill*; abundant on all chalk hills

Teras caudana, Fab. *Redhill*, *Reigate*, *Haslemere*; among sallow

— contaminana, Hb. Abundant everywhere in hawthorn hedges

Dictyopteryx lœflingiana, Linn. Common everywhere among oak

— holmiana, Linn. *Reigate*, *Redhill*, *Haslemere*

— bergmanniana, Linn. Abundant everywhere among rose

— forskaleana, Linn. Southern suburbs of *London*, *Haslemere*, *Redhill*, *Reigate*; among sycamore and maple

Argyrotoza conwayana, Fab. Generally common among ash trees

Ptycholoma leacheana, Linn. *Redhill*, *Reigate*, *Oxshott*, *Purley*, *Ranmore*, *Haslemere*; not uncommon in woods

Ditula semifasciana, Haw. *Redhill*, *Reigate*, *Haslemere*; among sallow

Penthina picana, Frol.; corticana, Steph. *Richmond*, *Box Hill*, *Reigate*, *Redstone*, *Buckland Hill*, *Oxshott*, *Haslemere*; among birch

Penthina betulætana, Haw. *Redstone Wood*, *Haslemere*; heaths, among birch
— capræana, Hb. *Haslemere*; scarce
— prælongana, Gn.; sororculana, Steph. *Redhill*, *Haslemere*, *Witley*; formerly at *Dulwich*
— pruniana, Hb. Abundant everywhere among blackthorn
— ochroleucana, Hb. *Redhill*, *Reigate*, *Ranmore*, *Haslemere*
— cynosbatella, Linn.; variegana, Hb. Common everywhere in hedges
— sauciana, Hb. Abundant at *Leith Hill*, *Hindhead*
— gentianana, Hb. *Dorking*, *Reigate*; among teazle
— sellana, Hb. *Reigate*, *Redhill*, *Box Hill*, *Mickleham*, *Haslemere*; on rough hillsides
— marginana, Haw. *Haslemere*; common in damp woods
— carbonana, Dbld. *Haslemere*, scarce; *Coombe Wood*, formerly
Antithesia salicana, Gn. *Norbiton*; once near *Redhill Station*; formerly at *Battersea*
Spilonota ocellana, Schiff. Generally common
— lariciana, Zell. *Box Hill*, common among larch; *Haslemere*, scarce
— pauperana, Frey. *Box Hill*; among wild rose, rare
— aceriana, Mann. Abundant among poplar in the *South London* suburbs
— dealbana, Frol. Generally common
— neglectana, Dup. *South London* suburbs; not common
— incarnatana, Hb.; amænana, Hb. *Croydon*, *Box Hill*, *Buckland Hill*, *Betchworth Hill*; formerly on *Barnes Common*
— suffusana, Zell. *Reigate*, *Haslemere*; generally in hawthorn hedges
— rosæcolana, Dbld. *Reigate*, *Redhill*, *Shirley*, *South London* suburbs; very common in gardens, and destructive to roses
— roborana, Schiff. Everywhere common among rose
Pardia tripunctana, Schiff. Generally common
Aspis udmanniana, Linn. *Redstone*, *Reigate*, *Box Hill*, *Oxshott*, *Ripley*, *Coombe Wood*, *Haslemere*, *South London*; common among bramble
Sideria achatana, Schiff. *Richmond*, *Norbiton*, *Coombe Wood*, *Ripley*, *South London* suburbs, about hawthorn hedges
Sericoris latifasciana, Haw. Taken on *Clundon Common*, *Ripley*, by Mr. J. F. Stephens
— bifasciana, Haw. *Norbiton*, *Oxshott*, *Mickleham*, *Milford Heath*; among Scotch fir
Sericoris cespitana, Hb. *Mickleham*, *Caterham*, *Betchworth Hill*, *Redstone Hill*; abundant at *Box Hill*, *Ashtead*, *Shirley*, *Leatherhead*
— conchana, Hb. *Leith Hill*, *Reigate Heath Wood*, *Mickleham*, *Box Hill*, *Haslemere*, *Churt*; in swampy meadows
— lacunana, Schiff. Abundant everywhere; even found in *South London*
— urticana, Hb. Generally common in woods; abundant on the hills among whortleberry
— micana, Hb. *Churt*; in swampy meadows
Mixodia ratzeburghiana, Sax. *Croydon*, *Mickleham*, *Reigate*, *Redhill*, *Box Hill*; about young fir plantations
— rubiginosana, H.S.; Bouchardana, Dbld. *Oxshott*; not rare among fir
Euchromia purpurana, Haw. *Box Hill*, rather common; *Crome Hurst*, *Buckland Hill*, sparingly; *Haslemere*, rare
Orthotænia antiquana, Hb. *Haslemere*; not common
— striana, Schiff. *Redhill*, *Reigate*, *Box Hill*, *Haslemere*, *South London* suburbs
— ericetana, Bent. *Haslemere*, rare; once in *Headley Lane*, *Mickleham*, by Mr. Sydney Webb
Eriopsela fractifasciana, Haw. *Redhill*, *Reigate*, *Dorking*, *Shirley*, *Box Hill*, *Sanderstead*; common on chalk hills
— quadrana, Hb. Formerly at *Stoats Nest*, near *Croydon*
Phtheocroa rugosana, Hb. Once taken by Mr. Sydney Webb near *Dorking*
Cnephasia musculana, Hb. Generally common
— politana, Haw.; lepidana, Curt. *Shirley*, *Haslemere*; widely distributed on heaths
Sciaphila nubilana, Hb. *Chiddingfold*, *Horsley*, *Reigate*, *Redstone*; common in the *South London* suburbs about hawthorn hedges
— perterana, Gn.; conspersana, Dgl. *Betchworth* and *Box Hill*
— pascuana, Hb. *South London* suburbs, *Box Hill*
— subjectana, Gn. Generally abundant
— virgaureana, Tr. Plentiful everywhere
— chrysantheana, Dup.; alternana, Schiff. *Shirley*, taken by Mr. H. J. Turner
— sinuana, Steph. *Mickleham*, *Redhill*; rare
— hybridana, Hb. Generally common in hedges
Sphaleroptera ictericana, Haw. *Richmond*, Mr. H. J. Turner
Capua ochraceana, Steph. *Horsley*, *Haslemere*, formerly at *Dulwich Wood*

Clepsis rusticana, Tr. Said to occur in boggy places on the heaths

Bactra lanceolana, Hb. Everywhere abundant among rushes

Phoxopteryx siculana, Hb. *Haslemere*; in damp woods

— unguicana, Linn. *Tilburstowe* and *Leith Hill*

— uncana, Hb. *Redhill*, *Reigate*, *Haslemere*, *Oxshott*; not very common

— inornatana, H.S. Formerly at *Wimbledon* and *Barnes Common*

— biarcuana, Steph. *Haslemere*, scarce; formerly at *Wimbledon* and *Barnes Common*

— comptana, Frol. *Croydon*, *Reigate*, *Horsley*; abundant on *Box Hill*, and chalk hills generally

— myrtillana, Tr. *Hindhead*, and other hills near *Haslemere*; among whortleberry

— lundana, Fab. Generally common among clover

— derasana, Hb. *Croydon*, *Sanderstead*, formerly *Birch Wood*, *Haslemere*; not common

— diminutana, Haw. *Redhill*, *Reigate*, *Haslemere*, scarce; formerly at *Coombe Wood*

— mitterbacheriana, Schiff. *Redhill*, *Reigate*, *Horsley*, *Haslemere*; common in woods

— upupana, Tr. *Oxshott*, *Redstone Wood*, occasionally

— ramana, Linn.; lactana, Fab. *Haslemere*; common in woods among aspen

Grapholitha paykulliana, Fab. *Redhill*, *Reigate*, *Haslemere*, *Witley*, *Hindhead*, *Shirley*

— nisana, Linn. Widely distributed in hedges and lanes among sallows, even to the *South London* suburbs

— cinerana, Haw. *Norwood*; among poplar

— nigromaculana, Haw. *Redhill*, *Reigate*, *Norbiton*, *Haslemere*

— campoliliana, Schiff. Generally common about sallows in woods and hedges

— minutana, Hb. *South London* suburbs; among poplars

— trimaculana, Don. Generally abundant among elm

— penkleriana, Schiff. Widely distributed among alder

— obtusana, Haw. *Redhill*, *Reigate*, *Oxshott*; common in *Haslemere* woods; formerly in *Dulwich Wood*

— nævana, Hb. Abundant everywhere

— geminana, Steph. *Leith Hill*, *Haslemere*; among whortleberry

Phlœodes tetraquetrana, Haw. Generally distributed; common in woods

Phlœodes immundana, Fisch. *Haslemere*; among alder

— demarniana, Fisch. Taken at *Oxshott* by Mr. Percy Richards and Mr. R. Adkin

— crenana, Hb. Once at *Richmond Park*, by Mr. T. Blackburn

Hypermecia cruciana, Linn.; augustana, Hb. Generally common among sallow

Batodes angustiorana, Haw. Generally distributed; very abundant in gardens in *South London* and the suburbs

Pœdisca bilunana, Haw. *South London* suburbs, on birch trunks; *Oxshott*, *Chobham*, *Redstone Hill*, *Haslemere*; irregular in its appearances

— oppressana, Tr. *Purley*; among poplar

— corticana, Schiff. Everywhere abundant among oaks

— profundana, Schiff. *Redhill*, *Reigate*, *Box Hill*, *Byfleet*, *Haslemere*; in oak woods

— occultana, Dougl. *Weybridge*, *Box Hill*, among larch; *Birch Wood*, where it was first noticed in this country

— solandriana, Linn. Generally distributed in hedges

— semifuscana, Haw. *Redhill*, *Reigate*, *Haslemere*; among sallow

— sordidana, Hb. *Haslemere*, *Maldon*; among alders

Ephippiphora bimaculana, Don. *Redhill*, *Haslemere*, *Churt*

— cirsiana, Zell. *Redhill*, *Reigate*, *Box Hill*, *Haslemere*; common

— scutulana, Schiff. Generally distributed in marshy places

— brunnichiana, Schiff. Generally abundant among coltsfoot, even in *South London*

— fœneana, Linn. *Croydon*, *East Dulwich*

— nigricostana, Haw. *Redhill*, *Reigate*, *Sanderstead*, *Ramner*, *Haslemere*

— trigeminana, Steph. *Reigate*, *Redhill*, *Box Hill*, *Mickleham*, *Ranmore*, *Ripley*, *Haslemere*; common among ragwort

— tetragonana, Steph. *Redhill*, *Reigate*, *Haslemere*; not uncommon; formerly at *Coombe Wood*

— signatana, Dougl. *Croydon*, *Sanderstead*, *Mickleham*

— ephippana, Hb.; populana, Fab. *Wimbledon*, *Haslemere*; among sallow

— gallicolana, Zell. *Wimbledon*; reared from oak-galls

Olindia ulmana, Hb. *Croydon*, *Leith Hill*, *Box Hill*, among yew; *Hindhead*, *Haslemere*, frequenting lanes leading up to the hills

Roxana arcuana, Linn. *Haslemere*, in open woods; formerly at *Combe Wood*

Semasia spiniana, Fisch. *Redhill*, *Reigate*, *Haslemere*; about hawthorn

Semasia janthinana, Dup. *Croydon*, *Reigate*, *Redhill*, *South London* suburbs
— rufillana, Zell. *Croydon*, *Mickleham*, *Sanderstead*, *Reigate*, *Redhill*, *Haslemere*; among wild carrot
— wœberana, Schiff. Generally common about fruit trees
Coccyx strobilana, Linn. *Croydon*, *Abinger*, *Box Hill*; among spruce
— ochsenheimeriana, Zell. *Box Hill*, among spruce fir, apparently a recent immigrant
— splendidulana, Gn. *Haslemere*, in oak woods; formerly at *Coombe Wood*
— argyrana, Hb. Generally common in oak woods, sitting on the trunks
— hyrciniana, Uslar; tædella, Linn. Abundant everywhere among spruce fir
— distinctana, Bent. *Mickleham*, *Gomshall*
— nanana, Tr. *Haslemere*, *Redhill*, *Reigate*, *Mickleham*, *Box Hill*; common on spruce fir
— vacciniana, Fisch. *Haslemere*, among whortleberry
Heusimene fimbriana, Steph. *Richmond Park*, *Wimbledon*, *Coombe Wood*
Retinia buoliana, Schiff. *Gomshall*, *Oxshott*, *Milford*, *Churt*; among Scotch fir
— pinicolana, Dbld. *Redhill*, *Oxshott*, *Milford Heath*, *Shirley*
— turionana, Linn. *Box Hill*, *Birch Wood*, *Oxshott*; on fir, near *Haslemere*
— pinivorana, Zett. *Oxshott*, *Milford Heath*
Carpocapsa splendana, Hb. *Redhill*, *Reigate*, *Haslemere*; among oak
— grossana, Haw. *Reigate*, *Mickleham*, *Box Hill*, *Chobham*, *Haslemere*, *Milford*; among beech
— pomonana, Linn. Everywhere in orchards; also in fruit rooms and shops
Opadia funebrana, Tr. In the *Reigate* district in orchards, and also in fruit stores
Endopisa nebritana, Tr. *Redhill*, *Reigate*, *Haslemere*; abundant in pea fields
Stigmonota coniferana, Ratzb. *Oxshott*, *Mickleham*, *Hindhead*, *Haslemere*; among fir trees on the hills
— pallifrontana, Zell. One specimen taken by Mr. H. J. Turner at *Reigate* in June, 1894
— internana, Gn. *South London* suburbs beyond *Nunhead*; taken by Mr. H. J. Turner
— perlepidana, Haw. *Haslemere*, in woods, *Shirley*
— composana, Fab. *Redhill*, *Reigate*, *Birch Wood*, *Haslemere*; common among clover
— weirana, Dougl. *Redhill*, *Box Hill*, *Mickleham*; among beech
Stigmonota nitidana, Fab.; redimitana, Gn. *Haslemere*; woods near *London*
— regiana, Zell. *South London* suburbs, *Redhill*, *Reigate*; among sycamore
— germarana, Froel.; puncticostana, Steph. *Ripley*, *Haslemere Woods*; not common
— roseticolana, Zell.; germarana, Stn. Manual, *Reigate*, *Box Hill*, *Coombe Wood*, *Haslemere*; the larva common in haws
Dicrorampha politana, Schiff. *Croydon* and elsewhere in waste places on the chalk
— alpinana, Tr. *Reigate Hill*, *Box Hill*, *South London* suburban gardens; among tansy
— petiverana, Linn. Everywhere among milfoil
— sequana, Hub. *Croydon*, *Reigate*, *Redhill*, *South London* suburbs, *Haslemere*
— plumbana, Scop. Generally common in grassy places
— plumbagana, Tr. *Redhill*, *Reigate*, *Box Hill*, *Haslemere*
— saturnana, Gn. *South London* suburbs; probably widely distributed among tansy
— acuminatana, Zell. *Redhill*, *Reigate*, *Mickleham*, *Haslemere*; among ox-eye daisy
— simpliciana, Haw. *Croydon*, *Redhill*, *Reigate*, *Witley*; among mugwort
— consortana, Steph. *Croydon*, *Mickleham*, *Reigate*, *Redhill*, *Haslemere*; among ox-eye daisy
Pyrodes rhediana, Linn. *Haslemere*; flying over hawthorn
Catoptria albersana, Hb. *Redstone*, *Reigate*, *Haslemere*; common in woods
— ulicetana, Haw. Abundant everywhere about furze
— microgrammana, Gn. *Box Hill*; among rest-harrow
— juliana, Curt. *Guildford*, *Redstone*, *Haslemere*, *South London* suburbs and parks
— hypericana, Hb. Generally distributed among St. John's wort
— conterminana, H.S. Once at *Redstone Hill* by Mr. Sydney Webb
— fulvana, Steph. *Box Hill*, and doubtless elsewhere on the chalk
— cana, Haw. *Haslemere*; doubtless everyeverywhere common among thistles
— scopoliana, Haw. Generally distributed among knapweed
— cæcimaculana, Hb. *Mickleham*; common at *Headley Lane*, probably elsewhere on the chalk
— expallidana, Haw. Damp meadows near *Redhill Station*; formerly near *Coombe Wood*

Trycheris mediana, Schiff. *Outwood*, *Holmwood*, *Dorking*, *Redstone*, *Haslemere*
Lobesia permixtana, Hb.; reliquana, Stn. *Ashstead*, *Headley Wood*, *Haslemere*
— servillana, Dup. *Haslemere Woods*; scarce
Eupœcilia nana, Haw. *Redhill*, *Oxshott*, *Haslemere*, *Shirley*, *Reigate*
— dubitana, Hb. *Farnham*, *Oxshott*, *Box Hill*; scarce at *Redstone* and *Reigate*; common on the railway banks in the *South London* suburbs — even to the railway stations
— sodaliana, Haw.; amandana, H.S. *Croydon*, *Ripley*, *Sanderstead* and elsewhere, among buckthorn on the downs
— maculosana, Haw. *Redstone*, *Tilburstowe*, *Haslemere*; among bluebells
— hybridellana, Hb. *Guildford*, *Reigate Hill*, *Box Hill*, *Mickleham*, *Betchworth*
— ambiguana, Hb. *Haslemere*; rare
— angustana, Hb. Generally distributed and common
— curvistrigana, Wilk. *Haslemere*; scarce
— manniana, Zell. *Haslemere Woods*; very rare
— rupicola, Curt. *Churt*, in a marsh
— flaviciliana, Dbld. On a bank facing *West Reigate Hill*, going by *Wray Lane*, also at *Sanderstead*
— subroseana, Haw. *Haslemere Woods*; scarce
— implicitana, H.S., Heydeniana, Zell. *Haslemere*, *South London* suburbs; on railway banks
— roseana, Haw. *Reigate* and elsewhere on the chalk, but scarce
— ciliella, Hb.; ruficiliana, Haw. *Reigate Hill*, *Buckland Hill*, *Mickleham*, *Horsley*; among cowslip
Xanthosetia zœgana, Linn. *Redhill*, *Reigate*, *Haslemere*, *Box Hill*, *Croydon*; not very common
— hamana, Linn. Common and generally distributed
Chrosis tesserana, Schiff. *Croydon*, *Mickleham*, *Box Hill*, and on other chalk hills; *Haslemere*, on railway banks
— rutilana, Hb. *Stoats Nest* and *Caterham Downs*, near *Croydon*; among juniper
— audouinana, Dup. *Redstone Wood*, *Reigate Heath*, *Haslemere*; rare
Argyrolepia baumanniana, Schiff. *Haslemere*; common in damp woods among *Scabiosa succisa*
— subbaumanniana, Wilk. *Reigate*, *Sanderstead*, *Mickleham*, *Box Hill*, and probably on all other chalk hills
— zephyrana, Tr.; dubrisana, Curt. *Croydon*, *Reigate*, *Haslemere*; uncommon
Argyrolepia cnicana, Dbld. *Redhill*, *Haslemere*; in marshy spots among thistles
— badiana, Hb. *Crome Hurst*, *Croydon*, among burdock; formerly at *Battersea*
— æneana, Hb. *Haslemere*, on railway banks; scarce
Conchylis dipoltella, Hb. Formerly near *Guildford* and *Croydon*—possibly extinct
— francillana, Fab. *Sanderstead*, *Reigate*, *Redhill*; on the chalk
— dilucidana, Steph. *Boxhill*, *Dorking*, *Reigate*, *Banstead*, *Sanderstead*; on the chalk
— smeathmanniana, Fab. *Oxshott*, *Betchworth*, *Banstead*, not common; formerly at *Barnes* and common in the *South London* suburbs, now long absent
— stramineana, Haw. *New Cross*, slope of railway bank; *Box Hill*, sparingly; *Richmond*
— inopiana, Haw. *Haslemere*, in marshy fields; *Ripley*
Aphelia pratana, Hb. *Sanderstead*, *Mickleham*, abundant at *Haslemere* and *Churt*; *Reigate*, *Redhill*, *South London* suburbs
Tortricodes hyemana, Hb. Generally common in oak woods

TINEINA—CHOREUTIDÆ

Simæthis fabriceana, Linn. Abundant everywhere over nettles
— pariana, Linn. *Reigate*, *Redstone*, *Haslemere*; in thatch

PSYCHIDÆ

Taleporia pseudo-bombycella, Och. *Weybridge*, *Godstone*, *Tilburstowe*, *Shirley*, *Haslemere*, *Milford*, hanger between *Betcham* and *Box Hill*
Psyche radiella, Curt. *Reigate Hill*, *Brockham Hill*, *Box Hill*
— intermediella, Brd. *Box Hill*, *Leatherhead*, *South London* suburbs
— roboricolella, Brd. *Haslemere*
Solenobia inconspicuella, Stn. *Richmond Park*, *Milford Heath*

TINEIDÆ

Lemnatophila phryganella, Hb. *Gatton Woods*, *Haslemere*
Diurnea fagella, Schiff. Everywhere common
Epigraphia avellanella, Hb. *Haslemere*, *Box Hill*; on birch trunks
— steinkellneriana, Schiff. *Oxshott*, *Redstone Hill*, *Nutfield*, *Leith Hill*, *Haslemere*

Diplodoma marginepunctella, Steph. *Richmond*, *Croydon*, *Sanderstead*, *Haslemere*, *Oxshott*, *Milford Heath*; not common

Xysmatodoma melanella, Haw. *Milford Heath*; formerly at *Peckham Rye*

Ochsenheimeria birdella, Curt. *Redstone Wood*, *Haslemere*, *South London* suburbs

— bisontella, Lienig. *South London* suburbs

— vacculella, Fisch. *South London*; under loose bark of old willows

Scardia corticella, Curt.; emortuella, Zell. *Tooting Common*

— parasitella, Hb., carpinetella, Gn. *Richmond*; on trunks of decayed oaks

— granella, Linn. *Witley*

— cloacella, Linn. Everywhere common

— ruricolella, Stn. *Haslemere*; common about hedges

— cochylidella, Stn. Stainton records 'once taken near *Sanderstead*'

— arcella, Fab. *Haslemere*, not scarce; common in a swamp near *Redhill*

Tinea imella, Hb. *Sutton*, *Stoats Nest*, *Croydon*

— ferruginella, Hb. *Dorking*, *Redhill*, *Reigate*, *Haslemere*, *South London* suburbs

— rusticella, Hb. Everywhere common, including *South London* suburbs

— fulvimitrella, Sodoff. *Haslemere*; rare

— tapetzella, Linn. Everywhere abundant, and especially so in stables and harness rooms

— albipunctella, Haw. *Redhill*, *Box Hill*, *Richmond*, *Haslemere*

— fuscipunctella, Haw. *Redhill*, *Reigate*, *Haslemere*, *South London*; in houses

— pellionella, Linn. Abundant everywhere in houses; destructive to woollens and furs

— pallescentella, Stn. *South London* suburbs; not uncommon

— lapella, Stn.; ganomella, Tr. *Reigate*, *Redstone*, *Haslemere*; common in woods and hedges, the larva feeding in birds' nests

— biselliella, Hemm. Abundant generally in houses; destructive to all hair fabrics

— simpliciella, H.S. *Headley Lane*, *Mickleham*; very local

— nigripunctella, Haw. *Redhill*, *Haslemere*; in outhouses or on palings

— angustipennis, H.S. A single specimen taken on a fence at *Richmond* by Mr. Sorrell

— semifulvella, Haw. *Reigate*, *Redhill*, *Coombe Wood*, *Ripley*, *Haslemere*; in the vicinity of decayed wood in hedges or woods

— bistrigella, Haw. *Redstone*, *Reigate Hill*, *Haslemere*; among birch

Lampronia quadripunctella, Fab. *Redhill*, *Reigate*, *Haslemere*, in hedgerows; scarce

— luzella, Hb. *Redhill*, *Reigate*, *Haslemere*, *West Humble*

— prælatella, Schiff. *Redstone Lane*, near *Leith Hill*, *Haslemere*; in hollow lanes among strawberry

— rubiella, Bjerk. *Haslemere*, *Reigate*, *Redhill*; among raspberry

Incurvaria masculella, Schiff. Common everywhere about hawthorn hedges

— pectinea, Fab.; zinckenella, Zell. *Redstone*, *Reigate*, *Haslemere*

— oehlmanniella, Hb. *Reigate*, *Redhill*; common at *Haslemere*

— tenuicornis, Stn. A single specimen taken near *Haslemere*

— capitella, Linn. *Redhill*, *Reigate*; occasionally in old gardens, among neglected currant bushes

Nemophora swammerdamella, Linn. *Reigate*, *Redhill*, *Box Hill*, *Horsley*, *Effingham*, *Haslemere*; common in woods

— schwarziella, Zell. Generally common in woods

— metaxella, Hb. *Reigate*, *Redhill*, *Haslemere*; local, in marshy spots

Adela fibulella, Schiff. *Reigate*, *Redhill*, *Mickleham*, *Shirley*, *Haslemere*; common

— rufimitrella, Scop. *Haslemere*, *Redhill*, formerly at *Putney*

— sulzella, Schiff. *Reigate Hill*; not common

— degeerella, Linn. *Richmond*, *Effingham*; once at the *Copyhold Farm*, *Redhill*; common in *Haslemere Woods*

— viridella, Linn. Generally distributed among oaks

— cuprella, Fab. *Wimbledon* and *Barnes Commons*

Nemotois scabiosella, Scop. On chalk downs, south of *Croydon*, upon scabious; not uncommon (Mr. B. Bower)

— cupriacella, Hb. *Croydon*, *Sanderstead*, *Banstead*, *Haslemere*; very local

— fasciella, Fab., schiffermillerella, Denis. On chalk downs, taken by sweeping

— minimella, Zell. *Reigate*, *Redhill*, *Mickleham*, *Haslemere*; not uncommon

Micropteryx calthella, Linn. Everywhere common

— seppella, Fab. *Reigate*, *Redhill*, *Sanderstead*, *Haslemere*; common

— aruncella, Scop. *Haslemere*; local

— mansuetella, Zell. *Haslemere*, in marshes, on Carex

— allionella, Fab. Recorded from *Richmond Park* by Mr. F. Bond; *Haslemere*

— thunbergella, Fab. *Redhill*, *Reigate*, *Haslemere*; rather common

Micropteryx purpurella, Steph. Generally common among birch
— semipurpurella, Steph. *Haslemere*; among birch
— unimaculella, Zett. *Haslemere*, not common; *Wimbledon Common*
— salopiella, Stn. *Haslemere*; scarce
— sparmannella, Bosc. *Redhill*, *Haslemere*; sparingly
— subpurpurella, Haw. Abundant in oak woods generally
Swammerdamia apicella, Don.; comptella, Hb. *Haslemere*, common; rare at *Redhill*
— griseocapitella, Stn. Generally distributed among birch
— oxyacanthella, Zell. *Reigate*, *Redhill*; abundant
— spiniella, Zell. *Reigate*, *Redhill*, *Haslemere*; less common
— pyrella, Vill. Generally common among fruit trees
Scythropia cratægella, Linn. *Dorking*, *Norbiton*; very local
Hyponomeuta plumbella, Schiff. *Croydon*, *Box Hill*, *Betchworth*, *Hambledon*, *Churt*
— irrorella, Hb. Formerly at *Wandsworth* and *Richmond Park*
— padella, Linn. Abundant everywhere in hawthorn hedges
— malellus. Name given by the late Mr. F. Bond to a small species, with rounded tip to the wings, making white cocoons, upon apple, abundant in *South London*
— cognatella, Hub. *Reigate*, *Redhill*, *Hambledon*, *Churt*, abundantly in the *South London* suburbs
— padi, Zell.; evonymella (?), Linn. One taken at *Reigate* by Mr. H. J. Turner
— vigintipunctatus, Retz. *Guildford*, *Haslemere*; very local
Prays curtisellus, Don. Generally common among ash
Eidophasia messingiella, Fisch. Once taken near *Haslemere* by Dr. Knaggs
Plutella cruciferarum, Zell. Abundant everywhere
— porrectella, Linn. *Reigate Hill*, *Wray Lane*
— annulatella, Curt. Mr. Sydney Webb records this usually seaside species at *Betchworth*, *Dorking* and *Redhill*
Cerostoma sequella, Linn. *Wray Lane*, *Reigate*, *Redstone Hill*, *Leith Hill*, *Ripley*, *Haslemere*; scarce
— vittella, Linn. *Reigate*, *Redhill*, *Haslemere*, *Witley*, *South London* suburbs; on elm
— radiatella, Don. Generally abundant in woods
— costella, Fab. In oak woods generally
— sylvella, Linn. *Reigate*, *Redhill*, *Haslemere*
Cerostoma alpella, Schiff. In oak woods generally, but scarce
— lucella, Fab. *Redhill*, *Reigate*, *Haslemere*; local and uncommon
Harpipteryx scabrella, Linn. *Haslemere*; among apple, scarce
— nemorella, Linn. *Haslemere*, *Redhill*; occasionally
— harpella, Schiff; xylostella, Stn. Generally common among honeysuckle
Theristis caudella, Linn. *Redhill*, *Mickleham*, *Witley*, *Churt*; in lanes among spindle; occasionally beaten from thatch
Orthotælia sparganiella, Thunb. Swamps at *Redhill* station, *Croydon*
Enicostoma lobella, Schiff. Generally distributed among blackthorn; not very common
Phibalocera quercella, Fab. Widely distributed in oak woods, but not so abundant as was formerly the case
Exæretia allisella, Stn. *Holmwood*, *Dorking*; excessively local
Depressaria costosa, Haw. Generally common among furze, even to *South London* suburbs
— liturella, Schiff. *Betchworth Hill*, *Box Hill*, *Haslemere*; common
— pallorella, Zell. Same places, scarce
— bipunctosa, Curt. *Kingston Hill*, *Redhill*; rare
— umbellana, Steph. *Coombe Wood*, *Redhill*, *Reigate*, *Haslemere*, *Witley*, *Hindhead*; on heaths
— assimilella, Tr. *Redhill*, *Reigate*, *Wimbledon*, *Barnes*, *Haslemere*
— nanatella, Stn. *Mickleham*, *Box Hill*, *Betchworth Hill*; on the chalk
— atomella, Schiff. *Leith Hill*
— scopariella, Zell. *Haslemere*, among broom; formerly on *Barnes Common*
— arenella, Schiff. Everywhere common
— propinquella, Tr. *Sanderstead*, *Reigate*, *Redhill*, *Haslemere*; widely distributed
— subpropinquella, Stn. *Reigate*, *Redhill*, *Haslemere*; in thatch
— rhodochrella, H.S. *Haslemere*; scarce
— alstrœmeriana, Linn. *Norbury Park*, *Redhill*, *Reigate*, *Haslemere*; common
— purpurea, Haw.; vaccinella, Hb. *Redhill*, *Haslemere*, *Sanderstead*
— capreolella, Zell. *Reigate*, *Betchworth Hill*, *Box Hill*, *Sanderstead*, *Mickleham*
— hypericella, Hb. *Redhill*, *Reigate*, *Haslemere*, *Hambledon*, *Churt*
— conterminella, Zell. *Redhill*, *Haslemere*; common in swampy places among sallow
— angelicella, Hb. *Reigate*, *Redhill*, *Haslemere*; among Angelica

Depressaria carduella, Hb. *Haslemere* ; scarce
— ocellana, Fab. *Reigate*, *Redhill*, *Haslemere*
— yeatiana, Fab. Very scarce at *Reigate* and *Charlewood* ; common at *Haslemere*
— applana, Fab. Common everywhere
— ciliella, Stn. *Reigate*, *Redhill* ; common around *Haslemere*
— rotundella, Dougl. *Mickleham*, *Sanderstead*, *Reigate*, *Redhill* ; more especially on the chalk
— depressella, Hub. Formerly on the railway banks at *Forest Hill*
— pimpinellæ, Zell. *Reigate Hill*, *Stoats Nest*, *Croydon*
— albipunctella, Hb. *Wray Common*, *Redstone*, *Haslemere*, *Witley*
— pulcherrimella, Stn. *Croydon*, *Sanderstead*, *Reigate*, *Leigh*, *Haslemere*
— olerella, Zell. *Haslemere*, *Witley*, *Grayshott* ; apparently confined to heathy places in this and the adjoining counties
— douglasella, Stn. *Reigate Hill*, *Mickleham*, *Box Hill*, *Caterham*
— chærophylli, Zell. *Redhill*, *Reigate*, *Haslemere*, *Witley* ; in thatch
— ultimella, Stn. *Redhill*, *Witley* ; not common
— nervosa, Haw. *Dorking*, uncommon ; plentiful in thatch about *Haslemere*
— badiella, Hb. *Reigate*, *Redhill*, *Croydon Downs*, *Haslemere* ; formerly at *Barnes Common*
— pastinacella, Dup. *Guildford*, *Mickleham*, *Haslemere* ; scarce
— heracleana, Petiver. Common everywhere among cow parsnep
Psoricoptera gibbosella, Zell. *Haslemere*, on oak trunks
Gelechia cinerella, Linn. *Redhill*, *Haslemere*, *Churt*
— rufescens, Haw. *Dorking*, *Reigate* ; on chalk hills among long grass
— gerronella, Zell. *Barnes Common* and the outer suburbs, among furze
— inornatella, Dougl. Said to occur in marshy places ; not satisfactorily proved
— malvella, Hb. *South London* suburbs ; abundant in gardens among hollyhock
— populella, Linn. *Reigate*, *Redhill*, *Haslemere* ; common in the *South London* suburbs
— pinguinella, Tr. Near *Tulse Hill*, *South London*
— nigra, Haw. ; cautella, Zell. *Redhill*, *South London* suburbs ; scarce
— lentiginosella, Zell. *Haslemere* ; scarce, among dyer's greenweed
— velocella, Tisch. *Reigate*, *Putney Heath*, *Barnes Common*, *Esher*, *Milford Heath*
— ericetella, Hb. Abundant on all heaths
Gelechia mulinella, Fisch. Generally common among furze
— sororculella, Hub. *Redhill*, *Witley*, *Haslemere* ; among sallows
— alacella, Dup. *Leatherhead*, *Redhill*
— subpeliella, Warren. *South London* suburbs
— diffinis, Haw. Generally common on heaths
— terrella, Schiff. Abundant everywhere
— acuminatella, Sircom. *Redhill*, *Mickleham*, *Dorking*, *Haslemere*
— artemesiella, Tr. *Dorking*, *Reigate*, *Epsom*, on chalk downs ; *Milford Heath*
— senectella, Zell. *Milford*, *Hambledon*, *Haslemere*, *Redhill*
— similis, Dougl. *Mickleham*, *Stoats Nest*, *Croydon*, *Haslemere* ; once at *Redhill*
— umbrosella, Zell. *Haslemere*, *Milford Heath* ; in sandy places
— basaltinella, Zell. *Addington*, *Haslemere* ; in thatch
— domestica, Haw. Generally distributed
— rhombella, Hb. *Redstone Hill*, *Haslemere* ; in orchards among apple ; formerly at *Dulwich*
— proximella, Hb. Generally distributed among birch and alder
— notatella, Hb. *Reigate*, *Redhill*, *Haslemere* ; among sallow
— humeralis, Zell. ; lyellella, Curt. *Haslemere*, *Witley* ; in thatch
— vulgella, Hb. Generally distributed, even to the *South London* suburbs, in hawthorn hedges
— luculella, Hb. Widely distributed in oak woods, also in *South London* suburbs
— scriptella, Hb. *Haslemere* ; among maple
— fugitivella, Zell. Generally common among elm
— distinctella, Zell. *Croydon*, *Sanderstead*, *Redhill*, *Norwood*
— celerella, Dougl. *Caterham Downs*
— costella, Steph. *Reigate*, *Redhill*, *Haslemere* ; among woody nightshade
— fraternella, Dougl. Taken at *Purley* by Mr. B. A. Bower
— tricolorella, Haw. Generally common in the larval state on stitchwort
— maculea, Haw. Generally distributed and often common
— hubneri, Haw. Taken at *Oxshott* by Mr. R. Adkin
— knaggsiella, Stn. *Haslemere* ; in woods, not common
— maculiferella, Mann. *South London* suburbs ; in gardens
— atriplicella, Fisch. *South London* suburbs, among orache (Atriplex)

Gelechia sequax, Haw. *Dorking, Reigate, Croydon, Mickleham, Box Hill, Purley*; among sun cistus
— aleella, Fab. *Redhill, Norbiton, Haslemere*, on oaks; formerly at *Dulwich Wood*
— leucatella, Linn. *South London* suburbs, in hedges; *Norbiton*
— albiceps, Zell. *Redhill, Witley, Haslemere, South London* suburbs
— nanella, Hb. Generally distributed, but especially in *South London* suburbs, about pear trees
— mouffetella, Schiff. *Croydon, Redhill*, formerly common, now scarce; *Haslemere*; still existing among honeysuckle in the *South London* suburbs
— dodecella, Linn. *Redhill, Reigate, Mickleham, Milford Heath*; among fir
— triparella, Zell. *Haslemere*; near *Croydon*
— tenebrella, Hb. Widely distributed in the county
— ligulella, Zell. *Redhill, Haslemere, Churt*; in damp places, not common
— vorticella, Zell. *Haslemere*; scarce
— tæniolella, Tr. Generally distributed among bird's-foot trefoil
— coronillella, Tisch. Our only English locality for this species seems to be the 'hilly field' at *Headley Lane, Mickleham*, now closed to entomologists
— anthyllidella, Hb. Common everywhere on the chalk among 'lady's finger'
— albipalpella, H.S. *Redhill, Reigate, Guildford, Woking*
— atrella, Haw. *Redhill, Mickleham, Haslemere*; probably in all woods among St. John's wort
— bifractella, Mann. *Mickleham, Box Hill, Betchworth, Haslemere*; in damp places among fleabane
— osseella, Stn. *Redhill, Mickleham*
— lathyri, Stn. Taken by Mr. Percy Richards at *Raynes Park*
— gemmella, Linn. Widely distributed in oak woods, sitting on the trunks
— næviferella, Zell. *Redstone, Leith Hill, Guildford, Haslemere, South Landon* suburbs, about gardens and hedgerows, among goosefoot
— hermannella, Fab. In gardens in the *South London* suburbs; local
— ericinella, Zell. In the damp portions of all large heaths
— pictella, Zell. *Esher, Barnes Common*; very local
— paupella, Zell; inopella, Zell. *Reigate, Dorking, Guildford, Haslemere*; among fleabane
Gelechia subocellea, Steph. *Mickleham, Box Hill, Reigate, Dorking, Guildford*; on the chalk, among marjoram
Parasia lappella, Linn. *Leith Hill, Haslemere*; among burdock
— metzneriella, Dougl. *Redhill, Reigate, Dorking, Mickleham, Haslemere*; among knapweed
— carlinella, Dougl. Abundant among carline thistle everywhere on the chalk
— neuropterella, Fisch. *Mickleham, Box Hill, Betchworth Hill*; scarce
Cleodora cytisella, Curt. Top of *Betchworth Hill* among bracken
Chelaria hubnerella, Don.; conscriptella, Hb. *Redhill, Reigate, Haslemere*; in woods
Anarsia spartiella, Schr. *Redhill, Croydon, Wimbledon*
Macrochila fasciella, Hb. *Haslemere*; among blackthorn, scarce and very local
— marginella, Fab. *Redstone Hill, Box Hill, Sanderstead, Croydon*; on the chalk among juniper
Nothris durdhamella, Stn.; schmidiella, Heyd. *Reigate, Dorking, Guildford*; on chalk downs among marjoram
Sophronia parenthesella, Linn. *Reigate, Mickleham, Croydon*; formerly at *Barnes Common*
Pleurota bicostella, Linn. *Redhill, Hindhead*; probably on all heaths
Harpella geoffrella, Linn. Generally distributed in lanes among bramble
Hypercallia christiernana, Linn. *Buckland Hill*; scarce
Dasycera sulphurella, Fab. Common everywhere
— oliviella, Fab. *Norbiton*; local
Œcophora minutella, Linn. *Redhill, Reigate, Haslemere, Witley*; in thatch and in houses
— flavimaculella, Stn. *Redhill, Haslemere, Churt*; in swampy places
— trisignella, Zell. *Hindhead*; very local
— angustella, Hb. *Wandsworth* and other parts of *South London* suburbs
— lunaris, Haw. *Flanchford, South Landon* suburbs; on old fences
— tinctella, Tr. *Redhill*, and elsewhere in woods; *Haslemere*, in old apple orchards; *South London* suburbs
— unitella, Stn.; fusco-aurella, Haw. (?) *Norbiton, South London* suburbs, among poplar
— panzerella, Steph. *Redhill, Reigate, Dorking, Guildford, Haslemere*; formerly in *Dulwich Wood*
— flavifrontella, Hb. *Redhill, Reigate, Mickleham, Haslemere*; not common

Œcophora fuscescens, Haw. Generally common ; sometimes abundant on heaths
— pseudo-spretella, Stn. Everywhere abundant, and destructive, in houses
Œcogenia quadripuncta, Haw. ; kindermanniella, Zell. *Dorking*, *Beulah Hill*, *Norwood*, *Peckham Rye*, *Nunhead*
Endrosis fenestrella, Scop. Everywhere abundant in houses
Butalis grandipennis, Haw. *Shiere*, *Crowhurst*, *Leith Hill*, *Wimbledon*, *Barnes Common*, *Hindhead* ; among furze
— fusco-ænea, Haw. *Reigate*, *Dorking*, *Mickleham*, *Redhill*
— senescens, Stn. *Croydon*, *Reigate*, *Dorking*, *Mickleham*, *Haslemere*
— incongruella, Stn. *Wimbledon*, *Witley*, *Milford Heath*
Pancalia leuwenhoekella, Linn. Abundant at *Box Hill*, *Dorking*, *Reigate*, *Sanderstead* and elsewhere on chalk downs ; rare at *Haslemere*
Acrolepia granitella, Tr. *Leith Hill*, *Haslemere* ; among fleabane
Rœslerstammia erxlebenella, Fab. *Shirley* ; scarce and local
Glyphipteryx fuscoviridella, Haw. Abundant everywhere among rough grass
— thrasonella, Scop. Everywhere common among rushes
— haworthana, Steph. *Milford Heath* ; among cotton-grass
— oculatella, Zell. *Haslemere* ; in marshes among sedges
— equitella, Scop. *Box Hill*, *Mickleham*, *Redhill*, *Reigate Hill*, *South London* suburban gardens and cemeteries, among stonecrop
— fischerella, Zell. Common everywhere
Æchmia dentella, Stn. *Sanderstead*, *Haslemere* ; not very common
Perittia obscuripunctella, Stn. *Redhill*, *Reigate*, *Haslemere* ; and probably all woods among honeysuckle
Antispila pfeifferella, Fab. *Reigate*, *Dorking*, *Guildford* ; on chalk downs
— treitschkiella, Fisch. *Nutfield*, *Croydon*, *Mickleham*, *Reigate*, *Dorking* ; on chalk downs among dogwood, like the last species
Tinagma sericeella, Haw. *Redhill*, and generally in woods ; abundant at *Haslemere*
— stanneella, Fisch. *Redstone Wood*
— resplendella, Dougl. *Redhill*, *Reigate*, *Haslemere*, *Hindhead* ; in swampy places among alder
Douglasia ocnerostomella, Stn. *Reigate*, *Dorking*, *Mickleham*, *Box Hill* ; probably everywhere on the chalk among viper's bugloss
Argyresthia ephippella, Fab. Widely distributed, including the *South London* suburbs, about cherry and hawthorn
— nitidella, Fab. Common everywhere in hedges
— semitestacella, Curt. *Redhill*, *Reigate*, *Mickleham*, *Sanderstead*, *Milford* ; local among beech
— spiniella, Zell. *Haslemere* ; very local
— albistria, Haw. Common everywhere about blackthorn
— conjugella, Zell. *Reigate Hill*, *Haslemere* ; among mountain ash
— semifusca, Haw. *Haslemere*, not common ; once at *Reigate Hill*
— mendica, Haw. *Redhill*, *Haslemere* ; rather local among blackthorn
— glaucinella, Zell. *Redstone Wood* ; either abundant, or quite absent, in different years
— retinella, Zell. Common anywhere among birch
— abdominalis, Zell. *Croydon*, *Sanderstead*, *Mickleham* ; on the downs among juniper
— dilectella, Zell. *Reigate Hill*, *Mickleham*, *Sanderstead*, *Haslemere* ; in juniper bushes on the downs and also in gardens
— andereggiella, Fisch. *Haslemere* ; in old orchards, very local
— curvella, Linn. *Redstone*, *Reigate*, *Guildford*, *Haslemere*, *South London* suburbs ; probably everywhere among apple trees
— sorbiella, Tr. *Mickleham*, *Reigate Hill*, scarce
— pygmeella, Hb. Generally distributed and common among sallow
— gœdartella, Linn. Generally abundant among alder ; and in *South London* among birch
— brockeella, Hb. Widely distributed among alder and birch
— arceuthina, Zell. *Reigate*, *Dorking*, *Croydon*, *Sanderstead*, *Mickleham*
— præcocella, Zell. *Reigate Hill*, *Betchworth Hill*, *Sanderstead*, *Croydon*, *Mickleham* ; among juniper
— aurulentella, Zell. In the same places and also on *Hydon Heath* ; among juniper
Cedestis farinatella, Zell. *Gomshall*, *Churt*, *Milford Heath* ; among fir
Ocnerostoma, piniariella, Zell. Generally distributed in Scotch fir plantations ; very abundant at *Shirley*
Zelleria insignipennella, Stn. *Mickleham*, *Redstone*, *Hydon Heath*, *Buckland Hill*, among yew and juniper
Gracilaria swederella, Thunb. ; alchimiella, Scop. In all oak woods
— stigmatella, Fab. Generally distributed, including *South London* ; among poplar

Gracilaria straminiella, Stn. *Leith Hill*, *Box Hill*; Mr. Sydney Webb finds it, in his opinion, abundantly distinct from the next species
— elongella, Linn. Generally distributed in oak woods
— semifascia, Haw. *Reigate*, *Mickleham*; among maple
— populetella, Zell. *Birch Wood*, *Witley*; not common
— tringipennella, Zell. Generally distributed on chalk downs, railway banks, and rough ground, among plantain
— syringella, Fab. Abundant everywhere in gardens; in the *South London* suburbs greatly disfiguring the lilacs by mining in their leaves
— omissella, Dougl. *Reigate*, pathway to *Nutfield* from *Redhill* railway station, *Woking*, *Witley*, *Hambledon*; very local, among mugwort
— phasianipennella, Hb. *Witley*, *Haslemere*, *Shiere*; scarce, but traces of larva often observed
— auroguttella, Steph. Widely distributed among St. John's wort
— ononidis, Zell. *Betchworth*, *Buckland Hill*, *Mickleham*

Coriscium brongniardellum. Fab. *Redhill*, *Reigate*, *Guildford*, *Haslemere*, *Leigh*, *Dorking*; beaten out of thatch, not very commonly
— cuculipennellum, Hb. *Reigate Hill*, *Mickleham*, *Haslemere*; sparingly among privet
— citrinellum, Fisch.; sulphurellum, Haw. *Mickleham*, *Haslemere*

Ornix avellanella, Stn. Generally distributed among hazel
— anglicella, Stn. Everywhere common among hawthorn
— betulæ, Stn. *Redhill*, *Haslemere*; among birch
— torquillella, Stn. *Reigate*, *Redhill*, *Churt*, *Haslemere*; among blackthorn
— fagivora, Frey. The larva has been found by Mr. S. Webb rarely at *Reigate Hill*
— guttea, Haw. Widely distributed, frequenting gardens and orchards

Coleophora juncicolella, Stn. *Leith Hill*, *Dorking*, *Shirley*, *Haslemere*; on heaths
— laricella, Hb. *Redstone*, *Buckland Hill*, *Betchworth Hill*, *Guildford*, *Mickleham*; common among larch
— badiipennella, Fisch. *Redstone Hill*, *Reigate*, *Haslemere*; hedges and palings
— limosipennella, Fisch. *Reigate*, *Mickleham*, *Sutton*, *Box Hill*, *Flanchford*, *Haslemere*, *Witley*, *South London* suburbs; among elm
Coleophora solitariella, Zell. *Redhill*, *Nutfield*, *Betchworth Hill*, *Guildford*, *Haslemere*; among stitchwort
— olivaceella, Stn. *Haslemere*; scarce
— lutipennella, Zell. Generally common among oak
— fuscedinella, Zell. Everywhere plentiful
— viminetella, Zell. *Reigate*, *Redstone*, *Nunhead*
— siccifolia, Stn. *Redhill*, foot of *Box Hill*
— gryphipennella, Bouche. *Redhill*, *Reigate*, *Guildford*, in woods among wild rose; also in *South London* gardens
— orbitella, Zell. *Addington*
— nigricella, Steph. Common everywhere among hawthorn and fruit trees
— paripennella, Fisch. *Redstone*, *Reigate*, *South London* suburbs
— albitarsella, Zell. *Mickleham*, *Hooley*, *Nutfield*, *Betchworth*, *Haslemere*, *South London* suburbs; among ground ivy
— fuscocuprella, H.S. *Redstone Wood*, *Haslemere*, *Churt*; scarce
— alcyonipennella, Koll. *Redhill*, *Reigate*, *Guildford*, *Mickleham*, *Haslemere*
— frischella, Linn. Once taken at *Redhill* by Mr. S. Webb
— fabriciella, Vill. *Haslemere*, *Redhill*, *Reigate*, and elsewhere among knapweed
— bicolorella, Wilk. } *Redstone Hill*
— wilkinsoni, Stn. }
— hemerobiella, Zell. *Putney*, *Camberwell*; in gardens, about pear trees
— palliatella, Zell. *Redstone Wood*, rare; *Haslemere*, *Wimbledon*, *Dulwich*
— anatipennella, Hb. *Redstone*, *Reigate*, *South London* suburbs
— ibipennella, Heyd. *Richmond*, *Oxshott*, *Addington*, *Nunhead*, *Redhill*; scarce
— ardeæpennella, Tr. *Dulwich*, reared by Mr. H. J. Turner
— currucipennella, Fisch. *Wimbledon*, *Addington*, *Redstone Wood*; rare
— niveicostella, Fisch. *Mickleham*, *Guildford*
— saturatella, Stn. Recorded at *Mickleham* by Mr. J. W. Douglas
— discordella, Zell. *Reigate Hill*, *Betchworth*, *Mickleham*, *Hindhead*, *Forest Hill*
— genistæ, Stn. *Reigate Heath*, *Woking*, *Oxshott*; on boggy heaths among petty whin
— pyrrhulipennella, Tisch. *Wimbledon*, *Shirley*; among heather
— albicosta, Haw. *Reigate* and *Redhill*, rare; *Haslemere*, very common; *Shirley*, *South London* suburbs; among furze
— conspicuella, Mann. *Redstone*, once taken; *Dorking*, *Holmwood*, rare; its principal known locality is at *Headley Lane*, *Mickleham*

Coleophora wockeella, Zell. *Haslemere*; very local, among wood betony
— lixella, Zell. *Reigate Hill*, *Box Hill*, *Guildford*, *Mickleham*, *Sanderstead*, common on chalk hills; *Haslemere*, rare
— ochrea, Haw. *Riddlesdown*, *Sanderstead*, *Purley*; among sun cistus on chalk hills
— onosmella, Zell. *Mickleham*, *Box Hill*, *Guildford*; on all chalk downs about viper's bugloss
— inflatæ, Stn. *Mickleham*, *Guildford*, *Haslemere*; scarce, among bladder campion
— conyzæ, Zell. *Box Hill*, *Bletchworth*, *Mickleham*; among ploughman's spikenard
— graminicolella, Hein. *Haslemere*; very local
— therinella, Stn. *Haslemere*; among thistles
— troglodytella, Stn. *Witley*, *Haslemere*; among fleabane
— lineolea, Haw. *Guildford*; among woundwort
— murinipennella, Fisch. *Redhill*, *Haslemere*, widely distributed in woods; also found in *South London* suburbs
— squamosella, Stn. *Mickleham*
— cespititiella, Zell. Everywhere common among rushes in wet places
— annulatella, Teng. *Haslemere*; common among goosefoot
— argentula, Zell. *Croydon*, *Purley*, *Smitham Bottom*, *Haslemere*; common about milfoil
— virgaureæ, Stn. *Haslemere*; among goldenrod
Bedellia somnulentella, Zell. *Haslemere*; exceedingly local
Cosmopteryx eximia, Haw. druryella, Zell. Larvæ found in profusion on hop at *Weybridge* by Mr. Warren
Batrachedra præangustella, Haw. *Redhill*; abundant in the *South London* suburbs on poplar
— pinicolella, Zell. *Weybridge*, *Gomshall*, *Milford Heath*, *Shirley*; among fir
Chauliodus insecurellus, Stn. *Stoats Nest* near *Croydon*, *Purley*, *Smitham Bottom*
— chærophyllellus, Goe. *Haslemere*; not common
— illigerellus, Hb. *Redhill*, *Sanderstead*, *Haslemere*; in swamps
Laverna conturbatella, Hb.
— propinquella, Stn. } *Box Hill*
— lacteella, Steph. *Redhill*, *Nutfield*, *Haslemere*, *Churt*; in marshes
— raschkiella, Fisch. *Mickleham*, *Box Hill*, *Haslemere*; among rose bay
— miscella, Schiff. *Reigate*, *Dorking*, *Guildford*, *Croydon*; on chalk downs among rock rose
Laverna stephensi, Stn. *Sanderstead*, *Norbiton*, *Tooting*, *Tulse Hill*, and elsewhere in the *South London* suburbs
— fulvescens, Haw.; epilobiella, Stn. Generally in damp places among willow-herb
— ochraceella, Curt. *Redhill*; widely distributed but scarce, about the same plant
— phragmitella, Bent. Near *Three Bridges*, but just within the county boundary
— decorella, Steph. *Redhill*, *Reigate*, *Haslemere*, *Witley*; about waste ground and in thatch
— subbistrigella, Haw. *Haslemere*, *Brook*, *Wormley*; in thatch
— atra, Haw.; hellerella, Dup. Generally distributed, including *South London*; among hawthorn
— vinolentella, H.S. *South London* suburbs; among apple trees
— rhamniella, Zell. *Croydon*, *Reigate*, *Dorking*, *Box Hill*, *Sanderstead*
Chrysoclista linneella, Stn. Abundant on the trunks of lime trees in *South London*
— bimaculella, Haw. A specimen taken at *Leith Hill* was recorded in 1855
— schrankella, Hb. *Nutwood*, *Gatton*, *Haslemere*; in marshy places
— flavicaput, Haw. Generally distributed in hawthorn hedges
Asychna modestella, Dup. Generally common among stitchwort
— æratella, Zell. *Guildford*, *Ripley*, *Reigate*, *Sanderstead*; scarce
Chrysocorys festaliella, Hb. *Gomshall*, *Reigate Heath*, scarce; common at *Haslemere*
Stephensia brunnichella, Linn. *Reigate*, *Betchworth Hill*, *Sanderstead*, *Box Hill*
Elachista gleichenella, Fab. *Box Hill*, *Mickleham*, *Sanderstead*, *Reigate Hill*, *Haslemere*; in woods
— trapeziella, Stn. *Redhill*, *Nutfield*
— magnificella, Tengs. *Mickleham*, *Haslemere*; not common
— apicipunctella, Stn. Recorded as found in swamps only, without definite locality—usually a northern species
— albifrontella, Hb. Generally distributed in wood paths and borders of woods
— luticomella, Zell. Common in all woods
— atricomella, Stn. *Redhill*, *Sanderstead*, *Haslemere*; usually upon downs
— cinereopunctella, Haw. *Reigate*, *Haslemere*, *Sanderstead*, *South London* suburbs
— nigrella, Hb. Common everywhere
— stabilella, Stn. *Reigate*, *Dorking*, *Mickleham*, *Box Hill*
— bedellella, Sirc. *Sanderstead*, *Box Hill*, *Reigate*; on chalk downs generally
— obscurella, Stn. Generally common

Elachista consortella, Stn. Recorded at *Headley Lane*, *Mickleham*, by Mr. Stainton
— subnigrella, Dougl. *Reigate*, *Dorking*, *Sanderstead*, *Mickleham*
— megerlella, Zell. *Redhill*, *Haslemere*; in woods
— adscitella, Stn. *Reigate*, *Redhill*; woods and neighbouring downs
— zonariella, Tengs. *Redhill district*, *Haslemere*; edges of woods
— gangabella, Fisch. *Mickleham*, *Reigate*, *Redhill*, *Haslemere*
— tæniatella, Stn. *Reigate*, *Redhill*
— cerussella, Hb. Marshes in *Redhill district*; among reed-grass
— scirpi, Stn. Marshes near *Redhill station*
— rhynchosporella, Stn. Generally distributed on boggy heaths
— paludum, Frey. Marshes near *Redhill station*
— biatomella, Stn. Generally distributed on chalk downs and dry fields
— triatomea, Haw. *Croydon*, *Reigate*, *Redhill*, *Haslemere*
— collitella, Fisch (?) *Betchworth Hill*
— subocellea, Steph. *Mickleham*
— pollinariella, Zell. *Reigate*, *Redhill*
— rufocinerea, Haw. In every lane and field in abundance
— cygnipennella, Hb. Generally common among coarse grasses
Tischeria complanella, Hb. Generally common about oak in woods and hedges
— marginea, Haw. Common everywhere among bramble
Lithocolletis roboris, Zell. *Haslemere*; not common
— hortella, Fab. *Guildford*, *Dorking*, *Holmwood*, *Shiere*
— sylvella, Haw.; acerifoliella, Zell. Common throughout the chalk districts; scarce at *Haslemere*
— triguttella, Stn. Mr. Stainton's original specimen was taken at *Sanderstead*
— lantanella, Schr. Throughout the chalk districts, on mealy guelder rose
— bremiella, Zell. Common near *Thursley*, among Vicia sepium
— lautella, Zell. and var. irradiella, Scott. Generally distributed among oak
— cavella, Zell. *Dorking*, *Redstone*; scarce
— pomifoliella, Zell. Abundant everywhere. Several closely allied species, recently separated from this, have not yet been worked out in this county
— coryli, Nice. Generally common among hazel
— insignitella, Zell. Once taken at *Redhill* by Mr. Sydney Webb
Lithocolletis carpinicolella, Stn. *Betchworth*; local, among hornbeam
— spinicolella, Zell. Widely distributed in blackthorn hedges
— faginella, Mann. Common everywhere among beech
— torminella, Frey. *Chiddingfold*, among Sorbus torminalis; very local
— salicicolella, Sirc. Common in woods among sallow
— viminetorum, Stn. *Redhill*, *Reigate*; local
— ulmifoliella, Hub. Generally common among birch
— spinolella, Dup. *Redhill*, *Haslemere*; among sallow
— quercifoliella, Fisch. Everywhere abundant among oak
— messaniella, Zell. *Redhill*, *Reigate*, *Haslemere*. Generally among evergreen oak
— corylifoliella, Haw. Generally distributed in hawthorn hedges
— viminiella, Sirc. *Reigate*, *Redhill*, *Haslemere*; among willow
— scopariella, Tisch. Near *Redstone*, *Haslemere*; not common
— ulicicolella, Vaugh. *Redhill*, *Haslemere*; among furze
— alnifoliella, Hb. Common among alder everywhere
— heegeriella, Zell. *Redhill*, *Haslemere*; among oak
— cramerella, Fab. Common everywhere among oak
— emberizæpennella, Bou. *Redstone*, *Leith Hill*, *Godstone*
— frolichiella, Zell. *Churt*; among alder
— nicellii, Zell. Widely distributed among hazel
— stettinensis, Nice. *Redhill*; in alder swamps
— schreberella, Fab. *Redhill*, *Reigate*, *Witley*, *Milford*; among elm
— tristrigella, Haw. Widely distributed among elm
— trifasciella, Haw. Generally in woods among honeysuckle
— scabiosella, Dougl. *Croydon* to *Stoats Nest*, *Smitham Bottom*, *Sanderstead*, *Mickleham*; on chalk downs
— comparella, Fisch. *Dorking*, *Holmwood*, *Ripley*, *Milford*, *South London* suburbs; about poplars
Lyonetia clerckella, Linn. Generally distributed in orchards and woods
Phyllocnistis suffusella, Zell. *Redhill*, *Reigate*, *Mickleham*, *Haslemere*
— saligna, Zell. *Nutfield*, *Redhill*, *Haslemere* in thatch; *South London* suburbs
Cemiostoma spartifoliella, Hb. Widely distributed among broom

Cemiostoma laburnella, Heyd. Everywhere in gardens among laburnum
— wailesella, Stn. *Redhill*, *Witley*, *Haslemere*
— scitella, Zell. *South London* suburbs; among hawthorn
Opostega salaciella, Tr. *Guildford*, *Redhill*, *Norbiton*, *Haslemere*
— crepusculella, Fisch. *Haslemere*; in swamps
Bucculatrix aurimaculella, Stn. Generally distributed among ox-eye daisy
— cidarella, Tisch. *Reigate* and *Redhill*, very scarce; *Haslemere*, *Churt*
— ulmella, Mann. *Forest Hill*, *Haslemere*, *Witley*; *Redhill*, common; it formerly abounded at *Redstone Wood*
— cratægi, Zell. *Dorking*, *Reigate*, *Redhill*, *Haslemere*; scarce
— demaryella, Dup. *Redhill* and neighbourhood, in every wood among birch; *Haslemere district* also
— boyerella, Dup. *Milford*, *Witley*, two specimens near *Redhill*
— frangulella, Goe. *Mickleham*, scarce; *Sanderstead*; *Haslemere*, common
— cristatella, Fisch. Generally common among milfoil
Nepticula atricapitella, Haw. } In all oak woods
— ruficapitella, Haw. }
— anomalella, Goe. Generally common
— pygmæella, Haw. *Redhill*, *Haslemere*
— pomella, Vaugh. } *Reigate* and *Redhill*
— oxyacanthella, Stn. } *district*
— aucupariella, Frey. *Reigate Hill*; scarce
— viscerella, Dougl. *Batts Hill*, *Redhill*; scarce
— catharticella, Stn. *Wray Lane*, *Reigate*; not rare
— septembrella, Stn. *Haslemere*, *Reigate*, *Wray Lane*
— cryptella, Frey. *Headley Lane*, *Mickleham*
— intimella, Zell. *Redhill*, *Reigate*, *Haslemere*
— headleyella, Stn. *Headley Lane*, *Mickleham*
— subbimaculella, Haw. In all oak woods
— trimaculella, Haw. *Redstone Hill*, scarce; *Haslemere*
— floslactella, Haw. In all woods among hazel
— sorbi, Stn. *Reigate*, *Redhill*; local
— salicis, Stn. In all woods among sallow
— microtheriella, Wing. *Redhill* and *Reigate district*
— poterii, Stn. *Mickleham*, *Reigate Hill*, *Betchworth Hill*
— betulicola, Stn. *Redhill*, *Mickleham*, *Haslemere*
— ignobilella, Stn. *Reigate* and *Redhill district*, *South London* suburbs
— argentipedella, Zell. *Redstone Wood*, rare; *Haslemere*
Nepticula plagicolella, Stn. *Reigate* and *Redhill district*
— tityrella, Dougl. Everywhere among beech
— angulifasciella, Stn. *Redhill*, *Reigate*, *Milford*
— atricollis, Stn. Abundant at *Redhill*
— continuella, Stn. Scarce at *Redhill*
— arcuata, Frey. *Reigate* and *Redhill district*
— gratiosella, Stn. *Milford Heath*
— marginecolella, Stn. *Redhill*, *Witley*
— alnetella, Stn. } In alder swamps, *Redhill*
— glutinosæ, Stn. }
— aurella, Fab. Among brambles everywhere
— gei, Wk. *Redstone Hill*, *Leith Hill*.
— luteella, Stn. *Redstone Wood*; scarce
— regiella, Frey. *Redhill* and *Reigate district*
Trifurcula atrifrontella, Stn. *Haslemere*; scarce
— immundella, Zell. *Redstone Hill*, *Barnes Common*, *Haslemere*; comes to gaslights
— pulverosella, Stn. *Haslemere*; on trunks of crab-trees

PTEROPHORI

Platyptilia ochrodactyla, Hb. Generally distributed
— trigonodactyla, Haw. Common everywhere among coltsfoot, even in the *South London* suburbs
Amblyptilia acanthodactyla, Hb. *Redhill*, *Reigate*, *Haslemere*, *Witley*
— punctidactyla, Steph. *Haslemere*, *Witley*; scarce
Oxyptilus parvidactylus, Haw. *Reigate*, *Dorking*, *Box Hill*
— pilosellæ, Zell. *Mickleham*, *Box Hill*
— teucrii, Greening. *Box Hill*; among wood sage
Mimæsioptilus phæodactylus, Hb. *Croydon*, *Reigate*, *Dorking*, *Box Hill*
— bipunctidactylus, Haw. Generally common among Scabiosa succisa
— loewii, Zell. *Redhill*, *Haslemere*
— fuscus, Retz. Generally common
Œdematophorus lithodactylus, Tr. *Haslemere*, *Churt*; among ploughman's spikenard
Pterophorus monodactylus, Linn. Abundant everywhere, even in *South London* suburbs
Leioptilus tephradactylus, Hb. *Ripley*, *Haslemere*; among golden rod in woods
Aciptilia galactodactyla, Hb. *Croydon*, *Horsley*; among burdock
— baliodactyla, Zell. } *Reigate*, *Dorking*, *Box Hill*, *Mickleham*; on chalk downs
— tetradactyla, Linn. }
— pentadactyla, Linn. Abundant everywhere in lanes and gardens
Alucita polydactyla, Hb. Common everywhere among honeysuckle

INSECTS

DIPTERA

Flies

Out of the three thousand odd species of Diptera at present known to be British the following list contains the names of some three hundred and sixty—a result which is solely due to the paucity of collectors of this order of insects. For owing to its natural features, and especially to its richness in heath-land, Surrey is peculiarly adapted to the needs of the sunshine-loving, flower-haunting Diptera ; so that if properly studied during a series of years the actual total of species would probably not fall short of those of Hampshire or Devon.

An asterisk (*) signifies that the specimen referred to is in the collection of the British Museum, and that the present writer is responsible for the determination. Collectors whose names frequently recur are indicated by their initials, as follows :—

Y. = Lt.-Col. Yerbury.
O. G. = W. R. Ogilvie Grant.
A. B. = A. Beaumont. [Such of Mr. Beaumont's species as are preserved in his own collection, and have not been presented by him to the British Museum, were determined either by the late Dr. Meade or by Mr. Billups.]
F. W. T. = F. W. Terry.
G. H. V. = G. H. Verrall.
E. E. A. = E. E. Austen.
F. B. J. = F. B. Jennings.
T. R. B. = T. R. Billups. [According to a note by Mr. Billups in *Entomologist*, vol. xxiv. (1891), p. 236, some at least of his captures were determined by the late Dr. Meade, and others by Mr. Brunetti.]
Br. Fl. = Verrall, *British Flies*, vol. viii.
C. = Curtis' *British Entomology*, vol. viii.

In the case of species recorded in entomological journals the reference to the original record is given : *Ent. Mo. Mag.* = *Entomologist's Monthly Magazine* ; *Ent.* = *Entomologist*.

Species recorded in Curtis' *British Entomology* and elsewhere have only been included when there seemed reasonable probability of their having been correctly determined, while the nomenclature has been revised in all cases.

ORTHORRHAPHA

NEMATOCERA

CECIDOMYIDÆ

Cecidomyia pteridis, Müll. *Shirley* ; larvæ in rolled leaflets of fronds of Pteris aquilina ; Sept. 1871 ; A. Müller, *Ent. Mo. Mag.* vol. viii. (1871), p. 99

— salicina, Schrk. *South Norwood* ; larvæ infesting the shoots of Salix alba ; Aug. 1869 ; A. Müller, ibid. vol. vi. (1869), p. 109

— taxi, Inchb. *Godalming* ; bred from galls on branches of Taxus baccata ; June, 1869 ; A. Müller, loc. cit. p. 61

CECIDOMYIDÆ (*continued*)

Cecidomyia ulmariæ, Bremi. *Godalming* ; bred from galls on Spiræa ulmaria, found July 25, 1865 ; first imagines emerged Aug. 29, 1865 ; also bred from galls on same plant, found Aug. 1, 1865 ; imagines emerged Aug. 10, 13, 16, 1865 ; galls also found Oct. 13 ; H. W. Kidd, *Ent. Mo. Mag.* vol. iv. (1868), p. 233

— urticæ, Perris. *Merton Abbey* ; bred from galls on Urtica dioica, found

CECIDOMYIDÆ (*continued*)

Nov. 25, 1900; imagines emerged Dec. 15, 1900; F. W. T.*

Cecidomyia veronicæ, Vallot. *Dorking*; bred from galls on Veronica chamædrys, June 2, 1898; F. Milton *

MYCETOPHILIDÆ

Sciara thomæ, Linn. *Woking*, Aug. 15, 1891; A. B.*

Mycetophila punctata, Mg. *Denmark Hill*, Oct. 5, 1866; G. H. V.*

Platyura cincta, Winn. June 1, 1892; G. H. V. *Ent. Mo. Mag.* ser. 2, vol. v. (1894), p. 79

Macrocera stigma, Curt. *Coombe Wood*, Oct. 5, 1866; G. H. V.*

— phalerata, Mg. *Coombe Wood*, June; C.

BIBIONIDÆ

Scatopse notata, Linn. *Merton Park* (out of rotten bones), April 15, 1900; F. W. T.* *Denmark Hill*, June 8, 1869; G. H. V.* *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256

— flavicollis, Mg. *Oxshott*, Sept. 28, 1892; A. B.*

— subnitens, Verr. *Denmark Hill*, May 11, 1868; G. H. V. *Ent. Mo. Mag.* vol. xxii. (1886), p. 180

Dilophus febrilis, Linn. *Oxshott*, April 8, 1894; Y.*

Bibio marci, Linn. *Oxshott*, June 9, 1895; Y., O. G.* *Mickleham*, June 21, 1890; T. R. B. loc. cit.

— hortulanus, Linn. *Virginia Water*, April 18, 1894; F. A. Baker.* *Merton Abbey*, June 9, 1901; F. W. T.*

— anglicus, Verr. *Denmark Hill*. 'Occurring in a garden here (Denmark Hill) by hundreds on leaves of shrubs, principally currant bushes.'—G. H. V. *Ent. Mo. Mag.* vol. v. (1869), p. 270; May 5 and 14, 1870; G. H. V.*

— reticulatus, Lw. *Oxshott*, May 20, 1900; Y.*

— laniger, Mg. *Shirley*, July 5, 1872; G. H. V.* *Oxshott*, April 8, 1894; Y.*

— johannis, Linn. *Esher*, April 8, 1894; Sir G. F. Hampson, Bt.* *Mickleham*, June 21, 1890; T. R. B. loc. cit.

— clavipes, Mg. *Box Hill*, Oct. 10, 1891; A. B.*

SIMULIDÆ

Simulium reptans, Linn. *Mickleham*, June 21, 1890; T. R. B. loc. cit.

CHIRONOMIDÆ

Camptocladius aterrimus, Mg. *Merton Abbey*, Dec. 9, 1900; F. W. T.*

Metriocnemus fuscipes, Mg. *Merton Abbey*, May 15, 1900; F. W. T.*

Tanypus varius, Fabr. *Wandsworth*, Aug. 16, 1900; F. W. T.*

— nebulosus, Mg. *Coombe Wood*, beginning of May; C.

PSYCHODIDÆ

Pericoma decipiens, Eaton. *Denmark Hill*, June 1, 1868; G. H. V., A. E. Eaton, *Ent. Mo. Mag.* ser. 2, vol. vii. (1896), p. 210

CULICIDÆ

Corethra plumicornis, Fabr. *Wimbledon*, May 13, 1900; F. W. T.*

Anopheles nigripes, Stæg. *Merton*, May 27, 1900, F. W. T.*; June 6, 1899, F. W. T.*

Culex pipiens, Linn. *Merton*, Sept. 9, 1900; F. W. T.*

— nemorosus, Mg. *Coombe Wood*, May; C. *Cobham*; C.

— ornatus, Mg. *Merton Park*, June 18, 1900; F. W. T.*

— cantans, Mg. *Oxshott*, June 9, 1895; Y., O. G.*

— dorsalis, Mg.[1] *Camberwell*, Sept. 1899; Dr. Simpson *

PTYCHOPTERIDÆ

Ptychoptera contaminata, Linn. *Oxshott*, June 16, 1895; O. G.*

— albimana, Fabr. *Dulwich*, May 15, 1871; G. H. V.*

LIMNOBIDÆ

Dicranomyia chorea, Mg. *Putney*, July 10, 1901; F. Low *

Erioptera flavescens, Mg. *Oxshott*, June 9, 1895; Y., O. G.*

Limnophila ochracea, Mg. *Merton Abbey*, larvæ found in rotten wood about the middle of March, 1901; pupated about the middle of April, and the perfect insects emerged about the end of the same month; F. W. T.* *Wimbledon*, larva found May 17,

[1] Said at the time to be very abundant and troublesome, its bites causing inflammation, swelling and abscesses. At the same period this species was also attracting attention in other London suburbs, such as Lewisham and Stamford Hill. At Aldeburgh in Suffolk, where the insect is abundant and sometimes makes itself very objectionable, it is known as the 'Norway mosquito,' and is said to have been introduced from Norway by a yacht. It is however doubtless indigenous to this country. Cf. A. Piffard and E. E. Austen, *Ent. Mo. Mag.* ser. 2, vol. vi. (1895), pp. 227–229.

LIMNOBIDÆ (*continued*)

1892, under birch bark; imago emerged June 5, 1892; B. G. Rye *

Trichocera hiemalis, De G. *Merton Abbey*, Dec. 9, 1900; F. W. T.*

Pedicia rivosa, Linn. *Oxshott*, June 9, 1895; Y.*

TIPULIDÆ

Pachyrrhina crocata, Linn. *Oxshott*, June 9, 1895; Y.* *Mickleham*, June 21, 1890; T. R. B. loc. cit.

— imperialis, Mg. *Denmark Hill*, April 4, 1867; G. H. V.*

— cornicina, Linn. *Kew*, July 8, 1892; F. Sumner *

Tipula nigra, Linn. *Battersea*, end of May; C. *Coombe*, June; C.

— scripta, Mg. *Box Hill*, June; G. H. V. *Ent. Mo. Mag.* vol. xxii. (1886), p. 201. *Oxshott*, June 9, 1895; Y., O. G.*

— lateralis, Mg. *Merton Park*, April 28, 1900; F. W. T.*

— gigantea, Schrk. *Penge*, June, 1891; F. Moore.* *Oxshott*, June 9, 1895, Y.*; June 16, 1895, O. G.* *Merton Park*, June 29, 1901; F. W. T.*

— lutescens, Fabr. *Putney*, Aug. 17, 1892; B. G. Rye *

— oleracea, Linn. *South Norwood*; larvæ swarming in fields of rye-grass, May, 1870; A. Müller, *Ent. Mo. Mag.* vol. vii. (1870), p. 60. *Mickleham*, June 21, 1890; T. R. B. loc. cit.

— ? sp. (near T. peliostigma, Schumm.). *Oxshott*, June 9, 1895, Y.*; June 16, 1895, O. G.*

BRACHYCERA

STRATIOMYIDÆ

Beris clavipes, Linn. *Weybridge*, June 18, 1892; A. B. *Mickleham*, June 21, 1890; T. R. B. loc. cit. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 203

— chalybeata, Forst. *Mickleham*, June 21, 1890; T. R. B. loc. cit. *Oxshott*, July 11, 1891; T. R. B. loc. cit.

Chorisops tibialis, Mg. *Clandon*, Aug. 6, 1900; Y.*

Pachygaster atra, Pz. *Coombe Wood*, July; C. *Box Hill*, June 9, 1896, A. B.*; July 18, 1893, A. B.

— leachii, Curt. *Oxshott*, July 11, 1891; T. R. B. loc. cit. p. 203; cf. Verrall, *Ent.* loc. cit. p. 235. *Dulwich*, Aug. 1889 and 1890; T. R. B. *Ent.* vol. xxiv. (1891), p. 22; cf. Verrall, loc. cit.

STRATIOMYIDÆ (*continued*)

Nemotelus nigrinus, Fln. *Battersea*, beginning of July; C.

Oxycera pulchella, Mg. *Battersea*, in elder bushes and amongst rushes; C. *Oxshott*, July 6, 1895, A. B.; July 11, 1891, T. R. B. loc. cit. p. 203

— trilineata, Fabr. 'Amongst elder leaves, *Battersea meadows*' (Donovan); C.

Odontomyia ornata, Mg. *Mitcham*, pupa found June 6, 1900; fly emerged June 9, 1900; F. W. T.*

— tigrina, Fabr. *Merton Abbey*, June 2, 1901; F. W. T.*

— viridula, Fabr. *Oxshott*, July 11, 1891; T. R. B. loc. cit. p. 262

Chloromyia formosa, Scop. *Oxshott*, July 11, 1891; T. R. B. loc. cit. p. 203

TABANIDÆ

Hæmatopota pluvialis, Linn. *Oxshott*, June 9, 1895; Y., O. G.* *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256

— crassicornis, Wahlbg. *Oxshott*, June 9, 1895; Y., O. G.*

Therioplectes tropicus, Mg.; var. melanochroiticus, Br. *Oxshott*, June 9 and 16, 1895; Y., O. G.*

Tabanus sudeticus, Zlr. *Byfleet*, July 18, 1898; A. B.

— bovinus, Linn. *Oxshott*, June 16, 1895; O. G.* *Farnham*, on window of sub-postoffice, July 13, 1899; A. Rawlins *

— bromius, Linn. *Oxshott*, June 16, 1895, O. G.*; July 5, 1896, O. G.*; July 11, 1891, T. R. B. *Ent.* vol. xxiv. (1891), p. 203

Chrysops cæcutiens, Linn. *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256. *Oxshott*, July 5, 1896, O. G.*; July 8, 1891, A. B.

— relictus, Mg. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 203

LEPTIDÆ

Leptis scolopacea, Linn. *Chobham*, June 6, 1897; O. G.* *Merton Abbey*, June 9, 1901; F. W. T.* *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256. *Oxshott*, Aug. 5, 1892; A. B.

— tringaria, Linn. *Oxshott*, June 9, 1895; Y., O. G.*; July 11, 1891;

LEPTIDÆ (*continued*)

T. R. B. *Ent.* vol. xxiv. (1891), p. 262

Leptis nigriventris, Lw. *Oxshott*, Aug. 28, 1892; A. B.

— lineola, Fabr. *Coombe Wood*, end of July; C. *Woking*, Aug. 20, 1892; A. B.

Chrysopilus aureus, Mg. *Coombe Wood*, June 13; C. *Oxshott*, Aug. 1, 1894; A. B. *Clandon*, Aug. 8, 1900; Y.*

— atratus, Fabr. *Merton Abbey*, June 16, 1901; F. W. T.* *Oxshott*, June 16, 1895, O. G.*; July 11, 1891, T. R. B. *Ent.* vol. xxiv. (1891), p. 203 (auratus). *Bletchingley*, July 14, 1895; O. G.* *Nutfield*, July; C. (Donovan)

ASILIDÆ

Leptogaster cylindrica, De G. *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256. *Chobham*, June 29, 1895; A. B. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 203

Dioctria reinhardi, Wied. *Oxshott*, July 6, 1895; A. B.

— atricapilla, Mg. *Oxshott*, July 9, 1898; A. B.

— rufipes, De G. *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256

— baumhaueri, Mg. *Box Hill*, June 5, 1892; A. B. *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 203

— flavipes, Mg. *Box Hill*, June 5, 1892; A. B.

Isopogon brevirostris, Mg. *Box Hill*, June 6, 1891; A. B.

Lasiopogon cinctus, Fabr. *Oxshott*, May 17, 1896; O. G.*

Laphria marginata, Linn. *Coombe Wood*, Middle of June; C.

Neoitamus cyanurus, Lw. *Oxshott*, June 16, 1895; O. G.*

Dysmachus trigonus, Mg. *Oxshott*, June 9, 1895; Y., O. G.* *Box Hill*, June 13, 1891; A. B. *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256

BOMBYLIDÆ

Anthrax hottentota, Linn. *Chobham* *

— fenestrata, Fln. *Oxshott*, June 7, 1895; A. B. *Bisley Common*, July 17, 1898, H. S. Piffard *; July 19, 1896, E. E. A.* *Woking*, E. Saunders.* *Chobham*, E. Saunders, *Ent. Mo. Mag.* vol. xxv. (1888), p. 131

BOMBYLIDÆ (*continued*)

Bombylius discolor, Mik. *Box Hill*, May 9, 1891; A. B.

— major, Linn. *Coombe Wood*, Mar. 28 (pupa); Westwood, 'Introduction,' vol. ii. p. 542. *Oxshott*, April 8, 1894; Y.* *Box Hill*, April 16, 1895; F. B. J. *Ent. Mo. Mag.* ser. 2, vol. vi. (1895), p. 145. *Mickleham*, April 16, 1895; F. B. J. loc. cit. *Coombe*, April and beginning of May; C.

THEREVIDÆ

Thereva nobilitata, Fabr. *Oxshott*, July 28, 1893; A. B.

— fulva, Mg. *Chobham*, July 11, 1895; A. B.

CYRTIDÆ

Oncodes gibbosus, Linn. *Wimbledon Common*, May and June; C. *Coombe Wood*, C. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 203

Paracrocera globulus, Pz. *Bookham Common*, June 3, 1893; C. O. Waterhouse.* *Oxshott*, July 25, 1896; A. B. *Wimbledon Common* (on birch), Aug. 3, 1896; B. G. Rye *

EMPIDÆ

Hybos grossipes, Linn. *Oxshott*, Aug. 5, 1892; A. B.

— femoratus, Müll. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

Rhamphomyia sulcata, Fln. *Coombe Wood*, June 4; C. *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

— gibba, Fln. *Woking*, Aug. 1, 1875; G. H. V. *Ent. Mo. Mag.* ser. 2, vol. v. (1894), p. 140

— fumipennis, Ztt. *Oxshott*, Aug. 6, 1892; A. B.

Empis tessellata, Fabr. *Merton Abbey*, June 9, 1901; F. W. T.* *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256

— livida, Linn. *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

— trigramma, Mg. *Coombe Wood*, May; C.

— scutellata, Curt. *Coombe Wood*, June 4; C.

EMPIDÆ (*continued*)

Empis pennaria, Fln. *Coombe Lane*, beginning of May; C. *Chobham*, June 10, 1893; A. B.

— vernalis, Mg. *Coombe Wood*, May 22, 1870; G. H. V.*

— caudatula, Lw. G. H. V. *Ent. Mo. Mag.* vol. xxii. (1886), p. 202

— chioptera, Fln. *Denmark Hill*, May 5, 1869; G. H. V.*

— pennipes, Linn. *Coombe Wood*, beginning of June; C. *Oxshott*, Aug. 5, 1892; A. B.

Hilara cilipes, Mg. *Dulwich*, May 20, 1870; G. H. V.*

— interstincta, Fln. *Coombe Wood*, May 22, 1870; G. H. V.*

— pinetorum, Ztt. *Denmark Hill*, May 4, 1868, G. H. V.*; May 5, 1869, G. H. V.*

Hemerodromia precatoria, Fln. *Oxshott*, May 20, 1893; A. B.

DOLICHOPODIDÆ

Psilopus platypterus, Fabr. *Box Hill*, June 6, 1891; A. B. *Clandon*, Aug. 6, 1900; Y.*

Dolichopus æneus, DeG. *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256

Pœcilobothrus nobilitatus, Linn. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 262. *Wimbledon*, July 12, 1889; E. Brunetti, *Ent.* vol. xxiii. (1890), p. 124

Hercostomus nanus, Macq. *Reigate*, July 5, 1872; G. H. V. *Ent. Mo. Mag.* vol. xii. (1875–6), p. 35

Gymnopternus cupreus, Fln. *Byfleet*, May 19, 1891; A. B.

Chrysotus cupreus, Macq. *Denmark Hill*, May and June; G. H. V. loc. cit. p. 247

— læsus, Wied. *Reigate*, *Woking*; G. H. V. loc. cit. p. 248

Melanostolus melancholicus, Lw. (Diaphorus dorsalis, Verr.). *Woking*, 'near the banks of the canal,' Aug. 1, 1875; G. H. V. loc. cit. p. 198

Argyra leucocephala, Mg. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

Thrypticus bellus, Lw. Between *Kew* and *Richmond*; G. H. V. *Ent. Mo. Mag.* vol. vi. (1869), p. 2

Porphyrops pectinatus, Lw. Near *Kew*, 1869; G. H. V. *Ent. Mo. Mag.* vol. xii. (1875–6), p. 148

— micans, Mg. (simplex, Verr.). Near *Box Hill* (bank of river Mole), Sept. 5; G. H. V. loc. cit. p. 197

DOLICHOPODIDÆ (*continued*)

Hydrophorus nebulosus, Fln. *Oxshott*, Sept. 28, 1892; A. B.

Teucophorus spinigerellus, Ztt. *Reigate*; G. H. V. loc. cit. p. 268

Anepsius flaviventris, Mg. *Weybridge*; G. H. V. loc. cit. p. 145

LONCHOPTERIDÆ

Lonchoptera lutea, Pz. *Wimbledon*, July 12, 1889; E. Brunetti, *Ent.* vol. xxiii. (1890), p. 124

CYCLORRHAPHA

PROBOSCIDEA

PIPUNCULIDÆ

Chalarus spurius, Fln. *Box Hill*, Aug. 5, 1893; A. B.

Pipunculus furcatus, Egg. *Br. Fl.*

— modestus, Hal. *Coombe Wood*, 'on grass beneath trees,' May and June; C.; *Br. Fl.*

— terminalis, Thoms. *Chobham*, June, 1896; *Br. Fl.*

— campestris, Latr. *Coombe Wood*, May, June, July; C. *Oxshott*, July 25, 1893; A. B.

— pratorum, Fln. *Coombe Wood*, May 7; C. *Byfleet*, Aug. 5, 1892; A. B.

— ? confusus, Verr. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204; cf. Verrall, *Br. Fl.* p. 114

SYRPHIDÆ

Paragus tibialis, Fln. *Weybridge*, July 1, 1871; *Br. Fl.* *Oxshott*, Aug. 8, 1891; A. B.

Pipizella virens, Fabr. *Oxshott*, Aug. 5, 1892; A. B.

— ? maculipennis, Mg. *Reigate*, July 5, 1872; *Br. Fl.*

— flavitarsis, Mg. *Oxshott*, June 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204; cf. Verrall, loc. cit. p. 235

Pipiza noctiluca, Linn. *Oxshott*, May 20, 1893; A. B.

Cnemodon vitripennis, Mg. *Denmark Hill*, June, 1867; *Br. Fl.*

Chrysogaster virescens, Lw. *Oxshott*, June 16, 1895; O. G.*

Chilosia pulchripes, Lw. Near *Richmond*; G. H. V. *Ent. Mo. Mag.* vol. vi. (1870), p. 206

— illustrata, Harr. Near *Dorking*, June, 1868; G. H. V. *Ent. Mo. Mag.* vol. vi. (1870), p. 204 (œstracea). *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

— variabilis, Pz. *Oxshott*, June 9, 1895; Y., O. G.* *Box Hill*, June 6,

SYRPHIDÆ (*continued*)

1891; A. B. *Battersea Fields*, May; C.

— vulpina, Mg. *Chobham*, May 10, 1893; A. B.

— barbata, Lw. Near *Leith Hill*, June 25, 1868; *Br. Fl.*

— albipila, Mg. *Oxshott*, April 8, 1894; Y.*

— albitarsis, Mg. *Chobham*, May 27, 1893; A. B.

— fraterna, Mg. *Box Hill*, Aug. 5, 1893; A. B.

— ? bergenstammi, Beck. *Woking*, Aug. 20, 1892; A. B.*

Platychirus manicatus, Mg. *Oxshott*, June 9, 1895; Y., O. G.*

— discimanus, Lw. *Shirley*, May 5, 1872; *Br. Fl.*

— albimanus, Fabr. *Box Hill*, May 9, 1891; A. B.

— immarginatus, Ztt. Near *Kew* (banks of the Thames), July 16, 1868; *Br. Fl.*

Pyrophæna granditarsa, Forst. *Oxshott*, June 4, 1892; A. B.

— rosarum, Fabr. *Chobham*, June 3, 1895; A. B. *Bisley Common*, July 18, 1897; E. E. A.*

Melangyna quadrimaculata, Verr. *Oxshott*, Mar. 7, 1897; Y.* *Claremont*; Y.* *Box Hill*, April 2, 1892; A. B.

Melanostoma ambiguum, Fln. *Oxshott*, April 8, 1894; Y.*

— mellinum, Linn. *Bletchingley*, July 14, 1895; O. G.* *Woking*, Aug. 20, 1892; A. B.

— scalare, Fabr. *Oxshott*, June 9, 1895; Y., O. G.*

Leucozona lucorum, Linn. *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256

Ischyrosyrphus laternarius, Müll. *Br. Fl.*

Didea fasciata, Macq. *Holmwood*, June 5, 1895; F. B. J. *Ent. Mo. Mag.* ser. 2, vol. vi. (1895), p. 280

Syrphus tricinctus, Fln. *Oxshott*, May 17, 1896; O. G.* *Holmwood*, June 5, 1895; F. B. J. loc. cit.

— lunulatus, Mg. *Oxshott*, May 17, 1896; O. G.*

— albostriatus, Fln. *Coombe Wood*, May 22, 1870; G. H. V.*

— vittiger, Ztt. *Oxshott*, June 9, 1895; Y., O. G.*

— annulatus, Ztt. *Shirley Common*, 'about furze (Ulex) blossom,' May 5, 1872; *Br. Fl.*

— nitidicollis, Mg. *Denmark Hill*; G.H.V. *Ent. Mo. Mag.* vol. v. (1869), p. 192

— ribesii, Linn. *Oxshott*, May 17 and

SYRPHIDÆ (*continued*)

June 9, 1895, O. G.*; July 4, 1900, A. B.

— latifasciatus, Macq. Near *Richmond*; G. H. V. *Ent. Mo. Mag.* vol. v. (1869), p. 193; var. b. Verrall. *Box Hill*, 1881; Rev. H. S. Gorham; *Br. Fl.*

— luniger, Mg. *Dulwich*, Sept. 9, 1885; E. Brunetti

— lasiophthalmus, Ztt. *Shirley Common* (about furze blossom), May 5, 1872; *Br. Fl.* *Oxshott*, April 8, 1894; Y.*

— punctulatus, Verr. *Shirley Common*, about furze blossom, May 5, 1872; *Box Hill*; *Denmark Hill*; *Br. Fl.*

— umbellatarum, Fabr. *Denmark Hill*; *Br. Fl.*

— compositarum, Verr. *Denmark Hill*; G. H. V. *Ent. Mo. Mag.* vol. ix. (1873), p. 255

— auricollis, Mg. *Denmark Hill.* 'Very common in garden.' 1867; G.H.V. *Ent. Mo. Mag.* vol. ix. (1873), p. 255

— cinctus, Fln. *Byfleet*, May 30, 1891; A. B.

— cinctellus, Ztt. *Oxshott*, May 17, 1896; O. G.* *Box Hill*, Aug. 5, 1893; A. B.

Sphærophoria scripta, Linn. *Box Hill*, June 6, 1892; A. B. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

— menthastri, Linn. *Oxshott*, May 17, 1896; O. G.* *Bisley Common*, July 19, 1896; E. E. A.*

— flavicauda, Ztt. *Denmark Hill* (on asparagus beds); *Br. Fl.*

Xanthogramma citrofasciatum, De G. *Dulwich*; *Br. Fl.* *Box Hill*, June 6, 1891; A. B.

— ornatum, Mg. *Oxshott*, Aug. 4, 1900, A. B; July 11, 1891, T. R. B. *Ent.* vol. xxiv. (1891), p. 204

Volucella pellucens, Linn. *Oxshott*, July 8, 1891; A. B. *Woking*, Aug. 3, 1891; E. E. A.*

— bombylans, Linn. *Oxshott*, July 5, 1896; O. G.*

Eristalis æneus, Scop. *Denmark Hill*, Aug. 14, 1868; *Br. Fl.*

— tenax, Linn. *Oxshott*, May 24, 1893; A. B. *Merton Abbey*, Sept. 2, 1900; F. W. T.*

— intricarius, Linn. *Oxshott*, June 16, 1895; O. G.* *Coombe Wood*, June; C. *Merton Abbey*, Sept. 2, 1900; F. W. T.*

SYRPHIDÆ (*continued*)

Eristalis arbustorum, Linn. *Denmark Hill*, Aug. 1867; *Br. Fl. Oxshott*, June 9, 1895; Y., O. G.*

— pertinax, Scop. *Oxshott*, June 16, 1895; O. G.* *Merton Abbey*, Sept. 2, 1900; F. W. T.*

Myiatropa florea, Linn. *Chobham*, July 8, 1891; A. B. *Coombe Wood*, July; C. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

Helophilus trivittatus, Fabr. *Merton Abbey*; F. W. T.*

— hybridus, Lw. *Oxshott*, June 9 and 16, 1895; Y., O. G.* *Chobham*, May 10, 1893; A. B.

— pendulus, Linn. *Englefield Green*; larvæ found June 4, 1893, in a tub containing some five inches of pond water; perfect insects emerged June 26, 1893; Hon. Katherine A. Thring.* *Oxshott*, June 16, 1895, O. G.*; July 11, 1891, T. R. B. loc. cit. *Woking*, Aug. 3, 1891; E. E. A.*

— versicolor, Fabr. *Oxshott*, June 9, 1895; Y., O. G.*

— transfugus, Linn. *Woodside*; *Br. Fl. Putney*; C. *Oxshott*, June 9, 1895; Y., O. G.*

— lineatus, Fabr. *Oxshott*, June 9 and 16, 1895; Y., O. G.*

Merodon equestris, Fabr. *Denmark Hill*, June 8, 1869; *Br. Fl. Oxshott*, June 13, 1896; Aug. 11, 1900; A. B.

Criorrhina floccosa, Mg. *Oxshott*, May 17, 1896; O. G.*

Xylota segnis, Linn. *Oxshott*, May 17, 1895; June 9 and 16, 1895, Y., O. G.*; July 11, 1891, T. R. B. loc. cit.

— florum, Fabr. *Oxshott*; *Br. Fl.*

— abiens, Mg. *Oxshott*, June 9, 1895; Y., O. G.*

Eumerus strigatus, Fln. 'Flying about brambles in *Coombe Lane*'; end of July; C.

— ornatus, Mg. *Weybridge*; *Br. Fl.*

Chrysochlamys cuprea, Scop. *Box Hill*; *Br. Fl. Oxshott*, April 8, 1894; Y.*

Sericomyia lappona, Linn. *Oxshott*, June 9 and 16, 1895; Y., O. G.*

— borealis, Fln. *Woking*; E. Saunders. *Oxshott*, July 11, 1891; T. R. B. loc. cit.

Chrysotoxum cautum, Harr. *Wimbledon*, June 5, 1898; F. W. T.*

— octomaculatum, Curt. *Godalming*; *Br. Fl. Oxshott*, Aug. 4, 1900; A. B.

SYRPHIDÆ (*continued*)

Chrysotoxum festivum, Linn. *Oxshott*, July 5, 1896; O. G.*

— bicinctum, Linn. *Oxshott*, July 11, 1891; T. R. B. loc. cit.

Microdon devius, Linn. *Box Hill*, June 25, 1895; A. B.

— latifrons, Lw. *Oxshott*, June 9, 1895; Y., O. G.*

CONOPIDÆ

Conops quadrifasciatus, De G. *Woking*, Aug. 3, 1891; E. E. A.*

— ceriiformis, Mg. *Box Hill*, Aug. 4, 1898; A. B.

— flavipes, Linn. *Oxshott*, July 13, 1895; A. B.

Physocephala rufipes, Fabr. *Oxshott*, July 8, 1891; A. B.

Zodion cinereum, Fabr. *Chobham*, May 17, 1893; A. B.

Oncomyia atra, Fabr. *Box Hill*, July 15 and 24, 1893; A. B.*

— pusilla, Mg. *Oxshott*, June 7, 1895; A. B.

Sicus ferrugineus, Linn. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204. *Box Hill*, July 24, 1893; A. B.* *Oxshott*, Aug. 5, 1892; A. B.

Myopa buccata, Linn. *Oxshott*, July 11, 1891; T. R. B. loc. cit.

— testacea, Linn. *Oxshott*, April 6, 1893; A. B. *Coombe Wood*, 'on Umbelliferæ,' May; C.

— ephippium, Fabr. (fasciata, Mg.). *Chobham*, June 6, 1896; A. B.

MUSCIDÆ

MUSCINÆ

Meigenia majuscula, Rond. *Dulwich*, June, 1893; T. R. B. *Ent.* vol. xxvii. (1894), p. 136; cf. Meade, *Ent. Mo. Mag.* ser. 2, vol. v. (1894), p. 157

Gymnochæta viridis, Fln. *Walton-on-Thames*, April 1, 1894; Y.* *Oxshott*, April 8, 1894; Y.*

Exorista notabilis, Mg. *Wimbledon*, Aug. 29, 1900; F. W. T.*

Phorocera cilipeda, Rond. *Wimbledon*; bred from larva of Acronycta psi, found Sept. 11, 1897; pupated Sept. 15, 1897; imago emerged Mar. 29, 1898; F. W. T.*

— concinnata, Mg. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

Gonia divisa, Mg. *Oxshott*, April 8, 1894; Y.*

Aporomyia dubia, Fln. *Walton-on-Thames*, April 1, 1894; Y.*

MUSCIDÆ (*continued*)

Degeeria collaris, Fln. *Box Hill*, July 15, 1892 ; A. B.

Thelaira leucozona, Pz. *Oxshott*, July 8, 1891, A. B.; July 11, 1891, T. R. B. *Ent.* vol. xxiv. (1891), p. 204

Olivieria lateralis, Fabr. *Oxshott*, July 11, 1891 ; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

Micropalpus vulpinus, Fln. *Oxshott*, July 5, 1896 ; O. G.* *Bisley Common*, July 19, 1896 ; E. E. A.*

— comptus, Fln. *Bisley Common*, July 18, 1897 ; E. E. A.*

Erigone strenua, Mg. *Oxshott*, June 9, 1895 ; Y., O. G.*

Tachina grossa, Linn. *Oxshott*, June 15, 1893 ; A. B.

— fera, Linn. *Oxshott*, July 24, 1893 ; A. B.

Servillia ursina, Mg. *Box Hill*, Mar. 28, 1894 ; A. B. *Walton-on-Thames*, April 1, 1894 ; Y.* *Oxshott*, April 8, 1894 ; Y.*

Bigonichæta spinipennis, Mg. *Wimbledon* ; pupa under loose bark on oak tree, May 10, 1892 ; fly emerged June 4, 1892 ; C. O. Waterhouse*

Melanophora roralis, Linn. *Oxshott*, Aug. 6, 1892 ; A. B.

Sarcophaga carnaria, Linn. *Merton Abbey*, June 9, 1901 ; F. W. T.* *Oxshott*, June 16, 1895 ; O. G.*

— infantula, Rond. *Reigate* ; G. H. V., R. H. Meade, *Ent. Mo. Mag.* vol. xii. (1876), p. 264

— cruentata, Mg. *Croydon*; bred from pupæ found in pigeons' dung, in which were the remains of dead pigeons ; R. H. Meade, loc. cit. p. 266

— hæmatodes, Mg. *Oxshott*, June 16, 1895 ; O. G.*

Cynomyia mortuorum, Linn. *Oxshott*, July 11, 1891 ; T. R. B. *Ent.* vol. xxiv. (1891), p. 262

— sepulchralis, Mg. *Oxshott*, Sept. 28, 1892 ; A. B.

Nyctia halterata, Pz. *Box Hill*, May 13, 1893 ; A. B.

Melanomyia nana, Mg. *Oxshott*, June 15, 1893 ; A. B.

Miltogramma punctata, Mg. *Chobham* ; E. Saunders.* *Oxshott*, Aug. 1, 1894 ; A. B.

Metopia leucocephala, Rossi. *Bisley Common*, July 19, 1896 ; E. E. A.*

Arrenopus piligena, Rond. *Bisley Common*, July 18, 1897 ; E. E. A.*

Dexiosoma caninum, Fabr. *Chobham*, July 29, 1892 ; A. B.

MUSCIDÆ (*continued*)

Prosena siberita, Fabr. *Woking*, Aug. 20, 1892 ; A. B.

Hæmatobia irritans, Linn. *Denmark Hill* ; G. H. V. *Ent. Mo. Mag.* vol. xxii. (1886), p. 231

Pollenia rudis, Fabr. *Box Hill*, April 2, 1892 ; A. B. *Oxshott*, April 8, 1894 ; Y.*

— vespillo, Fabr. *Oxshott*, July 11, 1891, T. R. B. loc. cit. p. 262 ; Sept. 28, 1892, A. B.

Musca domestica, Linn. *Wimbledon*, Aug. 28, 1900 ; F. W. T.*

— corvina, Fabr. *Oxshott*, Aug. 5, 1892 ; A. B.

Graphomyia maculata, Scop. *Woking*, Mar. 20, 1892 ; A. B.

Cyrtoneura simplex, Lw. *Oxshott*, June 9, 1895 ; O. G.* *Bletchingley*, June 14, 1895 ; O. G.*

Calliphora azurea, Fln. *Box Hill*, Aug. 9, 1894, A. B. ; G. H. V. *Ent. Mo. Mag.* vol. xxii. (1886), p. 231

— erythrocephala, Mg. *Richmond Park*, June 1, 1892 ; E. Y. Watson *

— vomitoria, Linn. *Epsom*, April 24, 1901 ; F. W. T.* *Morden*, May 7, 1899 ; F. W. T.*

Lucilia cornicina, Fabr. *Oxshott*, Sept. 28, 1892 ; A. B.

— nobilis, Mg. *Wimbledon*, May 19, 1901 ; F. W. T.*

ANTHOMYINÆ

Polietes lardaria, Fabr. *Merton Park* ; larvæ in old manure heap, Mar. 25, 1901 ; imagines emerged April 21, 1901 ; F. W. T.* *Oxshott*, June 9, 1895 ; Y., O. G.*

— albolineata, Fln. *Denmark Hill*, June 6, 1867 ; G. H. V.*

Hyetodesia lucorum, Fln. *Oxshott*, April 6, 1892 ; A. B.

— perdita, Mg. *Denmark Hill*, May 24, 1870 ; G. H. V.*

— erratica, Fln. *Chobham*, July 13, 1897 ; A. B.

— basalis, Ztt. *Oxshott*, June 9, 1895 ; Y., O. G.*

— scutellaris, Fln. *Chobham*, June 10, 1893 ; A. B.

Mydæa urbana, Mg. *Oxshott*, July 11, 1891 ; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

— tincta, Ztt. *Oxshott*, Mar. 6, 1892 ; A. B.

— pagana, Fabr. *Byfleet*, Aug. 3, 1892 ; A. B.

— impuncta, Fln. *Chobham*, June 10, 1893 ; A. B.

MUSCIDÆ (*continued*)

Spilogaster duplicata, Mg. *Oxshott*, Aug. 5, 1892 ; A. B.

— communis, Dsv. *Oxshott*, July 25, 1893 ; A. B.

Hydrotæa ciliata, Fabr. *Coombe Wood*, May ; C. *Oxshott*, June 9, 1895 ; Y., O. G.*

— irritans, Fln. *Oxshott*, June 30, 1893 ; A. B.

Hylemyia variata, Fln. *Denmark Hill*, May 17, 1870 ; G. H. V.*

— seticrura, Rond. *Chobham*, June 10, 1893 ; A. B.

— pullula, Ztt. *Denmark Hill*, April 29, 1868 ; G. H. V.*

— strigosa, Fabr. *Box Hill*, May 13, 1893 ; A. B.

Anthomyia pluvialis, Linn. *Merton Abbey*, June 2, 1901 ; F. W. T.* *Oxshott*, June 9, 1895 ; Y., O. G.* *Woking*, Aug. 15, 1891 ; A. B.

— pratincola, Pz. *Oxshott*, Aug. 5, 1892 ; A. B.

Chortophila albescens, Ztt. *Oxshott*, Aug. 1, 1893 ; A. B.

Phorbia floccosa, Macq. *Denmark Hill*, May 1, 1867 ; G. H. V.*

— pudica, Rond. *Denmark Hill*, April 27, 1867 ; G. H. V.*

— trichodactyla, Rond. *Denmark Hill*, Feb. 11, 1867 ; G. H. V.*

Pegomyia flavipes, Fln. *Box Hill*, Aug. 2, 1883 ; G. H. V.*

Homalomyia fuscula, Fln. *Oxshott*, April 15, 1893 ; A. B.

Caricea tigrina, Fabr. *Denmark Hill*, June 1, 1868 ; G. H. V.*

Cænosia sexnotata, Mg. *Woking*, June 5, 1893 ; A. B.

CORDYLURIDÆ

Cordylura pubera, Linn. *Battersea Fields*, May ; C.

Scatophaga stercoraria, Linn. *Oxshott*, April 8, 1894 ; Y.* *Wimbledon*, April 26, 1896 ; May 19, 1901 ; F. W. T.* *Oxshott*, June 9, 1895 ; Y., O. G.*

— merdaria, Fabr. *Oxshott*, June 16, 1895 ; O. G.*

HELOMYZIDÆ

Helomyza variegata, Lw. *Byfleet*, Aug. 3, 1892 ; A. B.

— flava, Mg. *Putney* ; C.

— olens, Mg. *Chobham*, June 10, 1893 ; A. B.

Blepharoptera serrata, Linn. *Putney* ; C.

Tephrochlamys rufiventris, Mg. *Brixton*, on window, April 22, 1867 ; G. H. V.*

SCIOMYZIDÆ

Dryomyza flaveola, Fabr. *Oxshott*, June 2, 1900 ; A. B.

Sciomyza albocostata, Fln. *Woking*, June 3, 1893 ; A. B.

— cinerella, Fln. *Box Hill*, April 20, 1893 ; A. B.*

— dubia, Fln. *Oxshott*, Aug. 16, 1890 ; T. R. B. ; cf. Verrall, *Ent.* vol. xxiv. (1891), p. 236

Tetanocera lævifrons, Lw. *Kew*, July 17, 1868 ; G. H. V. *Ent. Mo. Mag.* vol. xxii. (1886), p. 232

— (?) unicolor, Lw. *Woking*, June 3, 1893 ; A. B.*

— robusta, Lw. *Merton Abbey*, June 2, 1901 ; F. W. T.* [T. robusta is regarded by Hendel (Verh. z.-b. Ges. Wien, Bd. L. (1900) p. 339), the latest writer on the genus Tetanocera, as a synonym of the following species]

— ferruginea, Fln. *Wimbledon*, May 19, 1901 ; F. W. T.* *Woking*, June 3, 1893 ; A. B.

Pherbina coryleti, Scop. *Merton Abbey*, June 2, 1901 ; F. W. T.* *Bletchingley*, July 14, 1895 ; O. G.* *Woking*, July 17, 1897 ; A. B.

Trypetoptera punctulata, Scop. *Mickleham*, June 20, 1890 ; T. R. B. *Ent.* vol. xxiii. (1890), p. 256. *Leith Hill*, June 28, 1891 ; E. E. A.* *Reigate*, July 5, 1872 ; G. H. V.* *Box Hill*, July 15, 1893 ; A. B.* *Chobham*, July 29, 1893 ; A. B.*

Limnia marginata, Fabr. *Mickleham*, Aug. 2, 1896 ; B. G. Rye *

— unguicornis, Scop. *Clandon*, Aug. 1, 1896 ; A. B.*

— rufifrons, Fabr. *Chobham*, July 18, 1896 ; A. B.*

— obliterata, Fabr. *Oxshott*, July 11, 1891 ; T. R. B. *Ent.* vol. xxiv. (1891), p. 262. *Box Hill*, Sept. 24, 1892 ; A. B.

Elgiva cucularia, Linn. *Woking* ; G. H. V. *Ent. Mo. Mag.* vol. xxii. (1886), p. 233

PSILIDÆ

Psila fimetaria, Linn. *Chobham*, June 10, 1893 ; A. B.

— pallida, Fln. *Oxshott*, May 20, 1893 ; A. B.

— bicolor, Mg. *Chobham*, May 27, 1893 ; A. B.

Loxocera aristata, Pz. *Oxshott*, July 8, 1891 ; A. B.

— albiseta, Schrk. *Oxshott*, July 11, 1891, T. R. B. *Ent.* vol. xxiv. (1891), p. 262 ; Aug. 5, 1891, A. B.

MICROPEZIDÆ

Micropeza corrigiolata, Linn. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 262

Calobata petronella, Linn. *Leith Hill*, June 28, 1891; E. E. A.*

ORTALIDÆ

Ptilonota guttata, Mg. 'By the lake in *Wimbledon Park*'; C.

Pteropæctria afflicta, Mg. *Oxshott*, Aug. 8, 1891; A. B.

— frondescentiæ, Linn. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

Platystoma seminationis, Fabr. *Merton Abbey*, June 2, 1901; F. W. T.* *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256

Seoptera vibrans, Linn. *Oxshott*, June 9, 1895; Y.* *Egham*, June 28, 1899; O. G.*

Chrysomyza demandata, Fabr. *Oxshott*, June 30, 1893; A. B.

TRYPETIDÆ

Halterophora capitata, Wied. *Peckham Rye*; larvæ infesting Marie Louise nouvelle pears in October, 1868; flies emerged last week in October; E. Newman, *Ent.* vol. iv. (1868–9), pp. 186–8 (Ceratitis citriperda)

Acidia cognata, Wied. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

— heraclei, Linn. *Mickleham*, June 21, 1890; T. R. B. *Ent.* vol. xxiii. (1890), p. 256

Spilographa zoë, Mg. *Wimbledon*, June 5, 1898; F. W. T.* *Mickleham*, June 21, 1890; T. R. B. loc. cit. *Oxshott*, July 9, 1898; A. B.

Trypeta onotrophes, Lw. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204

— florescentiæ, Linn. *Oxshott*, July 8, 1891, A. B.; July 11, 1891, T. R. B. *Ent.* vol. xxiv. (1891), p. 204

Tephritis miliaria, Schrk. *Oxshott*, May 3, 1896, A. B.*; July 11, 1891, T. R. B. *Ent.* vol. xxiv. (1891), p. 204, cf. Verrall, loc. cit. p. 235; Aug. 1, 1894, A. B.*

— corniculata, Ztt. *Woking*, Aug. 20, 1892; A. B.*

— vespertina, Lw. *Oxshott*, May 20, 1893; A. B.* *Woking*, June 3, 1893; A. B.* *Chobham*, June 29, 1895; A. B.* *Esher*, Aug.; G. H. V. *Ent. Mo. Mag.* vol. xxii. (1886), p. 234

TRYPETIDÆ (*continued*)

Tephritis proboscidea, Lw. *Gatwick*, Aug. 1, 1891; G. H. V. *Ent. Mo. Mag.* ser. 2, vol. v. (1894), p. 145. *Oxshott*, Aug. 15, 1893; A. B.*

Euaresta conjuncta, Lw. *Oxshott*. April 11, 1894; A. B.*

LONCHÆIDÆ

Palloptera muliebris, Harr. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 204; cf. Verrall, loc. cit. p. 236 (Toxoneura)

SAPROMYZIDÆ

Peplomyza wiedemanni, Lw. *Putney*, June 7, 1896; B. G. Rye.* *Clandon*, Aug. 6, 1900; E. Saunders*

Sapromyza pallidiventris, Fln. *Chobham*, July 29, 1893; A. B.

— præusta, Fln. *Clandon*, Aug. 6, 1900; E. Saunders*

— plumicornis, Fln. *Chobham*, July 28, 1894; A. B.*

— inusta, Mg. *Oxshott*, Aug. 7, 1894; A. B.*

— biumbrata, Lw. *Denmark Hill*, Aug. 1, 1867; G. H. V. *Ent. Mo. Mag.* ser. 2, vol. v. (1894), p. 145

Lauxania ænea, Fln. *Oxshott*, July 11, 1891; T. R. B. *Ent.* vol. xxiv. (1891), p. 262. *Clandon*, Aug. 6, 1900; E. Saunders*

PIOPHILIDÆ

Piophila casei, Linn. *Wimbledon*, Jan. 18, 1900; F. W. T.*

EPHYDRIDÆ

Discomyza incurva, Fln. *Box Hill*, Aug. 5, 1893; A. B.

Ephydra breviventris, Lw. *Kew*, Aug. 4, 1868; G. H. V. *Ent. Mo. Mag.* vol. xxii. (1886), p. 234

Scatella noctula, Mg. *Coombe Wood*, beginning of May; C.

PHYTOMYZIDÆ

Phytomyza obscurella, Fln. *Merton Park*, May 16, 1898; F. W. T.*

BORBORIDÆ

Limosina ferruginata, Stnh. *Denmark Hill*; 'used to be abundant'; G. H. V. *Ent. Mo. Mag.* vol. xxii. (1886), p. 234

PHORIDÆ

Phora abdominalis, Fln. *Coombe Wood*, May 7; C.

EPROBOSCIDEA

HIPPOBOSCIDÆ

Ornithomyia avicularia, Linn. *Bletchingley* (on thrush), July 14, 1895; O. G.*

INSECTS

HEMIPTERA HETEROPTERA

Bugs

Of this section of the Hemiptera 340 out of the 454 British species have been recorded from Surrey, eleven (indicated in the list by a prefixed *) not having thus far been recorded from elsewhere in Britain. *Gonocerus venator* has only been found on the box trees at Box Hill, but on the continent it has occurred on various trees, and there seems to be no reason why it should not occur elsewhere in England, unless originally introduced. That this is possible is rather suggested by its European distribution, which is given by Puton as 'Europe centrale et méridionale,' as well as by the suspicion that its food plant may also have established itself as an escape from cultivation. The only other suspicious native of the eleven is *Amblytylus delicatus*, of which about twelve examples were taken by myself at Woking on *Gnaphalium germanicum*; the locality is now destroyed, but diligent search on the same species of plant growing close by has failed to produce more, and it is now twelve years since they were found. The road by the side of which the *Gnaphalium* grew was then new and 'in the rough,' and just in that condition which seems to encourage the growth of introduced though apparently wild plants, such as *Hieracium aurantiacum*, etc., and this makes me feel a little uncertain as to its being truly indigenous. I hope however it may yet be rediscovered, as it is a particularly beautiful little insect, and its food plant is common enough in the neighbourhood.

GYMNOCERATA

PENTATOMIDÆ

Corimelæna, White

— scarabæoides, Linn. *Reigate*, *Woking*, *Purley* (Saunders), *Mickleham*, *Headley* (Billups), *St. Martha's Hill*, *Gomshall*, *Shalford* (Butler), *Croydon* (Blatch)

Eurygaster, Lap.

— maura, Linn. *Woking* (Saunders), *Headley* (Billups), *Ewhurst*, *Gomshall*, *Ranmore* (Butler), *Reigate* (Linnell)

Podops, Lap.

— inuncta, Fab. Generally distributed

Sehirus, Am. S.

— bicolor, Linn. Generally distributed

— dubius, Scop. *Horsley* (Billups), *Caterham* (Champion)

— biguttatus, Linn. *Reigate* (Linnell), *Ewhurst* (Butler)

— morio, Linn. *Reigate* (Billups), *Mickleham* (Champion), *Box Hill* (Jennings)

Gnathoconus, Fieb.

— albomarginatus, Fab. Generally distributed

— picipes, Fall. *Chobham* (Saunders)

Sciocoris, Fall.

— cursitans, Fab. *Box Hill* (Jennings)

PENTATOMIDÆ (*continued*)

Ælia acuminata, Linn. *Reigate* (Saunders), *Shiere* (Capron), *Mickleham*, *Weybridge* (Champion), *Gomshall*, *Albury* (Butler)

Neottiglossa, Curt.

— inflexa, Wolff. *Woking* (Saunders), *Weybridge*, *Headley* (Billups), *Gomshall*, *Albury* (Butler)

Eysarcoris, Hahn.

— melanocephalus, Fab. *Weybridge* (Billups), *Esher*, *Guildford* (Champion), *Gomshall* (Butler)

Pentatoma, Oliv.

— baccarum, Linn. Generally distributed

— prasina, Linn. *Headley Lane* (Billups), *Redhill* (Linnell), *Ewhurst*, *Gomshall* (Butler)

— juniperina, Linn. *Sanderstead*, *Mickleham*, *Caterham* (Douglas and Scott)

Strachia, Hahn.

— oleracea, Linn. *Chobham* (Saunders)

Piezodorus, Fieb.

— lituratus, Fab. Generally distributed

Tropicoris, Hahn.

— rufipes, Linn. Generally distributed

Picromerus, Am. S.

— bidens, Linn. *Wimbledon*, *Chobham*,

PENTATOMIDÆ (*continued*)

Reigate (Saunders), *Esher*, *Weybridge*, *Headley Lane* (Billups), *Gomshall* (Butler)

Asopus, Burm.

— punctatus, Linn. *Haslemere* (Barrett), *Weybridge*, *Headley Lane* (Billups), *Wimbledon* (Dale), *Mickleham*, *Esher*, *Leith Hill* (Champion)

Podisus, H.S.

— luridus, Fab. *Chertsey*, *Weybridge*, *Headley Lane* (Billups), *Chobham* (Blatch), *Woking*, *Caterham* (Champion), *Albury*, *Gomshall*, *Ranmore* (Butler)

Zicrona, Am. S.

— cœrulea, Linn. *Wimbledon* (F. S. Saunders), *Shiere*, *Gomshall*, *Mickleham*, *Esher* (Newbery), *Chilworth* (Butler), *Headley Lane*, *Horsley* (Billups), *Woking* (Champion)

Acanthosoma, Curt.

— hæmorrhoidale, Linn. *Woking* (Saunders), *Headley Lane*, *Horsley*, (Billups), *Wimbledon* (Kirkaldy)

— dentatum, De G. *Shirley* (Billups), *Reigate* (Brewer), *St. Martha's Hill*, *Gomshall*, *Holmbury* (Butler), *Coombe Wood* (Newbery)

— interstinctum, Linn. Generally distributed

— tristriatum, Linn. *Box Hill*, *Mickleham* (Saunders), *Shiere* (Butler)

COREIDÆ

Spathocera, Stein.

— dalmanni, Schill. *Reigate Heath* (Saunders), *Weybridge* (Douglas and Scott), *Albury*, *Farley Heath* (Butler)

Syromastes, Latr.

— marginatus, Linn. Generally distributed

Verlusia, Spin.

— rhombea, Linn. *Chobham*, *Woking* (Saunders), *Gomshall* (Butler), *Albury*, *Ripley*, *Caterham*, *Esher* (Champion)

*Gonocerus, Latr.

— venator, Fab. *Box Hill*

Pseudophlæus, Burm.

— fallenii, Schill. *Weybridge* (Billups)

Ceraleptus, Cost.

— lividus, Stein. *Chobham* (Billups), *Woking* (Walker), *Albury* (Butler)

Coreus, Fab.

— denticulatus, Scop. *Woking* (Saunders), *Caterham* (Champion), *Oxshott* (Billups), *Weybridge* (Douglas and Scott), *Leith Hill*, *Albury*, *Gomshall* (Butler)

Alydus, Fab.

— calcaratus, Linn. *Woking*, *Chobham* (Saunders), *Esher*, *Weybridge*, *Leith Hill* (Champion), *Farley Heath*, *Gomshall*, *Ewhurst* (Butler)

COREIDÆ (*continued*)

Stenocephalus, Latr.

— agilis, Scop. *Chobham* (Billups), *Redhill* (Linnell)

Corizus, Fall.

— crassicornis, Linn. *Chobham*, *Reigate* (Saunders)

— maculatus, Fieb. *Chobham* (Saunders), *Woking* (Champion), *Ewhurst* (Butler)

— capitatus, Fab. *Reigate*, *Dorking* (Saunders), *Gomshall*, *Ewhurst* (Butler), *Headley* (Billups)

— parumpunctatus, Schill. *Chobham*, *Woking*, *Reigate* (Saunders), *Esher*, *Weybridge* (Champion), *Ripley*, *Gomshall* (Butler)

Myrmus, Hahn.

— myriformis, Fall. Generally distributed (on heaths)

BERYTIDÆ

Neides, Latr.

— tipularius, Linn. *Woking*, *Chobham*, *Reigate* (Saunders), *Esher*, *Mickleham* (Champion), *Albury* (Butler), *Merton* (Newbery)

Berytus, Fab.

— crassipes, H.S. *Headley* (Billups), *Shirley* (Champion), *Gomshall* (Butler)

— clavipes, Fab. *Reigate* (Blatch)

— minor, H.S. Generally distributed

— signoreti, Fieb. *Ewhurst*, *Gomshall* (Butler), *Reigate* (Saunders), *Sanderstead* (Douglas and Scott), *Mickleham* (Billups), *Cobham*, *Caterham* (Champion)

— montivagus, Fieb. *Woking* (Saunders), *Reigate*, *Caterham*, *Mickleham* (Champion), *Sanderstead* (Douglas and Scott), *Shalford*, *Gomshall* (Butler)

Metatropis, Fieb.

— rufescens, H.S. *Woking* (Champion), *Ewhurst*, *Gomshall* (Butler)

Metacanthus, Cost.

— punctipes, Germ. *Reigate* (Saunders), *Headley Lane* (Billups), *Mickleham* (Douglas and Scott), *Gomshall* (Butler), *Shiere* (Newbery)

LYGÆDIÆ

Nysius, Dall.

— lineatus, Cost. *Woking*, *Chobham* (Saunders), *Shalford* (Butler)

— thymi, Wolff. Generally distributed

Cymus, Hahn.

— glandicolor, Hahn. Generally distributed

— melanocephalus, Fieb. *Chobham*, *Woking* (Saunders), *Esher*, *Caterham* (Champion)

LYGÆDIÆ (*continued*)

Cymus claviculus, Fall. Generally distributed

Ischnorhynchus, Fieb.

— resedæ, Panz. *Coombe Wood* (Saunders), *Oxshott*, *Chobham* (Billups), *Mickleham* (Champion), *St. Martha's Hill* (Butler)

— geminatus, Fieb. Generally distributed

Ischnodemus, Fieb.

— sabuleti, Fall. *Merton* (Power)

Heterogaster, Schill.

— artemisiæ, Schill. *Reigate* (Saunders), *Mickleham*, *Caterham* (Champion), *Ranmore*, *Gomshall* (Butler)

— urticæ, Fab. *Betchworth* (Power)

Plociomerus, Say.

— luridus, Hahn. *Chobham* (Saunders)

Rhyparochromus, Curt.

— dilatatus, H.S. } Generally distributed
— chiragra, Fab. }

— antennatus, Schill. *Reigate Hill* (Saunders), *Gomshall*, *Ewhurst* (Butler), *Caterham* (Champion)

Tropistethus, Fieb.

— holosericeus, Schltz. *Reigate*, *Wandsworth* (Saunders), *Mickleham* (Champion), *Headley Lane* (Billups), *Gomshall* (Butler)

Ischnocoris, Fieb.

— angustulus, Boh. Generally distributed

Macrodema, Fieb.

— micropterum, Curt. Generally distributed, on heaths

Plinthisus, Fieb.

— brevipennis, Latr. *Woking*, *Chobham*, *Weybridge* (Saunders), *Reigate* (Blatch), *Shalford*, *Ewhurst*, *Gomshall* (Butler), *Wimbledon* (Champion)

Lasiosomus, Fieb.

— enervis, H.S. *Weybridge* (Billups)

Acompus, Fieb.

— rufipes, Wolff. *Redhill* (Linnell), *Weybridge*, *Oxshott* (Billups), *Gomshall* (Butler)

Stygnus, Fieb.

— rusticus, Fall. *Reigate*, *Chobham* (Saunders), *Leith Hill*, *Gomshall*, *Ewhurst* (Butler), *Weybridge* (Billups), *Caterham* (Champion)

— pedestris, Fall. } Generally distributed
— arenarius, Hahn. }

Peritrechus, Fieb.

— geniculatus, Hahn. *Woking*, *Reigate* (Saunders), *Headley Lane* (Billups), *Gomshall*, *Albury* (Butler), *Esher* (Newbery)

— luniger, Schill. *Woking* (Saunders), *Oxshott* (Billups), *Caterham* (Champion), *Gomshall*, *Leith Hill*, *Shalford* (Butler)

LYGÆDIÆ (*continued*)

Trapezonotus, Fieb.

— agrestis, Panz. *Reigate*, *Woking* (Saunders), *Chobham*, *Chertsey* (Billups), *Holmbury*, *Ewhurst*, *Leith Hill* (Butler)

Aphanus, Lap.

— lynceus, Fab. *Shirley* (Douglas and Scott)

— pini, Linn. *Woking*, *Chobham* (Saunders), *Ewhurst*, *Gomshall* (Butler), *Shirley* (Champion), *Addington* (Douglas and Scott)

— pedestris, Panz. *Chobham* (Saunders), *Croydon* (Blatch), *Purley Downs* (Douglas and Scott)

Eremocoris, Fieb.

— fenestratus, H.S. *Sanderstead*, *Headley Lane* (Douglas and Scott), *Reigate* (Saunders), *Caterham*, *Mickleham* (Champion), *Croydon* (Blatch)

Notochilus, Fieb.

— contractus, H.S. Generally distributed

Scolopostethus, Fieb.

— affinis, Schill. Generally distributed

— grandis, Horv. *Leith Hill* (Butler), *Woking*, *Chobham* (Saunders)

— neglectus, Edw. Generally distributed

— decoratus, Hahn. Generally distributed (on heaths)

Drymus, Fieb.

— pilipes, Fieb. *Betchworth* (Saunders), *Mickleham*, *Chobham* (Billups), *Croydon* (Rye)

— pilicornis, M. & R. *Caterham* (Champion), *Weybridge* (Billups), *Gomshall* (Butler)

— sylvaticus, Fab. } Generally distributed
— brunneus, Sahlb. }

— piceus, Flor. *Chobham* (Saunders), *Wimbledon* (Rye), *Headley Lane* (Billups), *Leith Hill* (Butler)

Gastrodes, Westw.

— abietis, Linn. *Chobham* (Billups)

— ferrugineus, Linn. *Woking* (Saunders), *Esher* (Champion), *Weybridge* (Billups), *Mickleham*, *Shiere*, *Farley Heath*, *Leith Hill* (Butler)

TINGIDIDÆ

Piesma, Lap.

— capitata, Wolff. Generally distributed

Serenthia, Spin.

— læta, Fall. *Reigate*, *Chobham*, *Woking* (Saunders), *Shiere*, *Gomshall* (Butler)

Campylostira, Fieb.

— verna, Fall. *Reigate* (Saunders), *Caterham*, *Mickleham* (Champion), *Weybridge* (Dale), *Oxshott* (Billups)

TINGIDIDÆ (*continued*)
Orthostira, Fieb.
— brunnea, Germ. *Redhill* (Linnell), *Horsley* (Billups), *Ewhurst*, *Gomshall* (Butler)
— cervina, Germ. *Reigate* (Blatch), *Shirely*, *Caterham* (Champion), *Coombe*, *Croydon* (Douglas and Scott), *Gomshall*, *Hurst* (Butler)
— parvula, Fall. Generally distributed
Dictyonota, Curt.
— crassicornis, Fall. } Generally
— strichnocera, Fieb. } distributed
—*fuliginosa, Costa. *Weybridge* (Power), *Woking* (Edwards)
Derephysia, Spin.
— foliacea, Fall. Generally distributed
Monanthia, Lep.
— ampliata, Fieb. *Reigate*, *Woking*, *Chobham*, *Wimbledon* (Saunders), *Esher* (Champion), *Gomshall*, *Ripley* (Butler)
— cardui, Linn. Generally distributed
— costata, Fab. *Reigate* (Saunders), *Caterham* (Champion), *Gomshall* (Butler), *Headley Lane* (Billups)
— quadrimaculata, Wolff. *Ewhurst* (Butler)
— dumetorum, H.S. *Chobham* (Saunders), *Esher*, *Ashstead* (Champion), *Woking*, *Oxshott* (Billups)
— simplex, H.S. *Redhill* (Linnell)
— humuli, Fab. *Woking* (Saunders), *Gomshall* (Butler), *Merton* (Newbery)

ARADIDÆ
Aradus, Fab.
— depressus, Fab. *Reigate*, *Coombe Wood*, *Woking* (Saunders), *Caterham* (Champion), *Gomshall* (Butler) *Wimbledon* (Newbery)
Aneurus, Curt.
— lævis, Fab. *Reigate* (Saunders), *Caterham* (Champion), *Chobham*, *Oxshott*, *Weybridge*, *Mickleham* (Billups)

HEBRIDÆ
Hebrus, Curt.
— ruficeps, Thoms. *Chobham* (Saunders), *Leith Hill* (Butler)

HYDROMETRIDÆ
Mesovelia, M. & R.
— furcata, M. & R. *Woking Canal* (Saunders)
Hydrometra, Latr.
— stagnorum, Linn. Generally distributed
Microvelia, West.
— pygmæa, Duf. *Chobham*, *Reigate* (Saunders)
Velia, Latr.
— currens, Fab. Generally distributed

HYDROMETRIDÆ (*continued*)
Gerris, Fab.
— paludum, Fab. *Chobham* (Saunders), *Byfleet*, *Woking* (Kirkaldy), *Caterham* (Champion)
— najas, De G. *Reigate*, *Chobham* (Saunders), *Ripley* (Butler), *Woking* (Kirkaldy)
— thoracica, Schum. } Generally
— gibbifera, Schum. } distributed
— lacustris, Linn. } distributed
— odontogaster, Zett. } distributed
— argentata, Schum. *Reigate*, *Chobham* (Saunders)

REDUVIIDÆ
Ploiaria, Scop.
— vagabunda, Linn. *Chobham* (Saunders), *Mickleham*, *Reigate* (Billups), *Ewhurst*, *Shalford*, *Holmbury* (Butler)
— culiciformis, De G. *Reigate*, *Chobham* (Saunders), *Shiere* (Newbery), *Holmbury* (Butler)
—*bærensprungi, Dohrn. *Woking* (Champion)
Reduvius, Fab.
— personatus, Linn. *Woking* (Saunders)
Coranus, Curt.
— subapterus, De G. *Woking* (Saunders), *Addington*, *Weybridge* (Douglas and Scott), *Coldharbour*, *Shalford*, *Ewhurst* (Butler), *Shirley*, *Esher* (Newbery)
Nabis, Latr.
— brevipennis, Hahn. *Wimbledon* (Saunders), *Headley Lane*, *Weybridge* (Billups)
— lativentris, Boh. } Generally distributed
— major, Cost. } Generally distributed
— boops, Schöidte. *Gomshall* (Butler)
— flavomarginatus, Scholtz. *Chobham*, *Woking*, *Reigate* (Saunders)
— limbatus, Dahlb. Generally distributed
— lineatus, Dahlb. *Chobham* (Saunders), *Oxshott* (Billups)
— ferus, Linn. } Generally
— rugosus, Linn. } distributed
— ericetorum, Scholtz. } distributed
—*brevis, Schiödte. *Woking* (Saunders)

SALDIDÆ
Salda, Fab.
— saltatoria, Linn. Generally distributed
— arenicola, Scholtz. *Shiere* (Capron)
— marginalis, Fall. *Chobham* (Saunders), *Woking* (Billups)
— orthochilia, Fieb. *Woking* (Saunders), *Shirley* (Billups), *Addington* (Douglas and Scott), *Coldharbour* (Butler)
— cincta, H.S. *Reigate*, *Chobham* (Saunders), *Redhill* (Linnell), *Shalford* (Butler), *Shiere* (Newbery)

SALDIDÆ (*continued*)

Salda cocksii, Curt. *Reigate* (Power), *Woking*, *Chobham* (Saunders), *Leith Hill* (Butler), *Wimbledon* (Newbery)

CIMICIDÆ

Ceratocombus, Sign.
— coleoptratus, Zett. *Chobham* (Saunders), *Weybridge* (Power), *Claremont* (Billups), *Esher* (Power), *Holmbury*, *Ewhurst*, *Leith Hill* (Butler)
Cimex, Linn.
— lectularius, Linn. Generally distributed
— hirundinis, Jen. *Chobham* (Saunders)
Lyctocoris
— campestris, Fall. Generally distributed
Piezostethus, Fieb.
— galactinus, Fieb. *Reigate*, *Woking* (Saunders), *Ewhurst*, *Albury* (Butler)
— cursitans, Fall. *Reigate* (Saunders), *Headley Lane*, *Chobham*, *Weybridge* (Billups), *Gomshall* (Butler)
Temnostethus, Fieb.
— pusillus, H.S. Generally distributed
Anthocoris, Fall.
— gallarum ulmi, De G. *Gomshall*, *Chobham*, *Surbiton* (Saunders), *Mickleham*, *Caterham* (Champion)
— confusus, Reut. } Generally
— nemoralis, Fab. } distributed
— sarothamni, D. & S. *Weybridge* (Douglas and Scott), *Woking*, *Chobham* (Saunders), *Shirley* (Billups)
— sylvestris, Linn. } Generally
Tetraphleps, Fieb. } distributed
— vittata, Fieb. } Generally
Acompocoris, Reut. } distributed
— pygmæus, Fall. } Generally
— alpinus, Reut. *Esher* (Champion)
Triphleps, Fieb.
— nigra, Wolf. } Generally
— majuscula, Reut. } distributed
— minuta, Linn. } Generally
Brachysteles, M. & R.
— fasciiventris, Garb. *Horsell*, *Chobham* (Saunders)
*Xylocoridea, Reut. [(Morley)
— brevipennis, Reut. *Richmond Park*
Xylocoris, Duf.
— ater, Duf. *Reigate*, *Chobham* (Saunders), *Caterham*, *Richmond* (Champion)
Microphysa, Westw.
— pselaphiformis, Curt. *Croydon*, *Box Hill* (Douglas and Scott), *Coombe Wood*, *Woking*, *Reigate* (Saunders), *Ewhurst*, *Shiere* (Butler)
— elegantula, Bær. *Reigate*, *Woking*, *Chobham* (Saunders), *Ewhurst* (Butler)
Myrmedobia, Bær.
— tenella, Zett. *Woking* (Saunders), *Esher* (Champion), *Gomshall* (Butler)

CIMICIDÆ (*continued*)

*Myrmedobia distinguenda, Reut. *Busbridge* (Saunders), *Esher* (Champion)

CAPSIDÆ

Pithanus, Fieb.
— maerkeli, H.S. Generally distributed
Acetropis, Fieb.
— gimmerthalii, Flor. *Wimbledon*, *Woking* (Saunders)
Miris, Fab.
— calcaratus, Fall. } Generally
— lævigatus, Linn. } distributed
— holsatus, Fab. } Generally
Megaloceræa, Fieb. } distributed
— erratica, Linn. } Generally
— longicornis, Fall. *Clandon* (Saunders), *Shalford*, *Box Hill*, *Shiere*, *Mickleham*, *Gomshall* (Butler)
— ruficornis, Fourc. Generally distributed
Teratocoris, Fieb.
— antennatus, Boh. *Reigate* (Saunders)
Leptopterna, Fieb.
— ferrugata, Fall. } Generally
— dolobrata, Linn. } distributed
Monalocoris, Dahlb. } Generally
— filicis, Linn. } distributed
Bryocoris, Fall. } Generally
— pteridis, Fall. } distributed
Pantilius, Curt.
— tunicatus, Fab. *Reigate*, *Wimbledon* (Saunders), *Esher* (Champion), *Mickleham* (Billups), *St. Martha's Hill* (Butler), *Shiere* (Newbery)
Lopus, Hahn.
— gothicus, Linn. *Reigate*, *Woking* (Saunders), *Coombe* (Power), *Merrow Downs* (Butler), *Shiere* (Newbery)
Phytocoris, Fall.
— populi, Linn. } Generally
— tiliæ, Fab. } distributed
— longipennis, Flor. } Generally
— dimidiatus, Kb. } distributed
— reuteri, Saund. *Reigate*, *Wimbledon*, *Chobham*, *Surbiton* (Saunders), *Mickleham* (Champion), *Shiere*, *Gomshall*, *Holmbury* (Butler)
— varipes, Boh. } Generally distributed
— ulmi, Linn. } Generally distributed
Calocoris, Fieb. } Generally distributed
— striatellus, Fab. } Generally distributed
— sexguttatus, Fab. *Headley Lane* (Billups), *Redhill* (Linnell), *Caterham* (Champion)
— fulvomaculatus, De G. *Reigate* (Saunders), *Leatherhead* (Billups), *Caterham* (Champion), *Shalford*, *Ewhurst* (Butler), *Wimbledon* (Newbery)
— bipunctatus, Fab. } Generally
— chenopodii, Fall. } distributed

CAPSIDÆ (*continued*)

Calocoris ticinensis, Mey. *Chobham*, *Gomshall* (Saunders), *Chilworth* (Butler)
— roseomaculatus, De G. *Gomshall* (Butler)
— infusus, H.S. *Wandsworth*, *Reigate*, *Charlwood*, *Gomshall* (Saunders), *Shiere*, *Farley Heath* (Butler), *Oxshott*, *Chobham* (Billups), *Ashtead* (Champion)
— striatus, Linn. *Headley Lane* (Billups), *Gomshall* (Butler)

Oncognathus, Fieb.
— binotatus, Fab. Generally distributed

Dichrooscytus, Fieb.
— rufipennis, Fall. *Reigate*, *Chobham* (Saunders), *Shirley* (Douglas and Scott), *Mickleham*, *Esher* (Power)

Plesiocoris, Fieb.
— rugicollis, Fall. *Woking*, *Chobham* (Saunders)

Lygus, Hahn.
— pratensis, Fab. Generally distributed
— rubricatus, Fall. *Reigate*, *Woking* (Saunders), *Chobham*, *Mickleham* (Champion), *Shiere*, *Shalford*, *Gomshall* (Butler)
— contaminatus, Fall. } Generally
— viridis, Fall. } distributed
— *limbatus, Fall. *Wimbledon* (F. S. Saunders)
— lucorum, Mey. *Reigate* (Saunders), *Shalford*, *Albury*, *Ewhurst* (Butler)
— spinolæ, Mey. *Woking*, *Reigate*, *Chobham* (Saunders), *Headley Lane* (Billups), *Caterham*, *Esher* (Champion), *Ewhurst*, *Shalford* (Butler)
— pabulinus, Linn. } Generally
— pastinacæ, Fall. } distributed
— cervinus, H.S. } distributed
— kalmii, Linn. } distributed

Zygimus, Fieb.
— pinastri, Fall. *Weybridge*, *Chobham*, *Woking* (Saunders), *Esher* (Champion), *Ewhurst*, *Shalford*, *Leith Hill* (Butler)

Poeciloscytus, Fieb.
— gyllenhalii, Fall. Generally distributed
— nigritus, Fall. *Mickleham* (Douglas and Scott), *Caterham* (Champion), *Shiere*, *Gomshall*, *Shalford* (Butler)
— unifasciatus, Fab. Generally distributed

Camptobrochis, Fieb.
— lutescens, Schill. *Reigate*, *Woking*, *Chobham* (Saunders), *Surbiton* (Marshall), *Gomshall* (Butler), *Coombe Wood*, *Esher* (Newbery)

Liocoris, Fieb.
— tripustulatus, Fab. } Generally
Capsus, Fab. } distributed
— laniarius, Linn. } distributed

CAPSIDÆ (*continued*)

Capsus scutellaris, Fab. *Chobham*, *Reigate* (Saunders), *Oxshott* (Billups)

Rhopalotomus, Fieb.
— ater, Linn. Generally distributed

Pilophorus, Hahn.
— cinnamopterus, Kb. *Shiere* (Capron), *Weybridge* (Billups), *Farley Heath* (Butler)
— perplexus, Scott. *Woking*, *Chobham*, *Surbiton* (Saunders)
— clavatus, Linn. *Woking* (Saunders), *Oxshott* (Billups), *Shalford* (Butler)

Systellonotus, Fieb.
— triguttatus, Linn. *Woking*, *Chobham*, (Saunders), *Weybridge* (Douglas)

Allodapus, Fieb.
— rufescens, Burm. *Reigate Heath*, *Chobham*, *Woking* (Saunders), *Leith Hill*, *Ewhurst* (Butler)

Halticus, Hahn.
— luteicollis, Panz. *Shalford*, *Ewhurst* (Butler)
— apterus, Linn. *Reigate*, *Charlwood* (Saunders), *Ewhurst*, *Shalford* (Butler)

Strongylocoris, Costa
— leucocephalus, Linn. *Mickleham* (Power), *Gomshall* (Champion)
— luridus, Fall. *Weybridge* (Douglas and Scott)

Labops, Burm.
— saltator, Hahn. Generally distributed
— mutabilis, Fall. *Chobham*, *Woking* (Saunders), *Weybridge* (Douglas and Scott)

Macrolophus, Fieb.
— nubilus, H.S. *Reigate* (Saunders)

Dicyphus, Fieb.
— constrictus, Boh. *Shiere*, *Gomshall* (Butler)
— epilobii, Reut. } Generally distributed
— errans, Wolff. } distributed
— strachydis, Reut. *Reigate*, *Betchworth*, *Woking* (Saunders), *Shalford*, *Ewhurst*, *Leith Hill*, *Gomshall*, *Shiere* (Butler), *Oxshott* (Billups)
— pallidicornis, Fieb. *Wimbledon*, *Esher*, *Reigate* (Champion), *Ewhurst*, *Shalford*, *Shiere* (Butler)
— globulifer, Fall. *Woking* (Saunders), *Shalford*, *Shiere* (Butler), *Mickleham*, *Shirley*, *Caterham* (Champion)
— annulatus, Wolff. *Reigate* (Saunders), *Caterham* (Champion), *Gomshall*, *Ranmore* (Butler), *Shiere* (Newbery)

Campyloneura, Fieb.
— virgula, H.S. Generally distributed

Cyllocoris, Hahn. } Generally
— histrionicus, Linn. } distributed
— flavonotatus, Boh. } distributed

CAPSIDÆ (*continued*)

Ætorhinus, Fieb. } Generally
— angulatus, Fab. } distributed
Globiceps, Latr.
— flavomaculatus, Fab. *Chobham* (Saunders), *Leatherhead* (Billups), *Weybridge*, *Sanderstead* (Douglas and Scott)
— cruciatus, Reut. *Chobham* (Saunders), *Reigate* (Champion)
— dispar, Boh. *Oxshott* (Billups)
Mecomma, Fieb. } Generally distributed
— ambulans, Fall. }
Cyrtorrhinus, Fieb. }
— caricis, Fall. }
— pygmæus, Zett. *Chobham*, *Wimbledon* (Saunders), *Esher* (Marshall)
Orthotylus, Fieb.
— bilineatus, Fall. *Wimbledon* (F. S. Saunders)
— flavinervis, Kb. *Woking*, *Esher* (Saunders), *Shalford* (Butler)
— marginalis, Reut. } Generally
— tenellus, Fall. } distributed
— nassatus, Fab. *Wandsworth*, *Chobham* (Saunders), *Oxshott* (Billups), *Shalford* (Butler)
— scotti, Reut. *Putney* (Newbery)
— ochrotrichus, D. & S. *Woking*, *Surbiton*, *Chobham* (Saunders)
— viridinervis, Kb. *Woking*, *Chobham* (Saunders)
— diaphanus, Kb. *Ripley*, *Gomshall* (Butler), *Putney* (Newbery)
— flavosparsus, Sahlb. *Byfleet* (Billups), *Gomshall* (Butler)
— chloropterus, Kb. Generally distributed, where broom occurs
— concolor, Kb. *Woking*, *Chobham* (Saunders), *Gomshall*, *Holmbury* (Butler)
— adenocarpi, Perr. *Woking*, *Chobham* (Saunders), *Weybridge* (Champion), *Shalford*, *Shiere* (Butler)
— ericetorum, Fall. Generally distributed
Hypsitylus, Fieb.
— bicolor, D. & S. *Reigate*, *Woking*, *Chobham* (Saunders), *Ewhurst*, *Gomshall*, *Shalford* (Butler), *Oxshott* (Billups)
Loxops, Fieb.
— coccineus, Mey. *Reigate*, *Chobham* (Saunders), *Oxshott* (Billups), *Shalford*, *Gomshall*, *Ranmore* (Butler)
Heterotoma, Latr.
— merioptera, Scop. } Generally
Heterocordylus, Fieb. } distributed
— tibialis, Hahn. }
Malacocoris, Fieb. }
— chlorizans, Fall. }

CAPSIDÆ (*continued*)

Onychumenus decolor, Fall. *Wandsworth*, *Chobham* (Saunders), *Farley Heath*, *Gomshall*, *Ewhurst*, *Shalford* (Butler), *Chertsey* (Billups), *Wimbledon* (Newbery)
Oncotylus, Fieb.
— viridiflavus, Goeze. *Charlwood* (Saunders), *Ewhurst*, *Gomshall* (Butler)
Macrotylus, Fieb.
— paykulli, Fall. Generally distributed on *Ononis*
— solitarius, Mey. *Reigate* (Saunders), *Shiere* (Capron), *Ewhurst*, *Shalford* (Butler), *Caterham* (Champion), *Mickleham* (Power), *Addington* (Douglas and Scott)
Conostethus, Fieb.
— roseus, Fall. *Reigate*, *Coombe Wood*, *Woking* (Saunders), *Weybridge*, *Guildford* (Champion), *Oxshott* (Billups), *Wimbledon* (Newbery)
Hoplomachus, Fieb.
— thunbergi, Fall. *Chobham*, *Reigate* (Saunders)
Macrocoleus, Fieb.
— hortulanus, Mey. *Reigate* (Saunders), *Caterham* (Champion), *Shiere* (Butler), *Mickleham* (?)
— molliculus, Fall. Generally distributed
— tanaceti, Fall. *Chobham*, *Surbiton* (Saunders), *Shalford* (Butler)
Amblytylus, Fieb.
— affinis, Fieb. *Woking*, *Reigate* (Saunders), *Ashtead* (Champion), *Ewhurst*, *Gomshall* (Butler)
—*delicatus, Perris. *Woking* (Saunders)
—*brevicollis, Fieb. *Woking*, *Chobham* (Saunders)
Harpocera, Curt.
— thoracica, Fall. } Generally distributed
Byrsoptera, Spin.
— rufifrons, Fall.
Phylus, Hahn.
— palliceps, Fieb.
— melanocephalus, Linn.
— coryli, Linn.
Atractotomus, Fieb.
— mali, Mey. *Chobham*, *Surbiton*, *Wimbledon* (Saunders), *Kew Gardens* (Power)
— magnicornis, Fall. *Croydon*, *Woking* (Saunders), *Shiere* (Capron), *Headley Lane* (Billups), *Gomshall*, *Holmbury*, *Mickleham*, *Shalford*, *Ewhurst* (Butler)
Psallus, Fieb.
— ambiguus, Fall. } Generally distributed
— betuleti, Fall. }
— obscurellus, Fall. }
— variabilis, Fall. }
— quercûs, Kb. *Clandon* (Saunders)

CAPSIDÆ (*continued*)
Psallus lepidus, Fieb. Generally distributed
— alnicola, D. & S. *Reigate*, *Esher*, *Chobham*, *Woking* (Saunders), *Shalford* (Butler)
— fallenii, Reut. Generally distributed
— albicinctus, Kbm. *Chobham* (Saunders)
— varians, H.S.
— diminutus, Kb.
— sanguineus, Fab.
— salicellus, Mey.
} Generally distributed
— rotermundi, Schltz. *Reigate*, *Woking* (Saunders), *Shiere* (Newbery)
Plagiognathus, Fieb.
— albipennis, Fall. *Reigate*, *Woking* (Saunders)
— viridulus, Fall.
— arbustorum, Fab.
} Generally distributed
— roseri, H.S. *Oxshott* (Billups), *Putney* (Newbery)
— pulicarius, Fall. Generally distributed
— saltitans, Fall. *Coombe Wood*, *Clandon* (Saunders), *Shalford* (Butler)
Asciodema, Reut.
— obsoletum, D. & S. Generally distributed
— fieberi, D. & S. *Reigate* (Saunders), *Croydon*, *Shirley* (Douglas and Scott)

CRYPTOCERATA

NAUCORIDÆ
Naucoris, Geoffr.
— cimicoides, Linn. *Earlswood*, *Chobham* (Saunders), *Morden*, *Southfields* (Kirkaldy)

NEPIDÆ
Nepa, Linn.
— cinerea, Linn. Generally distributed

NEPIDÆ (*continued*)
Ranatra, Fab.
— linearis, Linn. *Wandsworth Common* (Douglas and Scott), *Earlswood* (Linnell), *Chobham* (Blatch), *Morden* (Kirkaldy)

NOTONECTIDÆ
Notonecta, Linn.
— glauca, Linn. Generally distributed
Plea, Leach
— minutissima, Fab. Generally distributed

CORIXIDÆ
Corixa, Geoffr.
— geoffroyi, Leach
— atomaria, Ill.
— lugubris, Fieb.
— hieroglyphica, Duf.
— sahlbergi, Fieb.
— linnæi, Fieb.
— limitata, Fieb.
} Generally distributed
— venusta, D. & S. *Chobham* (Saunders)
— striata, Linn.
— fallenii, Fieb.
} Generally distributed
— distincta, Fieb. *Reigate*, *Chobham* (Saunders), *Weybridge* (Dale), *Wimbledon* (Kirkaldy)
— fossarum, Leach.
— mœsta, Fieb.
— fabricii, Fieb.
} Generally distributed
—*saundersi, Kirkaldy. *Chobham* (Saunders)
— præusta, Fieb. Generally distributed
— concinna, Fieb.
— carinata, Sahlb.
} *Esher* (Champion)
— bonsdorffi, Sahlb. *Woking* (Champion)
— coleoptrata, Fab. *Morden* (Kirkaldy)
Sigara, Fab.
— minutissima, Linn. *Chobham* (Billups)
— scholtzii, Fieb. *Chobham* (Saunders)

HEMIPTERA HOMOPTERA

CICADIDÆ

Cicadas

The Homoptera constitute a sub-order of the Hemiptera, important both in the point of number and variety of structure. The British species are small as compared with those of tropical countries, some of which attain dimensions almost at the limit of insect life. Some foreign *Cicadæ* measure upwards of seven inches from tip to tip of their expanded wings.

The true *Cicada*, provided with its elaborate apparatus for singing, chirping or screeching, according to the æsthetic tastes of the intelligent auditor, is in England restricted to one genus and one species, *Cicadetta montana*, Amyot. Of late years it has been often captured in the New

Forest, Hampshire, and it was long thought to be peculiar to that district. This insect was however captured in Surrey about 1865 by Mr. Charles Barrett in Frillinghurst Wood near Chiddingfold, and I possess this specimen. I have not however been able to secure other examples, though several unavailing visits have been made to that locality. Possibly the wrong season for the disclosure of the imago was chosen. It can hardly be considered extinct in the county of Surrey.

MEMBRACIDÆ

Fiend-flies

This family is largely represented in the Old World, with the singular exception of the continent of Europe, which at present is reported to afford science only four or perhaps five species, and these are confined to the section *Centrotidæ*. Great Britain counts for two of these species—*Centrotus cornutus*, Linn., and *Gargara genistæ*, Kirsch. The first of these species is indigenous to Surrey but is not common. From the horned character of the pronotum and its grotesque appearance, it is known in France as *le petit diable*. Perhaps no examples in all entomology can vie with the family of *Membracidæ* as to the variation of form shown by adaptation to certain unknown circumstances of environment. The contortions of the upper thorax are marvellous to behold.

FULGORIDÆ

Lantern-flies

The remarks made as to size of the *Cicadinæ* will apply to the *Fulgoridæ* of Great Britain. Though numerous in Surrey the species are small, and at first sight would seem to be no representatives of the great lantern-fly of China and northern India. *Issus coleoptratus*, Geoff., may be taken at Shiere near Godalming ; *Cixius cunicularius*, Linn., at Haslemere ; also *C. similis* at Woking, and probably *C. pilosus*.

DELPHACIDÆ

These insects are numerous and much affect the grass lands. The species of the sub-family are included in the genera, *Asiraca*, *Delphax*, *Chloriona*, *Liburnia*, *Stiroma* and *Achrotyle*. Many of these insects require a microscope to show their special characters.

CERCOPIDÆ

Frog-hoppers

Typical insects are represented in Surrey by the pretty little crimson-coloured *Triecphora vulnerata* and by the larger kinds of frog-hopper, *Aphrophora alni* and *A. salicis*, all of which may be found on the marsh-lands near Godalming. *Philænus spumarius*, or common cuckoo-spit, sometimes swarms on the trees so as to make it a misery to sit under them. Many thousands of the adult insects after they have left their

pupæ may be collected in an hour's time by sweeping the grass and low herbage.

The *Ulopidæ* and *Paropidæ* are only poorly represented in this county.

JASSIDÆ

Grass-flies

This sub-family, which is numerous in species and genera, includes the insects commonly known as grass-flies. They affect all kinds of trees, shrubs, herbs and gramineæ. Though small, many are beautiful objects under a microscope when viewed by reflected light. The pretty little leaping *Tettigonia viridis* is very common in the Haslemere district, and may be found coursing up and down the stems of coarse meadow-grasses in midsummer.

The *Jassidæ* are included in the *Membracidæ* by Carolus Stål, but it is not obvious why he thus located them.

APHIDIDÆ

Aphides—Green-flies

Comparatively few realize the fact that the larger part of the animal matter in the world is the result of insect agency. Except through the medium of foes and parasites the balance between vegetable and animal life would not be maintained. Blight and insect-pest would render useless all the efforts of the agriculturist.

The wonderful multiplication of aphides, made possible by the process of parthenogenesis and their spread through the dimorphism of both sexes, is familiar to us. Thus under suitable conditions clouds of these insects may appear within a few days in localities where they were before only known as units.

Crops.—The agriculturist has perhaps no greater aphis-foes to contend with than *Siphonophora granaria*, *S. pisi*, *Rhopalosiphum rapæ* and *Aphis rumicis*. The first-named species deposits its ova on the flower-stalks of wheat and other corn-crops, and often destroys the produce of many acres in a few days. There may be as many aphides on one corn-head as there are grains of seed, which last become shrivelled and diseased from their attacks. Fortunately more than half of these aphides will be found stung or pierced by one of several kinds of ichneumon flies, but this check mostly comes too late to save the character of the crop. *Siphonophora pisi*, known to farmers as the green dolphin, attacks leguminous plants and particularly the field pea. It is more common in some seasons than others, and the companies are mixed with other allied species. *Aphis viciæ* often crowds the stalks of the wild vetch. *Rhopalosiphum rapæ* is almost omnivorous, and attacks indiscriminately the mangold, the swede and turnip, the kohl-rabi and the potato. As injuring the last plant it was named by Smee *Aphis vastator*, and was thought by him to cause the potato-rot. *A. rumicis* does great injury to the broad-bean, and has the common name of the black dolphin. It may be known, as

being black with white patches on the dorsum, which patches seem to become larger as the age of the insect increases.

The Haslemere district some years ago was under partial cultivation of the hop, and the aphis *Phorodon humuli* was plentiful in the local hop-gardens. This aphis and the less common *P. galeopsidis*, which feeds on the hemp-nettle, which is not like the hop a true nettle, is now known to deposit its ova in late autumn on the dead stools of the hop-vines, just above the surface of the soil or a few inches below it, and thus an answer is given to the question, what becomes of the living aphis when its natural food-plant has entirely disappeared? The answer is also made more easy by what now appears to be a fact, that there is a migration from the hop to the sloe at certain seasons. The sloe of course is a persistent tree and not perennial like the hop. *P. malaheb* should be probably marked off as a synonym, if this fact of migration be admitted. *P. galeopsidis* is a distinct species. The natural checks to the increase of *P. humuli* are well known, principally through the agency of the larvæ of voracious *Cocinellidæ* and *Syrphidæ*, familiarly known to countrymen as hop-dogs.

Horticulture.—The peach and nectarine trees have each their aphis-pests; the former particularly is infested by *Myzus persicæ* and *Rhopalosiphum dianthi*. The first aphis causes open bladders on the leaves, within which the insects hide; the second rolls and crinkles the leaves, and finally changes their colour to dark brown. *R. dianthi* is one of the usual great pests of the greenhouse. *Myzus cerasi* is the common black aphis which destroys the crops of cherry orchards. It also swarms on the garden plum, which tree is further injured by the attacks of *Aphis pruni* and *A. padi*. The pest known as American blight is only too familiar and obvious to the apple-grower, by the white cotton-like tufts which hang to the branches and trunks of orchard-trees. *Schizoneura lanigera* has both aerial and subterranean forms, somewhat similar to those we see in the great vine-pest of France, *Phylloxera vastatrix*. The ova have been discovered both on the branches and in the crevices of apple-bark both above and underground; singularly the males are found mouthless and incapable of taking any nourishment. This blighting pest may be reduced by a copious spraying with weak solutions of calcium sulphide, obtained by boiling together a mixture of sulphur and quicklime in water. This aphis must not be confounded with another species, *Aphis mali*, Kalt, which does not injure the trees so much and is not tomentose. *Myzus ribis* is common on both the red and the black currant bushes. It forms red or brown open tubercles on the leaves. The bright-coloured *Aphis cucurbiti* and the ubiquitous *A. rapi* vie with the 'red spider' in trying the patience of the grower of melons, cucumbers and gourds.

On passing to vegetable blights we find that through them the gardener is often not happy in successfully raising his crop. The leaves of the common kale and cabbage are frequently made hideous by the half-decaying masses of dead and dying individuals of *A. brassicæ*. Sometimes the combined weight of these insects nearly equals the weight of the leaf

on which it feeds. A beneficent thunderstorm or the ravages of numerous lady-birds, lace-flies and small Hymenoptera, all by their several actions, reduce this exuberant insect-life to its proper dimensions. Several root-feeding aphides are found in our gardens, as *A. subterranea*, *Schizoneura fodiens*, and *Tychea phaseoli* on the French bean, but the injuries done bear no proportion to those done by aerial forms to the green leaves.

Ornamental flowers.—Although it cannot be said that every plant has its own special aphis ready to attack it, the appended list may point out the fact that so far as observation goes certain aphides are only to be found on particular plants and trees. Thus *Rhopalosiphum nymphææ* is believed to be exclusively connected with the water-lily, which suffers much from its attacks ; *Aphis opima* seems truly to poison the sap of our greenhouse cineraria ; *Callipterus castanea* I have only found on the sweet chestnut ; *Pterocallis juglandicola* only affects the walnut ; *Chermes abietis* only the spruce fir and *C. laricis* the larch. But it is highly probable that in many cases a stint of the natural food may cause a taste for a plant of quite a different family. There is no strict rule which can be followed in this respect. British aphides are found even to affect plants indigenous to the cultivated parts of India. *Siphonophora pelargonii* and *S. rosæ* are the common pests of our geraniums and calceolarias ; *Aphis papaveris* blackens the stalks of our poppies ; *Siphonophora rosæ*, *S. rosarum* and *S. trirhoda* encrust the soft shoots of our choice roses, besides which other species infest the columbine, honeysuckle and other ornamental flowering plants.

Forest trees.—Notwithstanding the astringency of the leaves of the English oak they form the food of at least five species of aphis, the most prevalent of which are *Callipterus quercûs* and *Thelaxes dryophila*. The finely clouded membranous wings of *Dryobius roboris* and of *D. croaticus* will separate these species from the former ones. They are also remarkable for the fine purple-red stain they give to alcohol and to turpentine spirit when insects are soaked in them. *Stomaphis quercûs* is an example of a dying-out or defunct species ; it is remarkable for its very long and extended proboscis furnished with fine bristles, used for piercing the sap-wood of *Quercûs sessifolia*. It is perhaps the largest aphis yet described, and is very rare. Specimens were captured by F. Walker about 1850 on some oaks near Weybridge, at Dulwich and also at Finchley.

The linden or lime tree shelters very many thousands of *Pterocallis tiliæ* under its leaves. These insects, common in Surrey, occur on the continent in such profusion, and eject from their nectaries such a quantity of honeydew, that Boussingault the French chemist stated that one sick tree alone will produce three kilograms of the sweet liquid, and Kaltenbach says that in Switzerland the traveller may trace this aphis by the viscid substance which it sheds on the ground. *P. tiliæ* is the prey of numerous parasitic Hymenoptera, twenty or more individuals being sometimes contained in the body of a single specimen. Another species of this genus, *P. fagi*, forms small companies which make the common beech almost hoary with the cottony covering of their bodies. The

viviparous brood acquire many shades of green or reddish-brown colour. This species possesses both winged and apterous males.

The sycamore and the maple trees form food for *Drepanosiphum platanoides* and *Chaitophorus aceris*. The latter insect is interesting from its dimorphism. Occasionally it produces, in addition to the normal progeny, a curious toad-like form which has puzzled entomologists both as to its family and species. Under the name of *Phyllophorus testudinatus* it was thought to be the larva of some unknown insect. Subsequently it has proved to be an aberrant form of one of the green viviparous females of *Chaitophorus aceris*. These singular abortions, if they may be so called, are found slowly crawling in the condition of small yellow scales under the leaves. The body, legs and antennæ are furnished with folioles or flabellæ. They are quite solitary, isolated in habit, and never develop any sexual organs, though they may persist for four or more months without leaving the leaves from which they suck the sap. They never develop wings, but they cast their integuments as delicate membranous sloughs. Though this insect has been several times described, it still forms material for the expert microscopist to work out its morphology and embryology.

Aphides and galls.—The obscure cause of the mimicry of the natural fruits of plants by insect agency is open to speculation and is full of interest. A good example of such is to be found in the false cones of the spruce fir, which are so remarkably similar to the true cones of that fir as to be scarcely distinguishable from them. On opening one of such cones we find the chambers to be tenanted by hundreds of the winged and oviparous females of *Chermes abietis*. The delicate winged forms of these flies are often to be seen flitting above the openings of these cones on sunny days. Several galls on the oaks, made by *Cynipidæ*, are also partially tenanted by aphides, but the species, I believe, is not well identified. Erect, pedunculated galls are also found on the upper surfaces of elm leaves ; these are the work of *Tetraneura ulmi*. But perhaps the most remarkable gall, also on the elm, is made by *Schizoneura lanuginosa*. These galls are very like unripe figs, and measure as much as three inches in length. They open from the top, out of which issue thousands of the winged forms which have been bred from the apterous grubs within. Our poplars are visited by several species of aphides, each of which makes its own peculiar gall. These may be instanced by *Pemphigus bursarius*, *P. spirotheca* and others. It is interesting to note that such galls are duly represented by structures on the native poplar trees found on the plains of Afghanistan. Some aphides are the prey of *Diodontus*, *Coryna* and *Psen*, all of which are minute Hymenoptera. The last-named insect carries live aphides to chambers hollowed out of the pith of the blackberry. These aphides are consumed by the larvæ afterwards hatched from the ova of the *Psen*.

Before concluding this brief account of the Homopterous *Aphididæ*, some remarks may be added as to the underground forms which affect ants' nests. The solicitude of these interesting Hymenoptera for the

honey secretions of other insects is known to all. This solicitude is not however confined to the aphis family ; the larvæ of *Psyllidæ* and of the *Membracidæ* and even those of the *Centrotidæ* are often laid under contribution for what is analogous to the honey-dew obtained from homopterous species either living under or above ground. But this taste for sweets is not the only inducement to the epicitism of numerous insects of other insect orders, which are found to seek the sociability of the ant-hill ; amongst the *Coleoptera* alone Mr. Donisthorpe notes approximately one hundred species. Centipedes and woodlice also add their numbers as tolerated guests in these ant-communities.

CICADINÆ

Cicadetta montana, Amyot. *Haslemere*

MEMBRACIDÆ—CENTROTIDÆ

Centrotus cornutus. *Haslemere*
Gargara genistæ (?)

FULGORIDÆ

Issus coleoptratus, Geoff. *Godalming*
Cixius pilosus, Oliv.

DELPHACIDÆ

Liburnia longipennis, Curt. *Gomshall*
— discolor, Boh. *Wimbledon*
— exigua, Boh. *Haslemere*
— mesomela, Boh. ,,
— limbata, Flor. ,,
Dicranotropis hamata, Boh. *Haslemere*
Chloriona farinosa, Buck. ,,

CERCOPIDÆ

Tricephora vulnerata, Ill. *Haslemere*
Aphrophora alni, Fall. *Shiere*
Philænus spumarius, Linn. *Haslemere*
— lineatus, Linn. ,,
— exclamationis, Sahl. ,,

ULOPIDÆ

Ulopa reticulosa, Fab. *Haslemere*
— trivia, Germ.

PAROPIDÆ

Megophthalmus scanicus, Fall.

JASSIDÆ—BITHOSCOPIDÆ

Macropsis microcephala
— lanio, Linn. On oaks
Bythoscopus alni. *Haslemere*
— rufusculus. On birch.
Pediopsis virescens, Fab. *Haslemere*
— nanus, Boh. *Box Hill*
— tiliæ, Sahl. *Esher*
— tibialis, Scott. *Shiere*
Idiocerus fulgidus, Fab. On poplar
— confusus, Flor. *Godalming*
— distinguendus, Kirsch. *Shiere*
— nubilus, Buck. *Haslemere*
Agallia venosa, Fall. ,,
Tettigonia viridis, Linn. ,,
Evacanthus acumenatus, Fab. *Haslemere*
Eupelix cuspidata, Fab. ,,
Acocephalus albifrons, Flor. ,,

JASSIDÆ—BLITHOSCOPIDÆ (*continued*)

Acocephalus histrionicus, Flor. *Haslemere*
Doratura stylata, Sahlsb. *Haslemere*
Paramessus phragmitis, Boh. ,,
Stictocoris preysleri, Schäff. *Cisbury*
Athysanus grisescens, Zett.
— russeolus, Fall. *Addington*
— brevipennis, Kirsch. *Haslemere*
— communis, Sahlsb. ,,
— obscurellus, Kirsch. ,,
— obsoletus, Kirsch. ,,
Deltocephalus pascuellus, Fall. ,,
— distinguendus, Fall. ,,
— pulicaris, Fall. ,,
— flori, Fieb. ,,
— ocellaris, Fall. ,,
Thamnotettix splendidula, Fab. ,,
— dilutior, Kbm. ,,
— plebeja, Fall. ,,
— variegata, Fall. ,,
— subfusca, Fall. ,,
Limotettix sulphurella, Fall. ,,
— sexnotata, Fall. ,,
— crocea, H. Schäff. ,,
Alebra albostriatella, Fall. ,,
Dicraneura mollicula, Boh. ,,
— armata, Buck. ,,
Eupteryx pulchellus, Fall. On oaks
— germari, Zett. Fir
— vittatus. In swamps
— concinna, Germ. Oaks
— urticæ, Fab. Nettles
— notatus
— carpini, Fonsc. Hornbeam and hop
— melissæ, Curt. Sage and thyme
Typhlocyba quercûs, Schr. Oaks
— ulmi, Linn. Elm
— rosæ, Linn. Swarms on the rose
— avellanæ ,, ,, hazel
— cratægi ,, ,, thorn
Zygina blandula. Bird cherry

APHIDIDÆ

Siphonophora scabiosæ, Schr. Scabious
— granaria, Kirby. Wheat
— alliariæ, Koch. Onion

INSECTS

Siphonophora polygoni, Buck.
— hieracii, Kalt.
— millefolii, Kalt. Milfoil
— circumflexa, Buck. Cineraria
— pisi, Kalt. Pea
— scrofulariæ, Buck. Figwort
— lactucæ, Kalt. Lettuce
— rubi, Kalt. Bramble
— pelargonii, Kalt. Geranium
— urticæ, Kalt. Nettle
— convolvuli, Kalt. Periwinkle
— avellanæ, Sch. Hazel
— jaceæ, Kalt. Sowthistle
— rosarum, Walk. Briar
— solidaginis, Fab. Golden rod
— carnosa, Buck. Nettle
— muralis, Buck. Lettuce
— sonchi, Linn. Sowthistle
— cichorii, Koch. Corn cockle
Phorodon humuli, Schr. Hop
— malaheb, Fourc. Sloe
— galeopsidis, Walk. Sloe
Myzus cerasi, Kalt. Cherry
— persicæ, Sulz. Peach
— ribis, Kalt. Currant
Rhopalosiphum dianthi, Schr. Everywhere
— lactucæ, Pass. Sowthistle
— nymphææ, Linn. Water lily
Siphocoryne pastinaceæ, Linn. Carrot
— capreæ, Fab. Willow
Drepanosiphum platanoides, Kalt. Maple
Megoura viciæ, Buck. Vetch
Aphis brassicæ, Linn. Cabbage
— cratægi, Walk. Blackthorn
— subterranea, Walk. Roots
— malvæ, Koch. Tobacco
— mali, Kalt. Apple
— urticaria, Kalt. Nettle
— penicillata, Buck. Willow herb
— saliceti, Kalt. Withy
— pyraria, Pass. Pear
— cucurbiti, Buck. Melon
— sorbi, Kalt. Mountain ash
— tanacetina, Walk. Tansy
— pruni, Réaum. Medlar
— hieracei, Kalt.
— farfaræ, Koch. Coltsfoot
— scabiosæ, Pass. Scabious
— padi. Bird cherry
— epilobii, Kalt. Willow herb
— jacobeæ, Schr. Ragwort
— acetosæ, Buck. Sorrel
— rumicis, Linn. Dock
— atriplicis, Linn. Orache
— sedi, Kalt. House-leek
— papaveris, Schr. Poppy
— cardui, Kalt. Thistle
— instabilis, Buck. Feverfew
Aphis pyri, Fonsc. Crab
— sambuci, Linn. Elder
— opima, Buck. Cineraria
— amygdali, Fonsc. Peach
— myosotidis, Koch. Everlasting
— persicæ, Sulz. Nectarine
Hyalopterus pruni, Fab. Peach
— trirhoda, Walk. Columbine
— melanocephalus, Buck. Bladderwort
— dilineatus, Buck. Moss rose
Chaitophorus aceris, Linn. Maple
— salicivorus, Walk. Willow
— populi, Linn. White poplar
Callipterus betularius, Kalt. Beech
— coryli, Goetz. Hazel
— quercûs, Kalt. Oak
— quercea, Kalt. „
— betulicola, Kalt. Birch
— castaneæ, Buck. Chestnut

LACHNINÆ

Pterocallis alni, Fab. Alder
— juglandicola, Kalt. Walnut
— tiliæ, Linn. Lime
Phyllaphis fagi, Linn. Beech
— juglandis, Frisch. Walnut
Lachnus agilis, Kalt. Scotch fir
— macrocephalus, Buck. Fir
— pini, Linn. Scotch fir
— pinicolus, Kalt. Larch
— viminalis, Fonsc. Willow
Stomaphis quercûs, Réaum. Oak
Trama troglodytes, Heyd. Roots
Dryobius croaticus, Koch. Oak
— roboris (?), Linn. Oak

SCHIZONEURINÆ

Schizoneura lanigera, Hausm. Apple
— fodiens, Buck. Roots
— fuliginosa, Buck. Austrian pine
— ulmi, Linn. Rolled elm leaves
— corni, Kalt. Medlar

PEMPHIGINÆ

Pemphigus fuscifrons, Koch. Lettuce roots
— bursarius, Hart. Poplar
— lactucarius, Pass. Goosefoot
Tetraneura ulmi, De Geer. Elm galls
Thelaxes dryophila, Westw. Oak
Glyphina pilosa, Buck. Scotch fir

CHERMESINÆ

Chermes corticalis, Kalt. Fir
— abietis, Linn. Spruce galls
— laricis, Hartig. Larch
— pini, Koch. Scotch fir
Phylloxera punctata, Licht. Oak
— vastatrix, Planchon. In greenhouses

RHIZOBIINÆ

Forda formicaria, Heyd. Grass roots
Tychea phaseoli, Pass. Roots of the scarlet runner

MYRIAPODA

The sixteen species of myriapods here recorded from Surrey were for the most part captured in three localities, namely at Kew Gardens by Mr. Nicholson, at Weybridge by Mr. W. R. Ogilvie-Grant, and at Kingston-on-Thames by Mr. Lucas. They may be taken as representative of the commonest forms of the county, and with one exception are widely distributed throughout England. That the list might be doubled with a little diligent search scarcely admits of a doubt. In addition to the species mentioned below, various tropical forms have been introduced into Kew Gardens in connection with the importation of exotic plants, and have been collected by Mr. Nicholson and sent to the British Museum. The most noticeable of these are three species of centipedes: *Scolopendra morsicans*, Linn., *S. subspinipes*, Leach, *Mecistocephalus punctifrons*, Newp., and the following millipedes: *Orthomorpha kelaarti*, Humbert from Ceylon, *Trigoniulus goësi*, Porat, and an undetermined species of *Spirobolellus*. There is no satisfactory evidence that these species breed in the conservatories. *Orthomorpha gracilis*, on the other hand, which is mentioned in the subjoined list, is of such frequent occurrence in this and other hothouses and breeds with such freedom that it may be regarded as semi-acclimatized. The interest of these importations lies in the evidence they supply that the species owe their present wide distribution in the tropics to human and not to natural agencies.

CHILOPODA

Centipedes

LITHOBIIDÆ

Short bodied, swift running centipedes furnished with eyes and only fifteen pairs of legs

1. *Lithobius forficatus*, Linn. *Syst. Nat.* ed. 10, p. 638 (1758).

Kew.

The common brown large sized species met with everywhere under stones in gardens and backyards as well as in fields and woods.

2. *Lithobius variegatus*, Leach. *Zool. Misc.* iii. p. 40 (1817).

Weybridge, Kingston-on-Thames.

This species, which is of peculiar interest on account of its being confined so far as is at present known to the British and Channel Islands, may be distinguished from the more familiar brown form *L. forficatus* by its larger head, longer legs, variegated colouring, etc. The colouring is protective, the mottled pattern of the body and legs harmonizing closely with the varied tints and lights and shades of the stones to the underside of which these centipedes cling, frequently remaining for some time motionless after discovery like most procryptically coloured animals. Unlike *L. forficatus* this species is not found in the neighbourhood of human habitations.

CRYPTOPIDÆ

Eyeless centipedes of medium length and thickness, possessing twenty-one pairs of short legs, and though somewhat intermediate in form between the Lithobiidæ and Geophilidæ resembling the latter rather than the former in their slow serpentine movements.

3. *Cryptops hortensis*, Leach. *Tr. Linn. Soc. Lond.* xi. p. 384 (1815).

Kew.

The common species of the genus measuring about 20 mm. or less in length.

4. *Cryptops anomolans*, Newport. *Ann. Mag. Nat. Hist.* xiii. p. 100.

Kew.

Two examples of this species have been found in Kew Gardens by Mr. Nicholson.

Since the species typically belongs to the fauna of the Mediterranean area and has hitherto not been met with elsewhere in Great Britain nor so far north as London in any of the countries of Europe, suspicion must necessarily rest upon its claim to rank as an indigenous English form. But since the spot where the specimens were captured lies in the open remote from the conservatories where the rest of the imported species are procured, it seems probable that the species is in a fair way to establish itself in this country and to take its place in our fauna alongside of such forms as the black and brown rat, several species of cockroaches and other familiar species which are known to have been introduced.

C. anomolans is a much larger form than *C. hortensis*, often measuring over 30 mm. in total length, and further differing from it in having the dorsal plate of the first tergite transversely sulcate in front and overlapped by the head shield.

GEOPHILIDÆ

Long bodied vermiform centipedes without eyes and furnished with a large but variable number of legs.

5. *Geophilus flavus*, De Geer. *Mém. Ins.* vii. p. 561 (1778) (= *longicornis*, Leach).

Kingston-on-Thames.

This species is distinguishable from the rest of the British species by its long and cylindrical antennal segments.

6. *Geophilus carpophagus*, Leach. *Zool. Misc.* iii. p. 43.

Weybridge, Kingston-on-Thames.

Differing from the preceding and from the rest of the British species by the 'ball and socket' method of articulation of the anterior sternal plates.

7 *Linotœnia crassipes*, C. Koch. *Deutschl. Crust. etc.* pt. 3, pl. 3 (1835).

Charterhouse (O. Latter).

This species and its congener *L. acuminata* are the two common British luminous centipedes which so frequently attract attention on damp evenings in the autumn by the emission of a phosphorescent secretion from their ventral glands. They may be distinguished from *Geophilus* by the presence of a tooth at the base of the fang on the poison jaws.

8. *Stigmatogaster subterraneus*, Leach. *Tr. Linn. Soc. Lond.* xi. p. 385 (1815).

Kew.

One of the largest British species of this family, distinguishable by its inflated thickly porous anal pleuræ.

DIPLOPODA

Millipedes

GLOMERIDÆ

Short broad millipedes with the body composed of only twelve segments and capable of being spherically rolled.

9. *Glomeris marginata*, Villers. *Linn. Entom.* iv. p. 187 (1789).

Wimbledon (B. G. Rye).

The species, the common pill millipede, is the only representative of the genus *Glomeris* known to occur in Britain. It presents a close similarity to the ordinary pill woodlouse (*Armadillo vulgaris*), but may be distinguished from it at a glance by its large posterior tergite and the narrow white band with which all its tergites are bordered.

POLYDESMIDÆ

Millipedes in which the body consists of from nineteen to twenty segments, most of which in all the British species are furnished with repugnatorial pores supported on a larger or smaller lateral crest or keel.

10. *Polydesmus complanatus*, Linn. *Faun. Suecic.* ed. 2, p. 502 (1761).

Weybridge, Kingston-on-Thames.

The commonest and largest British species.

11. *Orthomorpha gracilis*, C. Koch. *Syst. d. Myr.* p. 142 (1847).

Kew Gardens.

Imported and of common occurrence in many of the conservatories in England and other countries of Europe, where it breeds in profusion. The immature form is pale, but the adult is polished and of a rich brown hue with yellow keels.

IULIDÆ

Millipedes in which the body consists of a large but variable number of segments furnished with pores but without the lateral keels characteristic of the *Polydesmidæ*.

12. *Iulus teutonicus*, Pocock. *Ann. Mag. Nat. Hist.* (7), vi. p. 206 (1900).

Kew, Kingston-on-Thames, Wimbledon.

Until recently this species has passed both in England and on the continent under the erroneous name of *I. londinensis*. With exception of the latter, which has never been discovered since Leach's time, *I. teutonicus* is the largest tailless form of this genus met with in Britain.

I. londinensis, Leach (*Tr. Linn. Soc.* xi. p. 378 [1815]), described from the environs of London, may prove to belong to the Surrey fauna.

13. *Iulus niger*, Leach. *Zool. Misc.* iii. p. 34 (1817).

Kingston-on-Thames, Putney.

About as large as the preceding and jet black in colour, but furnished with a long pointed caudal process, and with the anterior half of the body-segments marked with transverse grooves.

14. *Iulus pilosus*, Newport. *Ann. Mag. Nat. Hist.* xi. p. 316 (1842).

Kingston-on-Thames.

Resembling *I. niger* in colour and the possession of a pointed caudal process, but differing in its smaller size and in the absence of transverse grooves on the anterior half of the body-segments.

15. *Iulus punctatus*, Leach. *Zool. Misc.* iii. p. 34 (1817).

Weybridge, Kew.

A yellowish brown species with a lateral spot on the body-segments and a clavate bluntly pointed caudal process. Found in rotten wood.

16. *Blaniulus guttulatus*, Bosc. *Bull. Soc. Philom.* p. 12 (1792).

Kew.

A very long and slender eyeless species with the anterior extremity of the body pale and a line of blood-red spots on each side of the body. A common strawberry pest.

ARACHNIDA

Spiders, etc.

So very little research has been made in connection with members of this order, so far as the county of Surrey is concerned, that it is not possible to consider the following account of the spider-fauna of the region under consideration in any respect a full one.

That it should prove a very rich locality when thoroughly well worked is evident from the physical characters and geological formation of the area. It is however scarcely possible to point particularly to any one tract as more likely to repay research than another, though the heather districts of Bagshot and Woking, with the rich river beds and meadow lands, firwood and oak and hazel districts will be found prolific in the various species peculiar to them.

In a general way too, wild uncultivated areas are much more fertile in spider forms than those that are highly cultivated. Yet even in the latter case, where isolated districts of wild growth and forest land occur, with cultivated land on all sides, these oases are often found to be more plentifully inhabited than even large tracts of primeval forest.

Of the 162 species of spiders recorded none are peculiar to the district, though several are worthy of special mention: *Atypus affinis*, *Araneus marmoreus*, *Dysdera crocota*, *Tegenaria parietina*, *Cœlotes atropos* and *Habnia elegans*.

SPIDERS

The greater part of the species recorded were collected by Mr. F. P. Smith of Islington, and the rest by the present writer.

In cases where the generic or specific name quoted is not that under which the spider has usually been recognized in the works of English authors, a note has been added calling attention to the fact. With these few preliminary remarks we may proceed at once with the list of the spiders of Surrey.

ARANEÆ

MYGALOMORPHÆ

ATYPIDÆ

Spiders with eight eyes, four lung books, and three tarsal claws.

1. *Atypus affinis*, Eichwald.

Wimbledon Common (F. P. S.).

Adult in May, June and October.

This is the only example of the *Mygalomorphæ* found in the British Islands. Though belonging to the same sub-order as the well-known trap-door spiders of the south of Europe and other tropical and sub-tropical regions, distinguished from the *Arachnomorphæ* by the possession of two pairs of pulmonary organs or lung books and by the vertical movement of the mandibles, these spiders make no trap-door at all.

The retreat consists of a long tunnel, half an inch in diameter and from seven to nine inches long, burrowed in the soil, and lined throughout with white silk, terminating at the lower end in a slightly enlarged cell, where the egg-sac is formed and the young are hatched and tended by the female. The upper end of the silk lining is prolonged for about three inches beyond the extremity of the burrow, forming a loose tube, closed at the end, and either lying on the surface of the soil, woven amongst the roots of heather and herbage, or hanging down free, according to the nature of the surroundings.

Mr. Enock reports that the spider does not leave this retreat in search of prey, but waits in the slack portion of the tube lying outside the burrow until some insect sets foot upon this silken purse-like structure. Instantly the fangs of the spider's mandibles are struck through the walls of the tube, the insect seized and dropped into the burrow through a rent in the silk, which is afterwards mended from within. The male is smaller, almost black, and may sometimes be found moving slowly about in the sunshine in the neighbourhood of the colony. The spider has also been recorded under the names *A. sulzeri* and *A. piceus* by English authors.

ARACHNOMORPHÆ

DYSDERIDÆ

Spiders with six eyes and two pairs of stigmatic openings, situated close together on the genital rima; the anterior pair communicating with lung books, the posterior with tracheal tubes. Tarsal claws, two in *Dysdera*, three in *Harpactes* and *Segestria*.

2. *Dysdera cambridgii*, Thorell.

Wimbledon.

Not uncommon under stones and bark of trees, where it lurks within a tubular retreat. The spider is easily recognizable by its elongate form, orange legs, dark mahogany carapace and pale clay-yellow abdomen. The palpal bulb of the male has no cross-piece at the apex.

This spider is also known as *D. erythrina*, Blackwall.

3. *Dysdera crocota*, C. L. Koch.

Horsley (F. P. S.).

Larger than the last species, with a deep orange-pink carapace, orange legs, and abdomen with a delicate rosy pink flush. The palpal bulb of the male has a cross-piece at the apex.

This spider is also known as *D. rubicunda*, Blackwall.

4. *Harpactes hombergii* (Scopoli).

Wimbledon.

Common on heaths, also to be met with under bark of trees, and recognizable by its ant-like linear form, black carapace and pale abdomen, and its three tarsal claws.

5. *Segestria senoculata* (Linn.).

Wimbledon.

Common under bark of trees, amongst detached rocks at the foot of cliffs, and in the crevices of loose stone walls. Recognizable by its linear form and the black diamond-shaped blotches on the dorsal surface of the abdomen.

DRASSIDÆ

Spiders with eight eyes, situated in two transverse rows. The tracheal openings lie just in front of the spinners. The tarsal claws are two in number, the anterior pair of spinners are set wide apart at the base, and the maxillæ are more or less impressed across the middle.

6. *Drassodes lapidosus* (Walckenaer).
Horsley (F. P. S.).

Usually common beneath stones in every locality.

7. *Drassodes cupreus* (Blackwall).
Woking.

This is a darker spider than the last. The mandibles of the male are less developed and the tibia of the palpus is shorter and broader. The central tongue of the vulva of the female is not so much dilate behind. It may be considered a sub-species.

8. *Drassodes troglodytes* (C. L. Koch).
Woking.

Under stones in pastures and on grass-lands. Can be recognized by the absence of dorsal spines on the tibiæ of the third and fourth pairs of legs.

9. *Drassodes sylvestris* (Blackwall).
Woking.

Not uncommon amongst dead leaves in woods.

10. *Scotophæus blackwallii* (Thorell).
Wimbledon.

A dark elongate mouse-grey spider, often found wandering about the walls of dwellings and outhouses at night.

CLUBIONIDÆ

Spiders with eight eyes, situated in two transverse rows. The tracheal openings lie immediately in front of the spinners. The tarsal claws are two in number but the anterior pair of spinners are set close together at the base, and the maxillæ are convex, not impressed across the middle.

11. *Micaria pulicaria* (Sundevall).
Horsley (F. P. S.).

A small dark spider, iridescent and shining, with a white cincture round the middle of the anterior half of the abdomen. Known also as *Drassus nitens*, Blackwall.

12. *Phrurolithus festivus*, C. L. Koch.
Wimbledon.

13. *Agræca brunnea* (Blackwall).
Lonesome (J. Dallas).

14. *Agræca proxima* (O. P.-Cambridge).
Wimbledon.

The egg-cocoon of this species is a familiar object to the field naturalist; a white silken sac shaped like an inverted wine-glass and hung by the stem to the stalks of rushes, heather, etc. The spider subsequently covers the silk with a layer of mud.

15. *Zora spinimana* (Sundevall).
Horsley (F. P. S.).

Common everywhere amongst herbage.

16. *Clubiona phragmitis*, C. L. Koch.
Carshalton, Wimbledon.

17. *Clubiona pallidula* (C. Clerck).
Horsley, Wimbledon Common (F. P. S.).

18. *Clubiona stagnatilis*, Kulczynski.
Horsley (F. P. S.).

19. *Clubiona reclusa*, O. P.-Cambridge.
Carshalton.

20. *Clubiona lutescens*, Westring.
Carshalton.

21. *Clubiona terrestris*, Westring.
Horsley (F. P. S.).

22. *Clubiona trivialis*, L. Koch.
Wimbledon, Woking.

23. *Clubiona compta*, C. L. Koch.
Horsley, Wimbledon Common (F. P. S.).

24. *Clubiona brevipes*, Blackwall.
Horsley (F. P. S.).

25. *Clubiona corticalis*, Walckenaer.
Horsley (F. P. S.).

26. *Clubiona diversa*, O. P.-Cambridge.
Wimbledon Common (F. P. S.).

27. *Chiracanthium erraticum* (Walckenaer).
Carshalton.

Common on the roadsides among bramble leaves. This spider is also known as *C. carnifex*.

SPIDERS

ANYPHÆNIDÆ

The spiders of this family resemble those of the *Clubionidæ* in most respects, except that the tracheal stigmatic openings beneath the abdomen are situated about midway between the genital rima and the spinners, and not as in the last family immediately in front of the spinners. One species only is indigenous to Great Britain, and is very common amongst the foliage of trees in May and June.

28. *Anyphæna accentuata* (Walckenaer).
Wimbledon.

THOMISIDÆ

Spiders with eight eyes, situated in two transverse rows, two tarsal claws, and anterior spinners close together at their base. Maxillæ not impressed. The crab-like shape and sidelong movements of these spiders are the chief characteristic which enable them to be distinguished from the more elongate *Drassidæ* and *Clubionidæ*.

29. *Philodromus dispar*, Walckenaer.
Horsley (F. P. S.).

30. *Philodromus aureolus* (Clerck).
Horsley (F. P. S.).

31. *Tibellus oblongus* (Walckenaer).
Horsley (F. P. S.).

Common amongst dry coarse grass on sandhills and also amongst the rich vegetation in swamps, where the species is as a rule much larger.

32. *Thanatus striatus*, C. L. Koch.
River Wandle.

Not uncommon in marshy places and swamps.

33. *Diæa dorsata* (Fabricius).
Horsley.

34. *Xysticus cristatus* (Clerck).
Horsley (F. P. S.).

35. *Xysticus pini* (Hahn).
Horsley (F. P. S.).

36. *Xysticus ulmi* (Hahn).
Wimbledon.

37. *Xysticus luctuosus* (Blackwall).
Horsley (F. P. S.).

38. *Xysticus erraticus* (Blackwall).
Horsley (J. Carrington).

39. *Oxyptila atomaria* (Panzer).
Horsley (F. P. S.), Wimbledon.

40. *Oxyptila trux* (Blackwall).
Horsley (F. P. S.).

41. *Oxyptila praticola* (C. L. Koch).
Horsley (F. P. S.).

42. *Oxyptila simplex*, O. P.-Cambridge.
Wimbledon Common (F. P. S.).

43. *Misumena vatia* (Clerck).
Horsley (F. P. S.).

ATTIDÆ

The spiders of this family may be recognized in a general way by their mode of progression, consisting of a series of leaps, when alarmed. More particularly they may be known by the square shape of the cephalic region and the fact that the eyes are arranged in three rows of 4, 2, 2; the centrals of the anterior row being much the largest and usually iridescent. Otherwise these spiders are simply specialized *Clubionids*, with two tarsal claws and other minor characters possessed in common with members of this latter family. The commonest, *Salticus scenicus*, will be well known to all observers, running and leaping on the walls of houses in the bright sunshine.

44. *Euophrys frontalis* (Walckenaer).
Horsley (F. P. S.).

Abundant in most districts.

45. *Heliophanus cupreus* (Clerck).
Horsley (F. P. S.).

46. *Salticus scenicus* (Clerck).
Wimbledon (F. P. S.).

This spider is also known as *Epiblemum scenicum*.

47. *Marptusa muscosa* (Clerck).
Wimbledon (F. P. S.).

One of the largest and most beautiful of our *Attidæ*, often abundant under the bark of old wooden palings, or among the loose stones of walls, such as those which cross the downlands on the south coast.

48. *Ergane falcata* (Clerck).
Horsley (F. P. S.).

49. *Dendryphantes hastatus* (Clerck).
Horsley (F. P. S.).

PISAURIDÆ

Spiders with eight eyes in three rows, and three tarsal claws. The first row of eyes consists of four small eyes which are sometimes in a straight line, sometimes recurved and sometimes procurved. Those of the other two rows are situated in the form of a rectangle of various proportions. *Pisaura* runs freely over the herbage, carrying its egg-sac beneath its sternum, while *Dolomedes* is a dweller in marshes and swamps.

50. *Pisaura mirabilis* (Clerck).
Horsley (F. P. S.), Woking, Bagshot.
Known also as *Dolomedes*, or *Ocyale, mirabilis*.

LYCOSIDÆ

The members of this family also have eight eyes, similarly situated to those of the *Pisauridæ*, but the first row is straight. Tarsal claws three. The spiders are to be found running freely on the ground and carrying their egg-sac attached to the spinners. Many of the larger species make a short burrow in the soil and there keep guard over the egg-sac.

51. *Lycosa ruricola* (De Geer).
Horsley, Wimbledon (F. P. S.).
A very common species. The male has a claw at the end of the palpus.

52. *Lycosa terricola* (Thorell).
Horsley (F. P. S.).
Also very common. The male has no claw at the end of the palpus.

53. *Lycosa perita*, Latreille.
Woking, Bagshot.
This spider is also known as *L. picta*.

54. *Lycosa accentuata*, Latreille.
Wimbledon Common, Woking, Bagshot.
Known also as *Tarentula* or *Lycosa andrenivora*.

55. *Pardosa lugubris* (Walckenaer).
Horsley (F. P. S.).
This and the four following species are also known under the generic name *Lycosa*.

56. *Pardosa amentata* (Clerck).
Horsley, Wimbledon (F. P. S.).

57. *Pardosa pullata* (Clerck).
Horsley (F. P. S.).

58. *Pardosa palustris* (Linn.).
Wimbledon.

59. *Pardosa nigriceps* (Thorell).
Wimbledon, Woking, Bagshot.

60. *Pirata hygrophilus*, Thorell.
Carshalton.

61. *Pirata piraticus* (Clerck).
River Wandle.

62. *Pirata latitans* (Blackwall).
River Wandle.

AGELENIDÆ

Spiders with eight eyes situated in two straight or more or less curved transverse rows. Tarsal claws three. The species of this family spin a large sheet-like web, and construct a tubular retreat at the back of it, which leads to some crevice among the rocks or the herbage, or the chinks in the walls of outhouses, wherever the various species may happen to be found. The habits of *Argyroneta* are however different.

63. *Tegenaria derhamii* (Scopoli).
Horsley (F. P. S.).

64. *Tegenaria atrica* (C. L. Koch).
Horsley (F. P. S.).

65. *Tegenaria parietina* (Fourcroy).
Wimbledon.
This spider is known also as *T. guyonii*, and is the *T. domestica* of Blackwall.

66. *Tegenaria silvestris*, L. Koch.
Horsley (F. P. S.).

67. *Agelena labyrinthica* (Clerck).
Wimbledon, Woking.
A very common spider, making a sheet-like web on the herbage with a funnel-shaped tubular retreat.

68. *Hahnia elegans* (Blackwall).
River Wandle.

69. *Argyroneta aquatica*, C. L. Koch.
Wimbledon.
This is the well-known *water spider* which makes a silken nest beneath the surface and swims and dives freely, hatching out its young within the nest.

70. *Cœlotes atropos*, Walckenaer.
Horsley (F. P. S.).

71. *Textrix denticulata* (Olivier).
Horsley (F. P. S.).

SPIDERS

ARGIOPIDÆ

The spiders included in this family have eight eyes, situated in two rows, the lateral eyes of both rows being usually adjacent if not in actual contact; while the central eyes form a quadrangle. The tarsal claws are three, often with other supernumerary claws. The web is either an orbicular snare or consists of a sheet of webbing, beneath which the spiders hang and capture the prey as it falls upon the sheet. This immense family includes those usually separated under the names *Epeiridæ*, *Linyphiidæ*, etc.

72. *Meta segmentata* (Clerck).
Horsley, Wimbledon (F. P. S.).

73. *Meta merianæ* (Scopoli).
Carshalton.

74. *Tetragnatha extensa* (Linn.).
Carshalton and Wimbledon.

75. *Tetragnatha solandri* (Scopoli).
Horsley (F. P. S.).

76. *Pachygnatha clerkii*, Sundevall.
Horsley (F. P. S.).

77. *Pachygnatha degeerii*, Sundevall.
Horsley, Wimbledon (F. P. S.).

78. *Cyclosa conica* (Pallas).
Horsley (F. P. S.).

79. *Zilla* × *-notata* (Clerck).
Horsley, Wimbledon (F. P. S.).

80. *Zilla atrica*, C. L. Koch.
Horsley (F. P. S.).

81. *Araneus cucurbitinus*, Clerck.
Horsley (F. P. S.).

This and the following eight species are also known under the generic name *Epeira*.

82. *Araneus diadematus*, Clerck.
Horsley, Wimbledon, Carshalton (F. P. S.).

83. *Araneus cornutus*, Clerck.
River Wandle.

Known also as *Epeira apoclisa*.

84. *Araneus quadratus*, Clerck.
Woking.

85. *Araneus umbraticus*, Clerck.
Horsley (F. P. S.).

86. *Araneus redii*, Scopoli.
Wimbledon, Woking.

Known also as *Epeira solers*.

87. *Araneus triguttatus*, Fabricius.
Carshalton.

Known also as *Epeira agalena*.

88. *Araneus adiantus*, Walckenaer.
Woking, Bagshot.

89. *Araneus marmoreus*, Clerck.
Horsley (F. P. S.).

Known also as *Epeira scalaris*.

90. *Linyphia clathrata*, Sundevall.
Wimbledon, Horsley (F. P. S.).

Known also as *Neriene marginata*, Blackwall.

91. *Linyphia hortensis*, Sundevall.
Wimbledon.

Known also as *L. pratensis*, Blackwall.

92. *Linyphia* pusilla, Sundevall.
Woking.

Known also as *L. fuliginea*, Blackwall.

93. *Linyphia montana* (Clerck).
Horsley (F. P. S.).

Known also as *L. marginata*, Blackwall.

94. *Linyphia triangularis* (Clerck).
Horsley, Wimbledon (F. P. S.).

Known also as *L. montana*, Blackwall.

95. *Linyphia peltata*, Wider.
Wimbledon.

Known also as *L. rubea*, Blackwall.

96. *Labulla thoracica* (Wider).
Wimbledon, Horsley (F. P. S.).

Known also as *Linyphia cauta*, Blackwall.

97. *Floronia bucculenta* (Clerck).
River Wandle.

Known also as *Linyphia frenata* (Wider).

98. *Stemonyphantes lineatus* (Linn.).
Horsley, Wimbledon (F. P. S.).

Known also as *Linyphia bucculenta*, O. P.-C., and *Neriene trilineata*, Blackwall.

99. *Drapetisca socialis* (Sundevall).
Horsley (F. P. S.).

Known also under *Linyphia socialis*.

100. *Tapinopa longidens* (Wider).
Horsley (F. P. S.).

Known also under *Linyphia longidens*.

101. *Lepthyphantes tenuis* (Blackwall).
Horsley, Wimbledon (F. P. S.).

This and the following species included in this and the next genus are usually known under the name *Linyphia*.

102. *Lepthyphantes blackwallii*, Kulczynski.
Carshalton.

103. *Lepthyphantes nebulosus* (Sundevall).
Wimbledon.

104. *Lepthyphantes minutus* (Blackwall).
Horsley, Wimbledon (F. P. S.).

105. *Lepthyphantes leprosus* (Ohlert).
Horsley (F. P. S.).

106. *Lepthyphantes henricæ* (Six.).
Carshalton.

107. *Bathyphantes dorsalis* (Wider).
Carshalton.

108. *Bathyphantes pullatus* (O. P.-Cambridge).
River Wandle.

109. *Bathyphantes gracilis* (Blackwall).
Carshalton, Horsley (F. P. S.).

Known also as *Linyphia circumspecta*, Blackwall.

110. *Sintula diluta* (O. P.-Cambridge).
Horsley (F. P. S.).

111. *Bathyphantes parvulus* (Westring).
River Wandle.

112. *Bathyphantes nigrinus* (Westring).
River Wandle.

113. *Bathyphantes meadii* (O. P.-Cambridge).
River Wandle.

Known also as *Linyphia approximata* (O. P.-Cambridge).

114. *Bathyphantes concolor* (Wider).
Horsley (F. P. S.).

115. *Macrargus rufus* (Wider).
Horsley (F. P. S.).

116. *Centromerus bicolor* (Blackwall).
Carshalton.

117. *Microneta viaria* (Blackwall).
Wimbledon.

Known also as *Neriene viaria*.

118. *Micryphantes fuscipalpis*, C. L. Koch.
Horsley (F. P. S.).

119. *Erigone atra* (Blackwall).
Wimbledon.

This and the next three species are known also under the name of *Neriene*.

120. *Erigone dentipalpis* (Wider).
Horsley (F. P. S.).

121. *Erigone longipalpis* (Sundevall).
Horsley (F. P. S.).

122. *Gongylidium rufipes* (Linn.).
Horsley (F. P. S.).

Known also as *Neriene munda*, Blackwall, and *Neriene rufipes*.

123. *Gonatium rubens* (Blackwall).
Horsley (F. P. S.).

124. *Gonatium isabellinum* (C. L. Koch).
Horsley (F. P. S.).

Known also as *Neriene rubella*, Blackwall.

125. *Neriene cornuta*, Blackwall.
River Wandle.

126. *Hypomma bituberculatum* (Wider).
Horsley (F. P. S.).

127. *Trachygnatha dentata* (Wider).
Horsley (F. P. S.).

128. *Œdothorax gibbosus* (Blackwall).
River Wandle.

129. *Œdothorax tuberosus* (Blackwall).
River Wandle.

130. *Stylothorax apicatus* (Blackwall).
Carshalton.

131. *Kulczynskiellum fuscum* (Blackwall).
Horsley (F. P. S.).

132. *Savignia frontata* (Blackwall).
River Wandle.

133. *Viderius anticus* (Wider).
Horsley (F. P. S.).

134. *Cornicularia unicornis* (O. P.-Cambridge).
River Wandle.

135. *Cornicularia cuspidata* (Blackwall).
Horsley (F. P. S.).

136. *Walckenaeria cristata*, Blackwall.
Carshalton.

137. *Hilaira uncata* (O. P.-Cambridge).
Horsley (F. P. S.).

Known also as *Neriene uncata*.

138. *Maso sundevalli* (Westring).
Carshalton.

MIMETIDÆ

Spiders of this family are similar in general respects to the *Theridiidæ*, having eight eyes and three tarsal claws. The species of *Ero* construct a small brown pear-shaped or cylindrical egg-cocoon suspended on a fine silken stalk. The legs are very spinose.

139. *Ero furcata* (Villers).
Horsley (F. P. S.).

SPIDERS

THERIDIIDÆ

The members of this family have eight eyes, situated in very much the same position as those of the *Argiopidæ*, but the mandibles are usually weak, the maxillæ are inclined over the labium, and the posterior legs have a comb of stiff curved spines beneath the tarsi. The web consists of a tangle of crossing lines, and the spider often constructs a tent-like retreat wherein the egg-sac is hung up. Tarsal claws, three. The legs are devoid of spines.

140. *Theridion tepidariorum*, C. L. Koch.
Wimbledon.

One of the commonest spiders in our hot-houses, and often venturing to endeavour to acclimatize itself out of doors in the gardens.

141. *Theridion sisyphium* (Clerck).
Horsley, Wimbledon (F. P. S.).

142. *Theridion pictum*, Hahn.
Horsley (F. P. S.).

143. *Theridion varians*, Hahn.
Wimbledon.

144. *Theridion denticulatum*, Walckenaer.
Wimbledon.

145. *Theridion simile*, C. L. Koch.
Carshalton.

146. *Theridion bimaculatum* (Linn.).
Horsley (F. P. S.).

147. *Theridion aulicum*, C. L. Koch.
Woking.

This species is also known under the name of *T. rufolineatum*.

148. *Theridion ovatum* (Clerck).
Wimbledon (F. P. S.).

This spider is also known as *T. lineatum*, or under the generic name *Phyllonethis*.

149. *Theridion pallens*, Blackwall.
Carshalton.

150. *Episinus lugubris*, Simon.
Horsley (F. P. S.).

This spider has hitherto been regarded as *E. truncatus*, Walckenaer.

151. *Pholcomma gibbum*, Westring.
Wimbledon (F. P. S.).

152. *Steatoda bipunctata* (Linn.).
Wimbledon.

153. *Pedanostethus lividus* (Blackwall).
Carshalton.

154. *Enoplognatha thoracica* (Hahn).
Wimbledon (F. P. S.).

PHOLCIDÆ

155. *Pholcus phalangioides* (Fuesslin).
Wimbledon.

DICTYNIDÆ

The species belonging to this family possess eight eyes, situated in two transverse almost parallel rows, the laterals being in contact. The calamistrum and cribellum are present, and there are three tarsal claws. They construct a tubular retreat with an outer sheet of webbing, which is covered with a flocculent silk made with the calamistrum and threads from the cribellum.

156. *Amaurobius fenestralis* (Stroem).
Horsley, Wimbledon (F. P. S.).

157. *Amaurobius similis* (Blackwall).
Horsley, Wimbledon (F. P. S.); abundant everywhere.

158. *Amaurobius ferox* (Walckenaer).
Wimbledon.

159. *Dictyna arundinacea* (Linn.).
Wimbledon.

160. *Dictyna uncinata*, Thorell.
Horsley (F. P. S.).

161. *Dictyna latens* (Fabricius).
Horsley (F. P. S.).

162. *Dictyna pusilla*, Thorell.
Horsley (F. P. S.).

CHERNETES

CHELIFERIDÆ

Out of twenty species of false scorpions hitherto recorded as indigenous to Great Britain only one has been taken in this county. The various species can usually be found amongst moss and dead leaves, or beneath stones and the bark of trees. They are unmistakable on account of their possession of a pair of forcipated palpi, like those of the true scorpion.

163. *Chthonius rayi*, L. Koch.
River Wandle.

OPILIONES

The harvestmen are spider-like creatures with eight long legs, the tarsi long and very flexible. Eyes simple, two in number, situated on each side of an eye eminence. Body not divided into two distinct regions by a narrow pedicle, as in spiders.

164. *Phalangium opilio*, Linn.
Carshalton.

165. *Phalangium parietinum*, De Geer.
Wimbledon, Horsley (F. P. S.).

166. *Liobunum rotundum* (Latreille).
Wimbledon.

167. *Oligolophus agrestis* (Meade).
Wimbledon.

168. *Nemastoma lugubre* (Müller).
Wimbledon.

169. *Sclerosoma romanum*, L. Koch.
Horsley (F. P. S.).

CRUSTACEANS

Though Surrey has been for an indefinite period within easy reach of competent naturalists, it has not tempted any of them to make a systematic investigation of its carcinological fauna. The present chapter derives benefit from the researches of Dr. Baird and a few others, rather because they happened to carry them on in the neighbourhood of London than because they had any special intention of exploring this county. Nevertheless the area in question undoubtedly contains species of no little interest in several divisions of the crustacean class. It will also appear from some discoveries that many more may reasonably be expected to follow.

In certain parts of the world the higher groups of the Malacostraca are well represented both on land and in fresh water. But this is not the case in England. Of the Brachyura or 'short-tails' we have no terrestrial or fluviatile species, no land crabs or river crabs. Here also the fresh water yields but a scanty supply of Macrura or 'long-tails.' Of these Surrey, like many other inland counties, can only claim with confidence a single species, the common river crayfish, *Potamobius pallipes* (Lereboullet).[1] In reference to this species two questions are not uncommonly mooted, one concerning the difference between a crayfish and a crawfish, the other concerning the difference between these and a lobster. All three were in uncritical ages included in a common genus *Astacus*, whereas now they are all three generically distinct. Crayfish and crawfish however are essentially the same word, and like other vernacular names have the misfortune to be sometimes used interchangeably. In drawing any distinction therefore it is important first of all to nail the name crayfish hard and fast on to the fluviatile species (*Potamobius*, the river-liver), reserving the other name for the marine animal sometimes called a rock-lobster. This, the crawfish, will be found to stand out boldly and clearly distinct by its far greater size, by its roughened carapace, by its exceedingly long and stiff second antennæ, and by its want of well fashioned claws or nippers. The crayfish, on the other hand, is very like a little lobster, but it will be found to differ from the true lobster (*Astacus gammarus*) by having a larger 'scale' to its second antennæ, and by having the segment which carries the last pair of trunk-legs movable upon the preceding segment instead of being firmly fixed to it. There are also small distinctions easy to observe in the frontal process known as the rostrum and in the caudal extremity known as the

[1] For the information that this is found 'in the Wey about 100 yards above Harris's boathouse at Weybridge' I am indebted to Henry F. Field, Esq., writing from 17 Argyll Road, Ealing, March 14, 1901.

telson, with others less easy to observe in the branchiæ, that is, the series of respiratory organs which are concealed under the protection of the carapace. In 1893 the Rev. James Menzies read a paper on 'The Natural History of the Crayfish' before the Holmesdale Natural History Club, Reigate. In the published abstract he does not record any Surrey locality for crayfishes, but he says, 'It has been observed that they have a preference for those parts of the river which run north and south, because of the shade from the midday sun,' and as to their diet he observes, 'Larvæ of insects, water-snails, tadpoles, or frogs which come within reach are suddenly seized and devoured, and it is averred that the water rat even is liable to the same fate.'[1]

Of the terrestrial Isopoda known as English, Surrey is likely to possess as many as any other county, and though the species hitherto recorded are not numerous they include some that are rather specially worthy of notice. These crustaceans, better known under the contemptuous name of woodlice, are Malacostraca like the crayfish, but of a lower grade and with many differences. Their eyes are sessile in the head, instead of being placed on jointed pedicels. Their breathing organs instead of being in the front part are in the caudal division of the animal's body. Their trunk-feet are fourteen in number instead of only ten. Moreover, these seven pairs of legs are severally attached to seven movable body segments without the overarching shield or carapace to which the corresponding segments are tied in crabs, lobsters and the like. With all these marks of distinctness it may seem odd and fanciful to classify a crab and a woodlouse in the same group. But there is another aspect from which this grouping may be viewed. Throughout the Malacostraca, miscellaneous as they may seem, it is possible to trace uniformity alike in the number of body segments and in the number of paired appendages belonging to those segments each to each. Merely to count the pieces and the pairs, it is true, might be misleading, for though the segments and the limbs never exceed a certain stipulated number, they very frequently fall short of it. There are sometimes segments without appendages, and sometimes appendages which do not seem to belong to specially allotted segments. A wide comparison however soon makes it clear that missing appendages have been relinquished only because they had become useless or inconvenient, and that reduction in the apparent number of body segments is due to advantageous consolidation. Even thus qualified the uniformity is so striking that few minds can resist the inference from it that all the Malacostraca are derived from common ancestors and may therefore naturally be grouped together, as apart from other animals which cannot pass this particular test. In the same way when the appendages are considered, whether in the endless diversity of genera and species or as a series exhibited in a single animal, it might at the first view seem a mockery to refer them to any common original. Antennæ, mouth-organs,

[1] *Holmesdale Natural History Club Proceedings*, p. 18 (1893).

raptorial claws and ambulatory legs, swimming-feet and tail-feet not only by function but by form are in many particulars so unlike one another that comparison often seems out of the question. But here again extended inquiry brings the most unexpected agreements to light. The normally whip-like character of the antennæ, for example, is found displaying itself in each of the other sets of appendages, and in turn disappearing from the antennæ themselves, which forego their pliant lashes to become stiffly pediform or broad and shovel-like. The crab has six pairs of mouth-organs and five pairs of trunk-legs. The woodlouse has four pairs of mouth-organs and seven pairs of trunk-legs. The difference would be startling but for the simple explanation that the last two pairs of jaws in the crab are equivalents of the first two pairs of trunk-legs in the woodlouse. The latter animal is probably of older lineage than the crab, possibly as well savoured as the shrimp, and is certainly represented in Surrey by some of our rarer English species.

Within the last few years several species have been added to the number of terrestrial Isopoda known in our islands. The total is still a modest one, for the moment reaching twenty-one in England and not quite so many in Ireland, though two continental species occur there which have not yet been found between the Irish and the English Channels. These woodlice of Great Britain and Ireland are distributed among four families. One of these, the Ligiidæ, takes its name from the genus *Ligia*, which has been distinguished as maritime rather than marine, because it loves the coast though it does not go into the sea. In the same family stands an inland genus, *Ligidium*, Brandt. Of this the oldest species was called *Oniscus hypnorum* by the celebrated Baron Cuvier in 1792, its name meaning woodlouse of the mosses. It loves the shelter of the woodlands, where the mould is crumbling, where the leaves lie thickly, where there is abundance of moss and moisture. The very next year after it had been named in France by Cuvier it was independently observed in Germany by Persoon, who styled it *O. agilis*, the nimble woodlouse, with appropriate allusion to the agility of its movements. Presently afterwards it was removed by Bosc from the too vaguely comprehensive genus *Oniscus* into one of narrower limits, being named by him and by several subsequent French writers *Ligia hypnorum*. Bosc declares that it is found 'on the shores of the sea under mosses.' About this statement the suspicion may arise that Bosc was not speaking from personal observation, but that having assigned the species to *Ligia* he thought himself bound to make it live, as species of *Ligia* usually live, by the lip of the sea. It is certainly not confined to such a situation, since it occurs in northern and central Europe everywhere, often gregariously.[1] Its distinctness from *Ligia* was in due course noted by Brandt, who in 1833 established for it the genus *Ligidium* and called the species *L. persoonii*, in which he was followed by numerous writers. Koch however in his *Crustacea of Germany* called it *Zia agilis*, so far

[1] Budde-Lund, *Crustacea Isopoda Terrestria*, p. 256 (1885).

doing right in preferring the specific name which Persoon had given it to that which others had given it in honour of Persoon. When in 1872 I chanced to find this species near Copthorn Common in Surrey it appeared not possible to assign it to any of the genera defined by Bate and Westwood in their *British Sessile-eyed Crustacea*, but to demand the re-establishment of Koch's genus *Zia*, which they had made a synonym of *Philoscia*. On this latter point my opinion was confirmed by Mr. Spence Bate himself. He also regarded the species as new, and upon this encouragement I described it as *Zia saundersii*, little conscious of the tissue of work to which this maiden effort would eventually lure me on.[1] It was however at once recognized by Dr. A. M. Norman that the species though new to England had been long known on the continent, and at the same time he pointed out that as Koch's genus was of later date than Brandt's the species ought to be called *Ligidium agile* (Persoon).[2] But even this did not conclude the business, for Budde-Lund in 1885 at length established the proper name as *L. hypnorum* (Cuvier). Besides the vicinity of Copthorn Common and of Charlwood, which is not far distant from Copthorn, no locality British or Irish seems to have yielded this species. From all our ordinary inland woodlice it is very easily distinguished by the second antennæ. In these it will be noticed that the flagellum or whip-like terminal part is divided into ten or eleven small joints. An equally well marked character is furnished by the other extremity, the tail-feet or uropods being peculiarly constructed. The peduncle of these is strongly produced on the inner side, and though the inner branch affixed to the tip of this process is much smaller than the outer branch, yet it extends much beyond it by help of its two long apical bristles. The animal's coat is smooth and shining, the animal itself is delicate and easily damaged, the two caudal bristles when moist readily adhere together and look like one.

In the family Trichoniscidæ Surrey has the little claret-brown *Trichoniscus pusillus*, Brandt. It has been found in the same neighbourhood as the previous species, but unlike that it is rather common and widely dispersed. It was called *Itea riparia* by Koch, and Bate and Westwood have followed Kinahan in calling it *Philougria riparia*, meaning that it is fond of moisture and is found on banks and braes. But Brandt's names for it are the earlier and must prevail. Its second antennæ are rather strikingly geniculated, and little outstanding spines give them a thorny appearance. The flagellum or lash has only four joints.

Of the family Oniscidæ there are at least five species in Surrey, *Oniscus asellus*, Linn., *Philoscia muscorum* (Scopoli), *Metoponorthus pruinosus* (Brandt), *Porcellio scaber*, Latreille, and *P. dilatatus* (Brandt). The first three of these have been found in the Copthorn district, the second is on record from Reigate,[3] the second, third and fourth have been sent me by

[1] *Ann. Nat. Hist.* ser. 4, vol. xi. p. 236 (1873); *Proc. Holmesdale Nat. Hist. Club*, October, 1872, to April, 1875, p. 1.

[2] *Ann. Nat. Hist.* ser. 4, vol. xi. p. 419.

[3] *Proc. Holmesdale Nat. Hist. Club* (1872–5), p. 1.

my niece, Miss Ethel Stebbing, from Weybridge; but so far as the distribution of all four is concerned, interest now would rather lie in discovering any county or large district where they do not occur than in finding localities where they do. It may be worth mentioning that in *Oniscus* and *Philoscia* the flagellum of the second antennæ is three-jointed, but it is only two-jointed in *Porcellio* and *Metoponorthus*. In all four the fewness of the joints takes away from the whip-like character of this part. The first antennæ in the woodlice are so small and obscurely placed that they do not offer very convenient characters for discrimination. *Philoscia* and *Metoponorthus* are distinguished from the other two genera by the abrupt contraction which marks off the pleon or terminal division of the animal from the trunk or middle-body. In contrast with these four species of Oniscidæ, which compete one with another in making themselves cheap, the *Porcellio dilatatus* of Brandt and Ratzeburg has been by no means commonly observed in England. When Bate and Westwood wrote they could only report it from the neighbourhood of Dublin. It is however to be met with at several points in our southern counties. In Surrey my sister-in-law Mrs. Stebbing has forwarded it to me from grounds abutting on Headley Common and from Frith Park, Walton-on-the-Hill. It is distinguished from *P. scaber* by the greater comparative breadth of body and also by the much less acute tip to the telson or terminal segment of the body.

In the family Armadillidiidæ Surrey, in common doubtless with all the other counties, possesses the species *Armadillidium vulgare* (Latreille). The ordinary dull-coloured form has been sent me from Weybridge by the collector already mentioned, and in company with it the variety that has its dorsal surface enlivened by light margins and longitudinal rows of yellow spots.

Among the Entomostraca the most interesting addition to the fauna of Surrey may be considered the phyllopod *Chirocéphalus diáphanus*, Prevost. While so many of its companions are stigmatized by unattractive nicknames, which confuse their true zoological position, for this species our regard is readily enlisted by its familiar name of 'fairy shrimp.' The fact of its occurring in Surrey became known to me by the following incidents. Having been taken by friends to pay an afternoon visit at Chertley Court, Leatherhead, the residence of Mr. Abraham Dixon, I learned from one of his daughters, Miss Letitia Dixon, that she had, to judge by the description I gave, on more than one occasion seen this very species. The pond in which it had occurred lay in the parish of Headley, near Walton-on-the-Hill. The site of this pond, when with my wife and brother and other friends I paid it a visit in August, 1900, was quite dry and grass-grown. It was indeed only a shallow depression in a small piece of tableland. To make sure that such an apology for a water-basin was the place that had been indicated and that it ever boasted of holding water, I made some inquiries at a neighbouring cottage. Upon receiving the desired assurance we dug up some of the earth from various points. That a few spoonfuls of dry

pasture land from a hilltop would produce 'shrimps,' or any other aquatic organisms, was an expectation that required some robustness of faith even in the zoologists of the party. If it inspired others with incredulous amusement they could scarcely be blamed. On August 21 some of the earth was placed in water. On the thirtieth it proved to have Ostracóda alive in it and a *Chirocephalus* a quarter of an inch long. The next day a second *Chirocephalus* was perceived of slightly smaller size. Both of these must have been born some days earlier. On September 6 the rest of the earth was put into water, and on the eleventh minute animals were found to be moving about, two of which appeared on the following day to be microscopic Chirocephali. It was pleasant to watch these creatures, and the preliminary to watching them was itself interesting. So artfully are they adapted chameleon-like to their surroundings, that even when full-grown in a small bowl under a good reading-glass they are not at once discoverable. When found they are seen sometimes to make rapid darts and sudden evolutions, more often to glide serenely along, or at will simply to hover in the water, with their eleven pairs of leaf-like limbs all the while in constant motion. The development of the sexual distinctions is also of interest. In the male the prehensile second antennæ and the digitate frontal processes are highly characteristic. The full-grown female is quite as easily distinguishable by her long projecting marsupium. In this, at least while not filled with eggs, the glandular structure which supplies the egg-shells appears to be in ceaseless activity. Difficult as it is to discriminate the animal from the mud over which it is swimming, it is far from being mud-coloured. It has a general tint of transparent greenish-brown, with blue on the back along the region of the heart; the large lateral eyes show red under a favourable light; the small median eye-spot is dark, the marsupial gland brown, the caudal furca bright red. The back is almost always downwards. The colours vanish in spirit, except that the marsupial gland retains some of its brown hue, and the eyes appear as black under a white coating. In the chilly part of the autumn the specimens which had not been put into spirit buried themselves in the earth, and have not reappeared. Whether under any circumstances they would have done so I cannot say for certain. It was eminently improbable that they would do so under the conditions they actually experienced, for during the winter the water was allowed to evaporate without being replenished, and the earth became by degrees a hard mass in the bowls. On April 9, 1901, water was again poured upon it, with the result that on the twentieth of the month a *Chirocephalus* about a tenth of an inch long was descried, and soon afterwards a second made its appearance. At the time of writing, May 10, the specimens are swimming about in a lively manner, one of them showing the characters of a female. Scores of Ostracoda are displaying an even greater vivacity, and if so much energy cannot be sustained without animal food, it is perhaps these minute creatures which keep down the phyllopod population by massacring their defenceless young. The

company of specimens from the dried mud examined last year included three species of Cladócera and two of Ostracoda. Of those which have reappeared this spring, one of the Ostracoda species is now in the ascendant.

Of the Cladocera, or branching-horned Entomostraca, so-called from their two-branched second antennæ, there are in Surrey several species well adapted to gratify the microscopist, and to direct the attention of collectors and students in general to the divisions and subdivisions of this important group. There are two principal sections. In the first, which is also the more extensive, the feet are pretty well covered by a bivalved carapace. This section contains two tribes, the Ctenópoda, called 'comb-footed,' from the comb-like arrangement of setæ on their six pairs of similar feet, and the Anomópoda, in which, as the name implies, the feet are not all similar. The former tribe contains two families, one of which, the Sididæ, is here represented by *Sida crystallina* (O. F. Müller), recorded by Baird from a 'ditch near Richmond, opposite Isleworth,'[1] and by members of the Quekett Microscopical Club from Walton, Woking and Richmond Park.[2] In the same family, and also taken by Baird from a 'ditch near Richmond, opposite Isleworth,'[3] stands *Daphnella wingii*, which has large eyes and very large antennæ, but a tail that is by comparison tiny. The proper generic name is *Diaphanosóma*, in agreement with the 'beautiful, clear, crystalline transparency' of its carapace, and perhaps it should be called *D. brachyurum* (Liévin), the short-tailed Diaphanosoma, but about this there is some uncertainty, so that with an alternative perhaps it may have to be distinguished as *D. wingii*.

The tribe of the Anomopoda contains four families. The first of these is the Daphniidæ, a powerful clan, in numbers numberless, so predominant as a rule in the horse-pond that it can scarcely fail to make the horse willy-nilly a carnivorous animal. Among the specimens reared from the dried mud above mentioned those assignable to *Daphnia* were however not very numerous. They were small, with the surface reticulation during life very conspicuous, the terminal spine of moderate length, and the abdomen dorsally not strongly sculptured. The species appear to be *Daphnia longispina* (O. F. Müller). Possibly in youthful stages many of their kindred fell victims to the better protected Ostracoda. Apart from this private hatchery there are records showing that more than one species of *Daphnia* or its nearest kindred are to be found in Surrey. Thus in a paper on 'Pond Life' Mr. W. Low Sarjeant, speaking of Mitcham Common, says: 'Just after passing the windmill there is a large duck-pond, which in the autumn especially swarms with a giant race of *Daphnia*, many of them exceeding an eighth of an inch in length, and I have taken them three-sixteenths of an inch

[1] *British Entomostraca*, Ray Soc. p. 109 (1850).

[2] *Journal of the Q. M. C.* ser. 2, vol. ii. p. 191 (1884); vol. iv. pp. 271, 273, 326 (1888, 1889).

[3] *British Entomostraca*, p. 110.

in length, which is an enormous size for a *Daphnia*.'[1] Judging by the size alone it is tolerably safe to infer that the species intended is *Daphnia magna*, Straus. Mr. D. J. Scourfield indeed has noticed that 'this, the largest species of the genus, seems to be almost solely an inhabitant of little duck-ponds.' But as the area of duck-ponds is apt to vary with the drought or moisture of a season, the dimensions of the pond on Mitcham Common need not be thought prohibitive. Among objects found on the excursions of the Quekett Club *D. schæfferi* is recorded from Richmond Park, and though no authority is given this is doubtless intended for the species so named by Baird, which is a synonym of *D. magna*. Also the same club records from Richmond Park a '*Daphnia* male, very large, body 2 mm. long.' In correspondence with these measurements M. Jules Richard gives 2-2·2 mm. as the length of the male *D. magna*, and 4-5 mm. as that of the female.[2] Dr. Brady has recently transferred this species to a new genus named *Dactylura*, 'finger-tail,' in allusion to a finger-like lobe in front of the terminal unguis ; but this is strictly an entail male, the female not having any such finger-like lobe.[3] After a mention of *Daphnia pulex* another species is rather vaguely described, among objects found by the Quekett Club at Woking, as 'a Daphnia—probably *reticulata* of Baird's British Entomostraca—having the eye at the end of a blunt rostrum.'[4] The *D. reticulata* of Baird's work is now divided between two species, *Ceriodaphnia reticulata* (Jurine) and *C. megalops*, Sars, in this genus the first antennæ of the female being movable, whereas in the same sex of *Daphnia* they are immovable. In the same family stands *Moina rectirostris* (O. F. Müller), which is one of the species bred from the dried mud taken at Headley. When alive this little transparent creature is beautiful under a lens. The pink colour is visible even to the unaided eye, but a slight magnification shows this to be due to the round pink eggs, neatly arranged in two parallel series, three in a row. It is also recorded from this county by Dr. Brady on the authority of Mr. Scourfield.[5]

In the extensive family of the Chydoridæ the waters of Surrey are well provided with species. It has two belonging to the genus *Chydorus*, Leach, which gives its name to the family. One of these, the very small and very common *C. sphæricus* (O. F. Müller), was bred from the dried mud procured at Headley ; the other, *C. globosus*, Baird, is recorded by Dr. Baird from a ditch near Richmond, with the observation that it is to be met with in 'June, July, August and September, but rare, and confined apparently to small patches.' He describes it as having the 'shell quite globose, a good deal resembling in form the preceding species, but more completely rounded, and nearly six times

[1] *Proceedings and Transactions of the Croydon Microscopical and Natural History Club*, p. 8 (1884–1886).

[2] *Ann. Sci. Nat.* ser. 8, vol. ii. pp. 193, 195.

[3] *Nat. Hist. Trans. Northumberland, Durham, and Newcastle-upon-Tyne*, vol. xiii. pt. 2, p. 240.

[4] *Q. M. C.* ser. 2, vol. ii. p. 34.

[5] *Nat. Hist. Trans. Northumberland*, etc. vol. xiii. pt. 2, p. 245.

larger ; striated circularly on exterior and upper margin, and spotted with small black spots ; the anterior portion of the shell is of a red hue, with a large, irregular-shaped, dark band running across the centre of the shell, and occupying about half its extent. The beak is extremely long, and at times appears to lie close to the body.'[1] *Eurycercus lamellatus* (O. F. Müller) is reported from Woking by the Quekett Club.[2] This is a large olive-coloured species, with the terminal part or post-abdomen very broad and lamellar, characters to which the two technical names allude. Dr. Baird says, 'The motion of this insect is peculiar; it generally lives at the bottom of the vessel in which it is kept, and when disturbed it bounds up by rapid short motions in a curved sort of line, and then returns in the same manner to the place from where it rose. It is very heavy and slothful compared with the other genera, and I have frequently turned it over two or three times before it has moved.'[3] In speaking of it as an insect Dr. Baird is here relapsing into the language of an earlier classification, when crabs and crayfish were all included in a heterogeneous mass of 'insects without wings.' A merciful dispensation has now relieved the over-burdened entomologist from regarding anything as an insect that has more than one pair of antennæ and more than three pairs of legs. *Camptocercus macrourus* (O. F. Müller) by its generic name alludes to the flexibility of its tail, and by its specific name to the length of it, the post-abdomen being 'very long, slender and extremely flexible,' so that 'the animal can twist it completely round in a circle, and then unbending it, thrust it far out beyond the shell.'[4] It is reported by Baird from a ditch near Richmond, but whether he has given it its right specific name is a little doubtful, Mr. Scourfield preferring to call it *C. rectirostris*, Schödler. Also from a 'ditch near Richmond' comes *Acróperus harpæ*, Baird. The generic name, signifying pointed extremity, refers to the form of the shell, which is described as 'somewhat harp-shaped, terminating inferiorly on anterior margin, in a more or less blunt point, projecting forwards,' while the specific name alludes to the sculpture of the surface, which is 'strongly striated, or rather ribbed, longitudinally and somewhat obliquely, giving the shell, which is quite transparent, a good deal of resemblance to a harp.'[5] *Alona quadrangularis* (O. F. Müller) is reported by Baird from the same prolific source, a 'ditch near Richmond,'[6] and by the Quekett Club from Walton.[7] *A. ovata*, Baird, is reported by the same club from Richmond Park.[8] A 'ditch near Richmond' further supplied Baird with *Peracantha truncata* (O. F. Müller), the genus instituted by Dr. Baird for this species owing its name to the strong hooked spines with which both extremities of the shell are beset.[9]

In the second section of the Cladocera the carapace is small, and makes no pretence of sheltering the feet. Like the first section it is

[1] *British Entomostraca*, Ray Soc. pp. 127, 128 (1850).
[2] *Q. M. C.* ser. 2, vol. ii. p. 34.
[3] *British Entomostraca*, p. 125.
[4] *Loc. cit.* pp. 128, 129.
[5] *Loc. cit.* pp. 129, 130.
[6] *Loc. cit.* p. 132.
[7] *Q. M. C.* ser. 2, vol. iii. p. 296.
[8] *Loc. cit.* ser. 2, vol. ii. p. 191.
[9] *British Entomostraca*, p. 137.

divided into two tribes. These are called the Onychópoda and the Haplópoda, or the nailed feet and the simple feet, the former having four pairs of feet fitted with a basal maxillary process, while in the latter there are six pairs of feet devoid of such a process. The first tribe is limited to the family Polyphemidæ, represented in Surrey by *Polyphemus pediculus* (Linn.), which the Quekett Club report from Woking and from Richmond Park,[1] Baird having previously recorded it in the following terms: 'Ditch near Richmond, on the banks of the Thames, nearly opposite Isleworth, July. It seems to be very limited in its range of habitat, for though this ditch is frequently filled by the tide from the river, and is fully a mile in length, I have only found it in one spot, not much above twenty yards in extent.' Of this species, notable for its great eye in front and great receptacle for the young to the rear, Dr. Baird remarks that 'the males have never yet been noticed by any observer.' Since however, 'like the *Daphniæ*, the *Polyphemus* has, at particular seasons, the ephippium, or saddle, which serves exactly the same purpose as in them,'[2] namely, to shelter the 'resting-eggs,' we may assume that the same rule applies here as with the Cladocera in general, permitting parthenogenetic development for the ordinary eggs, but requiring fertilization by the male for those eggs which pass through a probationary or resting period separated from the mother.

Of its Ostracoda, however well provided with them in reality, Surrey cannot at present greatly boast. Baird describes and figures a new species *Cypris gibbosa* as taken in 1836 from a 'ditch near the Surrey Zoological Gardens'[3]; but Brady and Norman say, 'This species is unknown to us. Dr. Baird's description may perhaps be taken to refer either to *C. prasina* or *Cyprois flava*.'[4] *Cypris reptans*, Baird, is recorded by Dr. Baird himself from 'the neighbourhood of London,'[5] and by the Quekett Club from Richmond Park.[6] Brady and Norman transfer it to a new genus *Erpetocypris*, so that both by its generic and specific names it is now dubbed as the creeping *Cypris*. Baird indeed transferred it to his genus *Candona*, which he established for animals of this habit. He noticed that some species of *Cypris* were lively swimmers, and that their agility depended on the presence of a bundle of long plumose setæ upon the second antennæ. For these he retains the generic name *Cypris*. But, he says, 'the others are deficient in this apparatus, and instead of swimming gaily through the limpid element, crawl in the mud at the bottom of the pools in which they are found, or creep along the aquatic plants which grow there, and if dropped into a glass of water, fall to the bottom without being able to suspend themselves for the shortest time. These constitute the genus *Candona*.'[7] In this genus he placed also a species called *Candona similis*, from a 'pond on Clapham Common,'[8] which Brady

[1] *Q. M. C.* ser. 2, vol. ii. p. 34, vol. iv. pp. 272, 273, 326.
[2] *British Entomostraca*, pp. 113, 114.
[3] *Loc. cit.* p. 156; and *Mag. Zool. Bot.* vol. i. p. 137 (1837).
[4] *Trans. Royal Soc. Dublin*, ser. 2, vol. iv. p. 78 (1889).
[5] *British Entomostraca*, p. 161.
[6] *Q. M. C.* ser. 2, vol. ii. p. 191 (1884).
[7] *British Entomostraca*, p. 160.
[8] *Loc. cit.* p. 162.

and Norman regard as the young of *Erpetocypris reptans*. In their genus the setæ of the second antennæ are not wanting, but they are short and not plumose, and the power of swimming is lost as in *Candona*. From the dried mud out of Headley parish there was reared a tolerably large species which appears to agree with *Stenocypris fischeri* (Lilljeborg),[1] and the much smaller *Pionocypris vidua*[2] (O. F. Müller), of which Baird's *Cypris sella* from a 'pond on Clapham Common' is made a synonym by Brady and Norman.[3]

For the Copépoda the records are even more scanty than those of the Ostracoda, being limited to the notice of '*Diaptomus castor*, male and female' as having been found by the Quekett Club at Woking,[4] and *D. gracilis*, Sars, which Dr. Brady reports as having been obtained by Mr. Scourfield on Wandsworth Common.[5]

For a complete catalogue of the Crustacean fauna of Surrey materials are still wanting. The gaps to be filled are large and numerous. On the other hand, about many of the unrecorded species it is safe to prophesy that they will be found in the county by the first naturalist who has the requisite leisure for the search and knowledge for their identification. The facilities for this pursuit have been greatly increased in recent years by luminous writings, describing the forms, the movements, the colours of various species, explaining where they are to be found and how they can best be captured. If difficulties still remain, there is a certain satisfaction to be derived from grappling with them ; and the natural beauty and interest of the species when found and examined may be guaranteed to give the explorer for his pains an ample and sure reward.

[1] See Brady and Norman, *Trans. Royal Soc. Dublin*, ser. 2, vol. iv. p. 81 ; and Sars, *Arch. Naturv.* vol. xviii. p. 4 (1896).

[2] *British Entomostraca*, p. 158.

[3] *Trans. Royal Soc. Dublin*, ser. 2, vol. iv. p. 89.

[4] *Q. M. C.* ser. 2, vol. ii. p. 34 (1884).

[5] *Nat. Hist. Trans. Northumberland*, etc. vol. xi. pt. 1, p. 32 (1891).

FISHES

The fish fauna of Surrey is essentially a freshwater one, but owing to a part of the Thames being under tidal influence it possesses a few marine types which extend into its limits. A complete list of Surrey fishes has not appeared before.

TELEOSTEANS

ACANTHOPTERYGII

1. Perch. *Perca fluviatilis*, Linn.
2. Ruff or Pope. *Acerina cernua*, Linn. (*A. vulgaris*, Day).

Common in the Thames above Richmond.

3. Miller's Thumb or Noggle-head. *Cottus gobio*, Linn.

ANACANTHINI

4. Flounder. *Pleuronectes flesus*, Linn.

Yarrell records it as occurring in the Thames as high as Sunbury near Hampton.

HEMIBRANCHII

5. Three-spined Stickleback. *Gastrosteus aculeatus*, Linn.

The smooth form (*G. liurus*, Cuv.) alone is found in inland ponds and streams, whilst the varieties with bony shields on the sides (*G. trachurus*, *G. simiarmatus*, Cuv.) occur in the tidal part of the Thames.

6. Ten-spined Stickleback. *Gastrosteus pungitius*, Linn.

More local. Known from Battersea and Cobham.

HAPLOMI

7. Pike. *Esox lucius*, Linn.

OSTARIOPHYSI

8. Carp. *Cyprinus carpio*, Linn.

Introduced from Asia to Europe in the twelfth or thirteenth century. First mentioned in England in 1496.

9. Crucian Carp. *Cyprinus carassius*, Linn.

Both the typical form and the gold-fish (*C. auratus*, Linn.) have been introduced in ponds, and are now fully acclimatized.

10. Barbel. *Barbus vulgaris*, Flem.

Abundant in the Thames.

11. Gudgeon. *Gobio fluviatilis*, Flem.
12. Rudd. *Leuciscus erythrophthalmus*, Linn.
13. Roach. *Leuciscus rutilus*, Linn.
14. Chub. *Leuciscus cephalus*, Linn.
15. Dace. *Leuciscus dobula*, Linn. (*L. vulgaris*, Day).
16. Minnow. *Leuciscus phoxinus*, Linn.
17. Tench. *Tinca vulgaris*, Cuv.
18. Bream. *Abramis brama*, Linn.
19. Bleak. *Alburnus lucidus*, Heck. & Kner.

Common in the Thames.

20. Loach. *Nemachilus barbatula*, Linn.

In small streams.

MALACOPTERYGII

21. Salmon. *Salmo salar*, Linn.

The salmon, which was once abundant in the Thames, can no longer be claimed as a member of this county's fauna, no capture having been recorded since 1821. Several attempts have been made since 1862 at re-introducing the fish, the latest of which (the first of a series which are to be carried on for some years to come) took place in April, 1901, when between 500 and 600 samlets, reared at Denham near Uxbridge, were turned into the river just below Teddington weir.

22. Trout. *Salmo trutta*, Linn.

Generally distributed in running waters, and found even in small brooks. The American charr, *Salmo fontinalis*, Mitchell, has been introduced near Guildford.

23. Herring. *Clupea harengus*, Linn.

Young specimens occur in the tidal part of the Thames. Dr. Günther has shown that the 'whitebait' eaten in London between April and July consist mainly of young herrings.

24. Shad. *Clupea alosa*, Linn.

25. Thwait. *Clupea finta*, Cuv.

This and the preceding species enter rivers in the spring, and a few have been found in the Thames as far as Hampton Court.

APODES

26. Eel. *Anguilla vulgaris*, Turt.

CYCLOSTOMES

27. Lampern. *Petromyzon fluviatilis*, Linn.

In rivers.

28. Mud Lamprey. *Petromyzon branchialis*, Linn.

In rivers and brooks.

REPTILES AND BATRACHIANS

This county, its western part at least, stands second to none in the variety and abundance of reptiles and batrachians. With the exception of the edible frog (*Rana esculenta*), which however has been introduced in various places, it possesses all the species of this section of the British fauna. No complete list of Surrey reptiles has ever been published, but an interesting series of articles by Mr. Bryan Hook in the *Surrey Magazine* for 1899 have made us acquainted with the very rich herpetological fauna of the district about Farnham, in which both *Lacerta agilis* and *Coronella austriaca* occur.

The common snake, the adder, the common frog, the common toad, the crested newt and the common newt are generally distributed and abundant in suitable localities. The slow-worm is also generally distributed, but in small numbers. The other species are local and call for special remarks.

REPTILES

LACERTILIA

1. Common Lizard. *Lacerta vivipara*, Jacq.

2. Sand Lizard. *Lacerta agilis*, Linn.

This larger species, remarkable for the bright green colour which adorns the sides and lower parts of the males during spring and early summer, is known from the eastern parts of Dorsetshire, Bournemouth, and the sandy heaths bordering the New Forest in Hampshire, Wellington College in Berkshire, and Farnham in Surrey, where it was first observed by Gilbert White, and where it is stated by Mr. Hook to be common on the heaths.

3. Slow-worm, or Blind-worm. *Anguis fragilis*, Linn.

OPHIDIA

4. Common or Ringed Snake. *Tropidonotus natrix*, Linn. (*Natrix torquata*, Ray).

5. Smooth Snake. *Coronella austriaca*, Laur.

This rare snake, distinguished by its perfectly smooth scales, has much the same range in this county as the sand lizard. It was first found in Dorsetshire, between Ringwood and Wimborne, in 1853; and at Bournemouth in 1859. It has since been recorded from Poole Heath, the New Forest, and on the limit between north Hants and south Berks. Its occurrence in west Surrey, at Chobham, was first recorded by Mr. H. N. Ridley in 1882. One specimen is reported by the Rev. J. E. Kelsall to have been taken on the hills between Yately and Camberley, on the borders of Hants and Surrey, in 1883; and four specimens were observed by Mr. Bryan Hook near Farnham between 1891 and 1898.

6. Common Viper or Adder. *Vipera berus*, Linn.

BATRACHIANS

ECAUDATA

1. Common Frog. *Rana temporaria*, Linn.

2. Common Toad. *Bufo vulgaris*, Laur.

3. Natterjack Toad. *Bufo calamita*, Laur.

Easily distinguished from the common species by the yellow line running down the spine, the shorter limbs, the running gait,

and the loud croak, consisting of a single rolling note. It prefers sandy localities, and breeds in May and June, rarely as early as end of April. Colonies of natterjacks frequent ponds for the purpose of breeding, but are rarely met with in the water before dusk, when they indulge in choruses, heard a mile away or more, often called 'brass bands' by the villagers in west Surrey. These colonies are very local, and appear to shift their quarters without apparent reason. They have long been known from Cobham, Woking, and Wisley Heath; and I have ascertained their presence at Ripley, and between that village and Byfleet. I have also been informed of their occurrence at Horsell and Worplesdon, north of the downs, and on Blackheath, south of the downs; and Mr. Bryan Hook has found them abounding near Farnham, where they are called 'jar-bob.' They used to be found many years ago at Deptford, in the immediate vicinity of London. I have never come across them in any part of east Surrey.

CAUDATA

4. Crested Newt. *Molge cristata*, Laur.
5. Common Newt. *Molge vulgaris*, Linn.
6. Palmated Newt. *Molge palmata*, Schneid.

This small newt, which may always be easily distinguished from the common species, in both sexes and at all seasons, by the absence of pigment on the throat, which is flesh-coloured, is very local in this county, and has only been recorded from Tooting and Woking. It is found near Haslemere.

BIRDS

Although, being without the seaboard, Surrey naturally lacks the repeated occurrences of many of the rarer and the permanent presence of several interesting maritime and littoral birds, the fact that it contains a number of lakes of big size and is connected more or less directly with the sea by the river Thames renders it capable of affording occasionally a haven for storm-driven stragglers from the coast and a resting-place for migrants which would not otherwise visit the county. With all these natural advantages it is not surprising to find that Surrey compares very favourably with other counties in its actual numerical list, and that quite apart from mere number of varieties, presents to the ornithologist a very choice field for what may be termed inland observation.

Within the last thirty or forty years the growth of the metropolis has had a very marked and curious effect upon the avifauna of the county. The extremely rapid increase in building in the immediate neighbourhood of London has caused all those parts which are within the circuit of easy daily travel to assume a suburban character, and within this radius the distribution of birds now presents all those characteristics which are to be met with in the suburbs of most large towns. It is in this connection worthy of notice that certain species seem capable of assuming a quasi-feral state and of fearlessly adapting themselves to localities where they meet with protection. Examples of this quite modern trait are to be found in the presence of the pigeon, moorhen, dabchick and gulls in the South London parks and the recent establishment of a heronry at Richmond. Apart, however, from these few instances, the Surrey suburbs present no features of peculiar interest.

Out in the country the tide of building has spread almost throughout Surrey : the wild and high hills are thronged with houses, and the railway and bicycle render few places free from invasion. This increase of population has almost driven away several naturally shy species, such as the great plover and the black grouse, the ring-ousel and the nesting woodcock, all of which, once common enough, are now quite rare. Then, too, with the many country houses have come the many sportsmen and close, rigid game preservation, with the inevitable result that almost all the predatory birds have quite disappeared, and many harmless species which are ignorantly supposed to be dangerous to game are in fear of extinction. The raven, the harriers and the buzzards have gone ; the owls, the magpie and the sparrow-hawk are decreasing ; whilst the woodpeckers and the nightjar suffer sadly from misplaced zeal. On the other hand, a general and laudable growth in the public

interest in birds and the recent development in the machinery of the Wild Birds Protection Acts have undoubtedly checked, to some slight extent, the insane desire to slaughter all and every species which present the slightest peculiarity ; and this effect is quite noticeable in the case of such charming residents as the kingfisher and great crested grebe ; whilst there is little doubt that the numbers of many both resident and migrant natives, chiefly amongst the smaller classes, which find a sanctum in the carefully-guarded pheasant woods and there live unnoticed by the keeper, sharing elsewhere as well the benefit of the two former advantages, have largely multiplied. Surrey may be said to be a small-birds' paradise. The wheatear on the downs, the cirl bunting on the high chalk hills, the grasshopper and even the Dartford warbler on the furze commons find a home : the nightingale abounds, and so, too, many other warblers—the reed, the sedge, the blackcap, the garden, the willow, the chiffchaff, the wood, and both the whitethroats. The finches are nearly all found ; the hawfinch frequents all rural Surrey, and the goldfinch in winter is quite common, though now a local breeding species. The crossbill visits the fir-tree districts every winter, and no doubt sometimes stays to nest ; so, too, the siskin, lesser redpoll and tree-sparrow. Sometimes the oriole and hoopoe visit the woods, and if not molested, would breed regularly. The three woodpeckers all are resident, and the wagtails—the pied, the yellow and the grey—are often, the first always, seen. Even the snipe and teal, the water-rail and quail, the wild duck and woodcock still sometimes nest—the wild duck often, but the others more rarely ; while in winter all kinds of wildfowl flock to the big lakes. The pochard, the wigeon, the tufted duck, the goldeneye, and even the pintail, then may at times be seen. From a purely ornithological point of view the still wilder districts of the west and south-west portions of the county are by far the most interesting. Here, round the big meres of Frensham and on the margins of these and neighbouring lakes drop many migrant waders. The common sandpiper and the green are not uncommon in many local places ; but on these sheets of water the redshank, the greenshank, the dunlin, the ringed plover, the curlew, and even the black-winged stilt have been recorded, and many other species of rarity and local value. Here, too, in hard weather flock gulls and terns, and even an occasional cormorant, and many of the rarest county records have been obtained from this neighbourhood, and the zoological journals show from the earliest years of the century a long local death-roll.

The black grouse is perhaps on the whole the most interesting county bird. From time immemorial it inhabited the two districts surrounding Leith Hill and Hindhead, and was until some time twenty years ago regularly pursued for sport. It was frequently assisted by importation, and for many years by this aid well held its own. It is at the present day almost, if not absolutely, extinct—a sad loss. Surrey has never, until this year (1900), had a complete history of its birds written.[1]

[1] *The Birds of Surrey*, by John A. Bucknill, M.A. London (1900) : R. H. Porter.

There have, however, been several books published, all more or less dealing with the avifauna of the county, and the chief of these was a little work, published in 1849, under the title of *The Letters of Rusticus*. This treated very fully of the avifauna of the Godalming district, and was the joint production of a group of enthusiastic naturalists in that town—Messrs. Newman, Kidd, Salmon and Stafford. The last-named gentleman brought together a large local collection of birds during a very long residence in that neighbourhood, and his ornithological museum passed at his death practically intact into the possession of Charterhouse School, where it now remains. It is by far the most interesting and, in fact, the only really important collection in the county of local interest.

Although since and before the publication of *The Letters of Rusticus* there have been issued several works possessing some local references, the only attempt to bring together all the county history and ornithological records under one cover has been that of Mr. John A. Bucknill, in his recently published work on the Birds of Surrey, from which have been quoted in the ensuing catalogue of species the occurrences of most of the rarer local visitors.

1. Missel-Thrush. *Turdus viscivorus*, Linn.

A common resident in the rural districts, but rapidly decreases in numbers near the metropolis. Locally largely reinforced by autumnal immigration.

2. Song-Thrush. *Turdus musicus*, Linn.

A very common resident in the county, penetrating also to the parks and gardens of even the most thickly-populated suburban areas. Receives some additional strength by migrants in autumn.

3. Redwing. *Turdus iliacus*, Linn.

A common winter visitor to the open parts of Surrey, but being essentially a bird of the fields is comparatively seldom observed in the immediate neighbourhood of London. Arrives in October and leaves at the end of March. It has been reported to have nested in the county, but on evidence which is not now regarded as accurate (*Bucknill*, p. 5).

4. Fieldfare. *Turdus pilaris*, Linn.

A common winter visitor, resembling in its habits and distribution the preceding species; known in Surrey by several names, 'felter-birds,' 'blue felt,' etc.

5. Siberian Thrush. *Turdus sibiricus*, Pallas.

The late Mr. Frederick Bond had in his collection a bird of this species. The specimen, which is now in the National Collection, is a female and was shot near Guildford, in February, 1865 (*Bucknill*, pp. 15–17). It is the only British-taken example which has been regarded by the classic authors as of more or less authentic origin, but the circumstances attending its capture are not wholly uniformly stated by the prominent ornithological authors.

6. Blackbird. *Turdus merula*, Linn.

A very common resident, its numbers being swelled by considerable parties of autumnal migrants. It may be found in many of the Surrey metropolitan parks. Very subject to albinism, pied varieties being quite common.

7. Ring-Ousel. *Turdus torquatus*, Linn.

In former years this beautiful species was a regular visitor to many parts of Surrey on its spring and autumnal migrations, and may have at one time bred on the western hills (*Bucknill*, p. 11). It is now much restricted in the county localities which it visits, and may be said to be practically confined to the high hills of the south and the west. On these it may sometimes be observed at the proper seasons, but it can nowhere in Surrey be regarded at the present day other than of somewhat unusual appearance, its diminishing occurrence being due to the many causes which have assisted towards the decrease of the rarer of the avifauna of the county.

8. Wheatear. *Saxicola œnanthe* (Linn.).

A regular summer visitor, breeding not uncommonly on some of the commons and downs of the county. Rather local in its distribution.

9. Whinchat. *Pratincola rubetra* (Linn.).

A common summer visitor, arriving about the middle of April, and leaving in September. Nests freely on the commons and rough grounds, and may generally be regarded as abundant.

10. Stonechat. *Pratincola rubicola* (Linn.).

A partial resident. The bulk of its numbers leave the county in autumn and return in spring. It is rather local in its distribution, but nests on many of the furze-covered Surrey commons.

11. Redstart. *Ruticilla phœnicurus* (Linn.).

A regular summer visitor of fairly general distribution. Arrives about the middle of April, leaving again in September, and is occasionally noticed in the south metropolitan parks.

12. Black Redstart. *Ruticilla titys* (Scopoli).

A rare winter visitor, sometimes probably overlooked. Has been recorded from the county on six occasions (*Bucknill*, pp. 22, 23).

13. Red-spotted Bluethroat. *Cyanecula suecica* (Linn.).

Has occurred once at Wandsworth (1862), and possibly elsewhere. A very rare straggler (*Bucknill*, p. 24).

14. White-spotted Bluethroat. *Cyanecula wolfi*, Brehm.

A specimen in the Charterhouse collection is stated to have been killed at Guildford Castle (*Bucknill*, p. 25). The record is not wholly satisfactory.

15. Redbreast. *Erithacus rubecula* (Linn.).

A common resident even within the metropolitan area. Its numbers are largely increased by migrants from the continent in autumn.

16. Nightingale. *Daulias luscinia* (Linn.).

An abundant summer visitor to all rural Surrey, where it is probably as common as in any other county in England. It arrives in early April and leaves towards the beginning of September.

17. Whitethroat. *Sylvia cinerea* (Bechstein).

An abundant summer visitor to all rural districts of the county. Known by several familiar names, such as 'hay-tit' and 'nettle-creeper.'

18. Lesser Whitethroat. *Sylvia curruca* (Linn.).

Another common summer visitor almost as abundant as the preceding species. Both the whitethroats arrive about the middle of April.

19. Blackcap. *Sylvia atricapilla* (Linn.).

A summer visitor rather more numerous than the garden-warbler, and less retiring. The possessor of a song only equalled by that of the nightingale. Arrives in early April.

20. Garden-Warbler. *Sylvia hortensis* (Bechstein).

A fairly common summer visitor to the rural parts of Surrey. Seldom arrives before May, and is rather shy.

21. Dartford Warbler. *Sylvia undata* (Boddaert).

In former years a tolerably common resident in many parts of Surrey, where it frequented the thickest furze-covered commons. Chiefly through the eager pursuit of collectors it is now restricted to a few remote and secluded corners, where its shy and retiring habits still allow it to skulk in safety and unnoticed.

22. Goldcrest. *Regulus cristatus*, K. L. Koch.

A fairly common resident, receiving considerable accessions to its numbers during winter, in which season it is more noticeable than at any other.

23. Firecrest. *Regulus ignicapillus* (Brehm).

Although this species has occurred in all the neighbouring counties, it seems rather doubtful if it can properly be added to this county's list. The recorded examples have hitherto proved to be unsatisfactory records, although there is no reason why it should not have occasionally occurred (*Bucknill*, p. 52).

24. Chiffchaff. *Phylloscopus rufus* (Bechstein).

A regular and common summer visitor; one of the earliest of our spring migrants, being usually observed before the end of March.

25. Willow-Warbler. *Phylloscopus trochilus* (Linn.).

The commonest summer visitor of the warbler tribe which favour the county with their presence. Arrives early in April, and is very generally distributed even near the metropolis.

26. Wood-Warbler. *Phylloscopus sibilatrix* (Bechstein).

The wood-wren, as this species is often called, is a summer visitor of rather local but fairly abundant distribution. It should not be regarded as uncommon, but, being very sylvan in its habits, is often unnoticed in localities where it may be found if searched for in its proper haunts.

27. Reed-Warbler. *Acrocephalus streperus* (Vieillot).

A fairly common summer visitor, but being restricted by its fondness for high reeds and water is to that extent local in its distribution. It is found on the Thames, Wey, Mole and several other smaller streams, and occasionally on the rushy margins of the local lakes.

28. Marsh-Warbler. *Acrocephalus palustris* (Bechstein).

It is doubtful if this species has been correctly recorded from the county. The late Mr. Edward Blyth believed that he had discovered it in Battersea Park, but his account is not wholly satisfactory (*Bucknill*, p. 44).

29. Great Reed-Warbler. *Acrocephalus turdoïdes* (Meyer).

Said to have occurred at least once in the county. The Charterhouse collection contains a specimen shot in 1858, near Godalming (*Bucknill*, p. 41).

30. Sedge-Warbler. *Acrocephalus phragmitis* (Bechstein).

An abundant summer visitor, but is nearly always found somewhere near water, and is to that degree local. Arrives towards the latter end of April.

31. Grasshopper-Warbler. *Locustella nævia* (Boddaert).

A regular summer visitor of rather local distribution, occurring tolerably frequently on many of the furze commons and heath lands of the country districts. It is of wary and retiring habits and secretes its nest with great care.

32. Hedge-Sparrow. *Accentor modularis* (Linn.).

A common and familiar resident throughout the county.

33. Alpine Accentor. *Accentor collaris* (Scopoli).

This species has occurred once in Surrey, at Milford, near Godalming, in 1841 (*Bucknill*, p. 30).

34. Dipper. *Cinclus aquaticus*, Bechstein.

A very rare straggler to the county which offers it no attractions. It has only been recorded on two or three occasions (*Bucknill*, pp. 62–64).

35. Bearded Reedling. *Panurus biarmicus* (Linn.).

The bearded tit may have nested within the county many years ago, and if so probably on the border of the Thames. It is doubtful however if it should be regarded as a resident in any other part of the county, and it is quite certain that it has not bred in Surrey for over half a century if at all. At the present day it has entirely ceased to exist, and no record of even its occurrence as a straggler has been published for very many years. It has also become extinct in all parts of England with the exception of one or two localities in the Eastern provinces (*Bucknill*, pp. 57–60).

36. Long-tailed Tit. *Acredula caudata* (Linn.).

A fairly common resident, and in the rural districts tolerably abundant.

37. Great Tit. *Parus major*, Linn.

A common resident, more abundant in Surrey than any of the Paridæ, except the blue tit.

38. Coal-Tit. *Parus ater*, Linn.

Another resident, not so common as the two preceding species, but nevertheless of general distribution throughout the county. In common with all the Paridæ it is more often seen near London in the winter months than in the nesting season.

39. Marsh-Tit. *Parus palustris*, Linn.

A fairly common resident, but more local in its distribution, and generally less abundant than the former three species.

40. Blue Tit. *Parus cæruleus*, Linn.

A familiar and abundant resident, usually known as the 'Tom tit.' The commonest tit found in Surrey.

41. Crested Tit. *Parus cristatus*, Linn.

A straggler of great rarity. It is doubtful if the county can claim more than one well-authenticated example, although it has been recorded on two or three occasions (*Bucknill*, p. 56).

42. Nuthatch. *Sitta cæsia*, Wolf.

A fairly common resident, frequenting chiefly those districts where there is large timber. Often popularly known by the name 'woodpecker.'

43. Wren. *Troglodytes parvulus*, Koch.

A common and well-known resident, often found in places quite close to the metropolis.

44. Tree-Creeper. *Certhia familiaris*, Linn.

Like the nuthatch, a fairly abundant resident in Surrey, which offers to both species by its thickly-wooded character a very congenial home. From its dull colour and feeble note it is less often observed than the preceding species.

45. Pied Wagtail. *Motacilla lugubris*, Temminck.

A common resident, but largely reinforced by migration in spring. It nests freely in the rural districts, and has been found breeding in the South London metropolitan parks. A very favourite host of the cuckoo.

46. White Wagtail. *Motacilla alba*, Linn.

Apparently a very rare visitor, the records of its appearance being few. From its likeness to its common relative the pied wagtail, it has probably been sometimes, possibly often, overlooked (*Bucknill*, pp. 133–135).

47. Grey Wagtail. *Motacilla melanope*, Pallas.

A winter visitor of somewhat local distribution, and has without doubt occasionally nested in the county. In some places it may be considered a regular and tolerably common winter migrant (*Bucknill*, pp. 135–137).

48. Blue-headed Yellow Wagtail. *Motacilla flava*, Linn.

Apparently another rare visitor on migration. It is a summer migrant to Great Britain, and may have in Surrey been sometimes overlooked. It has been noticed in the county, but seldom (*Bucknill*, p. 138).

49. Yellow Wagtail. *Motacilla raii* (Bonaparte).

Rather a common visitor in spring and autumn on migration, and a few, though not very many, remain to breed in the county. As a breeding species it is distinctly local, but as a migrant is often noticed even near London.

50. Tree-Pipit. *Anthus trivialis* (Linn.).

A common summer visitor, arriving in the first half of April, and nesting freely in the rural districts, sometimes even in the metropolitan area.

51. Meadow-Pipit. *Anthus pratensis* (Linn.).

A common resident, its numbers being increased by migration in spring. Familiarly known in Surrey as the 'tit-lark.'

52. Richard's Pipit. *Anthus richardi*, Vieillot.

Yarrell records a single specimen taken at Bermondsey in the early part of the century, and Mr. Blyth believed that another was taken on Tooting Common a few years prior to 1836. The county can only lay claim to these occurrences (*Bucknill*, p. 142).

53. Rock-Pipit. *Anthus obscurus* (Latham).

One or two specimens of this bird appear to have been undoubtedly taken in Surrey, but it is a mere straggler from the coast (*Bucknill*, pp. 141, 142).

54. Golden Oriole. *Oriolus galbula*, Linn.

A summer visitor, which from its beautiful appearance is seldom allowed to remain long unmolested. It may have nested occasionally in the county, but it has been savagely harried and killed on many occasions. It is perfectly harmless and a lovely and brilliant creature, and if only permitted to live would doubtless soon become a common visitor to this and other southern counties. As it is its repeated attempts at colonization have always met with a sadly inhospitable reception (*Bucknill*, pp. 64–67).

55. Great Grey Shrike. *Lanius excubitor*, Linn.

A winter visitor of somewhat irregular appearance. As it has been recorded from the county on over a score of occasions, it cannot be regarded as of extremely uncommon occurrence (*Bucknill*, pp. 85–87).

[Lesser Grey Shrike. *Lanius minor*, Gmelin.

A dubious visitor. A pair are recorded to have visited Dorking in 1886, but the evidence supporting the account cannot be regarded as conclusive (*Bucknill*, p. 87).]

56. Red-backed Shrike. *Lanius collurio*, Linn.

A somewhat common summer visitor nesting in many parts of the county, and sometimes even in the neighbourhood of London. It arrives towards the beginning of May, leaving at the end of September.

[Woodchat Shrike. *Lanius pomeranus*, Sparrman.

Appears to have occurred on two or three occasions in Surrey, but none of the records are entirely satisfactory (*Bucknill*, pp. 89, 90).]

57. Waxwing. *Ampelis garrulus*, Linn.

A rare winter visitor of very capricious appearance. In some years it has occurred in Great Britain in considerable numbers, and a few have as a rule been noticed in Surrey during these spasmodic invasions. The last local example was shot near Epsom in 1892 (*Bucknill*, p. 92).

58. Pied Flycatcher. *Muscicapa atricapilla*, Linn.

A rare summer visitor which has bred occasionally in the county, but not, as far as is known, in recent years. It has however been casually recorded on a number of occasions (*Bucknill*, pp. 93–95).

59. Spotted Flycatcher. *Muscicapa grisola*, Linn.

A common summer visitor, arriving about the middle of May and leaving again in September. Very generally distributed over the county.

60. Swallow. *Hirundo rustica*, Linn.

An abundant and familiar summer visitor, arriving about the middle of April and leaving in October or even earlier.

61. House-Martin. *Chelidon urbica* (Linn.).

Another very common summer visitor, rather more abundant than the preceding species, which it much follows in its arrival and departure.

62. Sand-Martin. *Cotile riparia* (Linn.).

A common summer visitor, arriving and leaving about the same time as the swallow. Breeds in colonies in holes in high banks, sand-pits and similar localities, and is to that extent local in its distribution.

63. Greenfinch. *Ligurinus chloris* (Linn.).

A common resident, nesting freely on the commons and in the hedges of all parts of Surrey. With other finches it packs in winter in considerable and often immense flocks, and then frequents the stubbles and rickyards.

64. Hawfinch. *Coccothraustes vulgaris*, Pallas.

At one time regarded as of rare occurrence in Great Britain, this species has since been recognized as a common enough resident in this and many other counties. It is shy and easily alarmed, and except during the autumn and winter months frequents the thick woods where it nests, though it sometimes favours an orchard. Although it would not be proper to term it abundant in Surrey it is of fairly general distribution, and perhaps as common in this county as in any other part of England (*Bucknill*, pp. 98–102).

65. Goldfinch. *Carduelis elegans*, Stephens.

Has decreased of late years very considerably. Rather a rare nesting species at the present day, and as a winter visitor of much less common occurrence than formerly, although in severe weather it still is to be found in some places in considerable numbers.

66. Siskin. *Carduelis spinus* (Linn.).

A rather irregular winter visitor, occurring however in certain spots in some—usually hard—seasons in tolerable abundance. Has also been recorded nesting in the county on a few occasions.

67. House-Sparrow. *Passer domesticus* (Linn.).

An abundant resident throughout the whole of the county.

68. Tree-Sparrow. *Passer montanus* (Linn.).

Mainly a winter visitor, although a few breed, usually in small colonies, very locally. In some winters it appears in large numbers, and in others is conspicuous by its absence.

69. Chaffinch. *Fringilla cœlebs*, Linn.

A common resident throughout the county. In winter it assembles in large packs, often composed of one sex.

70. Brambling. *Fringilla montifringilla*, Linn.

A not uncommon winter visitor, but of irregular appearance. Severe winters appear favourable to its occurrence, and when it does occur it is usually abundant.

71. Linnet. *Linota cannabina* (Linn.).

A common enough resident in the rural districts, where it frequents the furze commons. In winter it is gregarious and is then caught in some numbers by the birdcatchers.

72. Mealy Redpoll. *Linota linaria* (Linn.).

An irregular and apparently rare winter visitor to the county, in which it has been occasionally noticed. It is, however, doubtless often overlooked, although recognized as a distinct species by many birdcatchers (*Bucknill*, pp. 112, 113).

73. Lesser Redpoll. *Linota rufescens* (Vieillot).

A fairly common winter visitor to many parts of the county; on a few occasions it has been found nesting in Surrey, and it is probable that it remains with us more often than is generally believed. It is extremely fond of the seed of the alder.

74. Twite or Mountain-Linnet. *Linota flavirostris* (Linn.).

A winter visitor of considerable rarity, although from its resemblance to other members of the genus it no doubt sometimes passes unnoticed. Has been recorded on several occasions (*Bucknill*, pp. 115, 116).

75. Bullfinch. *Pyrrhula europæa*, Vieillot.

A common resident, breeding freely in most parts of the county. Owing to its bright colour it is more often popularly noticed in winter than when the foliage is on the trees.

76. Crossbill. *Loxia curvirostra*, Linn.

Generally speaking an autumn and winter visitor of capricious and local appearance. A few localities seem to be favoured annually with its presence, and it has nested and pro-

bably still occasionally breeds in a few places with regularity. Those places in which coniferous trees abound are chiefly favoured by it during its sojourn in Surrey and from these come most of the records of its visits and all the notices of its nest. It may be regarded as a winter visitor which shows no decrease in numbers and as one of the rarest birds which can claim the term of 'resident.'

77. Parrot-Crossbill. *Loxia pityopsittacus*, Bechstein.

This northern form of dubious specific identity appears to have been noticed in Surrey upon two occasions (*Bucknill*, p. 122).

78. Two-barred Crossbill. *Loxia bifasciata* (Brehm).

A very rare visitor to the county, from which it has been recorded on some six occasions (*Bucknill*, pp. 123–125).

79. Corn-Bunting. *Emberiza miliaria*, Linn.

A fairly common resident, pretty generally distributed throughout the county, and although not abundant may be found on several of the metropolitan commons.

80. Yellow Hammer. *Emberiza citrinella*, Linn.

A very common resident, packing in winter with other finches in large flocks. Often known in Surrey as the 'writing' or 'scribbling-lark.'

81. Cirl Bunting. *Emberiza cirlus*, Linn.

A resident, and probably as common in Surrey as in any other part of England. It is rather local in its distribution, but may be found on all the high chalk ranges of hills in fair numbers. It is however only in comparatively recent years that it has been recognized in this county as other than a somewhat rare species. Modern observers have however recorded it on many occasions, and its nest has been repeatedly discovered. It is probably one of those few species which is somewhat increasing in numbers.

82. Ortolan Bunting. *Emberiza hortulana*, Linn.

There is a male in the Charterhouse collection which is stated to have been shot at Godalming. It is the only definite record to which Surrey can lay claim, and it is quite possible that it may have escaped from captivity (*Bucknill*, pp. 130, 131).

83. Reed-Bunting. *Emberiza schœniclus*, Linn.

A fairly common resident, usually, although not always, frequenting the neighbourhood of water during the nesting season. In the winter it joins flocks of other finches and is then in no way local in its distribution.

84. Snow-Bunting. *Plectrophenax nivalis* (Linn.).

A rare winter visitor. A few may occasionally visit the county in severe seasons, but its local records are rather scanty (*Bucknill*, p. 132).

85. Lapland Bunting. *Calcarius lapponicus* (Linn.).

An extremely rare winter visitor to Surrey, having only been recorded on about half a dozen occasions (*Bucknill*, p. 133).

86. Starling. *Sturnus vulgaris*, Linn.

A common, well-known, useful and rapidly increasing resident.

87. Rose-coloured Starling. *Pastor roseus* (Linn.).

An extremely rare straggler to the county, in which it has been recorded three or four times only (*Bucknill*, p. 70).

88. Chough. *Pyrrhocorax graculus* (Linn.).

A very rare visitor, having been noticed four or five times. It may well be that all these recorded instances are merely escaped specimens (*Bucknill*, p. 70).

89. Nutcracker. *Nucifraga caryocatactes* (Linn.).

A rare straggler, twice shot and also twice seen in Surrey, all prior to the year 1847 (*Bucknill*, pp. 71–73).

90. Jay. *Garrulus glandarius* (Linn.).

A fairly abundant resident, and although much persecuted by gamekeepers manages, owing to its wariness, to more or less hold its own.

91. Magpie. *Pica rustica* (Scopoli).

Formerly a common enough resident, but has of late years decreased rapidly and is now quite scarce. Its diminution in numbers is mainly due to the increase of game preservation and its consequent destruction by the keepers, who all regard it, with some justification, as a deadly foe.

92. Jackdaw. *Corvus monedula*, Linn.

A common resident even in the suburban districts. In the rural districts it consorts largely with the rook.

93. Raven. *Corvus corax*, Linn.

Formerly, many years ago, a resident, but as such has long ceased to exist. Can now only be regarded as a very rare straggler, the last recorded example having occurred in 1895

(*Bucknill*, p. 79). The examples which have been specifically recorded from the county are singularly few.

94. Carrion-Crow. *Corvus corone*, Linn.

A partial resident, and at the present day much less common than in former years. Although it nests in some parts of the county, it is mainly noticed as a winter visitor. Being extremely destructive to game, it is the *bête-noire* of the keeper.

95. Hooded Crow. *Corvus cornix*, Linn.

A winter visitor of much less common appearance at the present day than in years gone by. It visits the county still in severe winters, but not in any numbers.

96. Rook. *Corvus frugilegus*, Linn.

An abundant resident, running right up to the metropolitan area, within which there are many old-established rookeries.

97. Sky-Lark. *Alauda arvensis*, Linn.

A very common and familiar resident in all the rural districts, and will take up its abode on almost any piece of waste land in the metropolitan neighbourhood. A very frequent captive, and sadly prized for its song.

98. Wood-Lark. *Alauda arborea*, Linn.

A resident of extremely local character. Although found nesting occasionally in the county, it cannot be regarded as common in any part of Surrey. It seems to have wholly escaped the notice of many modern naturalists, but is doubtless sometimes overlooked. It has probably decreased in numbers in recent years, as some of the early county observers considered it to be extremely common.

99. Shore-Lark. *Otocorys alpestris* (Linn.).

A very rare straggler; only recorded once or twice in Surrey (*Bucknill*, p. 146).

100. Swift. *Cypselus apus* (Linn.).

A common summer visitor, arriving early in May and leaving in September. Not common in the immediate neighbourhood of London.

101. Alpine Swift. *Cypselus melba* (Linn.).

A very rare visitor; only noticed on three or four occasions in the county (*Bucknill*, pp. 147, 148).

102. Nightjar. *Caprimulgus europæus*, Linn.

A common summer visitor to many of the suitable localities in Surrey. The open common and heath lands offer it a congenial home, and although, owing to the diminution in unenclosed and unmolested grounds, it is not so abundant as it was in years gone by, it is still frequent, even near London, in those spots where it can find its requisite food of moths, beetles and other winged insects.

103. Wryneck. *Iynx torquilla*, Linn.

A common summer visitor arriving, as a rule, a day or two before the cuckoo. This peculiarity has caused it to be popularly called the 'cuckoo's mate.'

104. Green Woodpecker. *Gecinus viridis* (Linn.).

The most abundant and largest of the British woodpeckers. In Surrey it is a common and well-known resident, its loud, laughing cry rendering it very conspicuous. It usually is known by the name 'yaffle.' Near the metropolis it is of course much less often noticed than in the country.

105. Great Spotted Woodpecker. *Dendrocopus major* (Linn.).

A resident in the more rural districts, where it nests in the thick and big-timbered woods. Occasionally is found also in the parks nearer London, but is nowhere a common species.

106. Lesser Spotted Woodpecker. *Dendrocopus minor* (Linn.).

Also a resident, and although, owing to its smaller size and arboreal habits, it is less liable to observation than the preceding species, it is in reality rather more generally distributed.

[Great Black Woodpecker. *Picus martius*, Linn.

Has been recorded on one or two occasions in Surrey, but none of the accounts can be regarded as at all satisfactory (*Bucknill*, p. 157).]

107. Kingfisher. *Alcedo ispida*, Linn.

A fairly common resident, though owing to its habits is naturally extremely local in its distribution. Has been much persecuted by collectors, and is doubtless not so abundant as in former years. The law has recently helped to protect it.

108. Roller. *Coracias garrulus*, Linn.

Has occurred once at Penge, in 1832 (*Bucknill*, p. 160).

109. Bee-Eater. *Merops apiaster*, Linn.

Has occurred twice in Surrey, at Godalming, and near Walton-on-Thames (*Bucknill*, p. 161).

110. Hoopoe. *Upupa epops*, Linn.

A summer visitor of rather rare occurrence. It has nested on a few occasions in the county,

and would doubtless do so, if permitted, in many places, but its singularly handsome appearance causes it to be the subject of the most wanton destruction. It is nearly always slaughtered directly it shows itself, and its history in Surrey consists of a long death-roll (*Bucknill*, pp. 162–166).

111. Cuckoo. *Cuculus canorus*, Linn.

An abundant summer visitor, arriving about mid-April and leaving in early autumn. The meadow-pipit, hedge-sparrow, robin, yellow hammer and pied wagtail are its favourite foster parents in Surrey.

112. White or Barn-Owl. *Strix flammea*, Linn.

A common resident in the rural districts, and is sometimes noticed in suitable places near London. Popularly called the 'screech-owl,' from its hoarse note.

113. Long-eared Owl. *Asio otus* (Linn.).

A scarce resident, frequenting the thickest woods. It is very retiring and seldom noticed, but is to be found in the fir-covered grounds of the wilder portions of the county. Its nest has been recorded occasionally from several different localities.

114. Short-eared Owl. *Asio accipitrinus* (Pallas).

A somewhat rare winter visitor to the county, from which it has been recorded on possibly a score of occasions (*Bucknill*, p. 171, 172).

115. Tawny Owl. *Syrnium aluco* (Linn.).

A fairly common resident, and in many well-wooded parts of Surrey quite plentiful.

116. Little Owl. *Athene noctua* (Scopoli).

A doubtful straggler which, although noticed in the county on two or three occasions, may quite possibly have never occurred in Surrey in a truly feral state (*Bucknill*, pp. 173, 174).

117. Marsh-Harrier. *Circus æruginosus* (Linn.).

Formerly nested in the county, but now a rare visitor. Has been recorded about a dozen times (*Bucknill*, pp. 175–177).

118. Hen-Harrier. *Circus cyaneus* (Linn.).

Doubtless in bygone years a resident on the rough moorlands and boggy heaths but at the present only an occasional visitor of rare occurrence. Noticed in Surrey rather more frequently than the preceding species (*Bucknill*, pp. 177–179).

119. Montagu's Harrier. *Circus cineraceus* (Montagu).

Another now rare visitor, though formerly no doubt of comparatively frequent appearance both in and out of the nesting season. Recorded on some twelve occasions (*Bucknill*, pp. 179, 180).

120. Buzzard. *Buteo vulgaris*, Leach.

A resident in former years, but probably not very recently. Still an occasional visitor, soon, with any other big hawk which visits Surrey, slain by the keeper on arrival. Recorded frequently even in quite recent years (*Bucknill*, pp. 180–182).

121. Rough-legged Buzzard. *Buteo lagopus* (Gmelin).

A rare winter visitor to this county, in which it has been killed some half a dozen times (*Bucknill*, pp. 182, 183).

[Golden Eagle. *Aquila chrysaëtus* (Linn.).

Although recorded as having occurred in Surrey on more than one occasion, the supposed examples have turned out to be immature specimens of the succeeding species. An unchallenged specimen is however recorded as having been shot at Godalming in 1810. The account may perhaps require confirmation, but is the only golden eagle to which the county can lay claim (*Bucknill*, p. 183).]

122. White-tailed Eagle. *Haliaëtus albicilla* (Linn.).

An occasional straggler to the county, where it has been noticed six times (*Bucknill*, pp. 183–185).

123. Goshawk. *Astur palumbarius* (Linn.).

A very rare visitor, recorded on only three or four occasions (*Bucknill*, p. 185).

124. Sparrow-Hawk. *Accipiter nisus* (Linn.).

With the kestrel, the only hawk which nests in Surrey regularly. A fairly common resident, but being very rapacious in its depredations upon the young of both game birds and poultry does not meet often with a hospitable reception and is doubtless decreasing rather rapidly.

125. Kite. *Milvus ictinus*, Savigny.

A very rare visitor to Surrey, which is singularly badly off for records of this species. Only noticed in the county two or three times (*Bucknill*, pp. 186, 187).

[American Swallow-tailed Kite. *Elanoides furcatus* (Linn.).

Reported to have once been shot at Farnham. The evidence is not quite satisfactory (*Bucknill*, p. 188).]

126. Honey-Buzzard. *Pernis apivorus* (Linn.).

A rare visitor in summer; only recorded on about six occasions, although it bred for years in the neighbouring county of Hampshire (*Bucknill*, pp. 188–190).

127. Peregrine Falcon. *Falco peregrinus*, Tunstall.

A rare visitor, Surrey not presenting the species with any suitable sites for nidification. Noticed in not quite a dozen instances (*Bucknill*, pp. 190, 191).

128. Hobby. *Falco subbuteo*, Linn.

In former years a fairly common summer visitor to the wild wooded districts, where it doubtless often nested. At the present day is of somewhat rare appearance, though a few are occasionally seen, and of course meet with the usual fate accorded by the keeper to all hawks (*Bucknill*, pp. 192, 193).

129. Merlin. *Falco æsalon*, Tunstall.

A somewhat scarce winter visitor. It has occasionally been shot and observed even in recent years, but is nowhere more than a straggler (*Bucknill*, pp. 193, 194).

130. Red-footed Falcon. *Falco vespertinus*, Linn.

A very rare summer visitor, only recorded on four or five occasions (*Bucknill*, pp. 194–196).

131. Kestrel. *Falco tinnunculus*, Linn.

The only common hawk in the county, but, even it, is less abundant by far than in past years. A resident species in all the rural districts, sometimes visiting the metropolis. Much more generally distributed than the sparrow-hawk.

132. Osprey. *Pandion haliaëtus* (Linn.).

A rare straggler on its spring and autumn migrations. It has been shot on about a score of occasions in Surrey, and has occurred in 1897, 1898 and 1899, so that it has not yet ceased to favour us with its presence (*Bucknill*, pp. 198–201).

133. Cormorant. *Phalacrocorax carbo* (Linn.).

A wanderer from the sea. Has been obtained casually on some of the large lakes and on the Thames (*Bucknill*, pp. 202, 203).

134. Shag. *Phalacrocorax graculus* (Linn.).

Another marine visitor shot in the county two or three times (*Bucknill*, p. 204).

135. Gannet or Solan Goose. *Sula bassana* (Linn.).

A straggler from the coast obtained in the county upon about six occasions, usually being picked up in an exhausted state (*Bucknill*, p. 204 or 205).

136. Common Heron. *Ardea cinerea*, Linn.

A resident, and though not perhaps so common as in years gone by, slightly on the increase, it having been lately accorded considerable protection in certain county localities. There have been several well-known heronries in Surrey, and the bird now nests in a few well-chosen localities, the most interesting of which is Richmond Park. There are also some large colonies just outside the county borders. From these come many of the specimens which are so often to be seen on the quiet corners of our lakes and streams (*Bucknill*, pp. 205–208).

137. Purple Heron. *Ardea purpurea*, Linn.

Once shot on Frensham Pond (*Bucknill*, p. 209).

138. Squacco Heron. *Ardea ralloides*, Scopoli.

Once killed at Vachery Pond, Cranleigh. The specimen is in the Charterhouse collection (*Bucknill*, p. 209).

139. Night-Heron. *Nycticorax griseus* (Linn.).

A rare straggler, noticed only two or three times (*Bucknill*, pp. 209, 210).

140. Little Bittern. *Ardetta minuta* (Linn.).

A very rare visitor. Recorded on three or four occasions only (*Bucknill*, pp. 210, 211).

141. Bittern. *Botaurus stellaris* (Linn.).

Formerly a regular winter visitor, but at the present day of occasional though not extremely rare occurrence, usually in severe weather. Has been shot and noticed frequently (*Bucknill*, pp. 211–214).

142. White Stork. *Ciconia alba*, Bechstein.

Stated to have been once shot at Frensham (*Bucknill*, p. 214).

143. Glossy Ibis. *Plegadis falcinellus* (Linn.).

A rare straggler, only recorded from Surrey once or twice (*Bucknill*, p. 216).

144. Spoonbill. *Platalea leucorodia*, Linn.

Formerly a rare visitor, having been noticed two or three times, but not within the last five-and-thirty years (*Bucknill*, p. 215).

145. Grey Lag-Goose. *Anser cinereus*, Meyer.

A winter visitor which, though in years past often visited our larger waters, is at the present day practically confined to overhead migration so far as Surrey is concerned. So too is the case with all the wild geese. It was sometimes shot by the early local ornithologists (*Bucknill*, p. 217).

146. White-fronted Goose. *Anser albifrons* (Scopoli).

Another winter visitor, constantly shot at Frensham and other ponds in the early years of the century. No published record since 1851 (*Bucknill*, p. 218).

147. Bean-Goose. *Anser segetum* (Gmelin).

A casual winter visitor of very rare occurrence and never of regular appearance as were the two preceding species. Recorded once or twice only (*Bucknill*, p. 219).

148. Pink-footed Goose. *Anser brachyrhynchus*, Baillon.

Curiously enough there is no specific record of this bird from Surrey, though there is no doubt that it has occurred with other wild geese on some of the western lakes in former years (*Bucknill*, p. 220).

149. Barnacle-Goose. *Bernicla leucopsis* (Bechstein).

Another maritime species, but shot at least once in Surrey (*Bucknill*, p. 221).

150. Brent Goose. *Bernicla brenta* (Pallas).

A maritime species seldom found inland and only shot in Surrey two or three times (*Bucknill*, p. 220).

151. Whooper Swan. *Cygnus musicus*, Bechstein.

Like the wild geese the whooper was once a regular winter visitor to the secluded waters of the county where it has been often recorded, but not, as far as can be gathered, during recent years (*Bucknill*, pp. 224, 225).

152. Bewick's Swan. *Cygnus bewicki*, Yarrell.

A rare winter visitor in former years. Only recorded once or twice (*Bucknill*, p. 226).

153. Mute Swan. *Cygnus olor* (Gmelin).

A common resident in a semi-domesticated state on the larger rivers and lakes of Surrey. It is doubtful if a properly authenticated truly feral example has been recorded from the county. The so-called Polish swan, a variety in which the cygnets are white, has been also observed and kept in Surrey on several occasions (*Bucknill*, p. 223).

154. Common Sheld-Duck. *Tadorna cornuta* (S. G. Gmelin).

A winter visitor of irregular appearance which has only been occasionally noticed. It is a common ornamental waterfowl, and supposed feral examples are often truant captives (*Bucknill*, p. 226).

155. Ruddy Sheld-Duck. *Tadorna casarca* (Linn.).

A favourite captive, and although several have been shot in an apparently wild state in Surrey, none have perhaps been truly wild specimens (*Bucknill*, p. 227).

156. Mallard or Wild Duck. *Anas boscas*, Linn.

A partial resident and a common winter visitor. Nests pretty freely along the more secluded waterways and in the sedge and rushes of marshy grounds. Surrey formerly boasted three decoys, two of which, Pyrford and Ottershaw, have long since ceased to exist, whilst the third at Virginia Water is now of little use. In severe weather the larger lakes usually hold a considerable number of this species and the teal.

157. Gadwall. *Anas strepera*, Linn.

A very rare visitor, twice or thrice obtained in the county (*Bucknill*, pp. 231, 232).

158. Shoveler. *Spatula clypeata* (Linn.).

Another rare visitor, having only occurred in winter three or four times (*Bucknill*, p. 232).

159. Pintail. *Dafila acuta* (Linn.).

A winter visitor, of rather rare appearance. It used to occur more often than it does at the present day, but a few have been shot on the lakes even in recent years (*Bucknill*, p. 233).

160. Teal. *Nettion crecca* (Linn.).

Although some few pairs have always nested annually in Surrey this species must be regarded as almost entirely a winter visitor. As such it is still fairly plentiful on the upper reaches of the Wey and on the big western meres, particularly in severe seasons.

161. Garganey. *Querquedula circia* (Linn.).

A rare summer visitor to Surrey, and very seldom noticed (*Bucknill*, p. 235).

162. Wigeon. *Mareca penelope* (Linn.).

A winter visitor, abundant doubtless in former years, but at the present day of very irregular appearance in most parts of the county. In hard weather and in early spring, Frensham and other big ponds sometimes hold large numbers, and on these it may be regarded as of regular occurrence. Elsewhere it is not at all common.

163. Pochard. *Fuligula ferina* (Linn.).

Formerly rather a common winter visitor, but now, though occasionally seen on some of the larger lakes, of by no means frequent occurrence.

164. Ferruginous Duck. *Fuligula nyroca* (Güldenstädt).

Once shot at Bramley near Guildford. The only county record (*Bucknill*, p. 239).

165. Tufted Duck. *Fuligula cristata* (Leach).

A winter visitor, a few usually visiting the quiet western lakes in severe weather. It is not common, and though it has been found breeding in some of the neighbouring counties, I am not aware that it has done so in Surrey.

166. Scaup-Duck. *Fuligula marila* (Linn.).

A marine species and has not unnaturally seldom occurred in Surrey. It has been shot four or five times (*Bucknill*, p. 241).

167. Goldeneye. *Clangula glaucion* (Linn.).

An occasional winter visitor, not of any very great rarity, though but seldom specifically recorded. It has been shot on several of the large sheets of water (*Bucknill*, p. 243).

168. Common Eider Duck. *Somateria mollissima* (Linn.).

Once recorded on rather indefinite evidence (*Bucknill*, p. 243).

169. Common Scoter. *Œdemia nigra* (Linn.).

A rare straggler from the coast. Recorded some half a dozen times from the county (*Bucknill*, pp. 243, 244).

170. Goosander. *Mergus merganser*, Linn.

An occasional winter visitor, of rare occurrence at the present time. In former years it seems to have often been noticed. Has been shot on Frensham and other lakes (*Bucknill*, pp. 244, 245).

171. Red-breasted Merganser. *Mergus serrator*, Linn.

A casual visitor, which has not been recorded for some years. In the early years of the century was several times observed and obtained on Frensham and the neighbouring lakes. The last record is in 1883 (*Bucknill*, pp. 245, 246).

172. Smew. *Mergus albellus*, Linn.

A rare winter visitor. Has been noticed five or six times (*Bucknill*, p. 247).

173. Ring-Dove or Wood-Pigeon. *Columba palumbus*, Linn.

An abundant resident, often reinforced in severe winters by enormous flocks of migrants from the north.

174. Stock-Dove. *Columba œnas*, Linn.

A fairly abundant species, nesting rather locally, but not uncommonly, in the old timber of our many parks. A considerable number leave the county in autumn and return in spring. Those that remain throughout the year often congregate in winter with the preceding species.

[Rock-Dove. *Columbia livia*, Gmelin.

Although recorded as occurring and even nesting in the county, this species must be regarded as a mere straggler, if, indeed, it has ever occurred in a wild state (*Bucknill*, pp. 249, 250).]

175. Turtle-Dove. *Turtur communis*, Selby.

A common summer visitor, arriving early in May and leaving about the beginning of October. It is quite plentiful in nearly every locality at all suited to its habits.

176. Pallas's Sand-Grouse. *Syrrhaptes paradoxus* (Pallas).

In common with most counties, Surrey has been visited by the Pallas's sand-grouse during its two great invasions. In the 1863 irruption several were seen and two or three shot near Aldershot and others near Guildford, and in the later immigration in 1888 quite a number were observed and several obtained (*Bucknill*, pp. 251–253).

177. Black Grouse. *Tetrao tetrix*, Linn.

From time immemorial this species has inhabited the high heath hills of the south and west of Surrey, but has in quite recent years become almost if not entirely extinct in every locality in which it used to dwell. It has a long and interesting local history. Many causes have combined to bring about its disappearance, and although often reinforced by artificial introduction, it is to be feared that it has now said a final farewell to the county (*Bucknill*, pp. 253–261).

[Red Grouse. *Lagopus scoticus* (Latham).

Frequently turned down, with some slight temporary success. No claim to be considered more than an importation (*Bucknill*, p. 261).]

178. Pheasant. *Phasianus colchicus* (Linn.).

An abundant resident rapidly increasing with the increase of game preservation.

179. Partridge. *Perdix cinerea*, Latham.

Another common resident, but less capable of semi-artificial protection than the preceding species, and therefore less constant in its numbers.

180. Red-legged Partridge. *Caccabis rufa* (Linn.).

The French partridge is now a common resident, but was formerly rare. It is extending its range and increasing its numbers, though it is not as yet as common with us as the grey.

181. Quail. *Coturnix communis*, Bonnaterre.

A late summer and autumn visitor of capricious appearance. It has also nested occasionally in the county. Some seasons find it tolerably common, but in others it is conspicuously absent.

[Virginian Colin. *Ortyx virginianus* (Linn.).

An introduced species which has seldom survived for more than a season after importation. Has occasionally nested and been shot, but has no right to real inclusion in the county list (*Bucknill*, p. 270).]

182. Corn-Crake or Land-Rail. *Crex pratensis*, Bechstein.

A fairly abundant summer visitor, arriving during the last few days of April, and nesting in most of the rural districts. In some seasons it is much more numerous than in others.

183. Spotted Crake. *Porzana maruetta* (Leach).

A rare visitor in spring and autumn, and has doubtless sometimes nested. The records of its occurrence are not numerous (*Bucknill*, pp. 272, 273).

184. Little Crake. *Porzana parva* (Scopoli).

Another very rare visitor, only mentioned as having occurred in the county once or twice (*Bucknill*, p. 274).

185. Baillon's Crake. *Porzana bailloni* (Vieillot).

Twice recorded from Surrey on apparently excellent authority (*Bucknill*, p. 273).

186. Water-Rail. *Rallus aquaticus*, Linn.

Rather a scarce resident of local distribution. Extremely shy, and frequents the thickest swamps and muddy covers. Here it nests in extremely inaccessible spots. Though not common it is often thought to be rarer than it really is, owing to its secluded habits. Its numbers are increased by some autumnal immigration.

187. Moorhen. *Gallinula chloropus* (Linn.).

A common resident, nesting on the rivers and on the ponds even of the metropolitan parks.

188. Coot. *Fulica atra*, Linn.

A tolerably common resident, but not nearly so generally distributed as the moorhen. Many of the large ponds hold a considerable number.

[Purple Gallinule. *Porphyrio cærulea* (Linn.).

One frequented a lake near Dorking for some months, and was eventually picked up dead. Possibly, though not certainly, an 'escape' (*Bucknill*, p. 280).]

189. Stone-Curlew. *Œdicnemus scolopax* (S. G. Gmelin).

Formerly a regular summer visitor, nesting in many parts of the upland wastes; but though a few may still breed in one or two localities, the bird can now be only considered a somewhat scarce visitor (*Bucknill*, p. 281).

190. Pratincole. *Glareola pratincola*, Linn.

Once shot, many years ago, in the county (*Bucknill*, p. 280).

191. Dotterel. *Eudromias morinellus* (Linn.).

Has not for many years been noticed in Surrey. In the first half of the century it was obtained several times, and may have in still earlier years been a regular visitor on migration to the west Surrey hills (*Bucknill*, p. 285).

192. Ringed Plover. *Ægialitis hiaticula* (Linn.).

An occasional visitor on its spring and autumn migration. Casually recorded on several occasions (*Bucknill*, p. 286).

193. Kentish Plover. *Ægialitis cantiana* (Latham).

Once shot on the Mole, but possibly sometimes overlooked (*Bucknill*, p. 286).

194. Golden Plover. *Charadrius pluvialis*, Linn.

A fairly common winter visitor, though much less abundant than in former years.

195. Asiatic Golden Plover. *Charadrius fulvus*, Gmelin.

One was shot on Epsom racecourse in 1870, and is now in the Charterhouse collection (*Bucknill*, p. 283).

196. Grey Plover. *Squatarola helvetica* (Linn.).

A rare visitor, seldom noticed in Surrey. Recorded only on two or three occasions (*Bucknill*, p. 284).

197. Lapwing. *Vanellus vulgaris*, Bechstein.

A common resident in most suitable places, but far less abundant than in former times.

198. Turnstone. *Strepsilas interpres* (Linn.).

Only twice noticed in Surrey (*Bucknill*, p. 289).

199. Oyster-Catcher. *Hæmatopus ostralegus*, Linn.

A casual visitor, recorded on less than a dozen occasions (*Bucknill*, p. 288).

200. Avocet. *Recurvirostra avocetta*, Linn.

Appears to have occurred in Surrey two or three times only (*Bucknill*, p. 290).

201. Black-winged Stilt. *Himantopus candidus*, Bonnaterre.

A small flock of six occurred on Frensham Pond in 1779, another single bird at the same place in 1832, and a third instance at Vachery in 1848. These are the only county records (*Bucknill*, pp. 290–292).

202. Grey Phalarope. *Phalaropus fulicarius* (Linn.).

An irregular straggler to the county, where it has been obtained on more than a score of occasions. In some winters large immigrations of this species occur in this country, and it is during such periods that the bulk of the county specimens have been taken (*Bucknill*, pp. 292–295).

203. Red-necked Phalarope. *Phalaropus hyperboreus* (Linn.).

A very rare straggler, there being only three definite local records (*Bucknill*, p. 295).

204. Woodcock. *Scolopax rusticula*, Linn.

A common enough winter visitor, and in former years a tolerably common breeding species, but as such now very rare.

205. Great Snipe. *Gallinago major* (Gmelin).

Recorded on some few occasions, but unfortunately on incomplete evidence (*Bucknill*, p. 298).

206. Common Snipe. *Gallinago cælestis* (Frenzel).

A common winter visitor, and rather local, though not extremely uncommon, as a nesting species. Formerly bred quite freely in the then secluded, low-lying open grounds of the county. The melanism known as Sabine's snipe has been taken locally once or twice.

207. Jack Snipe. *Gallinago gallinula* (Linn.).

A regular winter visitor, but not common, except on the rough marshy grounds of considerable extent, where it can find suitable feeding-places.

208. Dunlin. *Tringa alpina*, Linn.

Another spring and autumn migrant of occasional occurrence. Has been recorded on five or six occasions, but is not, perhaps, so rare as it would appear (*Bucknill*, p. 305).

209. Little Stint. *Tringa minuta*, Leisler.

Only once definitely recorded, but probably a rare visitor on migration (*Bucknill*, p. 307).

210. Curlew-Sandpiper. *Tringa subarquata* (Güldenstädt).

Another rare migrant, only noticed in the county once or twice (*Bucknill*, p. 304).

211. Purple Sandpiper. *Tringa striata*, Linn.

Twice shot in Surrey. A rare straggler (*Bucknill*, p. 306).

212. Knot. *Tringa canutus*, Linn.

A straggler on migration. Three or four have been shot at different times (*Bucknill*, p. 305).

213. Sanderling. *Calidris arenaria* (Linn.).

A rare visitor on migration; has been shot locally on a few occasions (*Bucknill*, p. 303).

214. Ruff. *Machetes pugnax* (Linn.).

An accidental straggler to the county. Some were taken near Godalming in 1836, and others in 1840 at the same place; but there is no recent local record (*Bucknill*, p. 307).

215. Common Sandpiper. *Totanus hypoleucus* (Linn.).

A regular and fairly common visitor in spring and autumn, frequenting the ponds and streams in the rural districts. Possibly has bred occasionally in the county (*Bucknill*, p. 311).

216. Wood-Sandpiper. *Totanus glareola* (Gmelin).

A rare visitor on its vernal and autumnal migration. Recorded on about half a dozen occasions (*Bucknill*, p. 310).

217. Green Sandpiper. *Totanus ochropus* (Linn.).

A spring and autumn migrant, but not common. Reported to have nested in the county, but on unsatisfactory evidence. May not infrequently be observed on the Mole, Wey and Thames, and the margins of the large lakes.

218. Redshank. *Totanus calidris* (Linn.).

An occasional spring and autumn migrant; observed and shot on several occasions (*Bucknill*, p. 312).

219. Spotted Redshank. *Totanus fuscus* (Linn.).

Once obtained at Godalming in 1855 (*Bucknill*, p. 313).

220. Greenshank. *Totanus canescens* (Gmelin).

An occasional migrant in spring and autumn; shot and observed in the county about a dozen times (*Bucknill*, p. 314).

221. Red-breasted 'Snipe.' *Macrorhamphus griseus* (Gmelin).

One was shot at Battersea about 1860. The only record to which Surrey can lay any claim at all (*Bucknill*, p. 303).

222. Bar-tailed Godwit. *Limosa lapponica* (Linn.).

A rare straggler, having only occurred thrice in Surrey (*Bucknill*, p. 315).

223. Black-tailed Godwit. *Limosa belgica* (Gmelin).

Another rare straggler which has only been noticed on two or three occasions (*Bucknill*, p. 316).

224. Common Curlew. *Numenius arquata* (Linn.).

An occasional visitor, which may perhaps have nested sometimes in the county. Not uncommonly seen high overhead, but only comparatively seldom drops from its migrations to feed on the quiet lakes and moors of Surrey. Has, however, been shot on numerous occasions.

225. Whimbrel. *Numenius phæopus* (Linn.).

Crosses the county, but seldom alights, on its spring and autumn migrations. Occasionally shot, but far more often noticed in the air (*Bucknill*, p. 419).

226. Black Tern. *Hydrochelidon nigra* (Linn.).

An occasional visitor on migration to the county waters, on which it has been recorded on many occasions.

227. Sandwich Tern. *Sterna cantiaca*, Gmelin.

Once or twice noticed in Surrey. A rare visitor (*Bucknill*, p. 321).

228. Roseate Tern. *Sterna dougalli*, Montagu.

Stated to have been shot once at Frensham and once at Vachery Pond (*Bucknill*, p. 322).

229. Common Tern. *Sterna fluviatilis*, Naumann.

A regular visitor in winter to the Thames, and often appears on the large inland waters of the county. By far the commonest tern which shows itself in Surrey.

230. Arctic Tern. *Sterna macrura*, Naumann.

Rather a rare winter visitor to the Thames, and in Surrey has only been specifically recorded once or twice (*Bucknill*, p. 322).

231. Little Tern. *Sterna minuta*, Linn.

Not very common on the Thames in winter, and has been recorded on our local lakes only with some degree of scarcity, but it is not very rare (*Bucknill*, p. 324).

232. Little Gull. *Larus minutus*, Pallas.

A rare visitor to Surrey, but occurs sometimes on the Thames; recorded about a dozen times (*Bucknill*, p. 325).

233. Black-headed or Brown-headed Gull. *Larus ridibundus*, Linn.

A very abundant winter visitor to the Thames, whence it strays occasionally to the inland county lakes.

234. Common Gull. *Larus canus*, Linn.

Fairly common as a winter visitor to the Thames, and sometimes finds its way inland.

235. Herring-Gull. *Larus argentatus*, Gmelin.

Not an uncommon spring, autumn and winter visitor to the Thames, and occurs inland in Surrey not infrequently.

236. Lesser Black-backed Gull. *Larus fuscus*, Linn.

Another fairly common visitor to the Thames, and is sometimes observed off the river.

237. Great Black-backed Gull. *Larus marinus*, Linn.

A rare winter visitor to the river, and only recorded from Surrey upon a few occasions (*Bucknill*, p. 330).

238. Glaucous Gull. *Larus glaucus*, Fabricius.

A specimen is stated to have been shot at Newark Mill on the Wey. It is the only county record (*Bucknill*, p. 331).

239. Kittiwake. *Rissa tridactyla* (Linn.).

A common winter visitor to the river, and often is found inland on our smaller streams and larger lakes.

240. Arctic or Richardson's Skua. *Stercorarius crepidatus* (Gmelin).

A very rare visitor, only recorded four or five times in the county (*Bucknill*, p. 333).

241. Razorbill. *Alca torda*, Linn.

A vagrant from the coast, being like all the *Alcidæ* which have occurred in Surrey a storm-driven visitor. Has been observed on four or five occasions at Cobham, Shalford, Cranleigh and other places (*Bucknill*, p. 335).

242. Guillemot. *Uria troile* (Linn.).

An accidental straggler to the metropolitan waters of the Thames, and has once been recorded inland at Milford near Godalming (*Bucknill*, p. 335).

243. Black Guillemot. *Uria grylle* (Linn.).

Mr. Stafford records three from the county, at Lambeth, Cranleigh and Guildford; the first being in the Charterhouse collection. These are the only Surrey records (*Bucknill*, p. 335).

244. Little Auk. *Mergulus alle* (Linn.).

Perhaps has occurred more often in the county than any other tempest-borne straggler. It has been recorded from Surrey on about a dozen occasions (*Bucknill*, p. 336). In some winters the species occurs inland much more frequently than in others.

245. Puffin. *Fratercula arctica* (Linn.).

The puffin has wandered into the county on three or four occasions, being driven inland by rough weather (*Bucknill*, p. 338).

246. Great Northern Diver. *Colymbus glacialis*, Linn.

A casual visitor of rare occurrence. It has been recorded from the county on about half a dozen occasions, Frensham Pond having supplied three of these examples (*Bucknill*, p. 339).

247. Black-throated Diver. *Colymbus arcticus*, Linn.

A rare straggler. Has been noticed on two or three occasions only (*Bucknill*, p. 340).

248. Red-throated Diver. *Colymbus septentrionalis*, Linn.

Another rare visitor. About a dozen have been observed in Surrey on various occasions; eight being seen together at Clandon in 1848, two of which were shot (*Bucknill*, p. 341).

249. Great Crested Grebe. *Podicipes cristatus* (Linn.).

Formerly a tolerably common resident on many of the larger sheets of water in the county, but now restricted as a nesting species to a few secluded or well-protected lakes, such as in Richmond Park, where it now has successfully brought up its young in safety for two successive years, 1899 and 1900. Probably protection has of late seasons slightly increased its numbers which at one time had almost reached the vanishing-point (*Bucknill*, p. 342).

250. Red-necked Grebe. *Podicipes griseigena* (Boddaert).

A rare straggler, only having been recorded from the county on two or three occasions (*Bucknill*, p. 346).

251. Slavonian Grebe. *Podicipes auritus* (Linn.).

A rare visitor. Only noticed on three occasions in the county (*Bucknill*, p. 347).

252. Eared Grebe. *Podicipes nigricollis* (Brehm).

Another rare straggler. Has been recorded on two or three occasions only (*Bucknill*, p. 347).

253. Dabchick or Little Grebe. *Podicipes fluviatilis* (Tunstall).

A fairly common resident, breeding freely on some of the lakes and rivers of the county and even on the metropolitan park waters, such as those of Kew and Battersea.

254. Storm-Petrel. *Procellaria pelagica*, Linn.

Another weather-borne wanderer. Has occurred several times in the county (*Bucknill*, p. 350).

255. Leach's Fork-tailed Petrel. *Oceanodroma leucorrhoa* (Vieillot).

The same remarks apply to this as to the preceding species (*Bucknill*, p. 351).

[Wilson's Petrel. *Oceanites oceanicus* (Kuhl).

There are specimens in the Charterhouse collection which are stated to have been obtained near Godalming, but the evidence for their inclusion in the county list is not, perhaps, on the whole quite satisfactory (*Bucknill*, p. 352).]

256. Manx Shearwater. *Puffinus anglorum* (Temminck).

A storm-driven visitor from the coast. Has been picked up dead or in an exhausted condition in Surrey four or five times (*Bucknill*, p. 349).

MAMMALS

It is unfortunate that hitherto hardly any interest, except of the most casual character, has been taken in the mammals of the county. With few exceptions there are no published records, and it has been impossible to discover any evidence of the occurrence in the county of some species which have in all probability occurred with comparative frequency.

In several other cases, notably amongst the bats, the inclusion rests upon a single record. Whilst it is felt that the following list will doubtless be shortly supplemented, it must be regretted that it is at present so incomplete.[1]

CHEIROPTERA

1. Greater Horse-shoe Bat. *Rhinolophus ferrum equinum*, Schreber.

This species appears to be very rare in Surrey. Hitherto, as far as can be ascertained, no published notice of its occurrence in the county has appeared, but as Surrey lies within its range there seems no reason why it should not be sometimes observed. Mr. R. F. Tomes informs us that he has taken it from the underground workings in the greensand near Godstone, where however he regards it as rare (*in lit.*).

2. Lesser Horse-shoe Bat. *Rhinolophus hipposiderus*, Bechstein.

The little amount of interest which has been taken in the mammalia of this county accounts doubtless for the fact that this species, although more generally distributed than the preceding, has, as far as can be discovered, not yet been locally recorded. Mr. R. F. Tomes however has taken it from the same locality as the greater horse-shoe, and informs us that it is not rare there (*in lit.*).

3. Long-eared Bat. *Plecotus auritus*, Linn.

This is not an uncommon species in Surrey, where its somewhat striking appearance causes it to be popularly recognized when caught. It seems to be fairly well distributed over the whole of the county, as we have notes of its occurrence from a number of different localities. With the exception of the noctule and the pipistrelle, this is the only bat which seems to be at all generally known in the county.

4. Barbastelle. *Barbastella barbastellus*, Schreber.

Bell—*Barbastellus daubentonii.*

This is a rare bat, but appears to have been noticed in Surrey once or twice. A single specimen was taken in the spring of 1860 clinging to the side of a tree in Richmond Park; it was in a state of semi-torpidity, basking in the warm sun. It was recorded at some length in the *Zoologist*, 1860, p. 6,953, by Mr. R. Mitford. Professor G. B. Buckton, F.R.S., informs us that he has captured it at Greys Wood, Haslemere (*in lit.*). No further occurrence of this species has been recorded in the county of which we are aware.

5. Great or White's Bat (Noctule). *Pipistrellus noctula*, Schreber.

Bell—*Scotophilus noctula.*
White—*Vespertilio altivolans.*

This bat is generally distributed throughout the county. From its large size and

[1] We wish to express our cordial thanks to those many gentlemen who have so kindly assisted in the compilation of this list, and notably to Mr. J. E. Harting, F.L.S., F.Z.S., Prof. G. B. Buckton, F.R.S., of Haslemere, Mr. L. Humphrey of Headley, Mr. C. Reeves of Reigate, Mr. H. Sawyer of Richmond Park, Mr. W. R. Ogilvie-Grant and Mr. G. E. Barrett-Hamilton of the British Museum, Mr. R. F. Tomes of Evesham, Mr. O. H. Latter of Charterhouse, Col. Healey of Milford, Mr. B. B. Gough of Capel, Mr. E. P. Larken formerly of Gatton, the Rev. J. E. Kelsall of Lymington, Mr. W. L. Distant of Upper Warlingham, Mr. G. E. Lodge of London, and Mr. F. B. P. Long of East Sheen.

bold flight it is known to most dwellers in the country, and we have notes of its appearance in a large number of localities. An interesting account of a kestrel pursuing one of these bats at Norbury appears in the *Zoologist*, 1890, p. 107. Mr. H. W. Murray has kept this species in captivity for some time, but though it fed freely and drank water from the hand, it was as a rule quite savage, and bit in a very lively manner. It may most frequently be seen circling round the tops of high trees, from which habit is derived its oldest trivial name 'altivolans.'

6. Pipistrelle. *Pipistrellus pipistrellus*, Schreber.

Bell—*Scotophilus pipistrellus.*

This is of course the most abundant species in the county, where it is very generally distributed. It is the least nocturnal of the British bats in its habits, being frequently noticed in the daytime. It is also sometimes seen in winter, and has even been observed in Surrey when snow was on the ground and the temperature below freezing point (*Zoologist*, 1887, p. 69).

7. Natterer's Bat. *Myotis nattereri*, Leisler.

Bell—*Vespertilio nattereri.*

Mr. J. E. Harting, in his paper on the distribution of this species in this country (*Zoologist*, 1889), was unable to give any evidence of its occurrence in Surrey, but thought that very likely it had been overlooked. No local published record is discoverable, but Professor G. B. Buckton, F.R.S., informs us that he has captured two specimens of this bat at Greys Wood near Haslemere (*in lit.*). Beyond this account we have no other note of its appearance in the county, but a careful investigation would probably lead to its being found in other localities.

8. Daubenton's Bat. *Myotis daubentonii*, Leisler.

Bell—*Vespertilio daubentonii.*

Although seldom specifically recorded from the county, this species is, in our opinion, not uncommon. Several local naturalists recognize four species of bats which are identified as the long-eared bat, the noctule, the pipistrelle, and a fourth which is probably Daubenton's. A large number (of which eight were taken) were found in July, 1888, in a hollow apple tree at Cranleigh. The species was identified by the Rev. J. E. Kelsall, and the occurrence recorded by him in the *Zoologist*, 1889, p. 308, and by Mr. W. Jeffery, *ibid.* p. 450.

This bat is usually seen in the neighbourhood of water, and we are quite confident that it occurs in some numbers on the Mole near Leatherhead.

9. Whiskered Bat. *Myotis mystacinus*, Leisler.

Bell—*Vespertilio mystacinus.*

We have been unable to discover any published record of the occurrence of this bat in Surrey. Mr. Robert F. Tomes informs us that he has taken specimens in the underground workings in the greensand near Godstone, and that it is there not uncommon (*in lit.*).

As it has occurred in all the neighbouring counties, it is probable that a careful search would discover it in other parts of Surrey; it is sometimes, doubtless, mistaken for its common congener, the pipistrelle.

INSECTIVORA

10. Hedgehog. *Erinaceus europæus*, Linn.

Common in all the rural districts, but has receded before the advance of the suburban building. Mr. Reeves had a white specimen which was killed near Reigate in 1894 (*in lit.*).

11. Mole. *Talpa europæa*, Linn.

Abundant nearly everywhere. Much subject to variations in colour, white, buff, orange, grey, and even pinkish specimens being occasionally met with. Mr. Reeves of Reigate has a collection of twenty-seven colour freaks, some of which are most striking.

12. Common Shrew. *Sorex araneus*, Linn.

A generally distributed and common resident. It is popularly recognized, owing to its being at certain seasons of the year frequently observed dead in the country roads.

13. Pigmy Shrew. *Sorex minutus*, Pallas.

Bell—*Sorex pygmæus.*

According to Bell this little animal is found all over England, but is rarely met with on account of its nocturnal habits, being very rarely seen in the daytime. It is the smallest mammal known in Europe, being only $2\frac{1}{2}$ inches in length, including its tail which is 1 inch long. We have taken its remains (skull, etc.) from the castings of white owls at Epsom.

14. Water Shrew. *Neomys fodiens*, Pallas.

Bell—*Crossopus fodiens.*

So few persons are aware of the existence of this species that it has been found rather difficult to gauge its distribution in Surrey very accurately. Doubtless a careful watch

will reveal its presence in all the rural districts, and that, although we have but few specific records of its occurrence, it is fairly common on all likely waters. Jenyns, in his *Manual of British Vertebrate Animals* (1835), mentions under the name of 'oared shrew' (a well-known variety of the water shrew, believed for a long time to have specific distinction) the occurrence of this species in Surrey (*q.v.* p. 18). Brewer includes it in his Reigate list of mammals (*Flora of Reigate*, 1856), and Smee in 1872, writing of the Wandle, says: 'We occasionally see it here . . . but it is very shy . . .' (*My Garden*, pp. 520, 521). We have also notes of its occurrence within quite recent years from the Lade Brook near Redhill (Gough *in lit.*), Chobham (Le Marchant *in lit.*), the Wey near Guildford (Latter *in lit.*), Reigate (Reeves *in lit.*), and Headley (Bucknill), and when more attention is paid to the mammals of the county, it will be no doubt found to be much more common than it at present appears to be.

CARNIVORA

15. Wild Cat. *Felis catus*, Linn.

Almost, if not completely, extinct in England, at the present day there is, as far as we can ascertain, only one record of the occurrence of this species in Surrey in which any sort of claim can be made to a genuinely feral origin.

In the *Letters of Rusticus* (pp. 5, 6) a long account is given by the late Mr. Edward Newman of the trapping of a specimen of the true *Felis catus* by one Chalcraft, keeper to a Mr. Mellersh of Godalming. The exact spot where it was taken was a wood surrounding Mr. Mellersh's seat, known as 'Blunden's,' a place situated a little south of the town. The skin alone was preserved, in the form of a cap, the local taxidermist, Mr. Waring Kidd, being too unwell at the time to set up the animal. The occurrence was shortly noticed in the *Zoologist*, 1849, p. 2,439, and that year was the date in which the *Letters of Rusticus* were published, but the account refers to a considerably earlier period, probably to the early twenties.[1]

As Mr. Newman was a very able and accomplished naturalist, and draws a long and careful contrast between this specimen and the 'outlying tabby,' it is probable that the record may be considered an authentic one, particularly as the story carries us back to times when the country round Godalming was almost *terra incognita*.

16. Fox. *Vulpes vulpes*, Linn.

Bell—*Vulpes vulgaris*.

Still common enough in the rural districts, but becoming quite scarce in the neighbourhood of the suburban areas. Even in the country it is, owing to the great increase of close game preservation, much less abundant than it was thirty or forty years ago. A curious litter of cubs was reared near Farnham in 1896, in which the heads were perfectly white and the bodies marked with white spots (*Field*, August 8, 1896).

17. Pine Marten. *Mustela martes*, Linn.

Bell—*Martes abietum*.

This species has long been extinct in Surrey, and very few records of its occurrence in the county are in existence. In May, 1834, one was caught in Richmond Park by Thomas Neal, an underkeeper employed by Mr. J. Sawyer. It was recorded in the *Field*, March 10, 1860. Mr. H. Sawyer informs us that the species was not uncommon in the park sixty or more years ago, but has now long disappeared (*in lit.*). At a meeting of the Surrey Natural History Society, held at the Museum, Guildford, June 3, 1847, Mr. R. A. Austen, one of the vice-presidents, announced that a marten had been recently caught in a wood near Blackheath, Albury, by Mr. Bray of Shere (*Zoologist*, 1847, p. 1,806). Both these specimens are referred to by Mr. Harting in his paper on this species published in the *Zoologist*, 1891, p. 157. The marten is included by Brewer in his Reigate list without remark (*Flora of Reigate*, 1856). On May 12, 1879, Mr. G. E. Lodge observed a specimen in a large wood known as the Redlands Wood near Holmwood and Dorking. This wood is of several hundred acres in extent, composed chiefly of Scotch, spruce, silver and larch firs, oak, Spanish chestnut and beech, and is very wild, so that the locality is suitable for the occurrence.[2] Mr. Lodge says (*in lit.*) that he had an excellent view of the animal, which appeared to be chasing a rabbit. A full note of this story appears in the *Zoologist*, 1892, p. 190.

We have no further notes of the local appearance of this species.

[1] Cobbett believed that he saw the true wild cat near Waverley. Date uncertain, but before the Blunden specimen (*Rural Rides*, p. 279).

[2] A great part of Redlands is not suitable for pheasants, and so not strictly preserved. The same or another specimen was seen close to Redlands by Mrs. H. E. Malden shortly after 1879.

18. Polecat. *Putorius putorius*, Linn.

Bell—*Mustela putorius.*

The polecat certainly existed in Surrey for many years after the disappearance of the marten, but there is little doubt that it is now extinct. It is probable, from the records which exist of its occurrence, that it was much commoner than the former animal. Mr. Harting, in his paper on this species published in the *Zoologist*, 1891, p. 283, writes: 'In the woodlands of Surrey in years gone by I have occasionally come across traces of the polecat, and seen recently killed specimens strung up by the keepers or brought home to be stuffed by the local taxidermist.'

Brewer included it in his Reigate list of mammals (*Flora of Reigate*, 1856), and Mr. Henry Sawyer of Richmond Park tells us that fifty years ago they were well known there, but have now disappeared (*in lit.*). About twenty-eight years ago seven were killed amongst some poultry near Chobham, one killed about twenty years ago near the same place, and another about 1885 taken alive in that neighbourhood (Le Marchant *in lit.*). Mr. Larken believes that many years ago it used to be found in Gatton Woods (*in lit.*), and about 1886 one was observed and nearly caught at Headley Park, Epsom (Murray). Since that date there seems to be no record of any specimen having been observed or captured in the county. The existence of both this and the preceding species became utterly impossible as game preservation—particularly of pheasants—grew more and more close.

19. Stoat. *Putorius ermineus*, Linn.

Bell—*Mustela erminea.*

The stoat is still common in the rural districts, though it is probably slowly sharing the fate of the marten and polecat. A specimen preserved by Mr. Reeves of Reigate was of a whitish yellow colour with pink eyes and without any black tip to its tail, probably a true albino. It was shot near Reigate in 1885. A curious story—by no means unique—is told by Mr. F. H. Salvin, who states that a man bathing in a canal near Guildford was attacked by no fewer than twelve stoats and badly bitten, but with the aid of a passer-by managed to kill three and put the remainder to flight. The account of this remarkable incident is related in the recently published *Memoir* of Lord Lilford.

20. Weasel. *Putorius nivalis*, Linn.

Bell—*Mustela vulgaris.*

Still abundant in the country and in our opinion a good deal more common than the stoat. It is of course trapped and shot religiously and is probably on the decrease. Bell in his *British Quadrupeds* (2nd ed. p. 187) states that in Surrey it is known by the name of 'kine,' a word signifying the same as the French 'chien.'

21. Badger. *Meles meles*, Linn.

Bell—*Meles taxus.*

The badger is of such nocturnal habits that its presence is often seldom recognized even in places where it is of quite common occurrence. In Surrey the species is now confined to the most rural districts, but it is only within the last twenty years that it has come to be regarded as at all uncommon. They were once quite abundant round Boxhill and amongst the thick woods running across the Weald, but at the present day the chief localities in Surrey in which they are to be found are the western district near Hascombe and Bramley and again westward by Loseley, Eashing and Peper Harrow.

We have however casual notes of its occurrence from all over the county and a few are still to be found in a good many places. Brockham, the little village not far from Dorking, is doubtless 'The Badger's Home,' 'Brock' being the old English name given to this species.

Mr. F. H. Salvin of Whitmoor House, Guildford, bred and reared the badger in captivity very successfully.

As a rule little mercy is shown to this poor beast if a chance is obtained of shooting or catching it or even, as has been the case to our own knowledge more than once, running into it with a pack of hounds.

22. Otter. *Lutra lutra*, Linn.

Bell—*Lutra vulgaris.*

The occasionally published exploits of the redoubtable 'Otter' Hone show that this species is still fairly common on the Thames. Up the Wey and Mole and right up their smaller tributaries the otter frequently ascends and sometimes is found too on the chain of big western lakes. The otter travels overland so quickly and so far that it is quite possible that the Surrey specimens are not all ascendants from the Thames but come from the south country watershed.

Most of the Surrey otters are on the move when caught, but a good many breed in the 'deeps' of the two principal streams and we understand near one at least of the larger meres.

We have a strange record of a fine male, weighing 32 lb., being killed by the train between Betchworth and Reigate in 1886.

Mr. Salvin of Guildford tamed, trained and bred them in captivity with great success. Owing to constant trapping and thoughtless destruction of this animal whenever possible the otter is in Surrey becoming much rarer than in former years.

RODENTIA

23. Squirrel. *Sciurus leucourus*, Kerr.

Bell—*Sciurus vulgaris.*

Still quite common in the country and occasionally found within the suburban area.

24. Dormouse. *Muscardinus avellanarius*, Linn.

Bell—*Myoxus avellanarius.*

Fairly common but rather local in its distribution.

25. Brown Rat. *Mus decumanus*, Pallas.

Abundant. Albinos, truly wild and not merely escaped white rats, have been met with; we have also a note of black specimens taken at Epsom and Mitcham, a variety which is very well recognized and sometimes has occurred in some numbers in other parts of England.

26. Black Rat. *Mus rattus*, Linn.

We can find no recorded instances of this species in Surrey. There is however no doubt that at one time it was quite abundant. It probably lingers still round the wharves of the Surrey side of the Thames.

27. House Mouse. *Mus musculus*, Linn.

Abundant.

28. Wood Mouse or Long-tailed Field Mouse. *Mus sylvaticus*, Linn.

Abundant and sometimes quite a nuisance in gardens, where it gnaws and eats almost anything.

29. Harvest Mouse. *Mus minutus*, Pallas.

Fairly common in most places. Mr. Reeves had a very curiously spotted specimen from Reigate in 1880.

30. Water Vole. *Microtus amphibius*, Linn.

Bell—*Arvicola amphibius.*

Common in all suitable localities. Melanic varieties have been taken locally.

31. Field Vole. *Microtus agrestis*, Linn.

Bell—*Arvicola agrestis.*

Though subject to much, apparently capricious, variation in its numbers the field vole is as a rule common enough in all parts of the county. In some seasons it has been known to become so numerous as to cause serious damage to crops and grass. Mr. Reeves of Reigate has had several white specimens sent to him from that neighbourhood for preservation and pied varieties have been also taken in the county.

32. Bank Vole. *Evotomys glareolus*, Schreber.

Bell—*Arvicola glareolus.*

Curiously enough when in 1887 Mr. J. E. Harting published in the *Zoologist* his paper on the distribution of this species in Great Britain no record existed of its occurrence in Surrey. That this was, as doubtless in the case of other small mammals, due merely to lack of observation seems now quite clear, for shortly after this publication a lengthy note on its common appearance near Westcott and Godalming appeared in the same periodical (*Zoologist*, 1888, p. 298), in which places the writer had known of its existence for some years prior to the date of writing. Since that time the British Museum has received specimens from various localities in the county, such as Betchworth and Bletchingley (Ogilvie-Grant, 1895), Elstead (Blandford, 1894) and Milford (Col. Healey, 1894). In that year the species seems to have been very abundant in the Godalming district, and it is a well-known fact that this vole, like the former species, is subject to periodical variation in its numbers, due probably to migration forced upon it by local failure of its usual sources of food.

Mr. Larken informs us he has taken it at Gatton (*in lit.*), and Mr. H. Sawyer states that it is found in Richmond Park (*in lit.*). It is also found at Headley and without doubt is locally plentiful throughout the county.

33. Common Hare. *Lepus europæus*, Pallas.

Bell—*Lepus timidus.*

In places where it is well preserved the hare is very abundant—over 100 were bagged in one day's shoot in the autumn of 1900 on one farm at Nork near Epsom—but in many districts it is not as a rule very common. Its numbers and its presence in suitable localities depend almost entirely on the protection afforded to it.

34. Rabbit. *Lepus cuniculus*, Linn.

Abundant. Melanic wild varieties are not uncommon.

UNGULATA

35. Red Deer. *Cervus elaphus*, Linn.

The red deer was a native of the primeval forests of England. Their remains have been found together with those of the mammoth in the gravel deposits of the Thames valley, and no doubt it roamed free all over Surrey until the time of the Conquest, when the Normans arrived on the scene, with their love of hunting, and formed the first parks for that purpose, enclosing large tracts of the country and making the most stringent laws regarding them. In the twelfth century Henry II. reduced the whole of Surrey to the state of a forest, and converted the royal manor of Guildford into a deer park.

This excessive extension of the royal forest of Windsor was complained of by the county; and under Richard I., John, Henry III., Edward I. and Edward III. successive and at last successful efforts were made which ended in reducing the bounds of Windsor Forest to the boundaries of the counties of Surrey and Berkshire, but in leaving the Surrey parishes west of the Wey and north of the Hog's Back as a *purlieu* of the forest, known as the Surrey bailiwick.[1] Here the red deer were numerous, not only in enclosed parks, but all over the country. Keepers were appointed whose business it was to drive them back to Windsor Forest. This was not always done, it was probably impossible, and the wild red deer are continually spoken of as present in the county. A stag and a hind were ordered in 1519 to be delivered yearly to Sir Christopher More from the Surrey bailiwick of Windsor Forest.[2]

In Queen Elizabeth's reign the Surrey bailiwick was practically treated as forest, and the deer were preserved there. On April 24, 1573, the Earl of Leicester wrote to William More and Edward Docwra, Esquires, appointing them to view the deer in the walks of the Surrey bailiwick of Windsor Forest, and to certify him of their numbers and state.[3] Disorders and poaching in Surrey are continually spoken of in the Loseley Papers as calling for the interference of the verderers of Windsor Forest, whence probably they include deer stealing. This offence is specified on one occasion, July (no day), 1604.[4] The red deer were common in the royal and many other parks, whence no doubt they often escaped.[5] A curious monument to John Selwyn, the royal keeper at Oatlands, in Walton church, represents him astride upon a deer and plunging a knife into its throat. The feat is said to have been performed in the presence of Elizabeth.[6] James I. hunted in Surrey in the open country outside the royal parks.[7] He was fond of hunting deer, as we learn from the number of references to the sport in the *Calendar of State Papers, Domestic Series*, and did all in his power to preserve them.

In a letter from Secretary Conway to the justices of the peace of Surrey,[8] dated April 5, 1624, *temp.* James I., we read, 'requests them to put the laws into execution as far as possible against Taddy Farnwill, who has killed red deer in Windsor Forest (in the bailiwick of Surrey), the king being very particular to have justice done in such cases.'

In the time of Charles I. the deer became so plentiful in west Surrey that the inhabitants sent a petition, dated 1630, to Henry, Earl of Holland, lord warden, asking for his help as the deer had impoverished the land to a very great extent by eating all the grass and corn. We also learn that Charles I. had two stags turned down in Sir Francis Leight's park at Addington for his disport.[9]

At the time of the Commonwealth the soldiers killed many of the deer and tore down the park fences, and those that escaped the soldiers took to the woods again. We find that in 1652 red deer were kept in Hampton Court Park.[10] When Charles II. came to the throne the royal parks were nearly denuded of deer, so he collected them from various private enclosures to restock his own herds. In a letter dated March 7, 1662, an order for a warrant was made to pay Sir Lionel Tollemache, Bart., £300 for feeding the deer lately brought to Richmond Great Park for the king's disport.[11]

Charles II. also imported a large number of both red and fallow deer from France to replenish his parks of Richmond and Sher-

[1] Manwood, *Treatise and Discourse of the Laws of the Forest*, 1598, pp. 243–86.
[2] Loseley MSS., August 1, 1519, ix. p. 9.
[3] Op. cit. April 24, 1573, i. p. 82.
[4] Op. cit. July, 1604, i. p. 50.
[5] Op cit. August 26, 1583, x. p. 93, and August 31, 1583, vi. p. 27.
[6] Grose, in the *Antiquarian Repertory*, vol. i. p. 27, tells the story. The monument is extant.
[7] Loseley MSS., June 8, 1608, i. p. 55.
[8] *Cal. S. Papers, Domestic*, p. 208, 1624.
[9] Op. cit. p. 294, 1624.
[10] Op. cit. p. 349, 1652.
[11] Op. cit. p. 302, 1662.

wood, and in 1664 he had all the red deer and 200 fallow deer removed from Richmond to put in 'such places as shall be ordered.'[1] In the same year, 1664, the inhabitants of the old Surrey bailiwick complained that their crops were overrun by deer. Their petition is printed in Manning and Bray, vol. iii. appendix lxxx., and is said there to be preserved at Windlesham, Surrey, in the church chest. Mr. Evelyn in his diary (1685) records that Bagshot Park was full of red deer.[2]

In the reign of Queen Anne red deer were still common in the south of England, as on her way from London to Portsmouth she saw a herd of 500 from a bank east of Liphook, very near the meeting place of Surrey, Sussex and Hampshire.

Mr. Joseph Whitaker in his descriptive list of the deer parks of England, 1892, states that fifteen red deer were kept in Mr. Godman's park at Park Hatch near Godalming, but no herd is now preserved there.

Red deer are still kept in Richmond Park, and Mr. H. Sawyer, the junior ranger, says that at the present time (1901) there are sixty head, but they usually number fifty (*in lit.*).

36. Fallow Deer. *Cervus dama*, Linn.

Whether the fallow deer is indigenous to England or not is a question that has not yet been finally settled, but the general opinion seems to be that it is not. In 1868 Mr. Boyd Dawkins described a new species of deer in Mr. Brown's collection,[3] which he named *Cervus browni*. This deer is almost identical with the existing fallow deer of our parks, but it is somewhat larger, and it possesses a third tyne above the bez, which, according to the late Sir Victor Brooke, occasionally occurs in the fallow deer. Bewick tells us that James I. introduced a dark variety from Norway, on account of its hardiness, and turned them down in Scotland, and from thence transported them into his royal chases of Enfield and Epping.[4] In a letter from Sir Roger Ashton to Salisbury, dated Greenwich, May 11, 1611, he writes: 'the king will not despatch the ships which brought the deer before he knows what Salisbury gave for the last that came,' etc.,[5] but Mr. J. E. Harting has shown us that this dark variety existed at Windsor in the reign of Edward IV., about the year 1465.

Mr. Shirley in his book, p. 21, quotes an interesting letter written by the command of Queen Margaret of Anjou :—

> By the Queene ! To my Lords, squier and ours J. D. Keeper of Shene Parke (now Richmond, Surrey) or his depute there :—
>
> Trusty and well beloved, For as moche as we suppose that in short tyme we shall come righte negh unto my Lord's menoir of Shene, we desire and praye you heartly that ye will keepe against our resortinge thedor, for oure disporte and recreation, Two or iii of the grettest bukkes in my Lord's parc there, saving alwayes my Lord's owne commandment there in presence as we trust, etc.[6]

Fallow deer were so plentiful in the middle ages that they were looked upon as a recognized article of food. Moryson, writing in 1617,[7] says (in a discourse on the Englishman's love of pleasure): 'Lastly (without offence be it spoken), I will boldly say that England (yea, perhaps one county thereof) hath more fallow deare than all Europe that I have seen.'

Queen Elizabeth used to hunt the fallow deer in the royal park of Nonsuch, Cheam. Camden mentions this park as being full of deer, and as late as 1650 there were 100 fallow deer in it. In the royal park of Guildford (of which no trace now remains) there were, according to Mr. Nordon, in 1607, 600 fallow deer. Mr. Evelyn, writing from Albury near Shere on July 2, 1662, says: 'We hunted and killed a buck in the park. Mr. Howard invited most of the gentlemen of the county near here.'[8]

Mr. Shirley gives an historical account of no less than thirty-nine parks in Surrey, thirty of which at the present day have ceased to exist. Fallow deer are still preserved in the few remaining, which, according to Mr. Joseph Whitaker's list, written in 1892, were :—

Richmond	1,100
Clandon	100
Park Hatch . . .	200
Peper Harrow. . .	220
Farnham	300
Wonersh	200
Carshalton	42
Ashstead	120
Wimbledon . . .	35

37. Roe Deer. *Capreolus capreolus*, Linn.

Bell—*Capreolus caprea.*

The roe deer is indigenous to Britain, and was very abundant in prehistoric times. Mr. John Millais has examined perfect skulls from

[1] *Cal. S. Papers, Domestic*, p. 13, 1664.
[2] Evelyn's *Memoirs*, vol. i. p. 570.
[3] *The Quarterly Journal of the Geological Society*, 1868, vol. xxiv. p. 511.
[4] Bewick, *History of Quadrupeds*, p. 143.
[5] *Cal. S. Papers, Domestic*, p. 31.
[6] *Letters of Queen Margaret of Anjou*, printed by the Camden Society, 1863, pp. 100–37.
[7] Moryson's *Itinerary*, pt. iii. p. 148.
[8] Evelyn's *Memoirs*, vol. i. p. 286.

the Surrey side of the Thames valley, and many horns and bones from the London clay (*in lit.*). Mr. J. E. Harting gives us some very interesting information relating to the introduction of roe deer into Surrey in the reign of Charles I. He says: 'The king had expressed a wish to have some turned out at Wimbledon in one of the royal parks, and application was made to Lord William Howard of Naworth Castle, Cumberland (where we may presume the roe deer was then common), to have some caught and sent up.' Directions for the purpose were accordingly given, and what followed may be gathered from the following entries in the *Household Book of the Owner of Naworth*:—

> 1633, June 29. To severall persons for Takeinge 31 Roekidds as appeareth by bill vij*li.* xi. and vj*d.*

They were no doubt taken in a haie with nets and kept there according to the ancient custom until they had become more tame and accustomed to confinement, and were ready to be removed to London.[1] This was accomplished by means of three carts, as we learn from the next entry:—

> July 16, 1633. To William Lancaster the Smith For binding three payre of wheeles with iron which conveyed Roes to London v*li.* xvj*d.*

[1] 'Haie' signifies fence or hedge enclosing a forest or park, and after a time came to mean the enclosed space into which deer were driven, having outlets across which nets were placed for their entanglement and subsequent capture. A picture of a boar hunt, attributed to Velasquez, in the Hertford House collection, gives a good idea of the haie.

and subsequently on the return of the carts:—

> For repairinge three cartes sent with Roes to London to King Charles thether and home again xv*s.* x*d.*

Mr. Harting goes on to say: 'How far these animals fared in their new home in Surrey we are not accurately informed, but it may be surmised that they throve and did well, for a few years later, viz. January 17, 1639, a warrant was issued to Sir Henry Hungate for the preservation of roe deer, broken out of Half Moon Park, Wimbledon, and now lying in the wood adjoining thereto, and to take care that no person hunt, course, or use any net or gun within four miles of the said park.'[2]

In recent years the roe deer does not seem to have done well in Surrey, as it is very shy and the county has become too thickly populated for an animal of such retiring habits. Mr. H. Sawyer, the junior ranger of Richmond Park, says: 'At one time a few roe deer were kept in Richmond Park, but they never did well' (*in lit.*). Mr. John Millais, in his *British Deer and Horns*, writing in 1897, says: 'There are a few roe in the woods by Virginia Water as well as at Petworth in Sussex, and there were certainly some in the heather and fir country near Swinley in Surrey as late as 1894, for Mr. Garth's hounds killed two bucks in that year, whilst another was seen.'

[2] J. E. Harting, *Essays on Sport and Natural History*.

The Edinburgh Geographical Institute

SCALE 4 MILES TO AN INCH
0 1 2 3 4 5 6 7 8

IC REMAINS.

15'
0'
30'
20'
51° 10'
LONDON
SOUTHWARK
GREENWICH
WOOLWICH
Barking Level
Erith
Richmond
Wimbledon
Merton
Mitcham
Croydon
Addington
Shirley
Beckenham
Bromley
Chislehurst
Bexley
Sutton
Carshalton
Cheam
Banstead
Epsom
Leatherhead
Coulsdon
Caterham
Warlingham
Chelsham
Tatsfield
Westerham
Titsey
Limpsfield
Oxted
Godstone
Bletchingley
Nutfield
Redhill
Reigate
Buckland
Betchworth
Dorking
Leigh
Horley
Horne
Lingfield
Edenbridge
Dormans
Burstow
Crawley
Ifield
Rusper
Capel
Ockley
Newdigate
Warnham
Horsham
East Grinstead
Hartfield
Withyham
Ashdown Forest
St. Leonards Forest
West Hoathly
Balcombe
Ardingly
Horsted Keynes
Penshurst
Chiddingstone
Cowden
Ashurst
Orpington
Farnborough
Chelsfield
Halstead
Cudham
Knockholt
Chevening
Brasted
Sundridge
J G Bartholomew

EARLY MAN

THE story of Surrey before the period of written history may be pronounced as interesting, in every sense, as that which has been recorded on paper or parchment. Nor is the general trend of the evidence less certain ; for whilst some details are indefinite, the chief facts relating to early man are founded upon grounds as indisputable as are those of geological science. The human elements, such as misleading chroniclers and the untrustworthy scribes who often copied incorrectly, are wanting, and the student of prehistoric times is guided by the actual objects which show traces of man's handiwork.

Every particle of human workmanship of that early period becomes therefore of great importance, and every indication of its association with or relationship to other remains deserves the most careful attention of those who wish to obtain a fairly complete idea of the conditions under which prehistoric man lived.

The various ages into which antiquaries have almost unanimously divided the prehistoric period will be followed in this account as being the most convenient. The remains of this period in Surrey will therefore be considered in the following order : palæolithic age, neolithic age, bronze age, and prehistoric iron age or Late Celtic period.

The Palæolithic Age

It must be remembered, in considering the earlier stone or palæolithic age, that at that time what is now Great Britain and Ireland was united to the continent of Europe, and as a consequence the climate was subjected to greater variations than those which our present insular situation gives us. Man's status too in the scale of civilization was lower than that with which we are now familiar. It would be difficult from the available data to describe it accurately, but it may be inferred from the following facts. He did not possess the knowledge of making pottery, neither did he know how to work metals, nor to shape flints or stone by means of grinding. He had no domesticated animals, and he did not till the soil ; but his means of subsistence consisted of such food as hunting and fishing were capable of furnishing. Yet it must not be inferred from these circumstances that the men of the palæolithic age were animals of such a low type as some authorities would have us believe. Abundant evidences of their artistic abilities

have been found in the form of vigorous sketches of men, animals and other objects made upon bones as well as in carvings executed in the same material. The skill displayed in the fashioning of palæolithic implements is very great, and from the few actual remains of man of that period which have been discovered and recorded there is reason to believe that he was as well endowed with brain as were the men and women who lived in the neolithic age.

Very few if indeed any traces have been found of human interments of the palæolithic age, most of the graves which had been regarded as belonging to that early period having been proved upon careful examination to belong to the neolithic or subsequent races.

The only evidence of this interesting age in Surrey that has yet been recorded consists of the flint implements which were shaped by human workmanship. These, in consequence of the practically imperishable material of which they are formed, have been preserved through all the changes which have happened during the long period of time which separates the palæolithic age from our own.

Perhaps it will be convenient at this point, before considering the implements discovered in Surrey, to mention a few of the more prominent features by which the implements of the palæolithic age may be distinguished from those of the neolithic age. There are several points of difference between the two classes, but a few will be sufficient for the present purpose. As far as the workmanship is concerned it may be remarked that a palæolithic implement was formed by a few bold and skilful blows which produced the desired shape without the expenditure of much labour. The stone selected for this purpose was sometimes one that had been procured from the chalk, and sometimes a flint from the coarse gravels of the river drift which had already been fractured and worn by natural forces.

Neolithic implements, on the other hand, to which more particular reference will be made hereafter, were usually formed from a special kind of flint that was found to be particularly suitable for the purpose. The blows by which it was brought into the desired shape were more carefully directed and more numerous; and in the case of highly finished celts and axes, the whole or a portion of the cutting edge, and not infrequently the whole of the surface, was finished by a grinding process which brought the stone to a smooth condition and obliterated all marks of the chipping by which it had been roughly shaped.

With regard to the superficial or other changes which the two kinds of flint implements have undergone, it will suffice for the present purpose to say that the palæolithic have in many cases been much changed in structure for some depth below their surface, whilst the larger proportion have acquired a reddish brown stain much resembling in appearance that produced by oxide or protoxide of iron. It is undoubtedly a mark of the antiquity of the fractures, but apparently does not necessarily imply that the implements have been embedded in a

ferruginous deposit, as it has been shown that the colouring matter may have been contributed by the flint itself, the iron being liberated in the process of alteration.[1] Neolithic implements rarely if ever exhibit these characteristics, although their surfaces are often whitened or rendered of a milky colour and smooth or glassy to the touch.

Palæolithic implements vary in shape from a pointed form not unlike a flattened pear to a flattened ovoid shape with a cutting edge all round. There are also large flakes, scrapers, and, of course, the cores or nodules of flint from which flakes have been struck off. Generally speaking the implements are such as would be useful for scraping, chopping, cutting and piercing purposes, and they do not exhibit the specialization of form for particular uses which is found in neolithic implements.

Many of the palæolithic implements found in Surrey have been procured from beds of drift gravel, most of the stones of which are much battered and abraded. The implements show the same characteristics, and have in most cases been modified by drift wear, particularly upon the angles and ridges.

Perhaps an even more significant fact, as pointing to the geological changes which have occurred since the implements were made, is to be found in the position which the gravel beds containing implements now occupy high above the present valleys. From its very nature and the causes which have produced it we know that gravel of this character must have been deposited in the lowest parts of the valleys of the district in which it now occurs. Since it is now found high up on the sides of the valleys, or even in terraces which seem to have a closer relation to the tableland which the present valleys traverse than to the valleys themselves, it follows that these lower valleys must have been eroded subsequently to the time when what is now the high level gravel was laid down. Owing to the practically indestructible nature of gravel we should expect to find, and as a matter of fact we do find, that much of the harder portions of the high level gravel has been carried down to the lower levels where it is mixed up with other materials.

It is these facts which give so much importance to discoveries of palæolithic implements among beds of undisturbed drift gravels, etc., and although the knowledge so obtained does not enable us to fix the exact number of years by which the palæolithic age is removed from our own, because we cannot ascertain the rate at which the natural forces have operated, yet it gives us good reason to infer that there was a great gap between the age of palæolithic man and that of neolithic man.

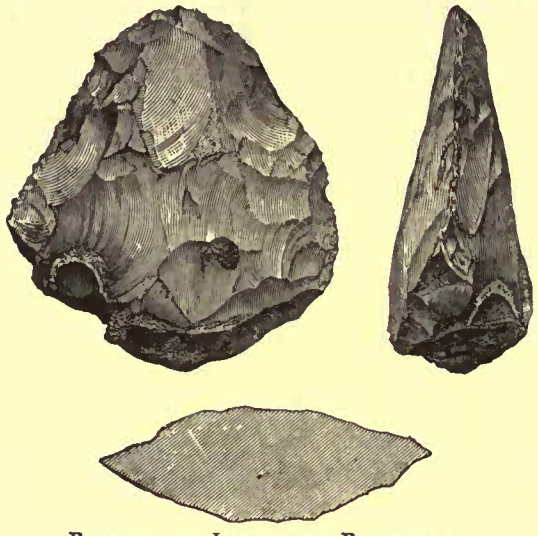
In attempting a brief sketch of the story of Surrey in the palæolithic age it will therefore be convenient to pay special attention to the positions in the drift gravels, etc., in which the implements occur.

A glance at the map of Surrey will show that one of the chief physical features in the surface of the county is the long range of chalk

[1] *Quarterly Journal of the Geological Society*, lvi. 8, 9.

hills running roughly in the direction of east and west and known as the North Downs. These hills, which attain an altitude in some places of considerably over 800 feet above the sea level, form the northern boundary of the Weald and the southern crest of the chalk plateau. From them the chalk dips gently down to the Thames valley in a northern direction and terminates more abruptly at the margin of the Weald on the south.

The North Downs in Surrey are however not without cross-valleys. At Guildford there is a valley of this kind through which the river Wey finds its course. Near Dorking is another, through which the river Mole flows. A little to the north of Merstham is a third valley cutting through the chalk hills, but this is now dry and its bottom is considerably above the surface of the adjacent gault valley of the Weald. It is the bed of the old Wandle, a river which owing to important modifications of its drainage area now commences its course at Croydon and ends it at Wandsworth, where it joins the Thames.



Palæolithic Implement, Peasemarsh, near Guildford.

Numerous discoveries of palæolithic implements have been made in West Surrey, particularly in the valley of the river Wey near Farnham. Sir John Evans[1] records the discovery of one palæolithic implement, about the year 1842, at Peasemarsh, between Guildford and Godalming. It was found by Mr. Richard Whitbourn, F.S.A., about 5 feet deep in a bed of gravel, and is now in the collection of Sir John Evans, K.C.B.

About the year 1887 a fine palæolithic implement was found by a labourer at Worplesdon in some ballast which had been brought from Farnham. The Farnham gravel was thereupon carefully examined by Mr. Frank Lasham[2] of Guildford, who in the space of less than five years succeeded in procuring therefrom more than 300 implements. Some of these are now exhibited in the Museum of the Charterhouse School at Godalming and in Guildford Museum.

It is a curious fact, and also remarkable as showing the intelligent interest which some workmen now take in matters of this kind, that in 1887, the same year in which the implement was found at Worplesdon, another fine specimen was found by another labourer on the railway between Guildford and Farnham. The specimen was shown to the Rev. G. S. Davies, one of the curators of the Charterhouse School Museum, who recognized its importance. It would appear however

[1] *Ancient Stone Implements*, ed. 2, p. 594; *Archæologia*, xxxix. 72.
[2] *Surrey Archæological Collections*, xi. 25–6.

Neolithic Celts, Croydon.

Neolithic Celt, Ash, near Farnham.

Neolithic Celt, Wisley.

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See page 233.

that it was the Worplesdon specimen which first led to the discovery of implements in the Farnham gravels.

These gravels in which the Farnham implements have been found are from 10 feet to 40 feet thick and lie about 364 feet above sea level and about 150 feet above the present level of the river Wey.

An unworn palæolithic implement has recently been found in Wonersh churchyard, but as the gravel in which it occurred had been imported from some unknown locality the discovery is not of very great importance. It is probable that the gravel was brought from Farnham. The specimen is now in the collection of Sir W. C. Roberts-Austen, K.C.B.

At Limpsfield, a village situated upon the Lower Greensand, Mr. A. Montgomerie Bell[1] has found at an elevation of 500 feet above the sea level many palæolithic implements embedded from 3 feet to 7 feet deep in gravel. If this gravel ever formed a part of that which caps some of the chalk hills to the north it must have been very considerably degraded. This is improbable, but the implements, as also the gravel in which they were discovered, have undergone a good deal of drift wear.[2]

On the slope of the Lower Greensand escarpment to the south of Limpsfield Common at a place called Redland's farm[3] more than 300 palæolithic implements have been discovered, principally upon the surface of the ground, but also in the brick earth at a depth in some cases of 5 feet. The levels at which the implements were found range from 570 feet to 450 feet above the sea.

On both sides of the Wandle, within about a mile of the point where the river falls into the Thames, many palæolithic implements have been found.

Mr. G. F. Lawrence[4] of Wandsworth has for some years past been finding numerous specimens in this neighbourhood. In 1882 Mr. Worthington G. Smith[5] discovered a palæolithic implement in an excavation for the foundations of a new house on Battersea Rise near Clapham Common. The gravel formed one of the higher terraces of the Thames, where palæolithic implements occur in such abundance as to lead Mr. Smith to think that the specimens occasionally found in the bed of the Thames near the mouth of the Wandle have been brought down from the terraces.

Mr. Lawrence[6] has also succeeded in finding palæolithic implements at Lavender Hill, the borders of Wimbledon Common, Earlsfield,

[1] *Quarterly Journal of the Geological Society of London*, xlvii. 140, etc.; Evans, *Ancient Stone Implements*, ed. 2, pp. 609–10.

[2] The relation of this gravel to the valley of the river Darent has been ably discussed by the late Professor Prestwich (*Quarterly Journal of the Geological Society of London*, xlvii. 126–63), who points out that 'before the deposition of this river drift at Limpsfield Common, a valley of considerable width and 200 to 300 feet deep had been excavated between the Lower Greensand hills and the adjacent Chalk plateau, by which the future Chalk escarpment was first brought into relief. This channel (which is on the line of the Gault) was subsequently worn deeper.'

[3] Evans, *Ancient Stone Implements*, ed. 2, p. 610.

[4] Ibid. ed. 2, p. 604.

[5] *Journal of the Anthropological Institute*, xii. 230–1.

[6] From private information.

Roehampton, and in the bed of the Thames at Putney, Richmond and Wandsworth.

A rough ochreous flint implement of the palæolithic age, found at Clapham, is now in the Museum of Practical Geology, Jermyn Street.

In the higher parts of the valley of the present Wandle, as also in the dry valley of the ancient river, palæolithic implements are much more rare. The gravels which are so well developed in the neighbourhood of Croydon, and which have been constantly searched over for worked flints, have hitherto proved remarkably barren, and the only specimen to be recorded is a rather well made ovoid implement of the palæolithic age found upon the surface of a ploughed field near Croham Hurst, about one mile south of Croydon. The implement is now in the collection of Mr. A. J. Hogg of South Norwood.

In some of the upper parts of the chalk plateau numerous pieces of fractured sub-angular and deeply stained flints have been found which have been accepted by some authorities as implements roughly shaped by the hand of man. Many antiquaries, however, are unable to accept them as artificial forms. Their shape is largely, perhaps entirely, the result of natural fractures and drift wear, and the general shapes of the implements are so rude and inconvenient that, until some more conclusive evidence is forthcoming, we prefer to consider them naturally shaped flints.

Examples of so-called 'eolithic implements' have been found by Mr. N. F. Roberts, F.G.S., at Warlingham and Tatsfield, and they have also been recorded from other localities in Surrey.

The Neolithic Age

In the course of the neolithic age the surface of the land had assumed its present appearance. The river drift period as it had formerly existed was closed, and the trees, plants and animals of the neolithic age may be said to have been roughly the same as those we now have, except that some species have been exterminated and others introduced by the forces of civilization. There have also been some changes on the sea coast by which the shore has been modified since the first appearance of neolithic man, but these appear trivial when compared with those of the palæolithic age.

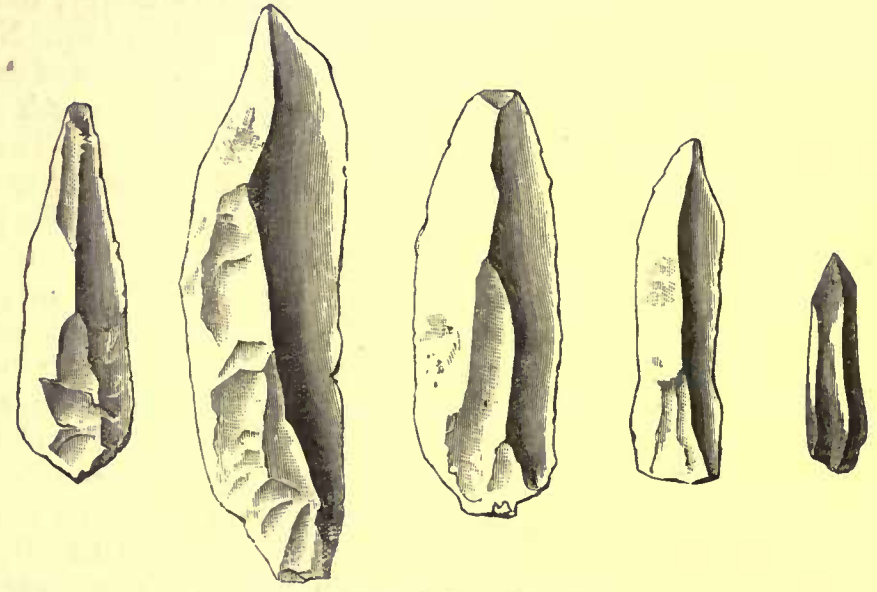
In a district such as Surrey, abounding in chalk, whence flint could readily be obtained, it would be remarkable if neolithic implements were not well represented. As a matter of fact they are scattered upon the surface of the ground throughout the county, and it would be difficult, perhaps impossible, to name a single parish in which they do not occur.

In the following account of the neolithic age in Surrey therefore it is not proposed to pay any particular attention to the occurrence of neolithic chips or flakes of flint unless those remains are specially noteworthy. But whilst only the discovery of the more regularly formed

tools or weapons will be noticed, there are other remains such as traces of dwellings and camps of which it will be necessary presently to speak in some detail.

The sharp-edged ground axe or celt which must have been one of the most valuable of the neolithic implements either for peaceable or warlike purposes, and which indicates a great advance upon the tools of the earlier age, has been found pretty evenly, but not plentifully, scattered over the surface of the country.

Examples of ground celts have been found at the following places in Surrey : Albury, Ash (2), Chertsey, Chipstead, Croydon (3), Egham, Dorking, Elstead, Kingston-on-Thames, Mitcham Common, Purley, Puttenham, Reigate, Titsey, Whitmore Common in Worplesdon parish, and Wisley. This does not profess to be a complete list, but it will serve to indicate the distribution of antiquities of this kind in Surrey.



Neolithic Flakes, Reigate.

It should be added that many examples of ground flint celts of the neolithic age have been procured from the bed of the river Thames near the Surrey shore.

The varieties of forms of flint implements shaped by chipping alone are very great, but examples of practically every class have been discovered in Surrey.

Perhaps one of the most remarkable collections of flakes, which are the simplest forms of neolithic implements, was found between the years 1848 and 1860 at Redhill near the railway junction. The discovery, made by Mr. John Shelley, was communicated to the Society of Antiquaries of London[1] early in 1860 by Mr. (afterwards Sir) John Evans. The flakes were accompanied by numerous cores of flint, from which it is evident that the manufacture of implements was carried on at this spot.

[1] *Proceedings*, ser. 2, i. 69–77.

Scrapers, formed of trimmed flakes, and so shaped as to present a sharp and bevelled edge for cutting or scraping purposes, have been found in abundance on the Hog's Back, at Wonersh, East Shalford farm in Shalford parish, at several places on the North Downs, particularly Riddlesdown, and also on the surface of the fields around Croham Hurst near Croydon.

Of the more elaborately made objects, the fine spearhead discovered many years since at Carshalton is a good example. It is lanceolate in shape with a flat base and four small notches obviously intended to receive the ligatures by which it was fixed into its shaft. There is an account of it, with an engraving, in Skelton's *Engraved Illustrations of Ancient Arms and Armour from the Meyrick Collection.*[1] Skelton, who describes the spearhead under the heading of 'Ancient British Stone Weapons,' mentions that it was found 6 feet below the surface of the ground at Carshalton in Surrey, and presented by Edmund Lodge, Esq., Norroy King-at-arms. Other examples of daggers have been found at Peasemarsh (near Guildford)[2] and Walton-on-Thames.[3] There is reason to doubt whether some of these objects which look like spearheads and are often supposed to have been used as such were not originally mounted in a short handle and used as knives. The methods of modern savages suggest the probability of some of the so-called spearheads having been so used.

Spearhead, or Knife, Carshalton.

Several neolithic hammer-stones, usually of some kind of sandstone and furnished with a hole for the handle, have been found in Surrey. The usual form is ovoid or discoidal. Examples have been found at Battersea, Hazlemere, Redhill, Reigate, Titsey and Wanborough.

There are some implements which have been shaped only roughly by chipping and subsequently perfected by long-continued use. To this class belong crushers and pounders which have been worn to a spherical shape by having been used for crushing. Examples have been found at various places in Surrey. They seem to have been sometimes used in connection with masses of sandstone which have been considerably worn

[1] Vol. i. pl. xlvi.; Evans, *Ancient Stone Implements*, ed. 2, p. 351.
[2] Evans, op. cit. ed. 2, p. 353.
[3] Evans, op. cit. p. 351.

URN FOUND IN TUMULUS AT WHITMORE COMMON, WORPLESDON.
See page 236.

NEOLITHIC ARROWHEADS, FARLEY HEATH.
(In the cabinet of Sir W. C. Roberts-Austen, K.C.B.)

To face page 235.

by use. Two such pieces of sandstone bearing small bowl-shaped depressions were found some years ago in barrows near Sheen.[1]

Another form of implement made of chipped flint found at various parts of Surrey is one which at first sight might be mistaken for a roughly made celt, and indeed there is no reason why it should not be so described, as it was probably affixed to a handle in much the same way as celts. It was however probably used for agricultural purposes such as breaking up the ground before sowing seeds. It might be described as a hoe rather than a celt. Examples have been found in the Thames near Mortlake, at Putney and Wanborough, and there are in the museum at the Charterhouse School, Godalming, several specimens procured in West Surrey.

Flint arrowheads shaped by careful and skilful chipping have been discovered in some numbers in different parts of the county, but perhaps more particularly in the western half of Surrey. These beautiful little objects bear evidence of great skill and care, and have always been regarded by the ignorant with some amount of superstition.

It has been supposed that they may have been made in the bronze age. One reason for this opinion is the absence, or at any rate the remarkable rarity, of arrowheads of bronze. Another is the wonderfully delicate flaking by which they have been shaped, and which is a mark of excellent and probably very late neolithic work.

In the Charterhouse School Museum at Godalming there are many examples of these arrowheads from West Surrey. Specimens have been found at the following places : Dorking, Eashing, Farley Heath, Farnham, Godalming, Lingfield Mark Camp, Puttenham, Redhill, Seale, Tilford, Wanborough and Woking.

The arrowheads from Farley Heath, which were found by, and are now in the cabinet of Sir W. C. Roberts-Austen, K.C.B., are particularly fine examples and of two types, viz. (1) stemmed and double-barbed, and (2) leaf-shaped, approaching in one example almost to a lozenge. In the same collection are several beautifully formed flakes, scrapers and saws, all procured from the Farley Heath district.[2]

One of the arts of the neolithic age was that of making pottery. This was shaped by the hand without the assistance of a wheel, coarse in texture, and not always perfectly baked. In the year 1900 in a small round barrow on Blackheath, near Shamley Green,[3] not far from Guildford, on the property of Mr. C. D. Hodgson, a cinerary urn was found enclosed in a rude kind of cist formed of rough slabs of local ferruginous sandstone. The urn contained remains of calcined bones, doubtless those of a human being, accompanied by neolithic implements but without any traces of metallic objects. Mr. R. A. Smith,[4] who inspected the site and remains on behalf of the British Museum, considers that

[1] Bateman, *Ten Years' Diggings*, p. 172.

[2] The writer is indebted to Sir William Chandler Roberts-Austen, K.C.B., for much valuable information in reference to prehistoric discoveries at Farley Heath.

[3] *Surrey Archæological Collections*, xv. 156.

[4] *Proceedings of the Society of Antiquaries*, ser. 2, xviii. 251–7.

the interment belonged to the transition period between the neolithic and bronze ages. Judging from the character of the pottery, it is not difficult to identify several fragments which have been found in other parts of Surrey as belonging to the same period.

Other tumuli of the neolithic age, or possibly of that of bronze, have been noted at Crooksbury Hill, in Farnham parish, Seale, Elstead, Tatsfield and Whitmore Common, in Worplesdon parish.

The tumuli at Whitmore Common which were excavated by the late Lieut.-Gen. Pitt-Rivers were of the bronze age, and yielded several interesting urns, which are now preserved in the Pitt-Rivers Museum at Oxford. One of these, by the courtesy of Mr. Henry Balfour, is here figured.

Remains, or rather traces, of neolithic dwellings have been discovered at more than one locality in Surrey, and as examples of the very earliest evidences of artificially constructed dwellings in the kingdom and for many other reasons they are of very great interest.

The sites selected for habitation in the neolithic age seem to have been always such as were naturally well drained. The summits of hills or the sides of valleys were the favourite situations. In the numerous small depressions called hut circles, which are now found on the surface of the ground in Surrey and other parts of England, we see all that remains of the dwellings in which neolithic families lived. These hut circles generally occur in clusters, but sometimes singly. The depression in the ground is surrounded by an annular mound composed of the removed earth, and is generally broken at one point where the entrance to the hut was situated. The construction of this mound was probably the first step towards making a neolithic house. The next step was to build over the hollow a kind of beehive hut made of intertwined branches. In the case of the smaller dwellings this was accomplished without difficulty, but where the hut was made upon a large scale with a diameter of 20 feet or upwards, a conical mound in the centre is generally found, and this was apparently intended to receive a central support, such as the stem of an uprooted tree.

The object of making the depression in the surface of the ground was obviously to procure sufficient headroom and some degree of warmth, and the encircling mound was evidently intended to throw off the rain which fell upon the roof of the hut.

The inflammable character of such a structure as this rendered it impossible to have within the hut such a fire as would be necessary for cooking purposes without incurring a great danger of setting the whole dwelling alight. The cooking fire was therefore made outside the hut[1] at a convenient and safe distance from it. Remains of such fires have been found in exactly this relation to the floors of neolithic dwellings,[2] and from the marks of great heat and the amount of charcoal found

[1] W. Boyd Dawkins, *Early Man in Britain*, p. 273.

[2] G. Clinch, 'Prehistoric Man in the Neighbourhood of the Kent and Surrey Border, Neolithic Age,' *Journal of the Anthropological Institute*, n.s. ii. 127, 134.

within them it is evident that cooking was carried on in neolithic times in much the same way as among some modern savages, the ground being made sufficiently hot by long continued firing to cook whole animals.

The methods of hut building varied in different places according to the nature of the soil and the supply of materials.

There are in Surrey various stretches of dry ground often too poor to pay for the trouble of cultivation and too remote from the railway systems for residential purposes, which have therefore never been touched by the plough or the builder, and remain practically in the same condition as in neolithic times. These spaces of virgin forest land contain numerous traces of human dwellings of the neolithic age, and in two of them these remains have been examined and described,[1] and there is no reason to doubt that many other commons in the county would furnish similar remains if carefully explored.

The two particular localities to which we refer are Shirley Common and Croham Hurst, two eminences near Croydon, both composed of pebble beds and remarkable for the dryness of their soil. Perhaps the hut floors at Croham Hurst are the more remarkable because some of them have been placed in such a position as to be sheltered from the winds blowing from the east and north. They present certain features which remind one of the rock shelters to be found in other places. Flint implements, mainly in the form of flakes and chips, and accompanied by cores of flint, are found in abundance around the hut floors, and the significance of their presence is increased by the fact that no chalk flints occur naturally either at Croham Hurst or Shirley. All these chalk flints must have been brought from the outcrop of the chalk at a considerably lower level. The flints too, almost without exception, bear traces, sometimes very pronounced, of having been worked.

At Shirley Common flakes and chips of flint have also been found near the hut floors, but in smaller numbers.

The inhabitants of Surrey in the neolithic age were farmers and herdsmen, and the sheltered southern side of Croham Hurst probably formed the winter quarters of some of the families or a small tribe and their herds. In the neolithic age man possessed domesticated animals which furnished one of the most constant sources of food supply.

There are several hilltop defensive earthworks in Surrey which, although their precise age is doubtful, may be reasonably considered to be of neolithic origin. The space enclosed is often of considerable extent, and the works may be considered to represent the strongholds in which early tribes entrenched themselves, their families and their cattle, rather than purely military camps. The difficulty of determining the period to which they belong is much increased by the fact that they have been occupied by successive races, but roughly speaking the

[1] 'Prehistoric Man in the neighbourhood of the Kent and Surrey Border,' *Journal of the Anthropological Institute*, n.s. ii. 127 et seq.

evidence in favour of their neolithic origin is derived from these two facts: firstly, the occurrence in and around them of numerous neolithic flint implements, and secondly the necessity, which must have been manifest even in neolithic times, of having some means of protecting animals and other property from plunder or theft. Again, the conversion of a natural hilltop into a kind of fortified platform by the construction of encircling lines of ditches and mounds is perhaps the first method a man or a tribe would adopt in the effort to procure personal safety as well as the safety of valuable possessions. Finally we know that Roman military camps were not placed upon small hilltops, and that some of the square camps which were excavated by the late Lieut.-Gen. Pitt-Rivers were proved to be of the bronze age. The theory that these hilltop entrenchments, following the natural shape of the ground and often enclosing a considerable space of ground, are of neolithic origin is therefore highly probable.

Examples of camps in Surrey which may be classed under the head of neolithic strongholds exist, or have existed, at Anstiebury Camp (near Leith Hill), Hascombe Hill (near Bramley), Holmbury Hill, Crooksbury Hill, White Hill (south of Caterham), St. George's Hill, Weybridge, Wimbledon, and Hillyfield, Longdown and Kinchill, three eminences in the parish of Tilford. A large mound near Abinger church has been considered by some to be a prehistoric camp, but opinions are divided as to its origin. Lingfield Mark Camp, which stands near the point where Surrey, Kent and Sussex meet; an earthwork in Squerries Court grounds at Westerham; Holwood Camp, Keston; 'Cæsar's Camp' near Aldershot; and another camp bearing the same name near the northern end of the Chobham Ridges in Berkshire, may be added to the list, as they are only just over the border; and from the fact that they occupy high points of ground and are associated with neolithic implements they probably form parts of the great group of camps of the district in neolithic times.

From remains which have been discovered it is evident that the people who lived in the neolithic age were acquainted with the art of spinning and possibly weaving. They could construct canoes and seaworthy boats, and were well acquainted with the art of husbandry. Their dress consisted partly of the natural skins and furs of animals and partly of the fabrics produced by the spindle and distaff. Personal ornaments included beads and pendants of stone, bone, shell, etc.

The dead were buried in a contracted posture near the surface of the ground, and a long oval mound or barrow was heaped above the interment. Weapons and other articles were usually buried with the dead body, and this has led to the inference that this primitive people had a belief in a future state of existence after death.

Neolithic man was of small stature, generally standing about 5 feet 5 inches high. His skull was long or oval and of fair capacity. The length of the skull, which was one of the most characteristic marks of the race, was produced by a great development of the back of the

head. The face was oval, and the cheek bones only slightly developed. The forehead was low and the nose aquiline.

The Bronze Age

One of the most important events which happened in our islands during the prehistoric period was unquestionably the introduction of metal. It is difficult if not impossible to understand all that was involved in the introduction of bronze and the knowledge of working it. Hitherto the only materials available for the manufacture of the toughest and hardest tools had been flint and stone. But, excellent as some of the neolithic work undoubtedly was, the implements were extremely liable to be injured by use, and the fear of damaging an elaborately wrought celt, for example, must have been a source of constant care to the neolithic warrior or hunter.

The need of some hard and at the same time more pliable material for the manufacture of weapons and tools must have been keenly felt before the discovery of the wonderful properties of metals, the method of extracting them from their natural ores, and converting them into their most useful form.

How that knowledge was first acquired is not known, and perhaps, seeing how great an interval of time separates the earliest age of metal from our own, it will never be discovered, but a distinguished metallurgist[1] has made the ingenious suggestion that it may have been discovered accidentally at the period when neolithic man cooked for food entire animals by means of heating small pits dug in the surface of the ground. The intense heat generated in such a fire was in all probability quite sufficient to produce fusion of the metal if easily workable ores happened to be present in the soil closely adjacent to the fire. Such fires of intensely high temperature were made, as may be clearly seen by the existing remains, near the neolithic dwellings at Hayes,[2] Kent.

It is not suggested that the first discovery of metals was made in these islands in this manner. The evidence goes to show that the art of extracting copper and tin from their ores and the skill of blending them in the proportions which gave the desirable property of hardness were both acquired in some other part of Europe or Asia or even Africa. This is pretty clear from the fact that some of the earliest metal objects found in the British Isles are made of good bronze, and have evidently been made by people skilled in the art of blending metals.[3]

The discovery of metal must have produced results which revolutionized the earlier methods of war, of hunting, and the more humble arts of the carpenter and the builder.

The earliest forms of metal tools or weapons used in the British Isles were the small bronze hand-daggers and the flat axes or celts, both of which are found to have been formed of bronze of the best quality.

[1] Mr. William Gowland, F.S.A., *Journal of the Anthropological Institute of Great Britain and Ireland*, n.s. ii. 140.

[2] Op. cit. pp. 127, 134–6.

[3] Dr. Munro, *Prehistoric Scotland*, pp. 177–8.

At first the metal would doubtless be very scarce, but when native metallic ores were found and worked it would be a natural desire to produce in metal the heavy celts which had hitherto been the common form of large weapon in use. For this purpose it was natural to use an actual stone celt to serve as the model for a mould for the bronze casting ; and as some knowledge of casting was already possessed, it would be a comparatively easy task to produce metal celts of this kind. The remains of the bronze age comprise celts of metal which have evidently been cast in this way from stone originals, and they have been considered to represent the earliest form in which metal celts were made.[1] The objection to such a theory is that they would require a large amount of metal at a time when it was scarce, and one feels inclined rather to regard them as indications of a period when bronze was procurable in some quantity.

Prehistoric objects formed of bronze are sometimes found singly on the surface of the ground or slightly below the surface, but more usually they occur in the form of hoards comprising many different implements, worn or unworn, and cakes or portions of cakes of copper.

Hoards of bronze are among the most suggestive and important as they are also the most characteristic of the remains of the bronze age. They may be conveniently divided into three groups. First, there are the collections of broken, damaged and worn-out implements, formed perhaps by an individual for the purpose of barter with a worker in bronze. The second group, comprising worn-out implements and cakes of copper, represents the stock of a worker in bronze. The third group consists of new and unworn tools. From the fact that these implements sometimes have not been freed from the irregularities and excrescences arising from the operation of casting it is obvious that the hoards of this kind represent the stock of a worker in bronze. The occurrence of bronze hoards of these three classes is of considerable importance as showing, first, that the metal was of great value, and when an implement was damaged or worn out it was saved in order to be melted down again ; secondly, it shows that the founding of articles of bronze was the special trade of certain individuals ; and, lastly, it indicates that no sufficiently strong building existed in which the metal could be safely stored, and that as a consequence the possessor was compelled to hide it in a secret place underground.

The various discoveries of bronze age antiquities in Surrey comprise the following hoards :—

Albury, Farley Heath. A hoard of bronze objects, comprising two spearheads, two palstaves, and part of a copper cake was discovered here, and presented in 1853 by Mr. Henry Drummond to the British Museum, where it is now deposited.

Beddington. This hoard was found in Beddington Park about the year 1870, and comprised a gouge, two broken spearheads, half of a celt-mould, six celts, and three lumps of bronze or copper.

[1] Wilde, *Catalogue of the Museum of the Roy. Irish Acad.* p. 366 ; Evans, *Ancient Bronze Implements*, p. 40.

Bronze Celts, Beddlestead Green, Chelsham.

Bronze Celts, Beddlestead Green, Chelsham.

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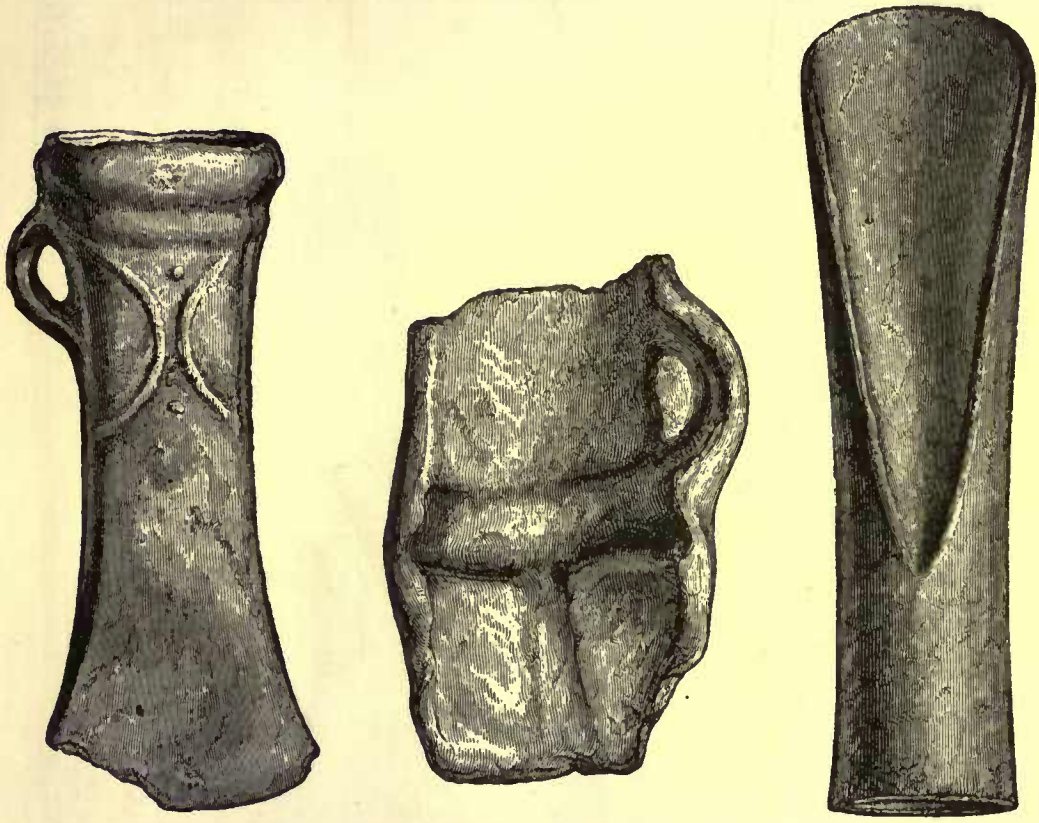
Chelsham. A bronze hoard was found at Beddlestead Green, in this parish, in 1890, comprising four celts, socketed, and each furnished with one loop, one fragment of a socketed celt, one fragment of a palstave furnished with one loop and well developed flanges, and three lumps of copper cake.

Croydon. An important hoard of bronze objects was discovered some years ago at Wickham Park. It comprised one palstave, six socketed celts, one gouge, one hammer, one knife, one dagger, one sword, one spearhead, one ferrule, one mould, and fragments of implements and copper cake.

Dorking. A small hoard of bronze was found in a cavity of the rock underground, in 1787, by some workmen digging stone. Only



Bronze Celt, part of Celt-Mould and Gouge, Beddington.

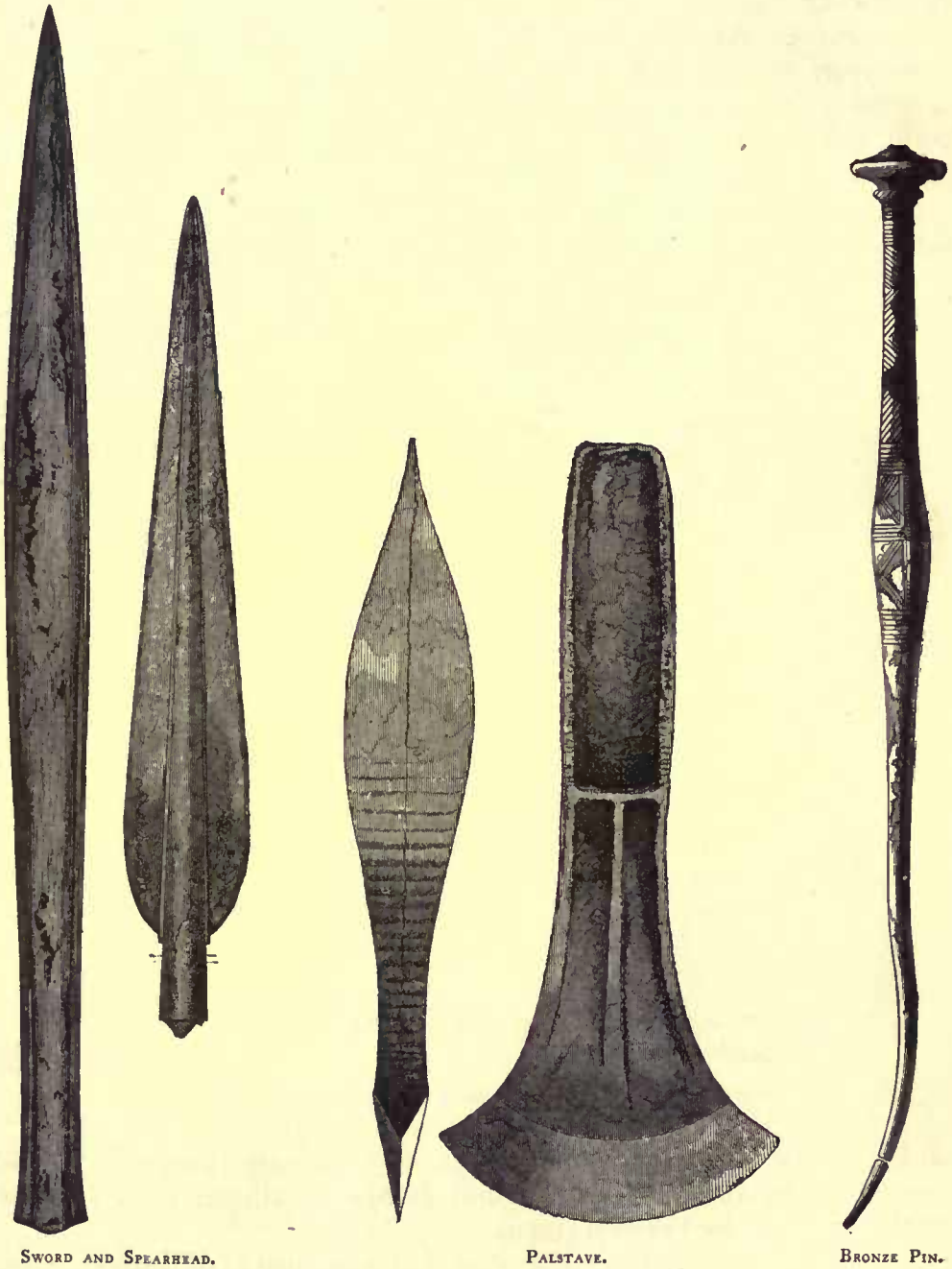
two bronze celts, and a semicircular piece of bronze (probably a sickle) were found in the hole, but several lumps of copper cake had been found previously by the workmen.

Kingston Hill. About the year 1869 a hoard of bronze objects was discovered at the George Gravel Pits, Kingston Hill. It comprised the following articles: two socketed celts, one sword, one spearhead and one piece of copper-cake.

Farnham. A hoard of bronze celts and palstaves was found at Sandy Farm, near Crooksbury Hill, by a workman in 1857. The discovery is noted and figured in *The Illustrated London News* of June 27,

1857 ; but the locality is there confused with Send, a parish some miles distant.

These various hoards were all the property of bronze founders. The Wickham Park (Croydon) hoard is perhaps the most interesting,



Sword and Spearhead. Palstave. Bronze Pin.

Bronze Age Antiquities found at the Mouth of the River Wandle.

from the fact that it contained so many single examples of different kinds of tools or weapons.

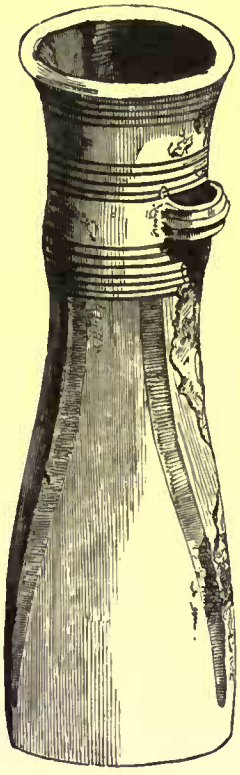
There are other miscellaneous collections of bronze age antiquities, which can hardly be considered hoards in the usual sense, but which

may be mentioned here perhaps more conveniently than elsewhere. The first is the accumulation which has been found in the bed of the river Wandle near its mouth. The bronze objects comprise a sword, a spearhead, a palstave, a pin, and many miscellaneous objects of bronze.

Another more important collection of bronze objects has been made from the bed of the river Thames near the following places in Surrey: Battersea, three swords, two spearheads, a gouge and a cauldron, all of bronze; Kingston, two palstaves, one socketed celt, three rapier blades, a leaf-shaped sword, a spearhead, and a knife with broad tang; Lambeth, a bronze spearhead; Richmond, a broad knife-dagger; Runnymede, a spearhead; Vauxhall, a long rapier blade and a leaf-shaped sword; Wandsworth, a remarkable socketed and looped celt, with the loop placed in the same direction as the socket (see illustration).

Bronze Sword, Battersea.

The distribution of antiquities of the bronze age over the surface of Surrey will be seen by a glance at the archæological map in which the various discoveries are noted. The positions in which hoards of bronze are found do not necessarily indicate settlements or places of permanent occupation, because, as a hoard was essentially a deposit of a secret character, it is quite conceivable that the most unlikely and inaccessible situations would be chosen for such purposes.



Bronze Socketed Celt, Wandsworth.

Flat bronze celts of the early type have been found at Albury and Godalming, whilst in addition to the socketed celts and palstaves mentioned in connection with hoards of bronze, specimens have been found at the following places in Surrey: Bagshot, Chertsey, Farnham, Godalming, Guildford, Riddlesdown, Rotherhithe, Wanborough, Wonersh; and at Kingston some remarkable specimens of socketed and looped celts bearing some interesting ornamentation consisting of vertical ribs or lines ending in a kind of ring ornament or circle with a central pellet (see illustrations, p. 245).

'This ornament,' as Sir John Evans[1] has pointed out, 'is perhaps the simplest and most easily made, for a notched flint could be used as a pair of compasses to produce a circle with a well marked centre on almost any material however hard.'

This device is also found on other objects of the bronze age, notably

[1] *Ancient Bronze Implements*, etc. p. 124.

in an elaborated form upon shields, on which we find concentric rings with a large number of small knobs or pellets between them.

Socketed celts appear to have been evolved by a very natural process from flanged palstaves. The original flat celt was a kind of axe, derived, as far as form is concerned, from the neolithic celt, and fitted at right angles, or nearly so, to the handle. In the course of time a lateral stop was introduced, and from this circumstance apparently sprang the idea of fitting the implement at the end of a long handle like that of the modern weeding spud. In this way the palstave was invented, and in order to attach it securely to its handle, so that it might not be accidentally lost, a loop was added to it.

Bronze Rapier-blade, Ditton.

Bronze Spearhead, Ditton.

The next development was to increase the flanges of the palstave in such a way (as is seen in a fragmentary specimen in the Chelsham bronze hoard) as to form what were practically two sockets.

The next step was the removal of the partition between these two sockets, and the implement approached very closely to and in fact became the socketed celt of which so many excellent specimens have been found in Surrey.

Bronze spearheads have been found in Surrey at Kingston, Ditton, Battersea and in the neighbourhood of Croydon. The spearhead from the last-named locality is a magnificent specimen, no less than $31\frac{1}{2}$ inches long, although more than an inch of the point is missing, and $2\frac{3}{4}$ inches broad at the broadest part. It is in the possession of Mr. I. J. Coleman, and was exhibited at a meeting of the Society of Antiquaries of London on May 2, 1901[1]; but the exact spot where it was found, for obvious reasons, has not been made public. A weapon of these proportions can hardly have been intended for military purposes, and it has been suggested that it was intended for state or ceremonial use.

In addition to the bronze sword found in the Wickham Park (Croydon) hoard, a broken example was found in the bed of the Thames at Runnymede, and others have been found in the river Thames, as has already been stated.

[1] *Proceedings of the Society of Antiquaries of London*, ser. 2, xviii. 352.

Bronze Socketed Celt, Riddlesdown.

To face page 244.

Two bronze armlets were found in association with a spindle whorl at Reigate.[1]

The form of bronze implement most frequently found in Surrey is the socketed celt, an object which was probably put to a great variety of uses. The idea as expressed by many writers seems to be that bronze celts, whether of the flat, flanged, or socketed forms, were employed for warlike uses. This however seems extremely unlikely for several reasons. It is improbable that the use of metal would be confined to implements of war. It seems much more likely that it would, soon after its discovery, be applied to other purposes for which a hard sharp edge was required. Indeed, the discovery of celts in association with chisels and gouges, as for example in the Wickham Park (Croydon) hoard, suggests that they were used as carpenters' tools.

The manner in which celts have been worn, re-sharpened and fractured is instructive, and points to the same conclusion. The fact that the fracture has occurred near the termination of the wooden handle within the socket leads to the inference that the implement was used in such a way as to produce considerable strain on the side ; and it is, in fact, just such as would be produced by splitting or cleaving wood.

The methods employed in casting articles in bronze in this early age were ingenious. In some cases it appears that when a mould of a good pattern was obtained care was taken not to wear it out with too much use, and in order to preserve it as a good pattern a model of it was sometimes cast in lead, which was then made to serve as the pattern of a clay mould, which of course was made in two pieces.

Little is definitely known about the ordinary buildings of the bronze age, but it may be inferred, from the existence of metallic tools, that the domestic dwellings—probably constructed upon the same lines as those of the neolithic age—were more commodious and more elaborate than any which had existed at an earlier period.

In the bronze age, moreover, crannoges, or artificial islands, were constructed as sites for dwellings, and, although damp and unhealthy, the surrounding water furnished some compensating advantages in the way of protection from unwelcome visitors.

In various departments of civilization the people who used bronze exhibit a distinct advance upon those who, at an earlier period, had been furnished only with implements of stone. In husbandry this progress is indicated by the use of bronze reaping hooks, by the employment of oxen in ploughing, and by the cultivation of several plants, such as beans and oats, which had not previously been made to minister to the wants of man.

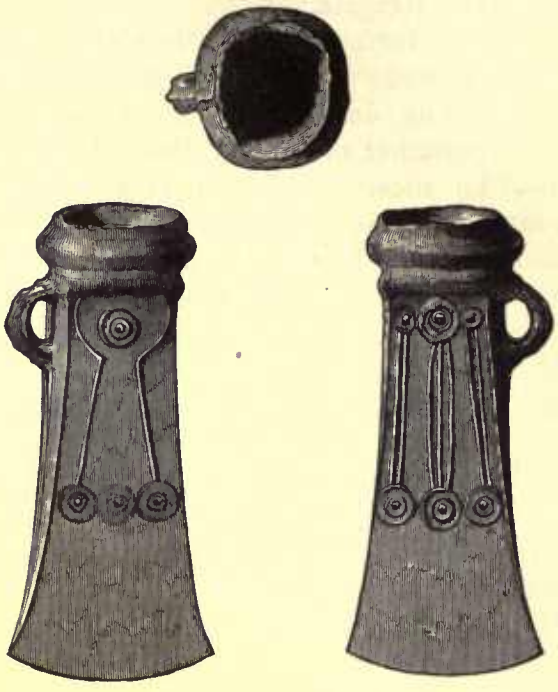
The bronze age man seems to have possessed also the knowledge of spinning, weaving and pottery-making. Pottery of this period was often ornamented by a series of impressed lines arranged in zigzag fashion.

The costume of bronze age man comprised articles of linen and

[1] *Archæological Journal*, x. 72–3.

Bronze Celt, Guildford.

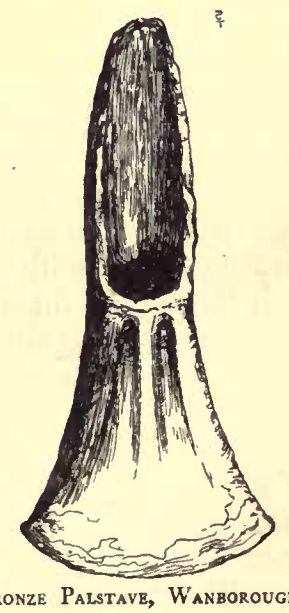
Bronze Palstave, Guildford.



Bronze Celt, Kingston.

Bronze Celt, Kingston.

Bronze Celt, Kingston.



Bronze Palstave, Wanborough.

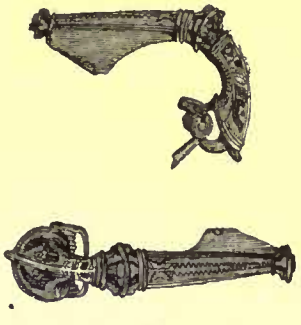
woollen homespun in the form of cloaks, caps, leggings and sandals. Personal ornaments consisted of golden beads and earrings, necklaces, bracelets, collars and coronets made of stone, glass, bronze or bone.

The graves or sepulchral barrows of this age were generally speaking circular in form, and intended for the interment of the cremated remains of only one person, whilst the oval barrows of the neolithic age had been constructed for several interments, and sometimes furnished with a central chamber of stone.

The Prehistoric Iron Age

The introduction of iron which succeeded the bronze age is closely associated with the appearance in these islands of the Brythons, a race of Celtic language from which the name of the chief island of the group is derived. There are two good reasons which account for the rarity of antiquities of this age. One, which is obvious to all, is the perishable nature of objects composed of iron, and the other is the comparatively short duration of the period when compared with that of the bronze or of the neolithic age. The circumstance however which gives so much interest to everything connected with this period is that it witnessed the origin and partial development of a very remarkable form of decorative art, which has received the designation of Late Celtic art.

During the bronze age attempts at ornament were feeble and ineffective, and consisted of little more than circles, pellets, zigzags and parallel lines or dashes. In the Late Celtic art, on the contrary, we find introduced for the first time curved forms of a remarkable and peculiarly elegant character, consisting in the main of spirals and curved trumpet-shaped forms, the origin of which is involved in some obscurity, but may perhaps have been derived originally from natural foliage. This form of art survived long after the appearance of the Romans in Britain, upon whom it exercised considerable influence, and indeed it survived as a living art during the pagan times of Britain.[1]



Late Celtic Fibula, Farley Heath (two views).

Surrey has furnished but few examples of Late Celtic art. Among a number of enamelled bronze objects found at Farley Heath, and described some years ago by Mr. Martin F. Tupper,[2] was a fibula, 3 inches in length, of the safety-pin type which is probably of late Celtic workmanship. Other objects found at the same place included enamelled circular fibulæ and two enamelled four-legged stands, which are now in the British Museum. These however are probably of the Roman period.

During the prehistoric iron age of course iron was in general use, but bronze was used for ornaments, and it is not improbable that some

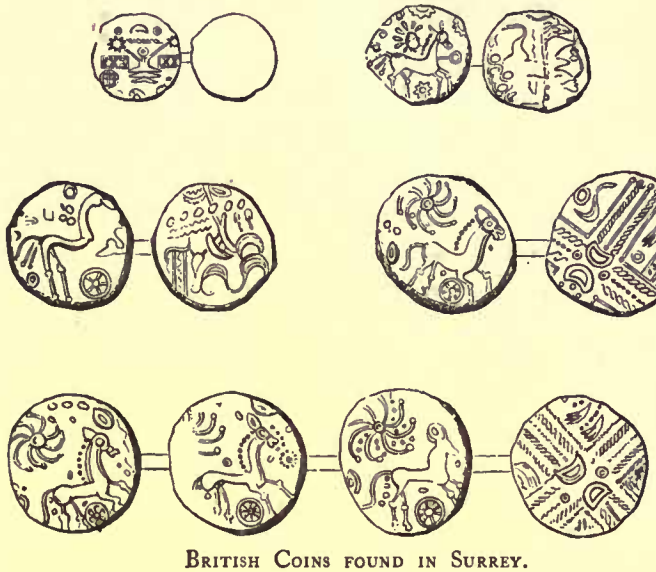
[1] Charles H. Read, F.S.A., *Parliamentary Return on Celtic Ornaments found in Ireland* (1899), p. 8; and Mr. Arthur Evans's Monographs.

[2] *Farley Heath: A Record of its Roman Remains and other Antiquities* (1850), p. 25.

of the antiquities which have been referred to the bronze age really belong to this, just as it is also probable that some of the highly wrought arrowheads, etc., and such implements as stone hammers may be reasonably referred to the age of bronze.

Coins of the ancient Britons

Gold and silver coins of the prehistoric period have been found in several different places in Surrey, particularly at Farley Heath, Albury,



British Coins found in Surrey.

where in 1848 a shepherd boy discovered a hoard of upwards of twenty gold pieces, including some examples of a type which had hitherto been unknown, and which Sir John Evans[1] has figured and described in his

British Coins found in Surrey.

monumental work on this branch of British numismatics. The coins, which were uninscribed, were found on a newly mended road, where it is supposed a hollow flint in which they had been concealed had been broken by the wheel of a passing vehicle.

[1] *The Coins of the Ancient Britons*, p. 84; and pl. D, figs. 6, 7, 8, *Numismatic Chronicle*, xi. 92.

Numerous British coins, both inscribed and uninscribed, particularly those of Verica, Commius and Cunobelin, have been discovered at Farley Heath. At Guildford coins of Caratacus, Epaticcus and Verica have been found, and at Kingston one of Tincommius has been discovered.

Many of the British coins bore devices which had obviously been derived from those on the beautiful coins of Philip II. of Macedon, but in consequence of being repeatedly copied by incompetent artists the original forms of the devices became scarcely recognizable. A coin of Verica found at Reigate in 1888, for example, is impressed with the figure of a vine leaf, a form which, as Sir John Evans has shown, was derived from one of the early varieties of the British Philipus.[1] Another coin found in a brickyard at Kew is of great interest from the fact that the device, originally the head of Apollo, has become much altered in the course of repeated copyings and really represents a form about halfway between that of the head of Apollo and that of the vine leaf.

Ancient Roads in Surrey

The difficulty of assigning a particular date or period to a roadway which in the first instance may have been a mere trackway across the country is so great that we cannot be too cautious in dealing with this important subject. Yet it is certain that roadways must have existed in Britain before the Roman occupation, and by general consent the old road known as the Pilgrims' Way which runs along the North Downs has been regarded as a pre-Roman way, and most of those who have written upon the subject agree that it was probably one of the first roads through Surrey at a time when the Weald was an almost impassable forest. In several parts of its course all traces of the road have been destroyed, in some places by cultivation of the soil, in other places by neglect and disuse, and in some instances portions of it have been entirely removed in the course of digging chalk from the side of the hill. Yet notwithstanding all this the way may be traced pretty clearly in many places in Surrey and Kent.

In the western part of the county it is first found near Farnham, whence it extends along the North Downs to the Kentish boundary. Sometimes it is found on the crest of the hills, but perhaps more frequently on the southern slope. Between Farnham and Guildford, and for some distance further to the east, there appear to be two separate branches of the road, one of which keeps along the top of the Hog's Back, whilst the other is found on the southern slope of the hills. This lower-level road has been traced to St. Catherine's (where there was probably a ford over the river Wey), to St. Martha's Hill, Albury and Shere, rejoining the upper road near Dorking. The lower road is supposed to have been the way actually used by the mediæval pilgrims. Eastward of Dorking the road is well seen at White Hill (an eminence

[1] *The Coins of the Ancient Britons, Supplement*, pp. 441, 510.

about a mile and a half south of Caterham), and at the foot of the North Downs near Titsey.[1]

Many of the villages which have sprung up in the districts through which it passes are near it but not in connection with it, showing that they belong to a new order of communications which was not introduced until the ancient Pilgrims' Way had become forgotten. In certain districts an attempt is made to explain this by the suggestion that pilgrims who used the road desired to avoid observation. This ingenious theory does not however account for the construction of the roadway in such a solitary and secluded position.

The subject as far as Surrey is concerned has been pretty fully dealt with by various writers, including Mr. William Bray, F.S.A., in *Archæologia*[2] and in his *History and Antiquities of Surrey*,[3] by various authors in the publications of the Surrey Archæological Society,[4] and in the Gloucester Congress volume of the British Archæological Association.[5]

Some of the British trackways were doubtless adopted and improved by the Romans whose appearance in Britain brought the prehistoric period to a close.

Topographical List of Prehistoric Antiquities in Surrey.

In the following list an attempt is made to record the various sites in Surrey where prehistoric antiquities have been found or where prehistoric remains still exist. In order to avoid frequent repetition of book titles, etc., the following abbreviations in the references to authorities have been adopted :—

Charterhouse Museum = The Museum in the Charterhouse School at Godalming.
Evans B. = *The Ancient Bronze Implements, Weapons and Ornaments of Great Britain*, by John Evans (1881).
Evans C. = *The Coins of the Ancient Britons* (1864), and *Supplement* (1890), by John Evans, F.S.A.
Evans S. = *The Ancient Stone Implements, Weapons and Ornaments of Great Britain*, ed. 2, by Sir John Evans (1897).
Guildford Museum = The Museum of the Surrey Archæological Society at the Castle Arch, Guildford.
Surr. Arch. Coll. = Surrey Archæological Collections (*The Transactions of the Surrey Archæological Society*).

Abinger.—Mound, possibly a barrow, with defensive earthworks near the church [*Surr. Arch. Coll.* xii. 162].

Albury.—Fragment of neolithic ground celt in the collection of Sir W. C. Roberts-Austen, British gold coin [*Evans C.* 181].

Bronze hoard now in the British Museum. Late Celtic fibula [Tupper, M. F. *Farley Heath* (1850), pp. 24–5].

British coins [*Evans C.* 84–5, 90, 108, 110, 117, 157, 176, 179, 181, 282, 346].

[1] *Surrey Archæological Collections*, v. 178–85 ; vi. 301-4 ; *Popular County Histories : Surrey*, by H. E. Malden, pp. 29–30.
[2] Vol. ix. 96–109. [3] Vol. iii. pp. xliv. et seq.
[4] *Surrey Archæological Collections*, v. 177–85, vi. 301–4, ix. 336–52, xii. 159.
[5] 1846 (published 1848), pp. 96–8.

ANSTIEBURY CAMP.—Neolithic arrowheads found here and at Meriden farm [*Archæologia*, ix. 100; *Evans S.* 389]. Chipped neolithic celt [*Surr. Arch. Coll.* v. 23]. A pre-Roman, possibly neolithic camp is here [*Surr. Arch. Coll.* xii. 157, etc.].

ASH.—Two neolithic ground celts [*Surr. Arch. Coll.* xi. 247–8; *Evans S.* 101].

One neolithic ground celt in Guildford Museum.

BAGSHOT.—Bronze palstave with stop-ridge and flanges, and another with stop-ridge, small flanges and one loop, in Guildford Museum.

BATTERSEA.—Perforated quartzite hammerhead (neolithic), discoidal in form, in Charterhouse Museum.

Bronze spearhead 14½ inches long, with traces of wooden handle in socket [*Evans B.* 327; *Arch. Assoc. Journal*, xiv. 329, pl. xxiv. fig. 3].

BATTERSEA RISE.—Palæolithic implement [*Journal of the Anthropological Institute*, xii. 230].

BEDDINGTON.—A hoard of bronze objects, comprising thirteen pieces, including one gouge, two broken spearheads, half of a celt mould, six celts, and three lumps of bronze [*Surr. Arch. Coll.* vi. 125–6; *Evans B.* 110, 174, 320, 340, 423, 447, 468].

BEDDLESTEAD.—See CHELSHAM.

BRAMLEY.—Neolithic camp. Neolithic flakes [*Surr. Arch. Coll. Anthropological Journal*, xiii. 137].

CARSHALTON.—Neolithic spearhead, or knife, found 6 feet below the surface [Skelton's *Meyrick's Armour*, i. pl. xlvi. fig. 5; *Evans S.* 351]. Neolithic implements found near the river Wandle.

CATERHAM.—White Hill, probably a prehistoric camp. It is called the 'Cardinal's Cap.'

CHELSHAM.—Hoard of bronze objects found at Beddlestead Green, comprising four celts socketed and each furnished with one loop, one fragment of a socketed celt, one fragment of a palstave furnished with one loop and well developed flanges and three lumps of copper cake [*Proceedings of the Society of Antiquaries of London*, ser. 2, xviii. 285 et seq.]

CHERTSEY.—Neolithic ground celt in Charterhouse Museum.

Bronze celt found in the stump of an old tree near St. Ann's Hill [*Arch. Journal*, xxviii. 242].

CHILWORTH.—Neolithic flake, scrapers and cores in Guildford Museum. Rough neolithic flakes [*Anthropological Journal*, xiii. 137].

CHIPSTEAD.—Neolithic celt of micaceous grit [*Proceedings of the Society of Antiquaries of London*, ser. 2, v. 374–5].

CLAPHAM.—Rough palæolithic implement found in gravel, now in Jermyn Street Museum, London.

COMPTON.—Neolithic implements, now in the Charterhouse Museum.

CROOKSBURY HILL.—See FARNHAM.

CROYDON.—Neolithic celts in the possession of Dr. J. M. Hobson.

Bronze hoard found at Wickham Park. Fine bronze spearhead 31¾ inches long, found in 1900.

CROHAM HURST.—Neolithic implements and traces of dwellings [*Journal Anthropological Institute*, n.s. ii. 127 et seq.].

DITTON.—Very narrow socketed bronze celt [*Proceedings of the Society of Antiquaries of London*, ser. 2, iii. 398; *Evans B.* 128].

Bronze dagger [*Arch. Journal*, xix. 364; *Evans B.* 245].

Bronze spearhead 20 inches long with midrib the whole length [*Arch. Journal*, xix. 364; *Evans B.* 316].

Bronze spearhead 6⅛ inches long with ornamental socket, now in the British Museum [*Evans B.* 319]. Bronze spearhead 13¾ inches long, now in the British Museum [*Evans B.* 328].

DORKING.—Neolithic arrowhead [*Archæologia* ix. 100; *Evans S.* 389].

Neolithic ground celt found at Holloway's farm, now in Jermyn Street Museum, London.

Hoard of bronze celts, etc., found in a cavity of the rock under the surface [*Archæologia*, ix. 99].

EARLSFIELD.—Palæolithic implements found by Mr. G. F. Lawrence.

EASHING.—Neolithic implements now in the Charterhouse Museum.

EGHAM.—Neolithic ground celt, about 7 inches long [*Arch. Journal*, xxviii. 242; *Evans S.* 101].

ELSTEAD.—Neolithic implements and fine ground celt in the Charterhouse Museum.

Roughly made neolithic arrowheads in Guildford Museum.

Prehistoric barrows [*Surr. Arch. Coll.* xii. 152–3].

FARLEY HEATH.—See ALBURY.

FARNCOMBE.—Two bronze celts, now in the Charterhouse Museum.

FARNHAM.—Many palæolithic implements found in the drift gravels here by Mr. Lasham and Mr. H. A. Mangles, F.G.S., and now in private possession and in Guildford and the Charterhouse Museums [*Surr. Arch. Coll.* xi. 25–9; *Proc. Geologists' Assoc.* xiii. 74–81; *Evans S.* 595–6]. Neolithic arrowheads, now in Guildford Museum. Bronze palstave with stop-ridge found at the Holt, Farnham, and now in the Charterhouse Museum. British gold coin [*Evans C.* 434].

Prehistoric camp, probably of the neolithic age. Neolithic implements now in the Charterhouse Museum. Prehistoric barrows [*Surr. Arch. Coll.* xii. 152–3].

Bronze hoard found at Sandy Farm near Crooksbury Hill [*Illustrated London News*, June 27, 1857; *Surr. Arch. Coll.* xii. 152]. This place seems to have been confused with the parish of Send.

FRIMLEY.—Palæolithic implement [*Evans S.* 596; *Proc. Geologists' Assoc.* xiii. 80].

GODALMING.—In the Charterhouse Museum are several specimens of palæolithic, neolithic and bronze age antiquities found in West Surrey. British coins [*Evans C.* 50, 64, 83, 472].

GUILDFORD.—In Guildford Museum are many palæolithic, neolithic and bronze age antiquities from West Surrey. Neolithic flakes, etc., from Whinney Hill, Chantry Woods, Guildford, from East Shalford Farm; and a bronze palstave, with stop-ridge flanges and one loop, found near Stoke Hospital, Guildford. British coins [*Evans C.* 280, 434, 511, 552].

HASCOMBE.—Neolithic camp.

HASLEMERE.—Perforated stone hammerhead of the Neolithic age, now in the Charterhouse Museum.

HOG'S BACK.—A large number of Neolithic scrapers and other implements, now in the Charterhouse Museum and other collections.

HOLMBURY HILL.—Neolithic camp [*Surr. Arch. Coll.* xii. 160–1]. Neolithic stone axe recently found at Holmbury Hill.

HORLEY.—British gold coin [*Evans C.* 69].

HORNE.—British gold coin [*Evans C.* 61].

KEW.—British gold coin [*Evans C.* 441–2].

KINGSTON.—Neolithic ground flint celt 5 inches long [*Evans S.* 126]. Neolithic ground celt of greenstone found whilst digging waterworks [*Evans S.* 150].

Numerous bronze age objects, including ornamented celts, leaf-shaped spearhead, also sepulchral urn, spindle-whorls, quern, fragments of pottery and pieces of copper cake [*Arch. Journal*, xx. 372–3; xxv. 154–5, 157; *Evans B.* 124, 126, 321].

At Kingston Hill was found a hoard of bronze objects, comprising lumps of copper cake, socketed celts, fragments of swords and spearhead [*Arch. Journal*, xxvi. 288; *Evans B.* 82, 423, 467].

LETHERHEAD.—British coins [*Evans C.* 83, 169].

LIMPSFIELD.—Many palæolithic drift-worn implements found here by Mr. A. M. Bell, F.G.S. Others found at Redland's farm. Neolithic implements and Romano-British pottery, some of which is now in Guildford Museum.

British coin [*Evans C.* 50].

LINGFIELD MARSH (MARK) CAMP.—Neolithic arrowhead [*Evans S.* 389]. Probably a neolithic hilltop camp.

MITCHAM.—Lower part of ground neolithic celt found near Mitcham Common, now in the Charterhouse Museum.

OXTED.—British uninscribed gold coin [*Evans C.* 50].

PEASEMARSH.—Palæolithic implement found in gravel [*Evans S.* 594].

Neolithic dagger of chipped flint [*Evans S.* 353].

PURLEY.—Neolithic flint celt, partially ground, found on surface of field by Mr. R. Garraway Rice, F.S.A.

PUTNEY.—Roughly chipped neolithic hoe, about 7 inches long, now in the Charterhouse Museum.

PUTTENHAM.—Part of a palæolithic implement, various neolithic implements and a ground celt; all these are in the Charterhouse Museum. Romano-British pottery found at Hillborough, and Puttenham, now in Guildford Museum.

REDHILL and REIGATE.—Various neolithic implements, including leaf-shaped arrowheads, cores, hammerhead, etc., and hut floors [*Proceedings of the Society of Antiquaries of London*, ser. 2, i. 71–4; *Evans S.* 244, 277, 378].

Thousands of neolithic flakes and evidences of neolithic dwellings [*Proc. Soc. Antiq. Lond.* ser. 2, i. 69–72; *Archæological Journal*, xvii. 171].

Ground neolithic celts, hammer-stones and spindle-whorl, and two bronze age armlets of bronze [*Evans S.* 100, 244, 278; *Archæological Journal*, x. 72–3].

British coins found at Reigate [*Evans C.* 83, 511].

RIDDLESDOWN.—Neolithic scraper, flakes and cores.

ROEHAMPTON.—Small ovate palæolithic implement found by Mr. G. T. Lawrence.

ROTHERHITHE.—Bronze age palstave of bronze [*Evans B.* 86].

ST. MARTHA'S.—Neolithic implements from the fields near St. Martha's Hill, in Guildford Museum. Neolithic or bronze age interments found in 1874.

SEALE.—Prehistoric barrows [*Surr. Arch. Coll.* xii. 152–3].

SHALFORD.—Neolithic implements.

SHEEN EAST.—Sandstone with hollow cavity, probably formed by use with a crusher or pounder [*Evans S.* 253; Bateman's *Ten Years' Diggings*, p. 172].

Palæolithic implements found by Mr. J. Allen Brown, F.G.S. [*Quarterly Journal of the Geological Society of London*, xlii. 555; *Evans S.* 591].

SHIRLEY.—Neolithic hut-floors and implements.

SUTTON.—Many neolithic implements found in and near Sutton by Mr. J. P. Johnson.

TATSFIELD.—So-called 'eolithic implements.'

THE THAMES AT BATTERSEA.—Bronze swords, spearheads, gouge and cauldron (*Evans B.* 175, 278, 279, 281, 321, 327, 411].

THE THAMES AT KINGSTON.—Bronze palstaves, celt, knife, rapier-blades, sword and spear-head (*Evans B.* 84, 86, 125, 211, 248, 250, 254, 284, 338).

THE THAMES BETWEEN KINGSTON AND HAMPTON COURT.—Two bronze celts, bronze sword and two iron spearheads [*Archæologia*, xxx. 492].

THE THAMES AT LAMBETH.—Bronze spearhead [*Evans B.* 330].

THE THAMES AT RICHMOND.—Bronze knife-dagger [*Evans B.* 246].

THE THAMES AT RUNNYMEDE.—Bronze spearhead [*Evans B.* 328; *Archæological Journal*, xviii. 158; *Arch. Assoc. Journal*, xvi. 322].

THE THAMES AT VAUXHALL.—Bronze rapier blade and leaf-shaped sword [*Evans B.* 248, 279].

THE THAMES AT WALTON.—British uninscribed gold coin [*Evans C.* 436].

THE THAMES AT WANDSWORTH.—Bronze socketed celt of unusual form [*Evans B.* 130].

TILFORD.—Earthworks, possibly of the neolithic age, on hills called 'Hillyfields,' 'Longdown' and 'Kinchill.'

TITSEY.—Neolithic ground celt [*Surr. Arch. Coll.* iv. 228; *Evans S.* 144].

Neolithic hammerhead of granite [*Surr. Arch. Coll.* iv. 237; *Evans S.* 230].

WALTON-ON-THAMES.—Two cinerary urns containing bones were discovered about three years ago half a mile west of Walton railway station. They are now in the possession of Mr. A. J. Butler.

Neolithic flint dagger [*Evans S.* p. 351; *Proceedings of the Society of Antiquaries of London*, ser. 2, vi. 73].

WANBOROUGH.—Small palæolithic ovate implement and neolithic implements, in the Charterhouse Museum.

Perforated hammer-stone formed of a quartzite pebble, in Guildford Museum.

Bronze palstave, in Guildford Museum.

WANDLE (the river).—Bronze swords, spearhead, palstave and pin [*Archæological Journal*, ix. 7–8; *Evans B.* 282, 316, 368].

WANDSWORTH.—Palæolithic implements found by Mr. G. F. Lawrence.

WARLINGHAM.—So-called 'eolithic implements.'

WEYBRIDGE.—St. George's Hill: a prehistoric camp.

WIMBLEDON CAMP.— Possibly prehistoric.

WIMBLEDON.—Palæolithic implement found on Wimbledon Common.

WISHMOOR.—Neolithic ground adze-like celt [*Journal of the Anthropological Institute*, p. 368, pl. xxi.; *Evans S.* 70].

WISLEY.—Neolithic ground celt, in Guildford Museum.

WOKING.—Fine neolithic stemmed and double-barbed arrowhead, found by Mr. W. Tice, in Guildford Museum. Several fragments of bronze age, or earlier, pottery found at Chobham Park farm, now in Guildford Museum and in the Charterhouse Museum.

WONERSH.—Fragment of palæolithic implement [*Evans S.* 596]. One palæolithic implement found by Sir W. C. Roberts-Austen, K.C.B., and numerous palæolithic implements found by Mr. C. D. Hodgson. Neolithic or possibly bronze age barrow found at Blackheath, near Shamley Green [*Surr. Arch. Coll.* xv. 156; *Proc. Soc. Antiq. Lond.* ser. 2, xviii. 251–7].

Numerous neolithic implements found by Sir W. C. Roberts-Austen, K.C.B.

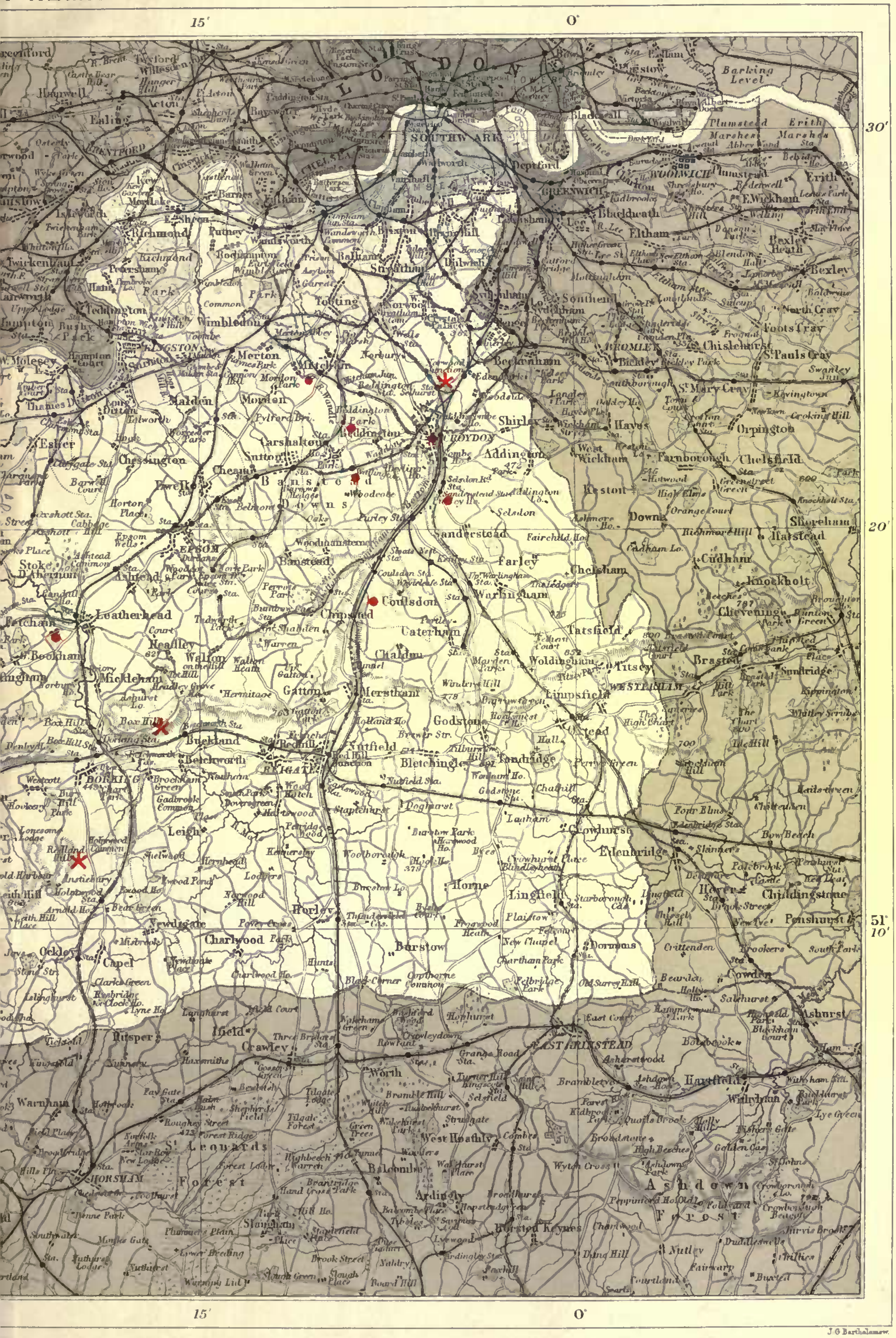
WORPLESDON.—Finely chipped neolithic celt found at Whitmore Common, in Guildford Museum.

Bronze age tumuli containing pottery; cinerary urns found at Whitmore Common, now in the Pitt-Rivers Museum, Oxford.

ANGLO-SA

The Edinburgh Geographical Institute

N REMAINS.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LONDON
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Hanwell
Richmond
Putney
Wandsworth
Wimbledon
Kingston
Hampton Court
Teddington
Twickenham
Isleworth
Mortlake
Barnes
Fulham
Brixton
Clapham
Balham
Streatham
Dulwich
Deptford
Blackheath
Lee
Eltham
Bexley
Bexley Heath
Sydenham
Norwood
Tooting
Merton
Mitcham
Morden
Malden
Beckenham
Bromley
Chislehurst
Foots Cray
St Pauls Cray
St Mary Cray
North Cray
Swanley
Orpington
Chelsfield
Farnborough
Keston
Hayes
West Wickham
Shirley
Addington
CROYDON
Beddington
Carshalton
Sutton
Cheam
Ewell
Epsom
Chessington
Esher
Thames Ditton
Banstead
Banstead Downs
Woodcote
Sanderstead
Selsdon
Farley
Warlingham
Chelsham
Coulsdon
Chipstead
Caterham
Chaldon
Woldingham
Tatsfield
Titsey
Westerham
Brasted
Sundridge
Cudham
Knockholt
Halstead
Shoreham
Chevening
Downe
Leatherhead
Fetcham
Ashtead
Stoke D'Abernon
Bookham
Headley
Walton on the Hill
Mickleham
Box Hill
Dorking
Buckland
Betchworth
Reigate
Redhill
Merstham
Gatton
Nutfield
Bletchingley
Godstone
Tandridge
Limpsfield
Oxted
Crowhurst
Lingfield
Edenbridge
Hever
Chiddingstone
Penshurst
Cowden
Ashurst
Horne
Burstow
Horley
Charlwood
Newdigate
Capel
Ockley
Leigh
Rusper
Ifield
Crawley
Worth
East Grinstead
Hartfield
Withyham
West Hoathly
Balcombe
Ardingly
Horsted Keynes
Slaugham
Horsham
St. Leonards Forest
Ashdown Forest
Warnham
Nutley
20'
30'
51° 10'
J G Bartholomew.

ANGLO-SAXON REMAINS

ALL that is derived from the usual sources of early Anglo-Saxon history about the region known to-day as Surrey might be expressed in a single paragraph, which would mainly rest on scraps of negative evidence, or on conjectures that are now for the most part incapable of proof or refutation, and would fail in any case to provide a genuine history of Surrey's beginnings in the post-Roman period. The proximity of London, which explains much in the later history of the county, only deepens the darkness in which its pagan days are hidden ; for it must be borne in mind that in the early time the influence of the city was mainly confined to the north bank of the Thames and even there to a limited area. For the present purpose therefore Surrey must be treated apart from the capital, and its early connexions traced if possible along other channels.

The advance of primary education and the spread of railways are every day reducing the scientific value of dialectical varieties, and this involves the abolition of one of the few means of grouping or identifying the various tribes or bands of settlers that planted themselves in different parts of the country as soon as the Roman power declined. Greater facilities of communication have, to a lesser degree perhaps, impaired the utility of anthropological research just at a time when the value of that branch of science has been brought to recognition. Though physical types are more permanent than peculiarities of language, there is little hope of recovering by this means the characteristics and affinities of the earliest Teutonic occupants of the county after a lapse of fourteen centuries. While it is vain to look for fresh evidence from the early chronicles, which have been for the most part edited in a thoroughly critical manner, and while the physical and dialectical tests are rapidly failing us, there is yet some hope that excavation may in course of time provide further and unexceptionable evidence, the value of which depends, not on the date of its discovery so much as on the skill and accuracy of the investigator. Not to claim too much importance for archæological inquiry it must be confessed that its sphere is limited, and of history in the wider sense the contents of graves can afford but little ; but at least there is a prospect of amplifying and perhaps correcting thereby the meagre records that precede the Domesday Survey.

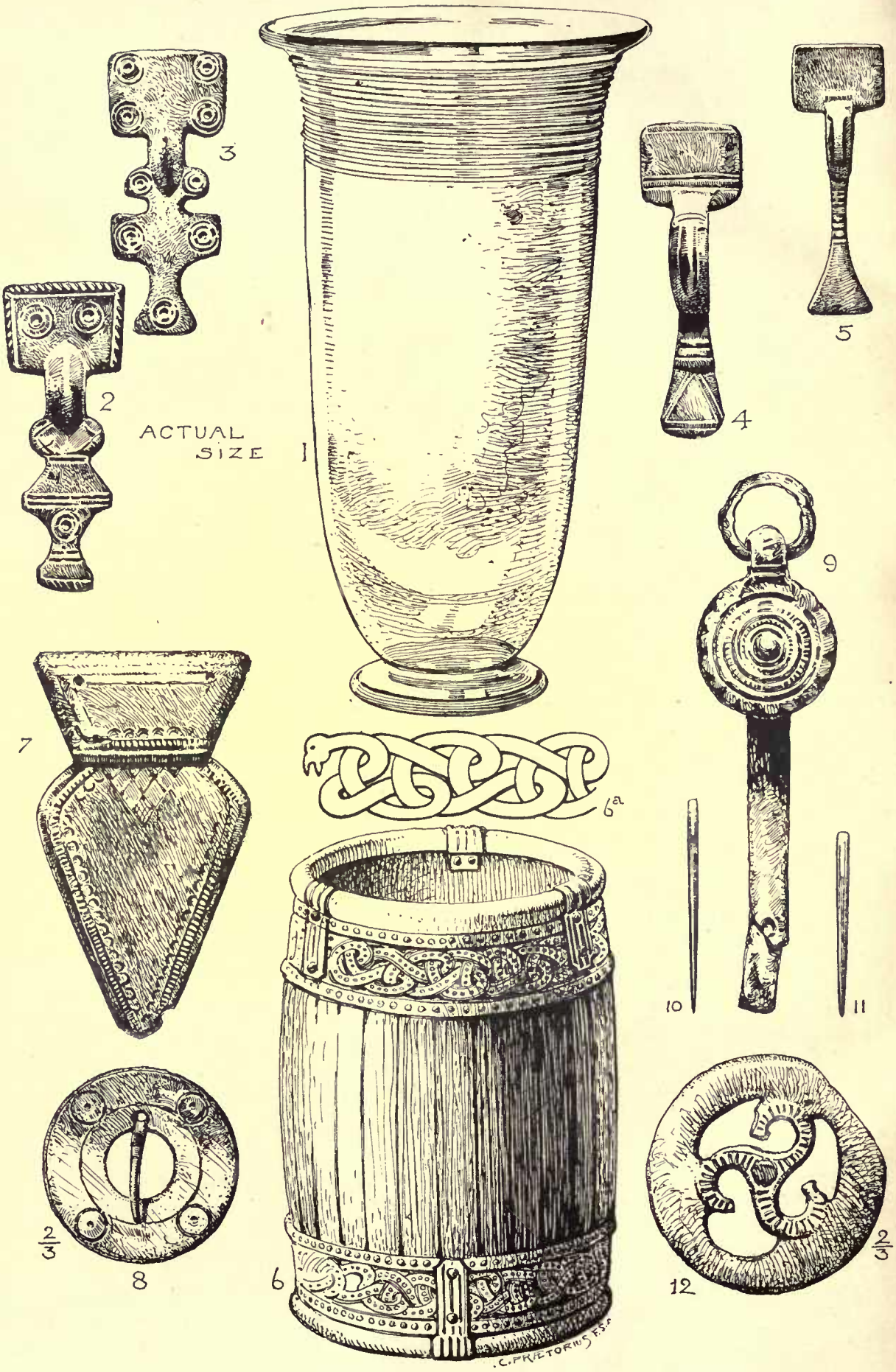
It does not require a close examination of dialect and feature among the present inhabitants of Surrey to appreciate the extent of London's expansion to the south ; but it is by this method that the dwellers in the remoter districts of the county may be provisionally classified, and their early predecessors connected with others who were their neighbours before the existing borders of the county were adopted. Before the forest was cleared and the lowlands drained, the inhabitants of this part of Britain must have been distributed mainly in accordance with the nature of the ground. It may safely be assumed that while the low-lying areas near the Thames would be liable to flood, the isolated eminences that are yet to be recognized in north Surrey afforded an unassailable site for habitation ; and there is archæological evidence to show that the river banks were by no means deserted by the ancient Britons. After four centuries of Roman administration the Thames was no doubt more under control, and skilful engineers had carried highways through marsh and forest in several directions ; but the neighbourhood of the Wandle and the lower valleys of the Mole and Wey were then as now subject to floods, and it is rather on the Chalk formation to the south and on the Greensand formation beyond it that traces of Teutonic settlements within the county should be looked for.

While geographical considerations would therefore suggest a search for relics of our pagan predecessors all along the southern border of the county, the heights of Sydenham and Forest Hill, of Norwood and Streatham might also be expected to furnish some traces of occupation by strangers who may well have entered the county from the north-east by way of the Thames. The expanse of London Clay around these groups of hills would however discourage further occupation to the east, while the soil in the north-western corner of the county would not support an agricultural or a pastoral people. This area was described in 1859 by the Rev. Charles Kingsley, then rector of Eversley, who called attention to the surroundings of the Roman road which crosses the bare and barren formation of Bagshot Sand, with clays on either side of it, which he believed to have been once covered with deep oak forest.[1]

Such then being the physical data on which must be based any reconstruction of the history of Surrey during the early Anglo-Saxon period, mention may now be made of those slight and dubious statements on the subject to be met with in the early chronicles. Not that any attempt can here be made to trace in more than outline the fortunes of the district during the centuries of obscurity that followed the withdrawal of the Roman officials. All that is aimed at in the present chapter is to examine and compare the actual relics that have so far come to light, in order to estimate the material condition and political connexion of the pagan or semi-pagan settlers who made, but omitted to record, the early history of our district.

It is natural to speak first of the battle fought at Wibbandune in 568, a few years after the accession of the young King Aethelbearht to

[1] Society of Antiquaries, *Proceedings*, iv. 282, ser. 1.



ANGLO-SAXON ORNAMENTS, ETC.

To face page 257.

the proudest throne in Britain ; but it is open to question whether the battle took place within the present borders of the county, and the identification of the site with Wimbledon derives no real support from philology. Most recent historians have been content to admit the traditional claims of Wimbledon, but the tradition owes much to the ingenuity of Camden, and has been disputed more than once. Worplesden in the south-west of the county has been suggested, but though the site is not an unlikely one, the alleged similarity of the names is rather fanciful. Another proposal, which certainly has a more solid foundation in history, has been made by Mr. Elliot Malden,[1] who would identify Wibbandune with Wipsedone, a place that was certainly known at the time when the boundaries of the land belonging to Chertsey Abbey were added to the original charter, perhaps in the thirteenth century. This would fix the field of battle somewhere on the heaths to the north of Chobham, near the Roman road[2] and the present railway line between Staines and Wokingham.

For the present purpose the question is of great importance, for it has a direct bearing on the nationality of the peoples who had settled as early as the middle of the sixth century to the east and to the west of Surrey, the result of their collision affecting the subsequent occupation of the disputed area. A final solution is perhaps impossible, but the area within which the armies may have met is limited by various considerations. The prosperous kingdom of Kent was shut in by sea or river on three sides, and almost entirely on the south-western frontier by Romney Marsh and the forest of the Weald. Expansion was possible only along the strip of country between the Thames and the Weald, corresponding to the Surrey of later centuries. After the battle of 568 and perhaps before that date this was politically distinct from Kent ; and whatever the significance of the diocese of Rochester it seems clear that the present boundary between Kent and Surrey dates from the early pagan days of England. It will be observed also that on all other sides Surrey has a border that may well have been dictated by the nature of the ground. Attention has already been drawn to the expanse of barren heath that is backed by the forests of Windsor and the Silchester district ; and while the Thames formed a more effective barrier then than now, the southern limit seems to have depended on the progress of forest clearing in the Weald. On the other hand the Kentish border looks purely arbitrary on the map, for the valley of the Ravensbourne, which is certainly followed for a short distance, seems to have no bearing on the delimitation.[3]

If this line is as old as the diocese of Rochester, it may be inferred that there was an efficient force on the west to maintain the frontier against any encroachments on the part of Kent. It is difficult however

[1] *English Historical Review*, iii. 428.

[2] This is the *Herestraet* or *via militaris* of the charter.

[3] On this point see Mr. Elliot Malden's paper on the West Saxon conquest of Surrey in *English Historical Review*, iii. 423, and his *History of Surrey*, p. 51.

to account for the silence of the chronicles as to the prowess of a people who could thus permanently hold in check the leading powers of Britain; for in the sixth century Wessex under Ceawlin already exercised a supremacy that rivalled that of Kent, and was destined later to unite the English kingdoms under one sovereign. At some time the West Saxons made the upper Thames valley their own, and after the extinction of Silchester probably came upon the Roman road which leads to Staines. The issue is thus narrowed, and whatever site is ultimately fixed on for the battle it may be reasonably assumed that Wibbandune was in Surrey, and that the battle resulted in the extension of West Saxon conquest or control to the Kentish border much as it stands to-day.

Beyond this rather dubious reference some insight into the early condition of the district is afforded by the Chertsey Charter, which will be fully dealt with elsewhere, but must here be referred to as marking the definite establishment of Christianity in a part of Surrey not by any means the most attractive or populous at that time. The foundation of the abbey by Wulfhere is generally placed in the year 666, while Frithwald was the local under-king owning allegiance to the Mercian throne; but the mention of Ecgberht in the preamble[1] looks like a confusion in the mind of an editor between the kings of Wessex and Kent who bore that name. The latter was in fact contemporary, but had no authority in Surrey, and only serves to fix the date. Something will presently be said as to the bearing of the Charter on the archæology of the county; but as it was granted at a date when we may suppose Christianity to have been already a living force in what were then the more healthful and civilized parts of Surrey, it will be more convenient first to notice the remains of a pagan or half-converted population that have been brought to light from time to time. An investigation of the few well attested relics of the early Anglo-Saxon period will no doubt justify certain conclusions as to the condition of the first Teutonic occupants of the district; but more extensive discoveries are necessary before the nationality of those early comers, and their relations with other settlers in the south, can be determined with any degree of accuracy.

The most important discovery of Anglo-Saxon remains in the county is no doubt that recorded by Mr. Francis Ll. Griffith in 1895,[2] though circumstances rendered a complete account impossible. In constructing the present Edridge road, to the south of the town-hall at Croydon, the workmen came upon a number of burnt and unburnt interments at a depth of about $2\frac{1}{2}$ feet; but as the excavations extended over many months, and were not specially watched, the remains cannot be precisely grouped or located, and their archæological value is thereby much impaired. An interesting collection was however made by Mr. Thomas Rigby, who presented typical specimens to the British Museum; and some objects from the site are exhibited in the Croydon town-hall.

[1] The words are '*regnante glorioso Egberto, rege Anglorum.*'
[2] Society of Antiquaries, *Proceedings*, xv. 328.

ANGLO-SAXON REMAINS

Besides some pottery and other objects of the Roman period, twelve iron shield-bosses, three swords and the same number of axe-heads, an angon, a glass cup, and several smaller relics were recovered, which may with confidence be assigned to the Anglo-Saxon period. These are described in detail and partly figured in the original account, which may here be briefly summarized. To deal first with the unburnt burials, the direction of which is not recorded, but was probably east and west, the shield-bosses varied in shape, but are not unusual, with the exception perhaps of two tall specimens of conical form with ribs running from point to base. One of this description is preserved at Oxford, and a similar specimen from Farthingdown will be noticed later. The swords and spearheads were in all probability associated with the shields in the graves of warriors, and it is interesting to notice first that the swords occur on this site in more than the usual proportion and may thus have some bearing on the average social position of the inhabitants at the time ; and secondly, that one of the specimens retains the bronze chape of its scabbard, a feature that is by no means confined to any particular district in this country, but is of sufficient rarity to be specially noticed here.

The angon[1] has been the subject of much inquiry and even of dispute, but it is commonly thought to be a weapon of the javelin class, distinguished by a barbed point and a long thin shaft of iron, which was no doubt fitted to a wooden handle, the latter being beyond a swordsman's reach. It was used at close quarters for transfixing an opponent's shield, which could then be borne to the ground by the assailant's weight. The classical passage[2] is however somewhat obscure and cannot here be discussed. Though seldom met with, the majority are known to have come from Frankish graves on the Rhine ;[3] and the weapon, over a yard in length, found at Croydon may be compared with others in the national collection from Strood, Kent, and the Department of the Marne, France.

It has been stated that on the continent the angon occurs only in the Alemannic and Burgundian territories and among the Ripuarian Franks.[4] The Abbé Cochet, who has been quoted to show the extreme rarity of this weapon in France, found only one specimen during his extensive excavations in Normandy, and only knew of one or two more in the country.[5] But several have come to light since his time, as in the Department of the Aisne,[6] and they are now said to be specially plentiful in Belgium and the region of the Salian Franks,[7] whence the English specimens were no doubt imported.

[1] Though in common use among antiquaries, this term has been objected to on the ground that the Old English *anga* means a 'goad' ; and according to Mr. W. H. Stevenson, there is no trace of its use in the sense of a weapon.

[2] *Agathias*, bk. ii. ch. v. ; *Archæologia*, xxxiv. 177 and xxxv. 48 ; Baron de Baye, *Industrial Arts of the Anglo-Saxons*, p. 25.

[3] Lindenschmit, *Handbuch der deutschen Alterthumskunde*, p. 180. [4] *Archæologia*, xxxvi. 78, 84

[5] *La Normandie Souterraine*, ed. 2, p. 352 ; *Sépultures Gauloises*, etc. p. 160.

[6] F. Moreau, *Album Caranda*, iii. pl. 102 (nouvelle série).

[7] Barrière-Flavy, *Arts industriels de la Gaule*, i. 38.

As somewhat of a rarity in English graves the angon may be connected with the three franciscas or axeheads, which again are more commonly found in Merovingian graves on the continent. In the British Museum are examples from the Isle of Wight, from Suffolk and London, but all are not of the same pattern. Strictly speaking, the francisca is an iron axehead for throwing, which has the centre of its cutting edge beyond the centre of the socket ; and to this type belongs at least one of the Croydon specimens. Other axeheads of about the same period have blades adapted for use at close quarters, extending below the socket, or above and below like a halberd.[1] The francisca proper has been assigned to Frankish graves of the fifth and sixth centuries, as it occurs abundantly in Belgium, which the Franks reached at an early date, and very rarely in parts of France which were only conquered by them after a long interval. Graves of the seventh and eighth centuries in which examples have occurred are thought with good reason to be those of chieftains.[2]

Among the antiquities preserved at Croydon is the upper part of a bronze bowl or cauldron belonging to a type of which several examples are extant from Anglo-Saxon graves. In the British Museum are three from Long Wittenham, Berks, while one is figured[3] from Linton Heath, Cambs, and another was found with Anglo-Saxon weapons and a bronze vessel of a different pattern at Sawston, in the same county, in 1816.[4] A specimen of the same type is published[5] from the neighbourhood of Stade on the Elbe, a district which affords many parallels to our Anglo-Saxon antiquities. The rim generally measures 7 inches across, the body being somewhat wider and the bottom rounded. The lip is horizontal and turned outwards, unlike another common type of bronze bowl which has a thickened rim turned in at an angle. A semi-circular handle of iron is attached to two angular projections from the rim of the vessel, which was hammered out of a circular sheet of metal.

The bronze tag of a girdle (fig. 7) is of unusual form, but an almost identical specimen is preserved in the Ashmolean Museum at Oxford, from an interment in the Dyke Hills, Oxon, where it was associated with objects that resemble a bronze mount from Croydon (fig. 9), possibly belonging to a bowl.

Two buckets about 4 inches high, mounted in the usual way with ornamented bronze bands but of less than average size, were also found. Their use is uncertain, but it is generally thought that they were originally filled with food offered to the dead, and a similar belief that refreshment was necessary beyond the grave may account for the presence of the elegant glass drinking cup exhibited with the buckets at Croydon.

This interesting example of Anglo-Saxon glass (fig. 1) is in excellent condition, and may in this respect be compared with another, of conical

[1] Various specimens are figured in *Archæologia*, xxxiv. 179.
[2] Barrière-Flavy, *Arts industriels de la Gaule*, i. 54.
[3] Neville, *Saxon Obsequies*, pl. 16.
[4] Figured in *Archæologia*, xviii. pl. 25, fig. 4.
[5] J. H. Müller, *Alterthümer der provinz Hannover*, pl. xiv. fig. 109.

shape, found in the remarkable cemetery at Kempston in Bedfordshire and now included in the national collection. The Croydon specimen however differs from many of its class in having a foot and being therefore capable of standing unsupported. Other fragments of glass were also found, but these belonged to one or more vases with hollow claws attached in two or three rows to the sides. This form is frequent in Kent and occurs in other parts of the country as Berkshire, Hampshire and Northants, Gloucestershire and Cambridgeshire; while it is not uncommon in the Frankish graves of Normandy and the Rhine district.

It may be mentioned that both these forms of the glass drinking cup were decorated with threads generally applied in spirals; and the foot which is always present with the hollow claws is sometimes attached, as in the present instance, to vessels without that peculiar ornamentation.

The paucity of smaller relics from the site is to be regretted, for it is suspected that some of the more portable and less conspicuous objects were appropriated by the workmen and thus left unrecorded. A few bronze needles (figs. 10, 11) were found, indicating perhaps feminine burials, but the number of brooches is extraordinarily small when compared with the number of graves. This may be to some extent explained by the large proportion of male interments, as shown by the swords and spearheads, ornaments being more plentiful in burials of the other sex. Two discs for attachment to some part of the dress have been preserved, each with an open work centre of triskele form, the limbs being of serpentine appearance (fig. 12). A very similar specimen[1] belonging to the Merovingian period has been found in the Department of the Aisne, France; and another[2] with four instead of three spokes was discovered in the Linton Heath cemetery. This particular device is not uncommon on objects of an earlier date, and has survived to modern times in the arms of the Isle of Man.

This is perhaps the only site in Surrey which has produced examples of the brooch, an important and characteristic item in early Anglo-Saxon costume. It was worn by both sexes, and though widely differing in pattern even within the limits of England was yet fairly uniform in particular districts and among particular tribes; so that the several types constitute an important factor in determining nationality. Little however is contributed to our knowledge of early England by the few brooches as yet discovered in Surrey, and these no more than the records can decide whether Kent or Wessex dominated Surrey in the pagan period. The flat ring brooch (as fig. 8) is indeed represented but is a most uncommon type in England, only a few isolated specimens being known. A finely engraved example from Kent is preserved in the British Museum, and others from Stamford, Lincs,[3] and Welford, Northants,[4] may perhaps be included in this class, though they differ in more than one particular.

[1] F. Moreau, *Album Caranda*, i. pl. xxxi.
[2] Figured in *Journal of Archæological Institute*, xi. 98.
[3] *Pagan Saxondom*, pl. xii.
[4] Ibid. pl. xxxii.

The square-headed type is on the other hand more sporadic, but it is difficult to match some of the Croydon specimens. Two of them (figs. 2, 3) have all the appearance of rude copies from a well known type which may perhaps be called Jutish, as it occurs almost exclusively in Kent and the Isle of Wight. The originals, which were highly gilt and generally ornamented with niello and garnets, occur in various sizes; the smallest, about 3 inches in length, being perhaps the prototype of those from Croydon, which have lateral projections that are otherwise difficult to explain, as they are not constructional and rather interfere with the design.

The others here represented (figs. 4, 5) with slender bow and stem are more commonplace and widely distributed. Examples more or less parallel are in the national collection from Harnham Hill, Wilts;[1] Long Wittenham[2] and East Shefford, Berks; and Cambridgeshire. The presumption therefore is that they are of West Saxon origin, but this view is not supported by any example from the site of the peculiar brooch of Wessex; the Croydon specimens described as saucer-shaped being of the smallest type, which is more of the nature of a button, and practically confined to the Jutish districts.

The foreign weapons and unfamiliar ornaments in the Croydon find, while not pointing definitely to any centre of emigration on the continent, still suggest a racial distinction between the early occupants of the county and their neighbours of Kent and Wessex. The records make it clear that Surrey was not considered an integral part of either kingdom in the early Anglo-Saxon period.

A peculiar feature of these interments has yet to be noticed. In the Croydon town-hall are exhibited a few vases which from all analogy would be referred without hesitation to the Roman period in Britain, and yet were discovered on the site of the Saxon cemetery just mentioned, apparently deposited in the graves. They were never intended to hold the ashes of the dead, and may therefore be classed with the rough hand-made pottery that will presently be noticed from Anglo-Saxon sites in Surrey. It is at present impossible to decide how long the Roman or Romano-British potteries, as for example in the Upchurch marshes, survived after Britain was cut adrift from the empire; but it is probable that though the handicraft declined, the custom of depositing a vase by the head of the deceased[3] was not affected by the changes of the fifth century. The condition of these Roman vases shows that they were carefully handled and deliberately preserved; and an intermediate stage may perhaps be traced in the form and quality of about half a dozen cinerary urns, also preserved at Croydon, which recall the wheel-made productions of the Roman potter; but, though found on an Anglo-Saxon site, they are devoid of ornament, and may thus be distinguished from the cinerary urns characteristic of Anglian ceme-

[1] Figured in *Archæologia*, xxxv. pl. xii. [2] Ibid. xxxix. pl. xi.

[3] An examination of some Sussex interments suggests that such vessels were only placed in the graves of males.

teries. A fragmentary specimen, however, now in the British Museum, has the usual impressed ornament in panels surrounded by a peculiar raised rib.

Cremation in Surrey during the post-Roman period seems to have been the exception, and beyond the instances already referred to has only been traced in two localities within the county. Whether the urns in question contained the remains of Romanized Britons of the fifth century or of a few stray immigrants who preserved the Anglian tradition has yet to be determined. But it may here be pointed out that cremation among the Romans became less common about the middle of the third century; and even if the Croydon urns may be assigned to the native population, the characteristic Anglo-Saxon ornament occurred on the specimens found at Beddington and Walton-on-Thames.

About three miles from the site already noticed, discoveries of Anglo-Saxon remains have been made from time to time in the vicinity of a Roman villa, at Park Farm in the parish of Beddington, north of the river Wandle and not far from Hackbridge station.[1] The occurrence of a silver penny of Aethelstan (925–40) may be regarded as purely accidental, and is no evidence that the villa was standing, much less that it was occupied, at that period. It was about 500 yards to the south of the building[2] that remains of a human skeleton were found in 1871, with an iron spearhead of superior manufacture, a small knife and portions of the shield-boss.

A few feet distant was found a second skeleton in a grave that had been clearly cut to a depth of 18 inches. On the same spot was also found a large sepulchral urn of dark ware, marked with patterns of considerable elegance; this was very moist and brittle but was fortunately removed entire. It measured 9 inches in height as well as diameter and contained fragments of bone mixed with the earth. A smaller urn fell to pieces on removal, but a third was found some days later similar to the first, though very much damaged; and near it was one of smaller but more graceful proportions, about 7 inches high, with encircling lines and impressed ornaments. This stood upright about 18 inches from the surface and contained a fragment of bone. Another skeleton with the usual iron knife, and also another fractured urn were recovered later on; and it was observed that though the gravel, which was about an acre in extent, was clearly raised above the surrounding meadows there were no surface indications of the burials beneath. On subsequent occasions,[3] in about half the same area, were found five cinerary urns and remains of four unburnt burials, in two of which the head was seen to lie towards the west. The graves contained besides an iron shield-boss of the usual pattern a few spearheads and knives but a very few personal ornaments, comprising a single bead of blue glass, a plain bronze bracelet and a few

[1] Society of Antiquaries, *Proceedings*, v. 153–5; *Journal of British Archæological Association*, xxvii. 518.

[2] Plans of the villa and its surroundings, as well as illustrations of the shield-bosses and spearheads, are given in Corbet Anderson's *Croydon*, pl. viii. and pp. 41, 87.

[3] *Surrey Archæological Collections*, vi. 123.

scraps of bronze that may have been portions of brooches but were beyond recognition.

Three years later, in 1874, further discoveries[1] were made in the same area, which has now been converted into a sewage farm for Croydon. The remains of a giant of about 6 feet 6 inches were discovered, his head resting on a circular shield of which the iron boss alone remained; another shield with a similar boss lay close to his left arm, while a spear had been placed along his left side. There also came to light part of a sword and a few spearheads that may have belonged to other graves, as the excavations were not rigidly supervised. Fragments of charred wood as well as 'a coarse black urn and a white drinking cup glazed with bright clean glazing' were taken as evidence of cremation; and it was deduced from a plan that the main interment mentioned above was made with the feet pointing to the north-east and the head towards the centre of one of two slight eminences during the levelling of which, in 1871, had been found two cinerary urns. There seems here a slight discrepancy between the two accounts, but the essential fact remains that within a restricted area were found skeletons lying with the head to the west, one at least with the head to the south-west, and several cinerary urns of the Anglo-Saxon period. It might be inferred from the account of the excavations in 1874 that the skeleton lying south-west and north-east was on a lower level than those previously found lying east and west and the cremated burials which were cleared away with the 'slight eminences' three years before. If this could be established the presumption would be that the burial not orientated was of earlier date than the others,[2] though the presence of cinerary urns in association would still leave the Christian character of the later graves uncertain.

On the chalk uplands to the south more satisfactory excavations were carried out in 1871 by Mr. Wickham Flower, who contributed an illustrated account to the *Surrey Archæological Collections*.[3] The grave mounds which had attracted his attention were situated on Farthingdown near Coulsdon, and about five miles south by west of Croydon. The chalk here rises over 400 feet above sea level and afforded a site such as the Saxons as well as the ancient Britons before them preferred for the burial of their dead. The existence of this burial place had been known for at least a century, for about 1770 one of the barrows had been opened and a perfect skeleton found within it. Mr. Flower considered that only the two largest mounds had been previously opened, so that his account of the smaller barrows may be taken to represent the original condition of the graves. Sixteen of these were examined in two groups about a quarter of a mile apart. They were all hewn in the solid chalk to the depth of 3 to $3\frac{1}{2}$ feet from the original surface of the

[1] *Journal of British Archæological Association*, xxx. 213.

[2] There were similar cases in a Cambridgeshire cemetery, but the converse was also observed more than once, and such a conclusion would here be fallacious.—W. K. Foster, 'An Anglo-Saxon Cemetery at Barrington' (*Cambridge Antiquarian Society's Communications*, vol. v.).

[3] Vol. vi. p. 108.

ground, and their presence was indicated by slight hillocks seldom rising 2 feet from the ground and resembling those to be seen in village churchyards at the present day.

In every instance the skeletons were found extended at full length, with the heads placed towards the west and the arms close to the sides. No traces of cremation or of any kind of funeral pottery were met with, and the bones and teeth with very few exceptions were perfectly sound and in their proper positions.

In one group were found a grave containing two skeletons placed so close together that the skulls were almost touching, but no traces of weapons or ornaments were found with them. Another burial yielded two small silver pins[1] placed near the skull and no doubt used for fastening the hair. They have a slight swelling in the middle, the head being formed of a small coil of silver wire through which the pin passed and to which it was fastened by hammering. A knife[1] of the common type and a bronze-mounted bucket devoid of any ornament were also found, the latter placed near the head of what was probably the skeleton of a woman.

The southern group was on higher ground, and in the first grave opened a small gold pendant[1] was found lying near the skull. This had probably been suspended from the neck, and consisted of a thin disc of gold with a ring welded round the edge and a small loop for attachment. On one face is an equal-armed cross inclosed in a circle, both formed by a series of slight indentations, in some of which the remains of some kind of paste or enamel could be seen by the aid of a microscope. The reverse is plain, and the trinket seems to have been much worn by use.

A very similar specimen is preserved in the Gibbs collection of antiquities from Faversham, now deposited in the British Museum. The cross is composed of a number of twisted gold threads applied to the surface and coiled into a boss at the centre. The spaces between the arms of the cross are covered with punched holes, but though in excellent preservation the face preserves no traces of enamel or other filling. In the same room is exhibited a simpler specimen found at Wye Down, Kent.

Another grave contained objects of remarkable interest, the skeleton being that of a man who was credited with a stature of nearly $6\frac{1}{2}$ feet. Lying across the breast and reaching from the right shoulder to the left knee was a sword of iron 38 inches long and 2 inches wide, of considerable thickness, though this may be accounted for by supposing the remains of the scabbard to have been fixed to the oxidized blade, and the measure of its length just given no doubt included the tang, which was 5 inches long and passed through the handle which was probably of wood. In the same grave was the iron boss[1] of a shield placed over the right foot of the skeleton. It is 7 inches high with a diameter of 5 inches at the base, and is minutely described by Mr. Flower, who found the grip or the metal part of it immediately below the

[1] Figured in the original account of the excavations.

boss. Though of extraordinary form it may be compared with the specimen mentioned above from Croydon, and is now preserved in the Ashmolean Museum. Near the left shoulder of the same skeleton was a bucket, the staves of which were bound together by iron hoops a good deal broken and corroded, and a small buckle[1] for a strap was also found.

In a neighbouring grave near the left shoulder of the skeleton was discovered a drinking cup[1] (fig. 6) of wooden staves ornamented at top and bottom with thin bands of bronze gilt embossed with serpentine interlacings (fig. 6a), while the edges are bound by other strips of bronze attached by three transverse bands at the top and bottom. Fragments of this cup with the sword and some other objects are now preserved at Croydon. Though buckets of similar construction are commonly found in graves of this period and have been already noticed more than once in the vicinity, drinking cups of this character are extremely rare, and the only perfect specimen in the British Museum at all comparable is the remarkable vessel from Long Wittenham, Berks, which has scenes from the Gospel history embossed round the outside. There is however in the national collection the upper brim of a wooden vessel which so closely resembles the gilt mount found at Farthingdown that the vessels may be supposed to have been of the same form and origin. It was found at Faversham and is included in the Gibbs collection. Below the three strips that cross the rim are grotesque human heads in bold relief that are strikingly realistic for the period, but the embossed ornament round the cup is composed of the dislocated limbs of the quadruped so commonly found in Anglo-Saxon ornament of the early time. In this respect it differs from the Surrey specimen, the design on which[2] consists of a continuous interlacing band in the form of a serpent, the head at least being as plainly discernible as in a somewhat similar design on an Anglo-Saxon brooch found at Standlake, Oxon,[3] and on a jewel found at Hardingstone, Northants.[4] The excavations in the former case were of special interest and were thoroughly carried out by John Yonge Akerman, who observed that in nearly every case the skeletons were lying with the feet pointing a little south of east. One burial pointing north-east and south-west, though the direction of the head is not stated, suggests a further comparison with some of the Surrey cemeteries; and the Hardingstone jewel has representations of a fish which may be regarded as a well known Christian symbol.

Among other graves examined on Farthingdown was one probably of a young girl, in which was found a small iron buckle[1] and six glass beads[1] of various colours. This seems to have been the only occurrence of beads in the whole cemetery, and their scarcity in the burials of Surrey may mark some difference either of race or condition between

[1] Figured in the original account of the excavations.
[2] A coloured drawing is given in *Surrey Archæological Collections*, vi. pl. iii. 113.
[3] Figured in *Proceedings*, Society of Antiquaries, iv. 93–6.
[4] Figured in *Victoria History of Northants*, vol. i.

the early occupants of the North Downs and their contemporaries in other parts of England, in which beads have been recovered from the graves in hundreds and are seldom absent from the graves of women.

In 1884, while an estate was being laid out for building purposes at Sanderstead to the east of the Croydon road, six or seven skeletons were unearthed within a space of 40 feet square, about 300 yards to the south of the railway station; but the remains were scattered and no competent observations made till a week later, when five more graves in the line of the new road then being constructed were discovered and examined by Mr. Garraway Rice, F.S.A., who has kindly allowed the following account to be compiled from his notes[1] and plans of the excavations.

The graves found on this occasion were situated upon the slope of the hill, and were from 18 inches to 2 feet in depth, cut in the solid chalk, which is only covered by about 9 inches of soil. The bodies had been laid at full length, with the arms lying straight down by the sides, and all were placed with the head to the west. The graves however, though orientated alike, were irregularly placed; and as several had been previously found in the centre of the 50 feet roadway, it is probable that the limits of the cemetery had not been reached. Though a careful search was made for relics, only three articles were recovered. At the head of the first grave opened was found a small pottery vase of coarse fabric and of a dark drab colour, though showing a dull red where broken. It measured $3\frac{1}{2}$ inches in height and $3\frac{1}{4}$ inches at the widest part, the opening at the top, which was without a lip, being $2\frac{1}{4}$ inches in diameter. Like those found at Croydon[2] and Leatherhead this vessel was not wheel-made, and in this respect resembles nearly all the pottery found in pagan graves of the Anglo-Saxon period. A rough unornamented vase would have left the date uncertain had its discovery not been followed by that of two small iron knives in separate graves. These are rarely absent from Anglo-Saxon graves, and were apparently carried about on the person by both sexes for domestic and general purposes.

The occurrence of a hand-made cup of dark ware at Hawkshill, near Leatherhead, should be noticed in this connexion, as a well-worn coin from the same spot, of Constantine the Great, struck about the year 330 probably at Trèves, is said to have been found inside. The discovery was made about fifteen years ago and was not fully noted at the time; but in view of the instances already cited, it is permissible to conclude that some of the skeletons found on this site in Fetcham parish were those of settlers who were buried not earlier than the middle of the fourth century. A few iron knives of the characteristic Anglo-Saxon pattern, were also found here; and in addition an interesting piece of flat bronze 'wheel-money,' with five spokes irregularly placed and the centre unpierced. It is figured full size in an account[3] of later excava-

[1] These were partly published in a letter to the *Croydon Advertizer*, March 7, 1885.
[2] One is preserved in the British Museum. [3] Society of Antiquaries, *Proceedings*, xviii. 253.

tions at Hawkshill, and closely resembles a specimen known to belong to the Merovingian period, from Caranda in the Department of the Aisne, France.

Several discoveries[1] too have been made in the neighbourhood of Mitcham that point to occupation in the early Anglo-Saxon period, though the record is in each case lamentably deficient in details that are essential in this branch of archæological investigation. In September, 1882, human remains were found in a field adjoining Morden Lane, on a bed of yellow sand which was covered by about 3 feet of black earth. The body had been placed in an extended position almost due north and south, although the direction of the head is not stated, and no trace of any metal or other object was found with the bones. About the year 1880 excavations were being made in the coal wharf adjoining the railway, about 50 yards north of the site just mentioned, when the workmen came upon some human remains and a corroded iron vessel, which, from a further description supplied, may be supposed to have been a shield-boss of the ordinary type. Two years later objects described as buckles, and possibly of Anglo-Saxon date, were found near the surface in a gravel pit hard by belonging to the railway company.

Though Mitcham is not an unlikely place for a settlement of that early date, it must be confessed that the evidence above cited does not amount to proof. More confidence may however be placed in the brief account of an earlier discovery near Morden Lane. In 1856 there was exhibited to the Surrey Archæological Society[2] the iron boss of a Saxon shield which had been found many years before. The land in this locality has been known in the Court Rolls of the Manor for the last four centuries as Dead Man's Close, and the name may be due to a tradition that it was an ancient burial place, or more probably to the discovery of human bones from time to time.[3]

More isolated interments have been disclosed in other parts of the county. In 1896 some glass beads[4] were found with a skeleton laid with the head westward at Wallington, but the grave was almost obliterated and the contents scattered before any notice was taken. A cinerary urn of the Anglo-Saxon period from Walton-on-Thames was exhibited to the Archæological Institute[5] in 1867, and contained besides calcined bones a small glass bead and portions of a bronze ornament. Very near this site, but outside the county, a mixed cemetery has been found at Shepperton on the north bank of the Thames ; and an urn that lay only 4 yards from an unburnt and orientated burial is figured in the *Proceedings* of the Society of Antiquaries (iv. 118, 191).

To summarize the foregoing accounts of excavations and discoveries, which are certainly more monotonous than most of their kind, it may be remarked that with very few exceptions the burials were orientated in

[1] Recorded by Mr. Garraway Rice in the *Croydon Advertizer*, September 23, 1882.
[2] *Surrey Archæological Collections*, vol. vi. pt. ii. Report p. xii.
[3] *Journal of British Archæological Association*, vii. 442.
[4] Now in the possession of Dr. Cressy of Wallington.
[5] *Journal*, xxv. 178.

the manner usually associated with the Christian profession ; and it has been more than once inferred by writers on the subject that burials not so orientated are of pagan origin and presumably earlier in date. There is much to be said for this view, and plentiful evidence in its favour both in this country and abroad. Burgundians, for instance, who were converted to Christianity early in the fifth century, were found almost without exception to have been buried unburnt and with the head to the west in the extensive cemeteries excavated by M. Baudot at Charnay ; and a similar uniformity of orientation was observed in a supposed Visigothic cemetery discovered in the Charente at Herpes, described by M. Barrière-Flavy. The same may be said of Selzen on the Rhine, and of the burials in Normandy excavated by the Abbé Cochet, though whether these last were all of Christian converts is certainly open to question.

It may be assumed that as the influence of the Church spread among the Teutonic conquerors of Britain, the common pagan custom of burning the dead, or burying them in full dress with their weapons, ornaments and personal utensils, would gradually give place to the more simple rites of primitive Christianity. The scanty furniture of the graves at Sanderstead and elsewhere in Surrey might indeed be reasonably explained by the supposed poverty of the deceased, but the assumption is unnecessary here if the east and west position is accepted as a proof that these were all burials of Christians. In the present state of knowledge it would be unwise to dogmatize on the point, for positive proof is still wanting that the distinction was uniformly observed. Negative evidence there is in plenty, for, in the first place, no Christian emblem is known in this country from a cremated burial or from any unburnt interment with the head placed to the south or south-west.

In our own country, where Christianity was not fully re-established till at least the middle of the seventh century, the direction of the graves varies considerably. Cemeteries have been discovered, as at Marston St. Lawrence, Northants, in which the bodies lay regularly with the head to the south-west.[1] Other sites have been found to contain burials in both directions, as Long Wittenham, Berks, while Kentish graves are almost invariably east and west.[2] As Kent was the first to receive the emissaries of Rome, it might be inferred that the graves of that kingdom were principally of Christian converts ; but it should be noted that in the neighbouring kingdom of the South Saxons, who were among the last to accept baptism, the east and west position is usual. Account must also be taken of Kentish subjects buried before the end of the sixth century ; and many must have met their death in the century and a half that is supposed to have elapsed since the traditional arrival of Hengest and Horsa in 449.

These difficulties may eventually prove to be not insuperable, and the Christian character of the east-and-west burials is again confirmed by at least two discoveries in this country of objects distinctly connected

[1] A plan is given in *Archæologia*, xlviii. pl. xxii.

[2] *Inventorium Sepulchrale*, p. 39.

with Christianity in graves of that description. The Desborough necklace[1] with its central cross of gold and the Long Wittenham cup[2] with its scenes from the Gospel history go far towards proving the case, especially as both were found in cemeteries containing interments in both directions. Though nothing strikingly suggestive of Christian ownership has occurred in the Anglo-Saxon graves of Surrey, the paucity of relics is in itself an argument of the same force as the direction of the graves; and the exercise of a little more care in the investigation of the cemetery at Beddington would perhaps have settled the priority of the unorientated burial at least in this particular instance.

It must be admitted however that the uniformity and the presumably Christian character of the Surrey interments render the early period none the less obscure. If the graves already discovered are all later than Augustine, why are there no traces of occupation in the sixth century, when there were probably two armies in the heart of the district, both of whom considered it worth acquisition by the sword? Where again are the traces of the West Saxons, who, after the fight of 568, apparently kept back the arms of Kent behind a frontier that was naturally weak and must have needed ample garrisons? Nor are these the only problems still awaiting a solution that seems only possible from archæological research. If the Surrey graves are all later than Augustine, whence came the Christian missionaries to the dwellers on the North Downs? It is generally held that the mission of Augustine accounted only for the conversion of Kent and East Anglia; and if Birinus brought baptism to Surrey, it is still more difficult to account for the absence of supposed pagan interments in the county, for the West Saxon court itself was not converted till 635, and at least a century must have elapsed since Wibbandune before the men of Surrey ceased to be worshippers of Woden.

It is certainly open to conjecture that Surrey was less strongly West Saxon than Hampshire, a county which there is reason to think was not overrun by the house of Cerdic so early as is commonly supposed.[3] And it may be that a minute examination of some of the ancient sites in Surrey would reveal traces of occupation by Britons more or less Romanized for a considerable time after the legions had been withdrawn from our shores. There is no obvious reason why the discoveries of the late General Pitt Rivers near Salisbury should not find a parallel in Hampshire and Surrey, as the chalk is common to all three counties and remains of Roman buildings plentiful enough in each of them. For the present, archæology dare not put a limit to the survival of a Romano-British civilization in any part of the country; and in view of the Surrey discoveries, it is not impossible that the kings of Kent and Wessex were content to exercise dominion over the Britons of the North Downs without actually planting colonies of their own among them till Christianity had in a measure prepared the way. Though the

[1] *Archæologia*, xxxviii. 350, pl. xvii. [2] Ibid. lv. 467.
[3] See chapter on Anglo-Saxon Remains in *Victoria History of Hampshire*, vol. i.

date of Surrey's conversion from heathenism is nowhere expressly recorded, the Chertsey Charter gives a date after which it is difficult to believe that the inhabitants of western Surrey can have remained long without baptism. The new faith would make itself felt in funeral observances; and even before the cemeteries were removed to the consecrated churchyard they would cease to be of service to archæology. In the chalk area and generally in the eastern half of the county the Gospel had no doubt spread some years before, for being separated from Kent by no natural obstacle the inhabitants would probably have welcomed the priest even when they would have repelled the soldier. Indeed the Surrey finds bear independent testimony to early ecclesiastical activity in so far as the graves contained remarkably few ornaments; and even the greatest seem to have been laid to rest with little but the weapons which they may have borne to defend the faith they died in.

The presence among them of the great Mercian king, Wulfhere, must have deeply affected the political and religious condition of the inhabitants of Surrey. The grant of large estates to the Church would set the seal on their conversion, and his temporal power must have been evident to their eyes if the conqueror passed through their territory to that of the South Saxons, whose king, Aethelwalch, had been under his protection since 661. As Kent was ravaged by Aethelred in 676[1] and the Bishop of Rochester driven from his diocese,[2] it is likely that the whole of Surrey had by that time passed under Mercian rule, so that it is all the more remarkable that Theodore when reorganizing the English Church should include Surrey in the West Saxon diocese of Winchester. The relations of that prelate with Wulfhere make it impossible to suppose that the over-lord disapproved of the arrangement, and the obvious inference is that Wessex had a strong and early claim on the Christian community of Surrey. As Mercian dominion south of the Thames may be fairly said to date only from the middle of the seventh century, the task for archæology is to decide between the two rival claimants to the over-lordship of Surrey between the close of the Roman period and the reign of Wulfhere, an interval to which most of the burials already described may be attributed. The question is one that specially and almost exclusively concerns the antiquary, but exact inquiry in this field is of comparatively recent growth, and material is still wanted to provide a definite solution. At present a few indications of contact with either power may be noticed here and there, but nothing better than an open verdict can be returned.

Of minor relics not connected with interments there are few to record in Surrey. Two however are of rare occurrence, and apart from their intrinsic value are of importance on different grounds. The first is a gold ring, not necessarily for the finger, found at Witley some years ago. It weighs 65 grains and belongs to a peculiar type, being of unequal thickness with a spiral groove in which is inserted gold wire.

[1] *Anglo-Saxon Chronicle* under that year.
[2] Bede, *Ecclesiastical History*, bk. iv. chap. xii.

In the original account[1] it was compared with a somewhat more common type belonging for the most part to the prehistoric period and illustrated in an early volume of the Archæological Institute.[2] The addition of a thinner strand to the spiral coil of gold seems to have been characteristic of the Viking period, and the Witley ring may be more properly classed with the gold bracelet found at Wendover and now preserved in the British Museum. Gold and silver bracelets of this type are however more commonly found in Norway, some associated with coins which assign them to the ninth and tenth centuries.[3]

Also of gold is a small Merovingian coin found about 1854 in a garden at Brockham, between Reigate and Dorking. It is a *triens* or *tiers de sol* struck at Metz, of the coinage of the French kings of the first race.[4] Its weight just exceeds 19 grains, and another coin of the same type, bearing the name of the same moneyer, Ansoaldas, occurred in the Crondall hoard. The Brockham piece is now preserved in the British Museum, and may be assigned to the period 550–600, during which the Roman influence is still apparent in the coinage.

In addition to the above, two important hoards of Anglo-Saxon coins in Surrey have been recorded. The first discovery[5] was made in April, 1817, within the parish of Dorking on Lower Merriden Farm at Winterford Hanger. A wooden box, containing about 700 silver coins and about six ounces of fragments, was struck by the plough, and being massed together by the decomposition of the alloy were easily recovered, though the box crumbled away on exposure to the air. The treasure had been concealed about a foot below the surface in a spot where the earth is of a particularly dark colour and productive of better corn than any other part of the field. A revised list of the coins shows that East Anglia was represented by sixteen of Aethelweard (837–50), three of Eadmund (855–73), and the same number of the Danish Aethelstan (878–90); Mercia by one each of Ceolwulf I. (822–3), Beornwulf (824–5), Wiglaf (825–39), and Burgred (853–74), while there are twenty-three of Berhtwulf (839–53). Of Ceolnoth, Archbishop of Canterbury (833–70), there are eighty-six, while of the sole monarchy there are twenty of Ecgberht (802–38), 265 of Aethelwulf (838–58), and 249 of Aethelbearht (861–6). The only foreign piece in the parcel was one struck at Soissons of Pepin (752–68), the father of Charlemagne. The majority were therefore struck in the first half of the ninth century, and though the deposit cannot have been made before the year 870, it was evidently not long after that date, and may thus have coincided with the accession of Alfred to the throne of England. It may here be added that the British Museum was indebted to Mr. Robert Barclay of Bury Hill and Mr. George Dewdney of Dorking for examples of types not already

[1] Society of Antiquaries, *Proceedings*, ser. 2, ii. 88.
[2] Vol. vi. p. 58; the Wendover specimen is figured in the same volume, p. 48.
[3] Rygh, *Norske Oldsager*, Nos. 713, 714. [4] *Journal of Archæological Institute*, xi. 69.
[5] *Archæologia*, xix. 109, where several pieces are figured.

represented, and 174 specimens from this hoard were thus added to the national collection.

Another hoard of the same period and character came to light during the construction of the railway line from West Croydon through Selhurst and Thornton Heath to Balham. In the manor of Whitehorse and not far from Collier's Water Lane the labourers found, about 2 feet below the surface, a stone chest without a lid. This was soon disposed of, and a mouldering canvas bag recovered from the ruins containing about 250 Anglo-Saxon silver coins, most of which were in fine preservation, a few small ingots of silver, part of a silver neck-ornament, and two or three Cufic coins.[1] As at Dorking, pennies were found of Aethelweard and Eadmund, Aethelred, Ceolnoth and Burgred, about two hundred belonging to the last named. The latest are those of Alfred, but all belong to the earliest years of his reign, being of the type of Burgred, and render it almost a certainty that the deposit was made between the years 872 and 875. The latter date is supplied by some coins of Charles the Bald, all of which present the title of king, which he exchanged for that of emperor on the death of his nephew Lothaire in that year.[2] The find also included a penny of Louis le Debonnaire (814–40), a son of Charlemagne, and some fragments of dinars struck by Haroun-al-Raschid, the famous Khalif of Bagdad (786–809). These have little bearing on the date of the hoard, but are interesting as showing the extent of European commerce in those days ; they may have been brought to England by the merchants of Marseilles, who trafficked with the east, or by the overland route through Russia to the Baltic. The ingots and portions of silver ornaments seem to have been destined for use as money rather than for the melting-pot, as some at least are almost exact multiples of the penny.[3]

[1] J. Corbet Anderson, *Croydon*, p. 115 ; see following pages for illustrations of the coins, bag and fragments.

[2] *Numismatic Chronicle*, new ser. ii. 303. [3] Ibid. new ser. vi. 233.

DOMESDAY SURVEY

THE Domesday Survey of the county of Surrey is neither long nor of special interest. Its length, indeed, is proportionate enough to the actual area of the county when we compare it with its neighbours in the south-east of England, the counties of Kent and Sussex ; but its relative lack of interest is accounted for by other causes. Sussex, largely isolated by tracts of forest and of marsh, had an ancient life of its own, typified by its bishop's see ; Kent, with two sees within its borders, and, like Sussex, largely isolated by its geographical position, possessed a body of local customs, of which the entry in Domesday is full of interest and of value. In Dover also it possessed a town of which there is a full and a striking survey. Compared with these historic counties, Surrey, in more respects than one, stood at a disadvantage. With no bishop of its own, with no great town, it did not even contain the seat of a Norman earl or great baron. And worst of all, we have no such entry of local administration and customs as affords so precious and so welcome a break in the normal monotony of Domesday. Geographical conditions were accountable, in no small degree, for Surrey's lack in historical importance. On the one hand the south of the county was largely forest waste ; on the other, the proximity of London would exercise so great an influence that its northern portion must have turned its eyes to Southwark rather than to Guildford. Instead, therefore, of a county town forming a centre for local life, Surrey, we shall find, even then, possessed in Southwark an urban district overshadowed by the great city that lay beyond the bridge and inevitably bound to become a mere suburb of London.

This is, I think, the new fact that a careful study of Domesday reveals to our eyes. Guildford, for such importance as it possessed, was indebted only to its position in a gap of the chalk uplands, which made it the meeting-place of certain roads, and, therefore, of some commercial as well as strategical consequence. The west and the south-west of the county, for which it would have formed a natural centre, were largely occupied by heath and woodland. Southwark, on the contrary, in the north-east, was surrounded by a close array of villages, by places bearing the familiar names of Lambeth, Kennington, Walworth, Bermondsey, Hatcham, Peckham, Camberwell, Brixton, and Battersea, to say nothing of Clapham, Wandsworth, Balham, Streatham, and Tooting. But the relative position of Southwark and of Guildford at the time of the Domesday Survey must be separately discussed below.

It is the emphatic verdict of Professor Maitland on Domesday that 'one great purpose seems to mould both its form and its substance; it is a geld book.'[1] The first question, therefore, that we have to consider in its study is that of the assessment it records for the tax known as (Dane)geld. This may at first sight seem a somewhat forbidding subject, but recent research has shown how much of our early history is concealed behind the details of assessment recorded in the great Survey. All this was hidden from the student until within the last few years, for it was not known that these figures represented a vast system of artificial assessment, based on what is now termed the five-hide unit, and practically unconnected with actual area or value. A few examples of the working of this system, in Surrey, may here be given. Croydon and Mortlake were assessed at 80 hides each, and Farnham at 60. Egham was assessed at 40 hides, as was Walkhampstead (Godstone); Cobham, Sutton, and Cuddington at 30 hides each, and Limpsfield at 25, which was also the assessment of each moiety of the great manor of Beddington. Merstham, Cheam, and Coulsdon are examples of a 20 hides assessment, Petersham stood at 10, and Mickleham, Rodsell, and Walworth at 5 hides each.

These assessments, as observed above, formed part of a vast system. The remarkable document that Professor Maitland has named 'the Burghal Hidage,' and that he has assigned to somewhere about the year 900[2] contains the entry—'To Eschingum and to Suthringa geweorc 1800 hides.' This, it is supposed, refers to Surrey, and means that the assessment of the whole county was 1800 hides, which were appendant for certain purposes to two 'burghs,' Southwark and 'Eschingum.' It is, at least, a remarkable coincidence that 'the great roll of the Pipe' for 1130 shows us Surrey assessed for Danegeld at 1750½ hides, and shows us within it two 'burghs,' Southwark and Guildford.[3] But what is termed the hidation, that is the assessment, of the county had undergone in the meanwhile a strange and violent fluctuation. Manor after manor is entered in Domesday as assessed in 1086 at only a fraction of what it was assessed at under Edward the Confessor. It is difficult, if not impossible, to trace the principle on which these sweeping reductions were made throughout the county. Two manors are entered together on the fief of Richard de Clare and in the same Hundred (fo. 35*b*). The assessment of the first is reduced to exactly one-half, while that of the second remains unchanged. It might be suggested that reductions in value accounted for such a difference; but each of these manors alike had lost about half its value in the early days of the Conquest. William de Braiose possessed two manors in the county; the assessment of the first had been reduced 90 per cent., and that of the second 60 per cent. It is true that the first had, at the worst, depreciated 80 per cent.; but

[1] *Domesday Book and Beyond* (1897), p. 3. [2] *Ibid.* pp. 503–5.

[3] 'Burgus de Sudwerca,' 'Burgus de Geldeforda' (Pipe Roll 31 Hen. I. [Record Commission], pp. 51–2). It was suggested by Professor Maitland that Eashing in Godalming ('Eschingum') 'may have been supplanted by Guildford.'

the other had not depreciated at all, and was actually valued, at the time of the Survey, 20 per cent. higher than under Edward the Confessor. In Cambridgeshire, again, it is possible to show that every manor in a certain Hundred obtained the same reduction; but in Surrey there are great varieties in the reductions within a given Hundred.

The sweeping character of these reductions and their apparently capricious distribution were discussed by me so far back as 1886, when I showed that they were distinctive of a group of four counties, Sussex, Surrey, Hampshire and Berks.[1] Two causes suggest themselves for these reductions being made: one is the ravage wrought on manors that were traversed by William's host; the other is the clamour of his first grantees for a reduction of the liability to taxation on the manors they received. That William's army traversed portions of the counties thus affected is no doubt the case,[2] but no connection can be established between the depreciated values and the reductions of assessment; while the absence of such reductions in Kent, a county which must have suffered equally, is fatal, apparently, to this suggestion, as it also is to the other.[3]

But what is certain, and most remarkable, is that the reduced assessments were not of a permanent character. It may, at first sight, sound improbable that the record from which there was no appeal, the record which was almost sacrosanct, could be so completely set aside. Surrey, however, which, under the Confessor, was assessed, according to Domesday Book, at 1,830 hides,[4]—a total which had suffered a huge reduction by 1086,—must have had it, before 1130, raised again to the high figure at which it had stood before the Conquest. This, which seems to have been unsuspected, is proved not only by the sum of the danegeld accounted for in that year, which represents, as observed above, 1,750½ hides, but by the details of the levy. The total assessments of the Archbishop of Canterbury's manors in Surrey amounted, when added up, to 219 hides, of which 8 were represented by St. Paul's manor of Barnes (fo. 34), the net total being thus 211 hides. In 1086 the gross total had been reduced from 219 to 57½. But the liability to danegeld of his manors in 1130 is represented by a sum denoting 211½ hides, which is evidently intended for a return to the pre-Domesday total. The moiety of the great manor of Beddington which was held by Miles Crispin was assessed in 1086 at 3 hides as against 25 hides under Edward the Confessor and his manor of 'Cisedune' at 1 hide as against 5 hides, the total for his holding being thus reduced from 30 hides to 4 (fo. 36*b*). In 1130 Brian Fitz Count,

[1] *Domesday Studies*, I. 110–114.

[2] See remarks below on the changes in value of the manors; and the paper by Mr. Baring on 'The Conqueror's Footprints in Domesday' (*English Historical Review* [1898], XIII. 17–25).

[3] These reductions must be carefully distinguished from those consequent on an actual diminution in the extent of the manor itself. The assessment of Bermondsey, for instance, was reduced from 13 hides to 12, because the count of Mortain had secured one hide for himself; and that of Ewell was similarly lowered from 15¾ hides to 13½, because 2¼ hides had been alienated from the manor by reeves. It should be noted that in the latter case the reduced assessment is entered as 'ad firmam,' not 'ad geldum.'

[4] Maitland's *Domesday Book and Beyond*, p. 505. I give this figure on the high authority of the Professor, but Mr. Malden and Mr. Baring, who have counted independently the hides T.R.E., make the total to be just over 2,000 (2,002½ ?).

who was the successor of Miles, is found liable to pay 60 shillings, which represents an assessment of 30 hides on his holding.[1] This is a decisive and a striking instance. It can also be shown that Cuddington, on which the assessment had been reduced from 26 hides to 7, was liable for 25 hides in the year 1130. That the old assessment of the Confessor's days may not have been restored in every instance is probable not only from the total for the county being somewhat lower in 1130, but also from the fact that we find in Berkshire two manors of which the assessments had been reduced from 40 hides to 6, and from 20 hides to 6 respectively, and the owners of which are found on the Pipe Roll of 1130 paying large sums to retain these low assessments.[2] It has been needful to discuss in some detail this important question, for its study proves that the Norman kings did not hesitate to raise in their own favour even the assessments admitted by Domesday Book itself.

When from the subject of assessment we turn to that of valuation, we again find that it involves a question of national history. It has been argued by Mr. Baring that the Domesday evidence enables us to trace the march of the Normans after the Battle of Hastings and to check the somewhat meagre statements by the chroniclers on the subject.[3] That William marched through Surrey, leaving London on his right, is, of course, an historical fact ; but Mr. Baring holds that we can go further and trace the line of his march. For Domesday records the value of manors not only under Edward the Confessor and in 1086, but also at the time when the Normans received them. It was at this last period that those which had been harried betrayed the fact by a sharp fall in their values. These three valuations are shown in the figures given below, those within square brackets representing the lowered values when the manors were received. Mr. Baring thinks that William advanced by 'Lewisham (16, [12], 30) and Camberwell 12, [6], 14, within striking distance of Southwark, to a camp at Battersea (80, [30], 75).' He argues that—

> From Camberwell a loop of damage runs twenty miles south to Blechingley and Westerham, touching five-and-twenty manors, together T.R.E. £305, afterwards £187.[4] These . . . lie only a mile or two apart in a line, though a looped line, and mark, no doubt, the track of a foraging expedition. . . . But William did not stay long before London. He could not cross the river, and after burning Southwark he apparently marched to Mortlake (32, [10], 38), and thence by Combe and Malden (together 11, [6], 11½) to Molesey, Ditton, and Walton (together 34, [20], 43). He does not, however, seem to have followed the river further, but to have struck south fifteen miles to Guildford, where we find damage at Shalford (16, [9], 20), Bramley (40, [30], 60), and Godalming (25, [20], 30).[5] From

[1] Pipe Roll 31 Hen. I., p. 51.

[2] See my paper in *Domesday Studies* (I. 114–5), and Pipe Roll 31 Hen. I., pp. 123, 125.

[3] See p. 277, note 2 above. I have endeavoured in my Introduction to Domesday for the *Victoria History of Northamptonshire* to trace, by the same evidence, the march of the Northern earls through that county in 1065.

[4] That is to say they had fallen in value to that extent, when the Normans received them, since the days of Edward the Confessor. Mr. Baring gives their names as 'Tooting, Merton, Ewell, Cuddington, Banstead, Woodmansterne, Chipstead, Merstham, Gatton, Nutfield, Blechingley, Chivington, Godstone, Oxstead, Tandridge, Titsey, Limpsfield, Westerham ; then back by Woldingham, Tillingdon, Farley, Chelsham, Beddington, Wallington, and Carsh(aulton).'

[5] *English Historical Review*, XIII. 19.

Guildford he turned west past Compton and Wanborough (15, [9], 15) to Farnham (55, [30], 47).

That the depreciation so strongly marked on certain Surrey manors in the early days of William was due to the march of his host through Surrey cannot well be doubted ; but it is very hazardous to form too definite conclusions. Ownership, as well as geographical position, has to be taken into consideration. Mr. Baring considered that, in Kent, the Archbishop of Canterbury's manors were specially spared ravage ; and, in Surrey, Mr. Malden holds, Queen Edith's manors were spared, while Oswold, an English thegn, a man with whom we shall meet below, saved his land from ravage by early submission.[1]

We stand on surer ground when we pass to a third of the subjects with which the Domesday Survey was avowedly concerned. In addition to assessment and valuation its compilers were also to record the names of those who had held the land at the death of Edward the Confessor, and of those who held it at the time of the Survey ; they were to inform King William of his land, in the words of the native chronicle, 'how it was set and by what men.'

At the head of these is always placed, by Domesday Book, the King himself. In Surrey the King appears as the successor of three different persons. He secured, of course, as Edward's heir, the Crown manors of Woking, Stoke, Wallington,[2] Kingston-on-Thames, Ewell,[2] and Godalming, and to these he added, on the death of Edward's widow Edith (1075), those of Reigate ('Cherchefelle'), Fetcham, Shere and Dorking, which had been held by her. He had also seized, at the outset, for himself the manors of the fallen Harold. Next to the King's land in the survey was placed that of the religious houses and ecclesiastical dignitaries. The local abbey of Chertsey towered, in the size of its fief, above any other monastery that held lands in the county. Its possessions, of course, were safe from confiscation, and this must have greatly hampered William in rewarding his eager followers. Indeed the entries in the Survey distinctly convey the impression that the abbey's titles were jealously scanned with the object of detecting any cases in which Englishmen had placed themselves and their lands under the protection of the house in order to escape their forfeiture. It will be necessary to return to this subject below.

Next in extent to the Chertsey lands were those of the Archbishop of Canterbury, chiefly consisting of the great manors of Croydon and of Mortlake. Farnham, then as now, was held by the bishop of Winchester, while 'the new minster' of that same city possessed the manor of Sanderstead, which was rising rapidly in value. The small estates held by the abbeys of Westminster and of Barking complete, with St. Paul's manor of Barnes, the endowments possessed in Surrey by the English religious houses. But Domesday reveals the changes that

[1] *History of Surrey* [1900], pp. 63–64, 70.

[2] It is not actually stated in Domesday by whom these manors had been previously held.

followed here upon the Conquest. Not only did the new and highly favoured foundation of Edward at Westminster obtain Battersea and Pirford from the Conqueror in exchange for Windsor; it also secured lands at Tooting from a rich citizen of London.[1] On the other hand, the lands which the ill-fated Harold had bestowed on the canons of his house of Waltham passed into the grasping hands of Robert count of Mortain (fo. 34). The foreign abbeys of St. Wandrille and Croix St. Leufroy shared with the Conqueror's own foundation, at Battle, in the spoils of Surrey; and Richard 'de Tonebrige' did not forget that abbey of Bec Hellouin which always enjoyed in a special degree the favour of his mighty house.[2]

Leaving now the lands of monasteries and of bishop's sees, we find a great part of Surrey treated as an appanage of Kent. That is to say, the largest fiefs outside the lands of the church were those of Odo bishop of Bayeux, who acted as earl of Kent and who had special charge of Dover, and of Richard 'de Tonebridge,' who already possessed, as the style assigned to him implies, the stronghold of Tunbridge Castle. It was obviously intended that the wide estates bestowed, in Surrey, on these magnates should assist them in providing for the guard of Kent and securing the approach to London.[3] On the Norman settlement of Surrey the fief of bishop Odo exercised an influence that deserves some little attention. For most of his tenants were well-known men, whose holdings afterwards developed into independent baronies. Among the vassals who followed him from the Bessin were Hugh de Port (en Bessin), who held of him largely in Kent and Hampshire and to some extent in Surrey, and Adam Fitz-Hubert, whose home at Ryes was not far from that of Hugh, and who is twice mentioned under Surrey.[4] The 'Ilbert' who held Cuddington of the bishop can be shown to be no other than that Ilbert de Laci, lord of Pontefract, who had also been his vassal.[5] Wadard, who held of him in several counties, and who was the predecessor of the house of Arsic, is actually depicted on the Bayeux Tapestry, with the legend 'Hic est Wadard.' Gatton and Weybridge were held of the bishop by a Herfrey, who also held of him three estates in Kent. A renowned fellow-prelate of Odo, Gilbert Maminot, bishop of Lisieux, held land of him at Peckham and Hatcham, as he also did at Greenwich. It was thus that Peckham and Hatcham came to form part of the barony of Maminot, and that Bretinghurst manor, at Peckham Rye, became liable to pay '10 sh. every 32 weeks to the ward

[1] The donor had obtained it from earl Waltheof by the means which subsequently brought so much land into the hands of citizens of London, that is by lending money on its security.

[2] The countess of Boulogne, who held Nutfield, bestowed it on St. Wulmer of Boulogne, but there is no mention of the gift in Domesday, and it may have been made later. The canons of Bayeux received from their bishop lands at Mitcham and at Ashstead.

[3] The importance of the Kentish strongholds was seen within two years of Domesday, when the castles of Rochester and of Tunbridge were held by Odo and by Gilbert de Clare against William Rufus.

[4] He is found acting as a Domesday commissioner in Worcestershire.

[5] See my paper on 'Bernard the Scribe' in *English Historical Review*, XIV. 430.

of Dover Castle.'[1] Anschitil de Ros was similarly a tenant of bishop Odo in both counties. These instances may serve to illustrate the feudal connection between the two counties. It is noteworthy also that the sheriff of Kent, Hamon (Fitz Hamon, the *dapifer*), held lands in both counties, and that 'Norman' his predecessor at Camberwell must have been the 'Norman' who had similarly preceded him in two Kentish manors.

Of the other Norman tenants-in-chief none had large estates or was specially connected with Surrey. Count Eustace of Boulogne, who had obtained in Kent two of the manors of earl Godwine, secured in Surrey the manor of Oxted, which had been held by the earl's widow. Earl Roger of Montgomery, the count of Mortain, and William de 'Braiose,' all had castles and vast estates down in Sussex to the south. Alvred de Merleberge's Surrey manor descended with his Herefordshire castle of Ewias; the stronghold of William Fitz Ansculf was at Dudley, and that of Robert Malet in Suffolk; Edward of Salisbury was sheriff of Wiltshire; and the great fief of Walter de Douai lay in the west country. Walter Fitz Other was connected with Windsor; Geoffrey de Mandeville had his seat in Essex; Humfrey the chamberlain held estates in no fewer than nine counties, many of which, like his Surrey manor, he owed to the favour of William's queen. A name of special interest is that of 'Albert the clerk,' who held half Addington in 1086, for I have traced him under various disguises, such as Albert the Lotharingian and Albert the chaplain, as a holder of land and of churches in sundry counties, who had enjoyed the favour of king Edward as of his successor William.[2] Another churchman of foreign birth who had settled in England before the Conquest was Osbern bishop of Exeter, whose manor of Woking, like his Bosham estate, had been originally bestowed on him as a Norman chaplain of the Confessor.[3]

Of the English landowners on the eve of the Conquest, we can learn, perhaps, more in Surrey than we can in most of the counties. Foremost, as we might expect, we find Harold and his house. It was in the earldom, extending over five or six counties, of Leofwine, a younger brother of Harold, that Surrey, Mr. Freeman tells us, was included when that earldom was given him in 1057.[4] But only Gatton and Cuddington, which then were assessed respectively at 10 and at 30 hides, are assigned to him by Domesday in the county. His mother 'Gida' had Oxted (20 hides) and his father Godwine Witley (20 hides) in addition to his rights at Southwark. But it is when we come to Harold himself that we are struck by the size of his possessions. Bermondsey, Battersea, Gomshall, Merton, Wotton, Pirford and Limpsfield, reckoned at 183 hides between them, were all in his own hands. He had bestowed on his Waltham foundation 6½ hides at Lambeth, and a hide and half at Streatham; and

[1] See *Liber Rubeus*, Ed. Hall, pp. 617, 710, 720, where (p. 1120) Bredhurst in Kent is erroneously suggested to be the place.

[2] See *The Commune of London and other Studies*, pp. 36–8.

[3] *Feudal England*, p. 320.

[4] *History of the Norman Conquest* (1870), II. 419, 568.

estates of which the total assessment was over 50 hides were held 'of' him by others. Omitting this last category, we find that exactly one-tenth of the assessed value of the county was in the hands of Harold himself, while the rest of his family held nearly half as much again between them. In Sussex, of course, they had absorbed between them a far greater proportion of the county. It has been weightily observed by Professor Maitland that—

> As with the estates of the king, so with the estates of the earls, we find it impossible to distinguish between private property and official property. . . . one of the best marked features of Domesday Book, a feature displayed on page after page, the enormous wealth of the house of Godwin, seems only explicable by the supposition that the earlships and the older ealdormanships had carried with them a title to the enjoyment of wide lands. That enormous wealth had been acquired within a marvellously short time . . . a great deal of simple rapacity is laid to the charge of Harold . . . but the greater part of the land ascribed to Godwin, his widow, and his sons, seems to consist of *comitales villæ*.[1]

Whether Harold's Surrey estates were connected or not with the earldom (as in the south-west of England), they point to a time when his influence was distinctly greater in the county than that of his brother Leofwine.

The landed settlement, under the Conqueror, was materially affected by the existence of these estates of Harold. In Surrey, for instance, he reserved for himself the whole of those which his fallen rival had held in his own hands, except Wotton, to which Harold's title was questioned by the Domesday jurors. Of the manors that William thus obtained, he gave Battersea and Pirford, in exchange for Windsor,[2] to Westminster, and bestowed Limpsfield on the abbey of his own foundation at Battle; but all the rest he held in 1086. With the manors 'held of' Harold by dependent thegns it was different. Tadworth and Little Bookham, which had been held of him by 'Godtovi,' were bestowed on William de Briouze ('Braiose'), while Oswold retained as a thegn of the King the Wisley estate he had held of Harold. The remaining five estates which had been held of him by various persons went to swell the fief of Odo bishop of Bayeux. In Surrey, therefore, there would seem to have been a certain method in the disposal of Harold's lands.

Next to the house of Godwine we may place 'Alnod cild,' whose important manor of Bramley heads the fief of the bishop of Bayeux. An English noble, who was also known, from the chief seat of his power, as 'Alnod' of Canterbury or of Kent, his wide possessions reached not only into Surrey, Sussex, and Hampshire, but even into Oxfordshire, Northants, and Bucks. The Domesday scribes, who, as in Surrey, spoke indifferently of William's predecessor as 'Harold' or as 'earl Harold,' were similarly careless of the styles of dispossessed Englishmen, so that the 'Alnod' who had held the great manor of Banstead may well have been the same man. His name, however, was not uncommon, and an 'Alnod

[1] *Domesday Book and Beyond*, p. 168.

[2] It is only from the Surrey Domesday that we obtain this information. Under Windsor itself Domesday gives us no hint that Edward had bestowed it on Westminster Abbey.

of London' is entered in Domesday as giving Tooting to Westminster Abbey. The true form of the noble's name is given by Florence of Worcester, who tells us that 'Æthelnoth of Canterbury' was one of the leading hostages whom William carried off with him to Normandy in 1067.[1] The bishop of Bayeux secured his lands with those—in Kent at least—of another Kentish noble, 'Bricsi (or Brixi) cild'; but the latter's Surrey manor of Stoke was obtained by Richard of Tunbridge. But the one English landowner who appears as distinctively a Surrey man is one to whose pecular position Mr. Malden has called attention, Oswold, brother apparently of Wulfwold abbot of Chertsey. His land at Worth in the forest to the south had passed away to Richard of Tunbridge, who allowed him, however, at Mitcham, to retain as an under-tenant the land he had held, before the Conquest, direct of the Crown; while at Effingham he actually held of Richard a good estate which had belonged to a dispossessed Englishman. He also held of Chertsey Abbey another estate at Effingham, which, under Edward the Confessor, he had held in his own right. But it is as a thegn of king William that his position is most remarkable; at the close of the Survey we find him holding, in that capacity, four estates, two of which he had similarly held direct of king Edward, while in one earl Harold was his lord. The fact that another Englishman, 'Seman,' had actually commended himself to Oswold 'since king William came into England' is a proof of the favour he had found in the eyes of the Norman King.

Huntsmen, as might be expected, were a class who contrived, in places, to keep their lands when other Englishmen lost them. Four huntsmen, under the Confessor, had held land in Surrey; and, although two of them, 'Elmer' and Coleman, were no longer holders of land in 1086, Wulfwine retained the small estate he had held under the Confessor, and Chetel the land at Littleton which had then been held by his father. With these retainers of the court, perhaps, we may class Theoderic the goldsmith, who held Kennington under William as he held it under the Confessor, and who, in the words of Professor Freeman, 'doubtless owed the favour of William to his skill in an art specially adapted to enhance the splendour of a king's court, an art for which both natives and sojourners in England were specially famous.'

The remaining instances of English landowners are introduced to illustrate the scattered nature of their possessions. Osmund, who had held in Surrey Loseley and Worplesdon with Burgham, can be positively shown to be the same Osmund as he who had held in Hampshire Penton Mewsey and North Houghton, and in Wiltshire, as Osmund the thegn, Milston and Eaton Mewsey.[2] For not only had they all passed to earl Roger of Shrewsbury: they had all been also bestowed by him on a

[1] 'nobilem satrapam Agelnothum Cantuariensem.' Ellis, unfortunately, followed Kelham, who relied on Hasted for identifying 'Alnod' with Wulfnoth, a younger brother of Harold (*Introduction to Domesday*, II. 21).

[2] This is doubtless the reason why Loseley was found, some two centuries later, to be held of Richard Seymour 'as of the manor of Eiton Meisey in Wilts' (Esch. 45 Ed. III., n. 4); and it identifies positively the Domesday manor of 'Ettone (Wilts).'

single under-tenant. In the same way the 'Carlo' who had held the 20 hide manor of Send was the 'Carle' who had held Eastrop and Shipton Bellenger in Hampshire, about a dozen manors in Wiltshire, and one in Somerset; for all these, like his Surrey manor, had passed from him to Alvred de 'Merleberge.' Two other Norman tenants-in-chief, Geoffrey de Mandeville and Miles Crispin, had succeeded respectively to the wide estates of Ansgar the staller and Wigot of Wallingford; but in Surrey we are only reminded of the fact by the jurors' protest that the lands they held had not belonged to their English predecessors.

Before leaving the subject of the personal element in the Survey, we may note that Domesday, as is sometimes the case, throws but little light on that important personage the sheriff. We learn, indeed, from a chance reference under William Fitz Ansculf that his father Ansculf (de Picquigny) had at one time held the shrievalty; but of the sheriff at the time of the Domesday Survey we know only that his name was Rannulf. At Guildford, we find that he had been holding a close (*hagam*) under the bishop of Bayeux (fo. 30), while the Southwark entry (fo. 32) shows him contesting, on the part of the King, the right of that very bishop to the dues received there from the shipping. His famous namesake Rannulf Flambard had already secured two churches, with a large endowment, at Godalming, together with a small estate at Tewsley hard by (fo. 30*b*); and I strongly suspect that 'Rannulf the clerk,' who had secured some house property at Guildford, which archbishop Stigand had held, was the same grasping man. Osbern de Eu ('Ow'), who is entered as holding the church of Letherhead, 'with 40 acres of land,' appurtenant to the royal manor of Ewell, was probably the 'Osbern' who held the church of the royal manor of Woking, and he also held, as Osbern 'de Ow,' the richly endowed church of Farnham (fo. 31), of which Domesday says that it was worth six pounds 'with 1 hide which he has in Hampshire.' I have no doubt that the reference is to Bentley, the Hampshire manor which adjoined Farnham, and was held, like it, by the bishop of Winchester. For Domesday shows us (fo. 40*b*), '1 hide and 1 virgate' in Bentley worth 50 shillings and held by 'Osbern' of the Bishop.

In the Domesday Survey the treatment of towns is erratic and often disappointing. Of the cities of Winchester and of London, for instance, there is no survey at all, while the notices of other towns vary greatly in character. This is the more to be regretted as the subject is of much importance in institutional history. In the learned works of Professor Maitland it has, in recent years, received special attention, and to these works I must refer in discussing the Surrey boroughs.[1] We have seen above (p. 276) that in the document which he terms the Burghal Hidage Surrey seems to have two 'burghs,' and that in the Pipe Roll of 1130 its two 'boroughs' are Guildford and Southwark. In Domesday Book these two places similarly receive distinct treatment. We do not

[1] Professor Maitland's conclusions will be found in *The History of English Law* [1895], I. pp. 625–678; *Domesday Book and Beyond* [1897], pp. 172–219; and *Township and Borough* [1898].

read that any one 'holds' either Guildford or Southwark, but that '*In* Guildford' the King has certain rights, and that '*In* Southwark' bishop Odo has others. Neither of them, indeed, is styled a borough, and Guildford is even, in three places, spoken of as a mere 'vill'; but the peculiar way in which they are entered sufficiently denotes their position.

Now the point to which I would invite attention is one which is of more than local interest; for the Surrey evidence in Domesday Book has a very direct bearing on Professor Maitland's theories. As originally advanced, his argument, suggested by a German writer, contained these passages:[1]—

> Another striking sight meets our eyes in the boroughs of Domesday Book. The *barones comitatus* have, and their predecessors, the great folk, hallowed and lay, of the old English shire, have had, houses and burgesses in the county town. These town houses, these burgesses, are often reckoned as belonging 'for rating purposes' to rural manors of their lords which lie many miles away from the borough. What did the Anglo-Saxon thegn want with a town house? He was not going to spend 'the season' there in order that he might take his wife and daughters to the county balls. . . . Is it not a duty of *burgward* which obliges the thegns of the shire to have houses and dependents in the *burh* of the shire?
>
> To me it seems that we enter on a new and a very hopeful line of speculation when we shift our attention from markets and handicraft and commerce to the military character of the ancient *burh*. . . . The important point is that many of the burgesses in a royal borough were not the king's immediate tenants; they did not pay their rents to him. The burgesses were a tenurially heterogeneous group. Some of them were reckoned to belong to divers distant rural manors of the *barones comitatus*. . . . I believe that, for England at all events, Dr. Keutgen is pointing in the right direction when he suggests that the *Burgfriede*, or special royal peace conferred upon fortified places which are military units in a system of national defence, is the original principle which serves to mark off the borough from the village.

Again, in his *Domesday Book and Beyond*, the learned writer developed his view on the same lines, but at greater length.

> The trait to which we allude we shall call (for want of a better term) the tenurial heterogeneity of the burgesses. . . . The fact that we would bring into relief is this, that normally the burgesses of the borough do not hold their burgages immediately of one and the same lord; they are not 'peers of a tenure'; the group that they constitute is not a tenurial group. . . . And the mesne lord will often be a very great man, some prelate or baron with a widespread honour. Within the borough he will, to use the language of Domesday Book, 'have' or 'hold' a small group of burgesses, and sometimes they will be reckoned as annexed to or 'lying in' some manor distant from the town . . . Seemingly the great men of an earlier day, the *antecessores* of the Frenchmen, have owned town houses: not so much houses for their own use, as houses or 'haws' (*hagæ*) in which they could keep a few burgesses.
>
> When we have obtained this clue, we soon begin to see that what is true of Oxford and Wallingford is true even of those towns of which no substantive description is given us. Thus there are 'haws' or town houses in Winchester which are attached to manors in all corners of Hampshire, at Wallop, Clatford, Basingstoke, Eversley, Candover, Stratfield, Minstead and elsewhere (pp. 178–180).
>
> This tenurial heterogeneity seems to be an attribute of all or nearly all the very ancient boroughs, the county towns (p. 182).

When we search the Domesday Survey of Surrey for traces of this principle, we soon discover that they are not wanting; but instead of the

[1] See *English Historical Review* [1896], XI. 16–18.

owners of rural manors possessing houses or 'haws,' as might be expected, in Guildford, we find, with some astonishment, that they held them in Southwark and in London. As this seems to have escaped notice, and as it has a very important bearing, I give the exact details. In Southwark there were 16 'haws' appurtenant to Merton, 4 to Mortlake, 1 to Banstead, and 3 to Chivington in Blechingley. Beddington also possessed there 8 messuages, and Oxted 1, as did Ditton and Walton-on-the-Hill. In Southwark and London jointly there were appurtenant to Walkhampstead (Godstone) 15 messuages, and to Blechingley 7. In London itself Home Beddington possessed 15 messuages, Beddington (Huscarle) 13, Mortlake 17, and Chivington in Blechingley 2, while a 'demesne mansion' in the city had belonged to the lord of Banstead. Of London burgesses, nineteen were subject to the owner of Lambeth, to whom they were worth yearly thirty-six shillings, while thirteen were appurtenant to Bermondsey. As against this long list we find nothing at Guildford except a single 'haw' which is entered as appurtenant to the adjoining manor of Shalford. It was Southwark therefore, not Guildford, where 'tenurial heterogeneity' prevailed in the Surrey Domesday.

We have seen that, in what Professor Maitland has termed the Burghal Hidage, Southwark appears as 'Suthringa geweorc.' Remembering the 'work' that Alfred wrought, in 878, at Athelney, we are certainly tempted to infer that there existed at Southwark a fortified *tête de pont* which was the above *geweorc*. But although this might be held to support Professor Maitland's theory that the 'haws' we meet with in Domesday Book were originally due to the military defence that rural thegns had there to render,[1] the absence of any such a system at Guildford, which he deemed the other 'burgh' of the shire, is distinctly opposed to his conclusions, while the 'haws' and houses spoken of at Southwark can be easily accounted for on other grounds. From the biographer of Edward we learn that, at the crisis in 1052, Godwine, the greatest man in the kingdom after the King himself, went to Southwark 'where was his own house.' In Domesday we read that the count of Mortain, the greatest landowner in England after the King himself, had his town house (as we should say) at Bermondsey. From these two instances we may guess that there were already on the south of the river, as we know there were in later days, mansions of great people.[2] On Surrey thegns London and Southwark evidently exercised a greater influence than the King's vill of Guildford. One might even, as against Professor Maitland, suggest that this was due to the fact that they had, in those days, other things than 'county balls' to think of.

Sir Walter Besant, in his *South London*, a book which deals with a

[1] This 'garrison theory,' as it is termed, which is maintained in *Domesday Book and Beyond* (pp. 183–192), has been subsequently, somewhat modified by the author in his *Township and Borough* (pp. 209–210) in consequence of the strictures of Mr. James Tait (*English Historical Review*, XII. 768).

[2] In 1130 the Archbishop of Canterbury, the King's nephew count Stephen, and the King's son, the earl of Gloucester, were all holders of land in Southwark.

district covered by the Surrey Domesday, has arrived at a very different conclusion on the actual state of Southwark at the time of the Norman Conquest.

> A few fishermen's huts were all that remained of the suburb . . . Five hundred years of battle . . . had not left of Southwark, once so beautiful a suburb, more than these poor huts and ruins of huts (pp. 43–4).

It is certain at least from the Domesday entry that Southwark had then a 'minster' of its own, a tidal creek where ships were moored and where they discharged their goods, a 'strande,' which was perhaps Bankside, and a 'water street,' which must have had inhabitants. As the lord of Ditton received in rent 500 herrings, while 2,000 went to Godstone, it is clear that a herring fishery was carried on from Southwark; and if we may not actually infer that a detailed survey of the place is among the omissions of Domesday, we may at least gather that it was already of some little importance, especially as, when we meet with it again some forty years later, it is formally recognized as a borough.[1]

The miscellaneous information afforded by Domesday, the information which, so to speak, it only contains by accident, is often the most interesting. But there is not much of it in Surrey. I have elsewhere explained that the great Survey was distinctly connected with danegeld and its payment, and not with the liability of the fiefs to render knight service.[2] No conclusions therefore can be drawn from its almost systematic silence on the latter subject. In Surrey it records not only the hidation (or liability to 'geld') but also, where it was discovered, the failure to pay the tax. Of a hide in Emleybridge Hundred, we read that it has 'never' paid 'geld' since Richard of Tunbridge received it (fo. 35). Such an entry as this affords proof that 'geld' had been levied several times during the reign of William.[3] The alleged silence of Domesday on the 'system of feudal land tenures' was held by Professor Freeman to show that these had as yet no existence. Nevertheless in Surrey, as indeed in other districts,[4] we have incidental glimpses of enfeoffment and even of subenfeoffment. Wadard, whom the bishop of Bayeux had enfeoffed at Ditton, had himself subenfeoffed there a tenant, who owed him, besides a money rent, 'the service of one knight' (fo. 32). Under Henry I. and Henry II. Ditton is duly found as held of his successors the Arsics by knight-service.[5] At Banstead also Richard, the bishop of Bayeux' tenant, had subenfeoffed others, who held there 'of' him (fo. 31*b*). Both on the church and on the lay fiefs the process

[1] Pipe Roll 31 Hen. I., pp. 50, 52. [2] See *Feudal England*, pp. 228–30.

[3] See *Domesday Studies*, I. 86–8, for the importance of this point.

[4] See *Feudal England*, pp. 306–7.

[5] 'Dittonam et Kersintone tenuit Triheram Picot in tempore regis Henrici pro servitio ij militum' (see 'Carta Manasseri Arsic' in *Liber Rubeus*, p. 303). It is unfortunately necessary to caution the student against the official edition of the *Liber Rubeus* (ed. Hall) in the Rolls Series (see *The Commune of London and other Studies*, pp. xv.–xvii.), the editor of which imagined the above 'Dittona' to be somewhere in Oxfordshire, while he identified 'Kersintone' in one place as Garsington and in another (tentatively) as Keston (p. 1,223). As a matter of fact it was neither, but Cassington, co. Oxon, where five hides were held in 1086, as at Ditton, by Wadard.

of enfeoffment had begun. Two of Walter Fitz Other's manors, Peperharow and Hurtmore (in Godalming), were already 'held of' him by tenants in 1086. Eighty years later we find his heir, in his *carta*, returning Ranulf de Broc as holding of him at Peperharow a knight's fee of 'the old feoffment,' and Philip 'de Hertmere' as holding another.[1] On the Chertsey Abbey fief William de Wateville and Hamo the sheriff (of Kent) were already holding lands of the Abbey in 1086. Eighty years later Roger de Wateville held of it a knight's fee.[2] For it must not be forgotten that, under the Normans, even a religious house would hold by knight-service; three knights was the quota due from Chertsey Abbey.

The system of tenure by knight-service introduced at the Norman Conquest was quite distinct from that ill-defined and somewhat obscure 'commendation,' in which have been detected the germs of feudalism even before the Conquest.[3] The Surrey Survey is somewhat rich in examples of this practice. The jurors of Wallington Hundred testify that 'a certain free man,' holding two hides and able to betake himself (*i.e.* to choose a lord) where he would, 'placed (*summisit*) himself in the hand(s) of Walter' de Douai for his protection (fo. 36). A woman who held land at Combe is entered as having, in king William's time, placed herself and it in the Queen's hand(s) obviously for the same purpose (fo. 36*b*). The land was thenceforth treated as 'of the Queen's fee' (*feuo*). There were those who betook themselves to the church, instead of to strangers, for protection; at Esher there are two cases of 'submission' to Chertsey Abbey; in the one a man and two women 'submitted themselves with their land to the abbey for protection,' in the other a woman who held a hide 'placed herself under the Abbey (*sub abbatia se misit*) for protection' (fo. 32). This is probably the explanation of an Englishman, Seman, having 'rendered service' in the form of twenty pence a year to his more powerful neighbour, Oswold, since the coming of king William, for a little land which, under Edward, he had held direct of the Crown (fo. 36*b*). It is also, I suspect the explanation of estates at Byfleet, Effingham, and Weybridge, which had been held respectively by Wulfwine, by Oswold, and by another Englishman, under Edward, in their own right, being held by each of them 'of' the Abbey in 1086[4] (fo. 32*b*). It is doubtful whether this device was in all cases successful in averting the confiscation of lands held by an Englishman; for cases are found on the Chertsey fief of Normans holding of the Abbey lands which Englishmen had held in their own right under Edward the Confessor.

To 'commendation' we may also, it seems probable, assign the strange tenure of Ditton under Edward the Confessor. We read that 'Leofgar held (it) of Harold and used to do service to him for it, but could have betaken himself (that is, have chosen a lord) where he

[1] *Liber Rubeus*, p. 315. [2] *Ibid.* p. 198.
[3] For this 'commendation' see Maitland's *Domesday Book and Beyond*, pp. 69–75.
[4] Compare p. 279 above.

would' (fo. 32).[1] The meaning of the passage is at first obscure, but the tenses used seem to me to imply that Leofgar had held the land in his own right,—had been free (as it was then said) to choose his lord,—before he had commended himself to Harold.

Of the old English tenures of land we have glimpses also in the *alodiarii villæ* who, at Cuddington, held ten out of thirty hides, and who could betake themselves (that is, choose a lord) with their lands where they would (fo. 31*b* 2). Partible inheritance, more familiar under the name of gavelkind, occurs on several Surrey manors. Leofgar, we read, who held Ditton, divided it, at his death, among his three sons.[2] Wanborough had been held as 'two manors' by two brothers, Swegen and Leofwine; their Norman successor threw the 'two manors' into one (fo. 36). Of Shalford we read that it had been held by 'two brothers,' and that though 'each had a house of his own, yet they dwelt in one *curia*' (fo. 35*b*), a word which suggests that the two houses stood within the same enclosure. Tadworth had similarly been held by 'two brothers' (fo. 31*b*), and I cannot but suspect that the equal division of the great manor of Beddington had its origin in the same system. Weybridge supplies a case of tenure by coheiresses, for we read of it that 'two sisters held it in the time of king Edward' (fo. 32).

Apart from the vast changes effected in the ownership of land by the confiscations and the fresh grants that followed on the Norman Conquest, there were cases in Surrey, as in other counties, of mere lawless seizure. Again and again we find the jurors from whose returns Domesday was compiled deposing that they know not by what right the tenant in possession holds the land. Indeed in one case the scribe allows them to say this in their own persons—'nescimus quomodo' (fo. 36). The usual formula is that the jurors, or, as they were termed, the men of the Hundred, have never seen a writ from the King placing the tenant in possession, or any officer of the King authorized to give him seisin. There were cases, however, such as those to which I have referred above (p. 284), in which the King had simply placed one of his followers in the shoes of an English magnate. In these cases the jurors, when they questioned a title, did so on the ground that the stranger's predecessor had not held the land. It must be remembered that in William's eyes all territorial rights were acquired by a grant from himself, and, therefore, any seizure made without such grant was not so much a wrong to a native as an infringement of his own prerogative; it might have deprived him of land which would otherwise have been at his disposal. Sometimes his own interests were more directly affected, as in the case of the Southwark dues, in which his grasping brother, bishop Odo, was charged by the sheriff with wronging him. At Guildford also bishop Odo was alleged to be holding houses which ought to have been the King's; one of these was held by the reeve of the bishop's manor of Bramley, and 'the men of the county [court] say' that the Bishop has

[1] 'sed quo voluisset cum terra ire potuisset.'

[2] 'Quando obiit hanc terram tribus filiis suis dispartivit' (fo. 32).

wrongfully annexed it to his manor, 'and hitherto the King has lost the dues, while the Bishop has them'; of another, 'the jurors say' that the Bishop's reeve has annexed it to Bramley simply because he had been a friend of the man who used to hold it! Again, at Gomshall, the jurors found that bishop Odo had 'wrongfully' annexed to his manor of Bramley half a hide which had been part of Gomshall not only under king Edward, but even after it had come into king William's hands. It was also after William's coming that an outlying estate belonging to Merton was seized by bishop Odo and given to the bishop of Lisieux, but this case was so glaring that Odo's reeve did not venture to uphold his lord's right (fo. 30). The King's interests suffered also through the action of the reeves (or, as we would say, the bailiffs) of his manors. 'The men of the Hundred' deposed that at Ewell these gentry had obliged their friends by making over to them two and a quarter hides of the manor with appurtenances. At Titing, they said, the land, which had been part of the Crown demesne, had been alienated from it by the reeve even in king Edward's days (fo. 31).

One is not surprised that the Church's lands suffered, like those of the king himself, at the hands of bishop Odo. He took from Westminster Abbey two hides of Battersea and gave them to the bishop of Lisieux, while two hides at Clandon, belonging to Chertsey Abbey, were annexed by him wrongfully, the jurors said, to his own manor of Bramley.

Of light on Norman administration or finance there is in Surrey little or none. It should, however, be noted that, among the king's manors, Woking and Stoke are both entered as paying the sheriff, apart from the King, twenty-five shillings a year, while Bermondsey paid him twenty. Of Gomshall, on the other hand, we read that its villeins are free 'ab omni re vicecomitis' (fo. 30*b*), an entry as obscure as is the character of the payments from the three manors above. No less obscure is the entry, also on the King's land, that the sheriff has seven pounds from the three manors in Surrey which queen Edith held, because he gives them help when they need it. The entry is made the more puzzling by the fact that these manors were four, not three, in number. Here also may be mentioned the entry, on the King's manor of Kingston, that Humfrey the chamberlain has charge of a villein 'for the purpose of collecting the Queen's wool, and took from him twenty shillings as "relief" when his father died.' The wording seems to imply that this was an act of oppression, but 'relief' was not a Norman innovation, for it had been paid by the Berkshire thegns (fo. 56*b*).

The one great industry was that of the plough, but it offers in this county no special features. It should, however, be observed that Clandon clearly seems to have been 'farmed' of Chertsey Abbey, which held it, by villeins, in 1086, and that they had there seven ploughs, although the record states (fo. 34) that there was only land for five. Its annual value was given as four pounds only, and yet these villeins paid a rent of six pounds, an excess which may imply that they were ready to pay for

the privilege of farming it themselves. Chessington also had been held by villeins (fo. 36*b*), but the tense implies that they had ceased to do so at the time of the Domesday Survey.[1] Next in importance to the labours of the plough were the herds of swine reared amidst the woods and the commons of Surrey. Indeed, the swine and the plough oxen are the only live stock mentioned on the pages of the Surrey Survey; and the swine appear only because they were a payment in kind for the use of the woods or pastures of the lord. In Sussex it seems to have been the practice that every villein who had seven swine should give one of them to the lord for 'pasture' (fo. 16*b*), and this was also the custom in Surrey at Malden and at Titsey (fos. 35, 36*b*). At Battersea and Streatham, however, the proportion was only one in ten. The 'grass swine' due for the pasture are generally distinguished from those paid for the pannage, that is for the mast in the woods on which the swine fattened. Domesday specially records the right of bishop Osbern, in respect of his own manor of Woking, to send 120 swine into the woods of the King's manor of Woking without payment for pannage. The interesting term 'a dene of wood,' which is found in the Ewell entry, is almost exclusively confined to Kent. It was not only for the feeding of swine that the wild woodland which then covered so much of the country was of value; but in Surrey there seems to be no allusion, as there elsewhere is, to its other uses. And although, as we have seen, two huntsmen were allowed to retain their holdings, there is no mention of a King's forest. We find, however, a 'King's park' alluded to at Stoke by Guildford, and in those days a park was used for preserving beasts of the chase. The position of the King's town of Guildford on the road from London to Winchester and to the Hampshire ports, made it convenient for the Norman kings to have there not only a castle, but a park in which to chase the deer. Hawking, at that time, as well as hunting enjoyed the favour of the sovereign, and we find it carefully recorded in the Survey that at Limpsfield there are three nests of hawks. From a small estate in the hands of Oswold, valued at no more than forty shillings, there seems to have been claimed 'yearly, for the King's use, two marcs of gold or two hawks' as composition for a trial by battle (fo. 36*b*). From this the hawk appears to have been valued at six pounds, a sum twice as large as the annual value of Walworth, and half as large again as that of all Weybridge. And yet, as Domesday elsewhere proves, the highly-prized 'Norway' hawk was worth as much as ten pounds.

Among the miscellaneous sources of territorial income were the water-mills at which the tenants' corn had to be ground for the lord's profit, and of which there were no fewer than seven on the great manor of Battersea alone; stone-quarries at Limpsfield, and water-meadows, which were of importance as providing hay for the plough oxen. Indeed in Middlesex, across the Thames, we find them regularly entered in

[1] The farming of manors by villeins is mentioned in the *Victoria History of Hampshire* (I. 442), in which county Alverstoke and Millbrook were so held.

Domesday as sufficing for so many plough-teams. They were indeed of such value that Domesday notes their exact acreage, descending even, in the case of Talworth, to a half 'v[irga]' of meadow, probably the eighth of an acre. The difference between the extent of meadow on the manors in the Thames valley, such as Egham (120 acres), Apps Court (46), Kingston-on-Thames (40), Mortlake (20), Battersea (82), and on those of the interior of the county, is strongly marked. Of 'fisheries,' as Domesday terms them, there were several in Surrey; but these fisheries seem to have been weirs constructed for the purpose of catching eels. From 'a fishery and a half' at Byfleet on the Wey the lord received yearly 325 eels; while at Petersham, in suggestive proximity to the well-known 'Eel-pie island,' he received 1,000 eels from one of the two 'fisheries,' and 1,000 lampreys from the other. The latter have an almost historic dignity, as has the 'fishery' mentioned at Mortlake, for Domesday tells us that it was 'forcibly constructed' by no less a man than Harold himself, and was held by archbishop Stigand for a long while afterwards (fo. 31). There is no mention of vineyards in Surrey, although we find at Wandsworth the only entry of a vineyardman (*vinitor*), it would seem, in all Domesday. Vineyards occur so often in Middlesex that they probably existed in Surrey also, although the Survey omits them. At Chertsey there is mention of a forge, which was worked for the Abbey. The miscellaneous sources of income include 'tolls' at Putney and Wandsworth.

The Domesday Survey was not intended to provide a census of the whole population, and I think it rash even to conjecture what the population was in 1086 from the figures there recorded. But on the relative proportions of the rural classes its evidence is always of interest. The valuable maps prepared by Mr. Seebohm[1] reveal no feature of special salience in Surrey; but the serfs, in proportion to the other classes, were rather more numerous than in Kent, and three times as numerous as in Sussex. Mr. Malden considers that Domesday shows 'a very marked preponderance in the south-east of the county,' especially in Tandridge Hundred, its south-eastern corner, of this servile class. He has also observed in the Survey 'a marked local distribution' in the classes of bordars (*bordarii*) and cottars (*cotarii*), which he is unable to explain. In the Hundreds of Godalming, Wallington, and Emleybridge '*cotarii*,' he has found, 'are nearly universal, to the exclusion of *bordarii*,' and on no estate in the county has he found both classes mentioned. 'The only rule,' however, he considers, 'seems to be that there should be no *cotarii* on royal demesne.'

It must be remembered that Domesday Book does not contain the Survey in the form in which it was made. The original returns from which it was compiled were drawn up Hundred by Hundred, and their contents had then to be rearranged under fiefs by the compilers. Of this process, the Surrey Survey contains a trace that has escaped notice at

[1] *English Village Community*, p. 86.

the foot of the first column on fo. 35*b*, and in the midst, apparently, of the fief of Richard de Tunbridge, there are found a few entries, occupying seven lines, which have no connection with that fief. They seem to have crept in from the return for Copthorne Hundred, from which the scribe was abstracting the entries relating to that fief. The process of rearrangement was a task of great difficulty, complicated by the fact that, for fiscal purposes, the Hundred was the recognized unit, while land which paid its 'geld' as a portion of one Hundred, might, from the lord's standpoint, belong to a manor in another. This, as will be seen in the Surrey Survey, frequently involved a cross-reference, and even occasionally led to estates being overlooked, especially where there was a doubt as to which fief they belonged to. This is the explanation of the extra leaf inserted in the Surrey Survey to contain the entries of some lands belonging to Chertsey Abbey which had, in the first instance, been omitted. Other traces of the difficulties involved will be found on fo. 36, where the entry on Balham, which constituted the sole holding, in Surrey, of Geoffrey Orlateile, has been added, as an afterthought, in the margin, possibly because it had been held over on the ground that Geoffrey could not show by what right he held it. On the same folio an omitted manor of Walter Fitz Other has had to be inserted at the tail of Geoffrey de Mandeville's fief; Walter de Douai's land is entered without the usual heading; and the third manor of Edward of Salisbury has had to be crowded in at the foot of the second column. The searching investigation to which the Great Survey is now being subjected for the first time for the purpose of these County Histories, will doubtless reveal much that has hitherto remained obscure; but there is no reason to suppose that even the keenest scrutiny will lessen our admiration for so vast an enterprise, or the gratitude we feel to those who have bequeathed us a unique possession.

NOTE

The reader should bear in mind throughout that the date of the Domesday Survey is 1086 ; that King Edward, to whose time it refers as 'T.R.E.', died January 5, 1066 ; that the 'hide' was the unit of assessment on which the (Dane)geld was paid, and that the 'virgate' was its quarter. The essential portion of the plough ('caruca') was its team of oxen, eight in number. The 'demesne' was the lord's portion of the manor, the peasantry holding the rest of it under him. Of the peasantry, the 'villeins' far outnumbered all the other agricultural classes ; below them were the bordars and cottars ; and, lowest of all, the serfs. Pannage was the due for feeding swine on the mast in the woodlands. The (water)mills, to which the peasantry were bound to send their corn to be ground, were occasionally at some distance from the bulk of the manor.

R. Thames
BOCHINGHAMSCIRE
R. Brent
MIDEL
R. Colne
BERROCHESCIRE
Egeham
Torp
Certesy
Estreham?
Webruge
R. Thames
Molesham
Ebsa
Limeurde
Waletone
Westone
Waletone
Aissela
Molesham
Ditone
Taleorde
CHINGESTUNE
Ditone
Taleorde
Meldone
Berne
Mortelege
Patricesham
Estreham?
Cumbe
Chingestune
Claigate
Cisendone
Codintone
Etwelle
Evesham
GODELIE
The Bourne
Cebeham
Biflet
R. Mole
(In Aissela)
(Two Hides)
AMELEBRIGE
Covenham
Wiselei
Peliforde
Stoche
Pachesham
Stede
COPEDORNE
Leret
Tadeord
Tornecrosta
Waltone
Hallega
Wochinges
R. Wey
Bocheham
Fecheham
Bocheham
Bocheham
Sande
S U D R
Werpesdune
Sudtone
Borham
Henlei
WOCHINGES
Orselei
Horslei
Epingeham
FINGEHAM
Michleham
Wucha
Stochæ
Clanedun
Clanedun
Pethingeorde?
Gildeford
Tetinges
Weneberge
Mildetone
Becesuuorde
Dorchinges
(One hide in)
Wescote
Eldeberie
Essira
Celeorde
Gomeselle
Padendene
Odetone
(One hide in)
Ferneham
Contone
Liteltone
Redessolham
Losele
Scaldefor
R. Wey
LAND OF THE BISHOP OF WINCHESTER
Hormera
Abincchorne
Sudtone
WODETONE
Hanstega
Pipareherge
Fernecome
Brunlei
Godelminge
Tiwesle
GODELMINGE
BLACHEFELDE
Arseste?
Hoclei
Witlei
Hameledune
No settled boundary probably existing between Surrey
THE WEALDEN
SUDSE

NOTES TO DOMESDAY MAP

(Compiled by H. E. MALOEN, M.A.)

In this map those manors in which the king had an interest are distinguished by a scarlet line under the name. A blue line is under those of the chief ecclesiastical tenant, the Abbey of Chertsey; a green line marks those of the greatest lay tenant, Richard, son of Count Gilbert, *alias* Richard de Tonbridge.

The identification of the names has been based upon a comparison of the later records of feudal tenures with the Domesday Survey. Where there is real uncertainty about a name a query has been appended, as to Estreham? Where a place is clearly not represented by any existing or formerly localized name, it is left out, as Driteham. Bramselle is omitted as being only possibly represented by a modern farm. A nameless manor in Tandridge Hundred has been hypothetically indicated by two queried modern names, Caterham? and Warlingham?

The Domesday Hundreds have been marked out by the later boundaries with some modifications. The attribution of places to Hundreds is careless in the Survey, and sometimes mistaken. In other cases the boundaries then were different from what they are now. One or two of the present Hundreds are perhaps not ancient. The estates of the Bishop of Winchester are attributed to no Hundred in the Survey, but answer to the present Farnham Hundred. The whole of Godley Hundred, with the exception of Pirford, was then held by the Abbey of Chertsey. It possibly represents a district formerly uninhabited except along the banks of the Thames, and considered as a Hundred after its grant to the Abbey, perhaps in the seventh century.

The Hundreds to the south bordered on uninhabited forest, with no definite southern boundary, so that some isolated places in Sussex were reckoned as belonging to them.

Nine of the Hundreds are named after places of small importance, one—Emley Bridge—being lost altogether. Kingston and Godalming were the largest places in their Hundreds.

The names and courses of rivers are given as they are now. The canalization of the Wey in the seventeenth century changed its course.

REFERENCE TO COLOURING

King's Manors	thus	*Waletone*
Abbey of Chertsey	,,	*Evesham*
Richard de Tonbridge	,,	*Tenrige*

p. 30a, col. i., of original Record

HERE ARE NOTED THE LANDHOLDERS IN SURREY

I King William
II The Archbishop of Canterbury
III The Bishop of Winchester
IV Bishop Osbern
V The Bishop of Bayeux
VI The Abbey of Westminster
VII The Abbey of Winchester
VIII The Abbey of Chertsey
IX The Abbey of St. Wandrille
X The Abbey of the Cross of St. Leutfred
XI The Abbey of Battle
XII The Abbess of Barking
XIII The Canons of St. Paul of London
XIV The Church of Lantheige (Lambeth)
XV Count Eustace
XVI The Countess of Boulogne
XVII The Count of Mortain
XVIII Earl Roger
XIX Richard de Tonebrige
XX William de Braiose
XXI William son of Ansculf
XXII Walter son of Other
XXIII Walter de Dowai
XXIV Gilbert son of Richer
XXV Geoffrey de Mandeville
XXVI Geoffrey Orlateile
XXVII Edward of Salisbury (Sarisberie)
XXVIII Robert Malet
XXIX Miles Crispin
XXX Haimo the Sheriff
XXXI Humfrey the Chamberlain
XXXII Ralph de Felgeres
XXXIII Rainald son of Erchenbald[2]
XXXIV Albert the clerk
XXXV Odard the cross-bowman
XXXVI Oswold, Teodric, and other servants of the King

THE LAND OF THE KING

In Wochinges [Woking] Hundred

In Gildeford [Guildford] king William has 75 closes[1] (*hagæ*) wherein dwell 175 homagers. In the time of king Edward it rendered 18 pounds and 3 pence. It is now valued at 30 pounds, and yet it renders 32 pounds. Of the aforesaid closes, Randulf the clerk has 3 closes where 6 homagers dwell, and whereof the same Randulf has sac and soc unless the common geld be laid upon the vill from which no one can escape. If his homager commit an offence in the vill, and, after being attached (*divadiatus*), shall escape, the King's reeve has nothing therefrom. But if he is accused and is attached there, then the King has the penalty. Thus Archbishop Stigand held them (*sc. hagas*).

Randulf the Sheriff holds 1 close, which he has up to this time holden of the Bishop of Bayeux. The homagers, however, testify that it is not attached to any manor, but that he who held it in the time of king Edward granted it to Tovi, the reeve of the vill, in discharge of a forfeiture of his. There is another house which the reeve of the Bishop of Bayeux holds of the manor of Bronlei [Bramley].

[1] Houses enclosed in separate fences. Perhaps 'closes' is the best translation.

[2] In the Survey, Rainald appears as undertenant to Alvred de Merleburgh, who holds Sende of the King. Alvred's name is an omission in this list.

Concerning this the men of the county say that he has no other right there, except one arising from the fact that (*non habet ibi aliam rectitudinem nisi quod quandam viduam &c*') the reeve of the vill married a certain widow whose house it was, and therefore the Bishop put that house into his own manor, and the King has hitherto lost the customs, but the Bishop has them.

The men who were sworn also say concerning another house which belongs to (*iacet in*) BRUNLEI [Bramley], that it belongs (to Bramley) on this ground only that (*iacet in Brunlei propter hoc tantum quod &c*') the reeve of the same vill was a friend of that man who had this house, and, his friend being dead, transferred it to the manor of Bronlei [Bramley].

WALERAN also disseised a certain man of a house from which king Edward had the custom. Now Otbert holds it with the custom, as he says, by (grant from) king William.

ROBERT DE WATEVILE holds one house, which rendered every custom in the time of king Edward ; now it renders nothing.

King William holds in demesne WOCHINGES [Woking]. It was part of the land which was farmed out by king Edward (*de firma Regis Edwardi fuit*). It was then assessed for 15½ hides. They have never paid geld. The land is for 6 ploughs. There is 1 in demesne ; and (there are) 33 villeins and 9 bordars with 20 ploughs. There is a church. Osbern holds it. And there is 1 mill worth 11 shillings and 4 pence. There are 32 acres of meadow. Wood worth (*de*) 133 hogs. Of this land, Walter, son of Other,[1] holds 3 virgates. A certain forester held this (land) in the time of king Edward, and it was then put out of the manor by king Edward. There is nothing there now. In the time of

p. 30a, col. 1i.

king Edward, and afterwards, it was worth 15 pounds by tale ; now 15 pounds by weight, and 25 shillings to the Sheriff.

The King holds in demesne STOCHÆ [Stoke next Guildford]. It was part of the land which was farmed out by king Edward (*de firma Regis Edwardi fuit*). It was then assessed for 17 hides. They paid no geld. The land is for 16 ploughs. In demesne there are 2 ploughs ; and (there are) 24 villeins and 10 bordars with 20 ploughs. There is a church which William holds of the King, with half a hide in almoigne. There are 5 serfs and 2 mills worth 25 shillings, and 16 acres of meadow. Wood worth (*de*) 40 hogs, and the same is in the King's park.[2] In the time of king Edward, and afterwards, it was worth 12 pounds ; now 15 pounds ; yet he who holds it renders 15 pounds by weight. The Sheriff has 25 shillings (from it).

[1] See p. 322 below.

IN BRIXISTAN [BRIXTON] HUNDRED

The King holds BERMVNDESYE [Bermondsey]. Earl Harold held it. It was then assessed for 13 hides ; now for 12 hides. The land is for 8 ploughs. In demesne there is 1 plough ; and (there are) 25 villeins and 33 bordars with 4 ploughs. There is a new and handsome church,[3] and 20 acres of meadow. Wood worth 5 hogs from the pannage. In London (are) 13 burgesses worth 44 pence (rent). In the time of king Edward, and now, it (was and) is worth 15 pounds, and the Sheriff has 20 shillings (from it). The count of Mortain holds 1 hide,[4] which in the time of king Edward, and afterwards, was in this manor.

The King holds MERETONE [Merton].[5] Earl Harold held it. It was then assessed, and now is, for 20 hides. The land is for 21 ploughs. In demesne there are 2 ploughs ; and (there are) 56 villeins and 13 bordars with 18 ploughs. There is a church ; and 2 mills worth 60 shillings ; and ten acres of meadow. Wood worth 80 hogs. In the time of king Edward it was worth 25 pounds, and afterwards 16 pounds ; now 35 pounds ; yet he who holds it renders 43 pounds. In Sudwerca [Southwark] 16 houses worth 18 shillings and 2 pence belong to this manor.

One named ORCUS holds 2 hides, which always lay in this manor, and are in another Hundred. He held them in the time of king Edward. It was then assessed for 2 hides ; now for nothing. There is 1 plough in demesne ; and 2 acres of meadow. It was always worth 20 shillings.

The Bishop of LISIEUX holds in CHENT [Kent] 2 solins[6] which belonged to this manor in the time of king Edward and of king William, as the men of the Hundred testify. He calls to warranty the Bishop of Bayeux,

[2] The Royal Park of Guildford.

[3] The church of the Cluniac Priory, founded by Alwin Child in 1082.

[4] See 34, a. 2 (p. 313 below).

[5] Granted by Henry I. to the Austin Canons of Merton.

[6] The Kentish measurement of land.

and his reeve has refused to plead [1] concerning it.

In Waleton [Wallington] Hundred

The King holds in demesne Waletone [Wallington]. In the time of king Edward (it was) and is now assessed for 11 hides. The land is for 11 ploughs. In demesne there is 1 plough; and (there are) 15 villeins and 14 bordars [2] with 10 ploughs. There are 3 serfs; and 2 mills worth 30 shillings; and 8 acres of meadow. (There is a) Wood which is in Chent [Kent].

Richard de Tonebridge holds of this manor one virgate, with a wood, whence he evicted [3] a peasant who dwelt there (*unde abstulit rusticum qui ibi manebat*). Now it renders to the Sheriff 10 shillings by the year. The whole manor in the time of king Edward was worth 15 pounds; now 10 pounds.

In Cherchefelle [Reigate] Hundred

The King hold in demesne Cherchefelle [Reigate].[4] Queen Edith (*Eddid*) held it. It was then assessed for 37½ hides; now to the King's use (*ad opus regis*) for 34 hides. The land is .[5] In demesne there are 3 ploughs; and (there are) 67 villeins and 11 bordars with 26 ploughs. There are 2 mills worth 12 shillings less 2 pence; and 12 acres of meadow. Wood worth 140 hogs from the pannage; and for the herbage, 43 hogs. It is now valued at 40 pounds, and renders so much.

p. 30b, col. 1.

In Chingestun [Kingston] Hundred

The King holds in demesne Chingestune [Kingston]. It was part of the land which was farmed out by king Edward (*de firma Regis Edwardi fuit*). It was then assessed for 39 hides; now for nothing. The land is for 32 ploughs. In demesne there are 2 ploughs; and (there are) 86 villeins and 14 bordars with 25 ploughs. There is a church; and 2 serfs; and 5 mills worth 20 shillings; and 2 fisheries worth 10 shillings, and a third fishery very good but not rented (*sine censu*). There are 40 acres of meadow. Wood worth 6 hogs. In the time of king Edward, and afterwards, and now, it was (and is) worth 30 pounds. Of the villeins of this vill, Humfrey the chamberlain had, and has, 1 villein in his charge for the purpose of collecting the Queen's wool. He also took of him 20 shillings as a relief when his father was dead.[6]

In Copededorne [Copthorne] Hundred

The King holds in demesne Etwelle [Ewell].[7] In the time of king Edward it was assessed for 16 hides less 1 virgate; now for 13½ hides to farm. The land is .[8] In demesne there is 1 plough; and (there are) 48 villeins and 4 bordars with 15 ploughs. There are 2 mills worth 10 shillings, and 14 acres of meadow. Wood worth 100 hogs. From the herbage, 11 hogs. In the time of king Edward it was worth 20 pounds; and afterwards, and now, 16 pounds, and yet it renders 25 pounds. The men of the Hundred testify that 2 hides and 1 virgate [9] have been subtracted from this manor, which were there in the time of king Edward; but the reeves let them out (*accomodaverunt*) to their friends, together with a coppice of wood [10] and a croft. The church of Leret [Letherhead] [11] belongs to this manor, with 40 acres of land. It is worth 20 shillings. Osbern de Ow holds it.

The King holds in demesne Feceham [Fetcham]. Queen Edith [Eddid] held it. It was then assessed for 7 hides; now for none. The land is .[12] In demesne there is half a plough and 2 oxen; and (there are) 3 villeins and 10 bordars with 2 ploughs. There are 4 mills worth 4 shillings, and 10

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[1] With good reason; for the Bishop of Bayeux had deprived the King of the 2 solins. They were at Greenwich (see the Kent Survey).

[2] These, and the bordars on the manors at Croydon, are the only bordars in Wallington Hundred. There are no cottars on royal demesne in Surrey.

[3] So lessening the value of the holding.

[4] Cherchefelle Hundred became Reigate Hundred. The name of Reigate, Mr. Round tells me, occurs in 1199.

[5] A blank in the MS.

[6] See 36, b. 1 (p. 326 below).

[7] Ewell, granted by Henry II., in his second year, to the canons of Merton.

[8] A blank in the MS.

[9] The 16 hides less 1 virgate, with 2 hides and 1 virgate subtracted, make 13½ hides; evidence that the Domesday virgate was a quarter of a hide.

[10] Probably Kingswood Liberty, which is part of Ewell parish.

[11] Letherhead nearly certainly. In *Testa de Nevill* it is Lerred; elsewhere Ledred and Leddered.

[12] A blank in MS.

acres of meadow. From the pannage and herbage, 6 hogs. In the time of king Edward, and afterwards, it was worth 60 shillings; now 50 shillings.

In Blachedfeld [Blackheath] Hundred

The King holds in demesne Gomeselle [Gomshall]. Earl Harold held it. It was then assessed for 20 hides, now for nothing. The land is for 20 ploughs. In demesne there are 2; and (there are) 30 villeins and 8 bordars with 18 ploughs. There are 6 serfs; and a mill worth 40 pence; and 3 acres of meadow. Wood worth (*de*) 30 hogs. In the time of king Edward it was worth 15 pounds, and afterwards 10 pounds; now 20 pounds; and yet it renders 30 pounds. The villeins of this vill are quit from every sheriff's matter (*re vicecom'*). Of the land of this manor, the Bishop[1] put half a hide in the manor of Brunlei [Bramley] wrongfully, and holds the same, which had been in Gomeselle [Gomshall] in the time of king Edward, and also of (king) William.

In Wodetone [Wotton] Hundred the King has in demesne one hide, which belongs to (*iacet in*) Gomeselle [Gomshall].

The King holds in demesne Essira [Shiere]. Queen Edith (*Eddid*) held it. It was then assessed for 9 hides, and yet there were then 16 hides there. Lately (*Modo*) it has not paid geld. The land is for 14 ploughs. In demesne there are 2 ploughs; and (there are) 19 villeins and 6 bordars with 12 ploughs. There is a church; and 6 serfs; and 2 mills worth 10 shillings; and 3 acres of meadow. Wood worth (*de*) 50 hogs. In the time of king Edward, and afterwards, and now, it (was and) is worth 15 pounds.

In Wodetone [Wotton] Hundred the King has in demesne 3 virgates, which belong to (*iacent in*) Essire [Shiere] and are valued there.

In Wodetone [Wotton] Hundred

The King holds in demesne Dorchinges [Dorking].[2] Queen Edith (*Eddid*) held it. It was then assessed for 10½ hides; now for nothing. The land is for 14 ploughs. In demesne there are 2 ploughs; and (there are) 38 villeins and 13 bordars with 14 ploughs. There is a church; and 4 serfs; and 3 mills worth 15 shillings and 4 pence. There are 3 acres of meadow. Wood worth 50 hogs from the pannage. From the herbage, 38 hogs. In the time of king Edward, and

p. 30b, col. ii.

afterwards, and now, it (was and) is worth 18 pounds. One named Edric, who held this manor, gave 2 hides to his daughters and they could put themselves under any lord whom they chose (*potuerunt ire quo voluerunt cum terris suis*). Of these hides, Richard de Tonebrige has one,[3] which does not belong to any manor, and he has there in demesne 1 plough, with 1 bordar, and a mill at the Hall, and (there is) 1 acre of meadow. Herfrey holds the other hide of the Bishop of Bayeux. Richard's hide is worth 20 shillings, Herfrey's 10 shillings.

From the 3 manors which queen Edith had in Surrey, the Sheriff has 7 pounds, because he affords them aid when they have need.

In Godelminge [Godalming] Hundred

The King holds in demesne Godelminge [Godalming]. King Edward held it. Then (there were) 24 hides. They have never rendered geld. The land is for 30 ploughs. In demesne there are 3 ploughs; and (there are) 50 villeins and 29 bordars[4] with 19 ploughs. There are 2 serfs; and 3 mills worth 41 shillings and 8 pence; and 25 acres of meadow. Wood worth 100 hogs. In the time of king Edward it was worth 25 pounds, and afterwards 20 pounds; now 30 pounds by tale; and yet it renders 30 pounds weighed and burnt.[5] Randulf Flambard holds of this manor a church,[6] to which belong 3 hides. Ulmær held it of king Edward. They have never rendered geld. The land is for 2 ploughs. In demesne there is 1; and (there are) 5 villeins and 12 cottars with 2 ploughs. There are 15 acres of meadow; and wood worth 3 hogs. The same Randulf holds

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[1] Of Bayeux.

[2] Held by the De Warennes, 'a tempore a quo non exstat memoria,' to quote John de Warenne's plea in 1279. Probably granted by William Rufus to the first De Warenne, Earl of Surrey.

[3] Probably Hampstead *iuxta* Dorking, part of the Honour of Clare in 1314.

[4] The only bordars in Godalming Hundred. Elsewhere in the Hundred cottars appear, but there are no cottars on royal demesne. See above, on Wallington.

[5] Tested for fineness.

[6] St. Peter's and St. Paul's, Godalming.

another church[1] in the same place, which renders 12 shillings by the year. These 3 hides, in the time of king Edward, and now, (were and) are worth 4 pounds; when he received them, 3 pounds.

The same Randulf holds of the King TIWESLE [Tuesley]. It belonged to Godelminge (Godalming). Lewin held it of king Edward. Then, and now, (it was and is) 1 hide. It has never paid geld. The land is for 1 plough, and it is there, with 1 villein and 6 cottars and 1 serf. In the time of king Edward it was worth 60 shillings; and afterwards, and now, 40 shillings.

In AMELEBRIGE [Emleybridge] Aldi, a certain woman, holds of the King 1 virgate. It is worth three shillings.

THE LAND OF THE ARCHBISHOP OF CANTERBURY

IN WALETONE [WALLINGTON] HUNDRED

II. Archbishop Lanfranc holds in demesne CROINDENE [Croydon].[2] In the time of king Edward it was assessed for 80 hides, and now for 16 hides and 1 virgate. The land is for 20 ploughs. In demesne there are 4 ploughs; and (there are) 48 villeins and 25 bordars with 34 ploughs. There is a church; and a mill worth 5 shillings; and 8 acres of meadow. Wood worth 200 hogs.

Of the land of this manor, Restold holds 7 hides of the Archbishop. Ralph (holds) 1 hide; and they have therefrom 7 pounds and 8 shillings for rent (*gablo*). In the time of king Edward, and afterwards, the whole was worth 12 pounds; now 27 pounds to the Archbishop (and) 10 pounds and 10 shillings to his homagers.

The Archbishop himself holds CEIHAM [Cheam][3] for the sustenance of the monks. In the time of king Edward it was assessed for 20 hides, and now for 4 hides. The land is for 14 ploughs. In demesne there are 2 ploughs; and (there are) 25 villeins and 12 cottars with 15 ploughs. There is a church; and 5 serfs, and 1 acre of meadow. Wood worth 25 hogs. In the time of king Edward, and afterwards, it was worth 8 pounds; now 14 pounds.

IN BRIXIESTAN [BRIXTON] HUNDRED

The Archbishop himself holds in demesne MORTELAGE [Mortlake].[4] In the time of king Edward it was assessed for 80 hides. The Canons of St. Paul's (Church) hold 8 of these hides, which have paid, and do pay, geld with the rest (*cum his*).[5] Now they pay geld for 25 hides altogether. The land is for 35 ploughs. In demesne there are 5 ploughs; and (there are) 80 villeins and 14 bordars with 28 ploughs. There is a church; and 16 serfs; and 2 mills worth 100 shillings; and 20 acres of meadow. From the wood, 55 hogs from the pannage. In London there were 17 houses rendering 52 pence. In Sudwerca [Southwark] 4 houses worth 27 pence; and 20 shillings from the toll[6] of the vill of Putelei [Putney], and [there is] a fishery unrented (*sine censu*).

Earl Harold had this fishery in Mortelaga p. 312a, col. 1.
[Mortlake] in the time of king Edward, and archbishop Stigand had it a long while in the time of king William; and yet they (the jurors) say that Harold set it up by force in the time of king Edward in the land of Chingestune [Kingston] and in the land of St. Paul's (Church).[7] The whole manor, in the time of king Edward, was worth 32 pounds, and afterwards 10 pounds; now 38 pounds.

Bainiard holds of the Archbishop WALEORDE [Walworth].[8] In the time of king Edward it was for the clothing of the monks. It was then assessed for 5 hides; now for 3½ hides. The land is for 3 ploughs. In demesne there is one plough; and (there are) 14 villeins and 5 bordars with 3 ploughs. There is a church; and 8 acres of meadow. In the time of king Edward it was worth

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[1] In 1220 there was still a record (in a Visitation) of another church, with a graveyard, dedicated to the Virgin, near Tuesley, not even then standing. The foundations have been lately found.

[2] Croydon parish was a peculiar of the See of Canterbury. This is one of the two places in Wallington Hundred where bordars appear. (See above, on Wallington.)

[3] Cheam parish was a peculiar of the See of Canterbury. The Church was dedicated to St. Dunstan.

[4] In Barnes parish, a peculiar of the See of Canterbury.

[5] These hides are surveyed below (p. 312) as St. Paul's manor of Barnes (*J. H. R.*).

[6] Toll for a market or a ferry.

[7] *i.e.* Barnes.

[8] Walworth parish was a peculiar of the See of Canterbury.

30 shillings, and afterwards 20 shillings; now 60 shillings.

In Cherchefelle (Reigate) Hundred

The Archbishop himself holds Merstan [Merstham][1] for the clothing of the monks. In the time of king Edward it was assessed for 20 hides; now for 5 hides. The land is for 8 ploughs. In demesne there are 2 ploughs; and (there are) 21 villeins and 4 bordars with 8 ploughs. There is a church; and a mill worth 30 pence; and 8 serfs; and 8 acres of meadow. Wood worth 25 hogs. For the herbage 16 hogs. In the time of king Edward it was worth 8 pounds, and afterwards 4 pounds; now 12 pounds.

In Wochinges [Woking] Hundred

The Archbishop himself holds Horslei [East Horsley][2] for the sustenance of the monks. In the time of king Edward it was assessed for 14 hides; now for 3 hides and 1½ virgates. The land is for 5 ploughs. In demesne there is 1; and (there are) 13 villeins and 6 bordars with 7½ ploughs. There are 3 serfs. Wood worth 50 hogs. In the time of king Edward it was worth 4 pounds, and afterwards in like manner; now (it is worth) as much, and yet it renders 100 shillings.

THE LAND OF THE BISHOP OF WINCHESTER[3]

III. The Bishop of Winchester holds Ferneham [Farnham]. Saint Peter[4] always held it. In the time of king Edward it was assessed for 60 hides, and now for 40 hides. The land is .[5] In demesne there are 5 ploughs; and (there are) 36 villeins and 11 bordars with 29 ploughs. There are 11 serfs; and 6 mills worth 46 shillings and 4 pence; and 35 acres of meadow. Wood worth 150½ hogs from the pannage. Of the land of this manor Ralph holds of the Bishop 4 hides less 1 virgate. William (holds) 3 hides and 1 virgate. Wazo (holds) half a hide. In these lands (there are) 3 ploughs in demesne; and (there are) 22 villeins and 9 bordars with 6 ploughs. Wood for 25 hogs. In the time of king Edward the manor, so far as it lies in Surrey,[6] was worth 55 pounds; when he received it, 30 pounds. Now the demesne of the Bishop (is worth) 38 pounds; (the land) of his homagers 9 pounds. Osbern de Ow holds the church of this manor of the Bishop. It is worth 6 pounds, with 1 hide, which he has in Hantesira (Hampshire)[7].

THE LAND OF BISHOP OSBERN[8]

In Wochinges [Woking] Hundred

IV. Bishop Osbern holds Wochinges [Woking].[9] He held it in the time of king Edward and it was then assessed for 8 hides; now for 3½ hides. The land is for 9½ ploughs. In demesne (there are) 1½ ploughs; and (there are) 20 villeins and 6 bordars with 8½ ploughs. There are 3 serfs; and a mill worth 30 pence; and 14 acres of meadow. Wood worth 28 hogs.

p. 31a, col. II.

This manor has, and had, a customary right in the King's wood of Wochinges (Woking); it is this: that the lord of this vill[10] can have in the same wood 120 hogs without (payment for) pannage. Two homagers, Ansgot and Godfrey, hold this manor of the Bishop; each (holds) 4 hides. The whole, in the time of king Edward, and afterwards, was worth 10 pounds, now 9 pounds and 10 shillings.

The Bishop himself holds Tetinges (Titing).[11] Elmer the huntsman held it in the time of king Edward. It was then assessed for

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[1] Merstham parish was a peculiar of the See of Canterbury.

[2] East Horsley parish was a peculiar of the See of Canterbury. This manor was the Archbishop's manor, as distinguished from the Bishop's manor (of Exeter). See note [9] below.

[3] What is now known as Farnham Hundred.

[4] The 'Old Minster' (*i.e.* the Cathedral) at Winchester.

[5] A blank in the MS.

[6] Part of the manor was in Hampshire.

[7] See Introduction.

[8] The Bishop of Exeter.

[9] There is reason for suspecting that this means what was called the Bishop's manor, in East Horsley, belonging to the See of Exeter down to Edward the Sixth's reign. Horsley is in Woking Hundred, and there seems to be no record of the See of Exeter holding land in Woking itself. The Bishop's manor in East Horsley is only about 4 miles from Woking.

[10] 'Dominus villæ' is an unusual and noteworthy phrase in Domesday (*J. H. R.*).

[11] Titing belonged to the See of Exeter till 1549. It has been, time out of mind, in Blackheath Hundred.

1 hide, and the like now. The land is for 2 ploughs. In demesne there is 1 plough and (there are) 1 villein and 6 bordars with 1 plough. In the time of king Edward, and afterwards, it was worth 3 pounds; now 40 shillings. The men of the Hundred testify that this manor was separated by the Sheriff from the land (*prestitum fuit extra firmam*) farmed out by king Edward, and that bishop Osbern had not this manor in the time of king Edward.[1]

THE LAND OF THE BISHOP OF BAYEUX[2]

In Blachetfelle [Blackheath] Hundred

V. The Bishop of Bayeux holds in demesne Brvnlei [Bramley]. Alnod Cild held it of king Edward. It was then assessed for 34 hides. Four of these hides belonged to free men who could withdraw from Alnod.[3] Over and above these there is land up to (*ad*) two ploughs in the manor itself which never rendered geld. All these lands are now farmed with (*in firma de*) Brunlei [Bramley]. The land is for 35 ploughs. In demesne there are 6 ploughs; and (there are) 84 villeins and 40 cottars[4] with 32 ploughs. There are 3 churches;[5] and 18 serfs; and 5 mills worth 26 shillings; and 20 acres of meadow. Wood worth 100 hogs. In the time of king Edward it was worth 40 pounds,[6] and afterwards 30 pounds; now 60 pounds, and yet it renders 80 pounds less 40 pence. Since the Bishop was seised thereof (*saisivit*) it has not rendered geld.

The Bishop himself holds Celeorde [Chilworth) in Brolege [Bramley]. Alwin Boi held it, and could take what lord he pleased (*potuit ire quo voluit*). It was then assessed for 3 hides; now for nothing. The land is .[7] In demesne there is 1 plough; and (there are) 6 villeins and 2 cottars with 2 ploughs. There is a mill worth 7 shillings. The whole is worth 70 shillings.

In Brunlege [Bramley] there are 2 more hides.[8] Anschil held them in the time of king Edward, and could take what lord he pleased (*potuit ire quo voluit*). It was then assessed for 2 hides; now for nothing. There are 3 villeins and 1 cottar with 1 plough. The land is for 1 plough. It is worth 36 shillings.

The Bishop has 2½ more hides in the same place, which Alvric held in the time of king Edward, and could put them under the protection of what lord he pleased (*cum eis potuit ire quo voluit*). The land is for 2 ploughs. It lies in Wodetone [Wotton] Hundred. It is worth 32 shillings.[9]

The same Bishop has 1 more hide there. A certain widow holds it, and held it in the time of king Edward, and could take what lord she pleased (*potuit ire quo voluit*). It was then assessed for 1 hide; now for nothing. It is worth 10 shillings.

In Blachefelde [Blackheath] Hundred

The Bishop himself has in demesne 3 hides. Alward held these, and could put them under the protection of what lord he pleased (*potuit cum eis ire quo voluit*). There are 5 villeins and 8 cottars with 2 ploughs. There are 5 serfs; and a mill worth 20 pence. The whole is worth 100 shillings by the year.

The selfsame Bishop has in the same Hundred land for 1 plough. Alwin held it in the time of king Edward. It is worth 30 shillings. Then . .[10] All the land that belongs to Brunlege [Bramley] has not rendered geld since the Bishop received it.

In Godelminge [Godalming] Hundred

The Bishop himself holds in demesne Redessolham [Rodsell, in Puttenham].[11] Tovi held it in the time of king Edward, and could put it under the protection of what lord he pleased (*cum eo potuit ire quo voluit*). It was then assessed for 5 hides; now for nothing. The land is for 2 ploughs. There are 3 villeins and 4 cottars with 1 plough; and 2 acres

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[1] Osbern was resident in England before the Conquest.

[2] Odo, Bishop of Bayeux and Earl of Kent, half-brother to the King. His holdings appear to be his as Earl of Kent; and on his rebellion against William Rufus they reverted to the Crown. They were not possessions of his See.

[3] *i.e.* choose another lord.

[4] Cottars, not bordars as otherwise universally in Blackheath Hundred. This is on the frontier of Godalming Hundred, where cottars are almost universal.

[5] Perhaps Bramley, Wonersh and St. Martha's (*vulg.*).

[6] *Solidos* in original corrected to *libras*.

[7] A blank in the MS.

[8] See 34, a. 1, where it appears that these hides were geographically in Clandon.

[9] These hides lay in Sutton (in Shiere). See entry at end of bishop's fief (*J. H. R.*).

[10] A blank in the MS.

[11] In the later manor of Puttenham Priory.

of meadow. Wood worth 4 hogs. In the time of king Edward, and afterwards, and now, it (was and) is worth 40 shillings.

The Bishop himself holds in demesne FERNECOME [Farncombe]. Ansgot held it in the time of king Edward and could put it under the protection of what lord he pleased (*cum eo potuit ire quo voluit*). It was then assessed for 3½ hides; now for nothing. The land is for 2 ploughs. There are 8 villeins p. 31b, col. i. and 3 cottars with 2 ploughs; and 15 acres of meadow. Wood for 3 hogs. It is worth, and was worth, 24 shillings.

A certain reeve of the King, named Lofus, claims this manor, and the men of the Hundred bear witness for him, because he was holding it of the King when the King was in Wales,[1] and he afterwards held it until the Bishop of Bayeux took his journey into Kent.

The said Bishop has transferred REDDESOLHAM [Rodsell] and FERNECOME [Farncombe] to the land which he has out in farm at (*convertit ad firmam de Bronlei*) Bronlei [Bramley].

IN TENRIGE [TANDRIDGE] HUNDRED

ANSCHITIL DE ROS holds of the Bishop TATELEFELLE [Tatsfield]. Alvric held it of king Edward. Then, and now, it (was and) is assessed for half a hide. The land is .[2] In demesne there is 1 plough; and (there are) 5 villeins and 9 bordars with 1 plough. There are 12 serfs. In the time of king Edward it was worth 30 shillings, and afterwards 40 shillings; now 60 (shillings).

Hugh holds of the Bishop a manor [3] which Cana held of king Edward. It was then assessed for 4 hides; now for half (a hide). The land is for 4 ploughs. In demesne there is 1 plough; and (there are) 5 villeins and 2 bordars. In the time of king Edward it was worth 4 pounds; and afterwards 20 shillings; now 40 shillings.

IN WALETONE [WALLINGTON] HUNDRED

The Canons of Bayeux hold of the Bishop MICHELHAM [Mitcham] [4] for 5 hides. Brictric held it of king Edward. He himself had 6½ [5] hides, but Otbert holds one, which Brictric mortgaged to his predecessor for (*quam antecessor eius tenuit in vadio de Brictrico*) half a mark of gold. In the land of the Canons there are 4 villeins and 1 cottar with 2 ploughs, and with 1 serf; [6] and (there are) 40 acres of meadow. The land is for 2 ploughs. It is worth, and was worth, 40 shillings. In Otbert's land there are 4 acres of meadow. They are worth 7 shillings. (There is) nothing more. Ansgot holds half a hide of the Bishop. It is worth 5 shillings.

In the same manor the Canons themselves hold of the Bishop 2½ hides, which 2 homagers held of king Edward. There is 1 plough in demesne; with 1 villein and 2 bordars, and 1 serf; [7] and (there are) half a plough, and 12 acres of meadow. (It was) always (worth) 20 shillings.

The selfsame Canons hold of the Bishop WITFORD.[8] Edmaer held it of king Edward. Then, and now, it (was and) is assessed for 3 hides. The land is for 2 ploughs. In demesne there is 1 plough; and (there are) 2 villeins and 6 cottars with 2 ploughs; and 4 acres of meadow. In the time of king Edward, and now, it (was and) is worth 30 shillings; when he received it, 10 shillings.

Richard holds of the Bishop BENESTEDE [Banstead].[9] Alnod held it of king Edward. It was then assessed for 29 hides; now for 9½ hides. The land is for 16 ploughs. In demesne there are 2 ploughs; and (there are) 28 villeins and 15 cottars with 15 ploughs. There is a church; and 7 serfs; and a mill

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[1] 1081 A.D., the only year William was in Wales. Odo was disgraced in 1082, so his progress into Kent must have been also in 1081 or 1082. Probably it was part of his preparation for his foreign expedition, which the King frustrated by his arrest.

[2] A blank in MS.

[3] Possibly Caterham, but see p. 315. Caterham was De Clare land; and Letherhead, where Hugh held Pachesham of the Bishop, became De Clare land also. *Testa de Nevill*, p. 219.

[4] The manor called Mitcham or Canon. Mitcham or Canon was granted by Edward III. to St. Mary Overie. Manning and Bray suppose that it was confiscated from the Canons of Bayeux with other lands of alien priories.

[5] 'Et dimidiam' is interlined.

[6] *Uno servo*, as if the *villani* had a *servus*.

[7] The *servus* again associated with the villeins.

[8] Wykford Lane in Mitcham has been assumed to be the sole relic of this lost manor. See also 35, b. 2.

[9] Banstead is put in Wallington Hundred as late as Speed's map of 1616. It is now reckoned in Copthorne, to which Borough and North and South Tadworth, all in Banstead parish, are attributed in 1086.

worth 20 shillings. Wood worth 20 hogs; and in Sudwerche [Southwark] 1 house worth 40 pence belongs to this manor; and in London Alnod had a demesne house belonging to this manor. Adam son of Hubert now holds it of the Bishop. The whole manor, in the time of king Edward, was worth 10 pounds, and afterwards 100 shillings; now 8 pounds. Of the land of this manor, Geoffry holds of Richard 5 hides. Ralph (holds) 2 hides. Ulsi (holds) 2 hides. The whole is worth 6 pounds and 10 shillings.

The same Ralph holds of the Bishop CALVEDONE [1] [Chaldon]. Derinc held it of king Edward. Then and now it (was and) is assessed for 2 hides. The land is for 2 ploughs, and they are there in demesne; and (there is) a church. In the time of king Edward it was worth 40 shillings, and afterwards 20 shillings; now 4 pounds.

IN BRIXISTAN [BRIXTON] HUNDRED

The Bishop of Lisieux holds of the Bishop HACHEHAM [Hatcham]. Brixi held it of king Edward. Then and now, it (was and) is assessed for 3 hides. The land is for 3 ploughs. There are 9 villeins and 2 bordars with 3 ploughs; and there are 6 acres of meadow. Wood worth 3 hogs. In the time of king Edward, and afterwards, and now, it (was and) is worth 40 shillings.

IN CHIRCHEFELD [REIGATE] HUNDRED

Herfrey holds of the Bishop GATONE [Gatton]. Earl Leofwine held it.[2] It was then assessed for 10 hides; now for 2½ hides. The land is for 5 ploughs. In demesne there p. 31b, col. 11. are 2 ploughs; and (there are) 6 villeins and 3 bordars with 2 ploughs. There is a church; and 6 acres of meadow. The wood and the herbage (are worth) 7 hogs. In the time of king Edward, and now, it (was and) is worth 6 pounds; when he received it, 3 pounds.

Ansgot holds of the Bishop half a hide in WALETONE [Wallington] Hundred. Epi held this in the time of king Edward, and could take what lord he pleased (*potuit ire quo voluit*). It is worth 5 shillings.

IN BRIXISTAN [BRIXTON] HUNDRED

The Bishop of Lisieux holds of the Bishop PECHEHAM [Peckham]. Alfled held it of Harold in the time of king Edward, and it belonged to (*iacuit in*) PATRICESY [Battersea]. Then and now it (was and) is assessed for 2 hides.[3] The land is for 1 plough. There is 1 villein and 3 bordars; and 2 acres of meadow. In the time of king Edward, and now, it (was and) is worth 30 shillings; when he received it, 20 shillings.

Ansgot holds of the Bishop ESTREHAM [Streatham].[4] Edwin held it in the time of king Edward, and could take what lord he pleased (*potuit ire quo voluit*). Then, and now, it (was and) is assessed for 1 hide. There is 1 plough and 2 villeins. It is worth, and was worth, 25 shillings.

IN COPEDEDORNE [COPTHORNE] HUNDRED

Hugh holds of the Bishop PACHESHAM [Pachevesham in Letherhead]. Ælmer held it of the King in the time of king Edward. It was then assessed for 4 hides; and now for 3 virgates. The land is .[5] In demesne there are 2 ploughs; and (there are) 11 villeins and 8 bordars with 2 ploughs. There are 4 serfs; and 2 moieties of mills [6] worth 12 shillings; and 5 acres of meadow. Wood worth 3 hogs. In the time of king Edward it was worth 40 shillings; and afterwards 20 shillings; now 70 shillings.

RANDULF holds of the Bishop 1 hide and 1 virgate. Leuric held it freely (*liberam*) of Harold, and could take what lord he pleased (*quo voluit ire potuit*). This land is now assessed for 1 virgate. 2 villeins have half a plough there. In the time of king Edward (it was worth) 20 shillings, and afterwards 12; now 10 shillings.

BAINGIARD holds of the Bishop 1 hide, which Elmer held of earl Harold, and he could take what lord he pleased (*quo libet ire potuit*). It was then assessed for 1 hide; now for 1 virgate. In demesne there is 1 plough; with 1 bordar; and the moiety of a mill worth 6

[1] This name is printed Salvedone in the Record Commission's edition; but, although the initial letter is badly formed, it is probably meant for C (*J. H. R.*).

[2] Brother to Harold; killed at the battle of Hastings.

[3] See 32, a. 2 below; and the Introduction.

[4] The two manors in Streatham, Tooting Bec and Leigham Court, are represented by five entries in Domesday. As this is not Tooting Bec, which appears below, it may be what was afterwards Leigham Court.

[5] A blank in the MS.

[6] See for moieties of mills Baingiard's holding below, and at Fecheham.

shillings. In the time of king Edward it was worth 20 shillings, and afterwards 10 shillings; now 24 shillings.

In WALETONE [Wallington] Hundred Adam son of Hubert has one hide of the Bishop, which has never paid geld.

The selfsame Bishop holds CODINTONE [Cuddington]. Earl Leofwine[1] [Lewinus] held it. It was then assessed for 30 hides. Of these, the Earl held 20 hides; and the allodial tenants (*alodiarii*) of the vill, who could seek any other lord for their lands (*qui cum suis terris quo volebant recedere poterant*), held 10 hides. The Bishop now holds 6 of these 10 (hides) with the other 20. These 26 hides are now assessed for 5 hides. The Bishop holds this as 1 manor. Ilbert[2] now holds of the Bishop these 26 hides. He (has) 22 hides, and 1 of his homagers 4 hides. In demesne there is 1 plough; and (there are) 7 villeins and 9 bordars with 6 ploughs. There are 4 serfs, and a mill worth 40 pence. Of these hides, Ralph holds 4 hides. Ulwin holds of the King 1 hide and 3 quarters of 1 hide. In demesne there is 1 plough; and (there are) 4 villeins and 4 bordars with 1 plough. The whole manor in the time of king Edward was worth 11 pounds; and afterwards 100 shillings; now 9 pounds and 12 shillings. Of the land of this manor, Restald holds 2 hides, but he renders account (*rationem*) in Waleton [Wallington] Hundred.

The Canons hold STEDE [Ashstead][3] of the Bishop of Bayeux. Turgis held it of earl Harold. It was then assessed for 9 hides; now for 3 hides and 1 virgate. The land is .[4] In demesne there are 2 ploughs; and (there are) 33 villeins and 11 bordars with 14 ploughs. There are 9 serfs; and 7 hogs from the herbage; and 4 acres of meadow. In the time of king Edward it was worth 10 pounds, and afterwards 6 pounds; now 12 pounds.

Ralph holds of the Bishop TADEORDE [South Tadworth in Banstead].[5] Two brothers held it of king Edward, and they could seek what lord they pleased (*quo voluerunt ire potuerunt*). It was then assessed for 5 hides; now for 1½ hides. The land is for 2 ploughs. In demesne there is 1½; and (there are) 3 villeins and 4 bordars with 1½ ploughs. There is 1 serf; and 1 hog from the wood. In the time of king Edward it was worth 40 shillings; and afterwards, and now, 30 shillings.

Richard holds of the Bishop FECEHAM [Fetcham]. Biga held it of king Edward. It was then assessed for 8½ hides; now for 4 hides. The land is for 5 ploughs. In demesne there is 1; and (there are) 8 villeins and 3 bordars with 1 plough. There are 2 serfs; and the 6th part of a mill, and the 3rd part of another mill;[6] and 10 acres of meadow; and from the pannage and herbage, 13 hogs. From the mills, 6½ shillings. In the time of king Edward, and now, it (was and) is worth 60 shillings; when he received it, 50 shillings. p. 32a, col. 1.

Nigel holds of the Bishop MICLEHAM [Mickleham]. Ansfrig held it of king Edward. Then, and now, it (was and) is assessed for 5 hides. The land is for 4 ploughs. In demesne there are 2 ploughs; and (there are) 4 villeins and 4 bordars, and 2 serfs. There is a church; and 2 acres of meadow. Wood worth 3 hogs. In the time of king Edward it was worth 3 pounds, and afterwards 50 shillings; now 4 pounds.

Hugh de Port holds of the Bishop BERGE [Burgh, or West Burrow in Banstead]. Three free men held it, and they could seek what lord they pleased (*quo voluerunt ire potuerunt*). It was then assessed for 5 hides; now for 2½ hides. Hugh holds these 4 manors[7] as 1 manor. It is valued in Waleton [Wallington] Hundred.

IN AMELEBRIGE [EMLEYBRIDGE] HUNDRED

The same Hugh holds of the Bishop 1 free hide in AISSELA [Esher],[8] and a certain woman (holds it) of him. There is 1 villein. It is worth 5 shillings. When Hugh possessed himself (*saisivit*) of this land, he had not the King's livery officer or writ therefor, as the Hundred testifies.

Herfrey holds of the Bishop WEBRUGE [Weybridge]. Two sisters held it in the

[1] Leofwine, brother to Harold.

[2] See Introduction (p. 280).

[3] Probably Ashstead.

[4] A blank in the MS.

[5] 'Tadeorde' is held with 'Calvedone,' see p. 303. South Tadworth and Chaldon afterwards owed Castleward for Rochester.

[6] Are these fractions of the mills at Pachevesham?

[7] Burgh was held later of Banstead. 4 seems here a mistake for 3.

[8] 'Assere' in *Testa de Nevill.*

time of king Edward, and they could put themselves and their land under any lord they pleased (*quo voluerunt cum terra se vertere potuerunt*). It was then assessed for 4 hides; now for 2 hides. There is 1 villein and 1 bordar;[1] and 16 acres of meadow. Wood worth (*de*) 5 hogs. It is worth, and was worth, 40 shillings. When the Bishop possessed himself (*saisivit*) of this land, he had not the King's livery officer or writ therefor, as the Hundred testifies.

In Chingestun [Kingston] Hundred

Wadard holds of the Bishop Ditone [Thames Ditton]. Leuegar held it of Harold, and served him, but could have commended himself and his land to any lord he pleased (*quo voluisset cum terra ire potuisset*). When he died, he divided (*disp*[*ar*]*tivit*) this land between his three sons, in the time of king Edward. It was then assessed for 6 hides; now for 2½ hides. The land is for 2 ploughs. There are 1½ ploughs, and (there are) 4 bordars, and 4 serfs; and part of a mill worth 15 pence; and 4 acres of meadow. Wood (worth) 20 hogs. In the time of king Edward it was worth 4 pounds, and afterwards 40 shillings; now 4 pounds. He who holds it of Wadard renders him 50 shillings and the service of one knight.[2]

The Bishop himself has (*h't*) in Sudwerche [Southwark] one minster (*monasterium*)[3] and one tide-way (*aque fluctum*). King Edward held it on the day on which he died. He who had the Church held it of the king. From the dues of the stream[4] (*de exitu aquæ*), where ships used to come alongside (*applicabant*), the King had two parts, earl Godwin the third. But the men of the Hundred, both French and English, testify that the Bishop of Bayeux commenced a suit concerning these tolls with Randulf the Sheriff; but he, understanding that the suit was not being justly conducted to the King's advantage, withdrew from the suit. But the Bishop at first gave the church and the tidal stream (*fluctum*) to Adelold, then to Ralph in exchange for a house. The Sheriff also denies that he had ever received (*percepisse*) the King's precept or seal concerning this thing. The men of Southwark testify that in the time of king Edward no one took toll on the 'strande' or in the water street (*vico aquæ*)[5] except the King: and if any one committing a trespass there should be questioned, he made fine (*emendabat*) to the King. If, however, he should escape unquestioned to the jurisdiction of him who had sac and soc, he (the lord) was to have the fine from the accused.

The said men of Southwark themselves have proved their right to a close and the toll thereof belonging to the farm (*ad firmam*) of Chingestone [Kingston]. Count Eustace held this. What the King has[6] in Southwark is valued at 16 pounds.

In Wodetone [Wotton] Hundred and in the manor of Sudtone [Sutton in Shiere] the Bishop of Bayeux has 2½ hides. Herulf held them in the time of king Edward, and could seek what lord he pleased (*quo voluit ire potuit*). They were then assessed for 2½ hides; now for nothing. These are enumerated and valued in the Bishop's manor of Brunlei [Bramley].[7]

p. 32a, col. ii.

THE LAND OF THE CHURCH OF WESTMINSTER

In Bricsistan [Brixton] Hundred

VI. Saint Peter of Westminster holds Patricesy [Battersea]. Earl Harold held it. It was then assessed for 72 hides; and now for 18 hides. The land is .[8] In demesne there are 3 ploughs; and (there are) 45 villeins and 16 bordars with 14 ploughs. There are 8 serfs; and 7 mills worth 42 pounds 9 shillings and 8 pence, or corn of the same price; and 82 acres of meadow; and wood worth 50 hogs from the pannage; and in Sudwerche [Southwark] 1 bordar worth 12

[1] In the rest of Emleybridge Hundred cottars occur, but no bordars, except at East Moulsey. Weybridge, when mentioned among the Chertsey manors, is attributed to Copthorne Hundred, where there are bordars and no cottars.

[2] The only knight-service recorded in Surrey.

[3] Not a monastery, for St. Mary Overie was a church of Canons, either regular or secular. There was clearly a church before the alleged foundation by William Pont de l'Arche in 1106 or by William Giffard, Bishop of Winchester, in 1107.

[4] The outfall of one of the ditches on the Surrey side used as a dock. Perhaps what was afterwards St. Olaf's dock.

[5] The Bank-side.

[6] In MS. *h't*, but perhaps *habeb'* is meant as he has nothing.

[7] See p. 301, note [9], above (*J. H. R.*).

[8] A blank in the MS.

pence (rent). From the toll of Wandelesorde [Wandsworth] 6 pounds. From a villein having 10 hogs, 1 hog; if (he has) less, he gives nothing. A knight holds 4 hides of the land of this manor. His stock (*pecunia*) is reckoned above with the other. The whole in the time of king Edward was worth 80 pounds, and afterwards thirty pounds; now 75 pounds 9 shillings and 8 pence. King William gave this manor to St. Peter's (Church) in exchange for Windesores [Windsor].[1]

The Count of Mortain holds 1½ hides[2] of the land of this manor, which belonged to it (*ibi erat*) in the time of king Edward, and for some time afterwards. Gilbert, a priest, holds 3 hides; they had been in the same condition. The Bishop of Lisieux (holds) two hides[3] of which the church was seised in the time of king William; and afterwards the Bishop of Bayeux disseised it. The Abbot of Certesi [Chertsey] holds 1 hide,[4] which the reeve of this vill, on account of some enmity, took away from this manor, and laid to Chertsey.

In Waletone [Wallington] Hundred

The Abbey itself of Westminster holds Mordone [Morden].[5] In the time of king Edward it was assessed for 12 hides; now for 3 hides. The land is .[6] In demesne there are 3 ploughs; and (there are) 8 villeins and 5 cottars with 4 ploughs. There is 1 serf; and a mill worth 40 shillings. In the time of king Edward it was worth 6 pounds, now 10 pounds; and yet it renders 15 pounds.

In Chingestun [Kingstvne] Hundred

The Abbey itself holds Claigate [Claygate in Thames Ditton].[7] In the time of king Edward it was assessed for 2½ hides; now for half a hide. The land is for 2 ploughs. In demesne there is 1; and (there are) 3 villeins and 2 bordars with 1 plough. There are 5 acres of meadow. Wood worth 1 hog. In the time of king Edward it was worth 40 shillings; now 50 shillings.

In Bricsistan [Brixton] Hundred

The Abbey itself holds Totinges [Upper Tooting]. Suain held it of king Edward; and it was assessed for 4 hides. The land is for 1½ ploughs. There are 2 villeins with half a plough; and 3 acres of meadow. In the time of king Edward, and now, it (was and) is worth 40 shillings; when (the Abbey) received it, 20 shillings. Earl Waltheof received this land of Suain after the death of king Edward, and pledged it for 2 marks of gold to Alnod of London, who granted it to St. Peter's (Church) for his soul: to wit, what he had there.[8] Odbert holds it of St. Peter's (Church) and has paid nothing for geld.

In Godelie [Godley] Hundred

The Abbey itself holds Peliforde [Pirford].[9] Harold held it of king Edward. Before Harold had it, it was assessed for 27 hides. After he had it, (it was assessed) for 16 hides at Harold's pleasure. The men of the Hundred have never heard of nor seen the writ on the King's behalf, which had fixed (*posuisset*) it at so much. The land is for 13 ploughs. In demesne there is 1 plough; and (there are) 37 villeins and 14 bordars with 6 ploughs. There are 3 serfs; and 2 mills worth 10 shillings; and 15 acres of meadow. For the pannage and herbage 80 hogs. In the time of king Edward it was worth 12 pounds, and afterwards 10 pounds;

[10] It now pays geld for 8 hides.[11]

[1] The writ of king William, declaring the grant of Battersea and Pirford to Westminster, is printed in Dugdale's *Monasticon*. If genuine it is as early as 1068, being addressed to Count Eustace and Archbishop Stigand.

[2] See perhaps 34, a. 2, under 'Estreham.'

[3] See 31, b. 2 (above).

[4] See perhaps 33, under 'Totinges.' It does not appear certain that these hides should be counted both here and in the other places. Those of the Bishop of Lisieux certainly should not.

[5] Morden and Claygate were among the manors confirmed to Westminster by charter under Edward the Confessor, and held till the Dissolution.

[6] A blank in the MS.

[7] *Vide supra*.

[8] This entry throws doubt on the Abbey's charter (*Monasticon*, i. 298) recording the gift to it of the 4 hides at Tooting by king Edward himself, as those which Suain his kinsman had held (*J. H. R.*).

[9] Madox printed in his *Formulare*, p. 238, from the original at Westminster, King William's charter exempting the abbey's '8 hides' at Pirford from all tax. It is addressed to the sheriff of Surrey, and dated 'post descriptionem totius Angliæ' (*J. H. R.*).

[10] In the margin of the original.

[11] Compare note [9] above.

now 18 pounds. The king has three hides of this land in his forest.[1]

THE LAND OF ST. PETER OF WINCHESTER[2]

In Waletone [Wallington] Hundred

VII. The Abbey of St. Peter of Winchester holds Sandestede [Sanderstead].[3] In the time of king Edward it was assessed for 18 hides; now for 5 hides. The land is for 10 ploughs. In demesne there is 1; and (there are) 21 villeins and 1 cottar with 8 ploughs. There p. 32b, col. 1. are 4 serfs. Wood worth 30 hogs. In the time of king Edward it was worth 100 shillings, and afterwards 7 pounds; now 12 pounds; yet it renders 15 pounds.

THE LAND OF THE CHURCH OF CHERTSEY

In Waletone [Wallington] Hundred

VIII. The Abbey of St. Peter of Certesy [Chertsey] holds Watendone [Whattingdon].[4] In the time of king Edward it was assessed for 20 hides; now for 5 hides. The land is for 8 ploughs. In demesne there is 1 plough; and (there are) 17 villeins and 2 cottars with 5 ploughs. There is a church. Wood worth 6 hogs from the pannage. In the time of king Edward it was worth 6 pounds; now 7 pounds.

The Abbey itself holds Colesdone [Coulsdon].[5] In the time of king Edward it was assessed for 20 hides; now for 3½ hides. The land is for 10 ploughs. In demesne there is 1 plough; and (there are) 10 villeins and 4 cottars with 6 ploughs. There is a church. Wood worth 3 hogs. In the time of king Edward it was worth 6 pounds, now 7 pounds.

The Abbey itself holds Sudtone [Sutton, near Cheam].[6] In the time of king Edward it was assessed for 30 hides; now for 8½ hides. The land is for 15 ploughs. In demesne there are 2 ploughs; and (there are) 21 villeins and 4 cottars with 13 ploughs. There are 2 churches; and 2 serfs; and 2 acres of meadow. Wood worth 10 hogs. In the time of king Edward it was worth 20 pounds; now 15 pounds.

In Tenrige [Tandridge] Hundred

The self-same Abbey holds 2 hides of land,[7] and William holds of the Abbot. But the men testify that it was the demesne land of Alwin in the time of king Edward, and he could take what lord he pleased (*quo voluit ire potuit*). It was then assessed for 2 hides; now for nothing. There is 1 bordar and 1 serf. In the time of king Edward it was worth 20 shillings, and afterwards 5 shillings now 10 shillings.

[8] In the self-same Hundred the Abbey itself holds 3 virgates of land.

In Amelebrige [Emleybridge] Hundred

The Abbey itself holds Covenham [Cobham].[9] In the time of king Edward it was assessed for 30 hides; now for 12½ hides. The land is for 10 ploughs. In demesne there is 1 plough; and (there are) 29 villeins and 6 cottars with 9 ploughs. There are 3 mills worth 13 shillings and 4 pence; and 1 acre of meadow. Wood worth (*de*) 40 hogs. In the time of king Edward it was worth 20 pounds; now 14 pounds.

William de Wateville holds 2 hides of the Abbey itself.[10] One Englishman held them in the time of king Edward, and in the lifetime of the same King he gave this land to the same

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[1] Of Windsor.

[2] There is an alleged omission of a manor belonging to the New Minster. By post-conquest authority (see Dugdale 3 vol. ed. I. 209) Ethelflaed, first wife of Edgar, is said to have given Lingfield in Tandridge Hundred to it. It certainly held it later (*Testa de Nevill*, p. 220).

[3] Sanderstead. It belonged at the Dissolution to the Abbey of Hyde, 'the New Minster' (of St. Peter).

[4] Whattingdon, an extinct manor in Coulsdon, belonging to Chertsey at the Dissolution. There was a chapel there, generally held with Coulsdon Church, and suppressed by Edward VI.

[5] Belonging to Chertsey at the Dissolution.

[6] Sutton Abbas, belonging to Chertsey at the Dissolution.

[7] Perhaps at Horley, which was a Chertsey manor later. Horley is now in Reigate (Cherchefelle) Hundred, but it is on the borders of Tandridge. In 1086 it was isolated in the forest, but there are traces of an ancient settlement there at Thundersfield.

[8] In the margin in the original.

[9] Cobham was Chertsey property later.

[10] Perhaps a farm called Norwood, in Cobham parish, which was claimed in 1679 as part of the manor of Esher.

church in almoigne. This land belongs to (*est de*) the manor of AISSELE [Esher]. There are 6 villeins with 2 ploughs. In the time of king Edward, and now, it (was and) is worth 14 shillings and 6 pence.

In the same vill of AISSELA [Esher] the same William has of the Abbey of Chertsey, as (the jurors) say (*dic'*), 3½ hides. In the time of king Edward 1 man and 2 women held them, and they could take what lord they pleased (*quo voluerunt se vertere potuerunt*); but for security they placed themselves with the land under the protection of the Abbey. There are 2 villeins with 1 plough. In the time of king Edward it was worth 16 shillings, and afterwards 5 shillings; now 10 shillings. These 5½ hides aforesaid are assessed for 5 virgates.

IN COPEDORNE [COPTHORNE] HUNDRED

The Abbey itself holds EVESHAM [Epsom].[1] In the time of king Edward it was assessed for 34 hides; now for 11 hides. The land is for 17 ploughs. In demesne there is 1; and (there are) 34 villeins and 4 bordars with 17 ploughs. There are 2 churches;[2] and 6 serfs; and 2 mills worth 10 shillings; and 24 acres of meadow. Wood worth 20 hogs. In the time of king Edward it was worth 20 pounds; now 17 pounds.

In WEBRIGE [Weybridge][3] the Abbey itself hitherto has held 2 hides. Alvred held them in the time of king Edward and after his death, and could seek what lord he pleased (*quolibet se vertere potuit*). Then, and now, (it was and is) 2 hides. There are 3 villeins; and 8 acres of meadow. Wood worth 2 hogs. (It was) always (worth) 20 shillings.

In the same vill an Englishman has 2 hides of the selfsame Abbey. He held them in the time of king Edward, and could put himself and his land under what lord he pleased (*cum ea quo voluit se vertere potuit*). There is 1 plough; and 2 villeins with half a plough; and 8 acres of meadow. Wood worth 2 hogs. It is worth, and was worth, 20 shillings.

p. 32b, col. ii.

IN CHINGESTUN [KINGSTON] HUNDRED

EDRIC holds of the selfsame Abbey half a hide which the Abbey held for 2 years before the death of king Edward. Three homagers held it of the same King previously, but they could not withdraw (therefrom) without the King's precept, because they were bedels[4] in Kingston. Then, and now, it (was and) is assessed for half a hide. The land is for 3 oxen. There are 7 oxen, with 1 bordar; and 2 acres of meadow. In the time of king Edward it was worth 7 shillings; now 8 shillings.

William de Wateville holds MELDONE [Malden][5] of the fee (*feuo*) of the Abbot. The Abbot held it in the time of king Edward. It was then assessed for 2 hides; now for 1 hide less 1 virgate. The land is for 1 plough. There are 4 villeins with half a plough. It is worth, and was worth, 20 shillings.

The Abbey itself holds in demesne PATRICESHAM [Petersham]. In the time of king Edward it was assessed for 10 hides; now for 4 hides. The land is for 5 ploughs. In demesne there is 1 plough; and (there are) 15 villeins and 2 bordars with 4 ploughs. There is a church and a fishery worth 1,000 eels and 1,000 lampreys; and 3 acres of meadow. In the time of king Edward it was worth 100 shillings; now 6 pounds and 10 shillings.

Haimo the Sheriff holds ESTREHAM (Ham ?)[6] of the Abbey itself. Ulward held

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[1] Chertsey property later.

[2] In the taxation of Pope Nicholas, the rectory of Epsom was valued at 30 marks, the vicarage at 6 marks and 20 pence. There was a Stamford Chapel, site unknown, belonging to Chertsey, which may be this second church.

[3] Weybridge is now (and above, 32, a. 1) in Emleybridge Hundred. It shows the characteristic bordar in place of cottar tenure (see 32, a. 1), which belongs to Copthorne, not Emleybridge. The right of the Abbey to these hides is questioned (*H. E. M.*).

It seems to be implied that the land had been alienated to the Abbey since king Edward's death and without king William's permission. See Introduction (*J. H. R.*).

[4] Elected village officers.

[5] Held of Chertsey later.

[6] There is a Ham in Kingston Hundred, which never, so far as is known, belonged to Chertsey. In the charter of Chertsey ascribed to a year not later than 675 its property is bounded by Hamae Insula, or Hamenege, which is represented not only by the later Ham House, but the older Ham Moor and by Ham Farm. This Ham was potentially an Estreham, or a Ham on the Street, for the Via Militaris, or Here Street, of the Chertsey

it of king Edward, and could seek what lord he pleased (*quo voluit ire potuit*). It was then assessed for 1 hide. There is land for 1 plough. There are 2 bordars. It is worth, and was worth, 20 shillings.

In Amelebrige [Emleybridge] Hundred

Rainald holds 1 hide in Aissela [Esher] of the self-same Abbey, and has paid geld for 15 acres. A certain woman held it in the time of king Edward, and could seek what lord she pleased (*potuit ire quo voluit*), but for security she put herself under the protection of the Abbey. There are 3 villeins. It is worth 7 shillings.

In Fingeham [Effingham] Hundred

The Abbey itself holds Bocheham [Great Bookham].[1] In the time of king Edward it was assessed for 26 hides; and now for 13 hides. The land is for 19 ploughs. In demesne there is 1 plough, and (there are) 32 villeins and 4 bordars with 18 ploughs. There is a church; and 3 serfs; and a mill worth 10 shillings; and 6 acres of meadow. Wood worth (*de*) 80 hogs. From the herbage, 30 hogs. Of this land, Gunfrey holds 1 hide, and he has there 1 plough. The whole manor in the time of king Edward was worth 16 pounds; now 15 pounds.

The Abbey itself lies in Godelei [Godley] Hundred, and the vill (of Chertsey) itself in the time of king Edward, and now, (was and) is assessed for 5 hides. The land is . . .[2] In demesne there are 2 ploughs; and (there are) 39 villeins and 20 bordars with 17 ploughs. There is a mill at the Hall; and (there are) 200 acres of meadow. Wood worth 50 hogs from the pannage; and a forge which serves the Hall. Of these 5 hides, Richard Sturmid holds 2½ hides under king William. But the Hundred testifies that his predecessor held of the Abbey, nor could he seek another lord (*poterat alias ire*) without leave of the Abbot. He has in demesne there 1 plough, and 1 villein and 4 bordars with 1 plough. The whole manor in the time of king Edward was worth 18 pounds; now 22 pounds. What Richard holds (is worth) 40 shillings.

The Abbey itself holds Torp [Thorpe].[3] In Godelei [Godley] Hundred. In the time of king Edward it was assessed for 10 hides; now for 7 hides. The land is .[4] In demesne there is 1 plough; and (there are) 24 villeins and 12 bordars with 8 ploughs. There are 33 acres of meadow. From the herbage, 24 hogs. In the time of king Edward, and now, it (was and) is worth 12 pounds.

In Fingeham [Effingham] Hundred

Oswold[5] holds of the selfsame church Epingeham [Effingham]. His very self (*ipsemet*) held it in the time of king Edward. It was then assessed for 6 hides; now for 2½ hides. The land is for 2 ploughs. There are 2 villeins and 9 bordars with half a plough; and (there is) 1 acre of meadow; and from the wood, 10 hogs from the pannage. It is worth, and was worth, 40 shillings.

In Godelei [Godley] Hundred

The Abbey itself holds Egeham [Egham]. In the time of king Edward it was assessed for 40 hides; now for 15 hides. The land is for 40 ploughs. In demesne there are 2 ploughs; and (there are) 25 villeins and 32 bordars with 10 ploughs. There are 120 acres of meadow. Wood worth 50 hogs from the pannage. From the herbage 25 hogs. In the time of king Edward it was worth 40 pounds; now 30 pounds and 10 shillings. Of this land Gozelin holds 3 hides, which were of the Abbey's demesne in the time of king Edward.

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charter, ran by it, and was Chertsey property; for no doubt it is the Ham granted by the Abbey to William de Hamme in 9 R. I. But it was in Emleybridge Hundred, not in Kingston. There is another Ham in Emleybridge Hundred, the little manor of Ham subordinated to Cobham, which, no doubt, with Cobham, was Chertsey property. The heading 'In Amelebrige Hundredo' below may be misplaced. A similar mistake appears possible elsewhere.

[1] Great Bookham was Chertsey property.

[2] A blank in the MS.

[3] Thorpe, Egham, and Chobham were among the lands granted by the reputed seventh century charter to Chertsey.

[4] A blank in the MS.

[5] Oswold, a considerable English owner (*vide infra*), who made an early submission to William, and retained his land as a rule, though he, from prudence or compulsion, sought a lord for some portions of it, as in this case. He seems to have been brother to Wulfwold, Abbot of Chertsey, under Edward the Confessor and William, who died in 1084.

The Abbey itself holds CEBEHAM [Chobham]. In the time of king Edward, and now, it (was and) is assessed for 10 hides. There is land for 12 ploughs. In demesne there is 1; and (there are) 29 villeins and 6 bordars with 11 ploughs. There are 3 serfs; and 10 acres of meadow. Wood worth 130 hogs. Of this land, Odm[us] holds of the Abbot 4 hides. Corbelin (holds) 2 hides of the land of the villeins. In demesne there is 1 plough; and (there are) 7 villeins and 4 bordars with 3 ploughs.[1] There is a church and another chapel.[2] The whole manor in the time of king Edward was worth 16 pounds. Now the monks' part (is worth) 12 pounds and 10 shillings, but the homagers' (part) 60 shillings.

p. 33

IN WALETONE [WALLINGTON] HUNDRED

Haimo the Sheriff holds 1½ hides in fee of the Abbot of Chertsey. Alward held it in the time of king Edward, and could seek what lord he pleased (*potuit se vertere quo voluit*). In demesne there is 1 plough; with 6 cottars, and 3 serfs, and 11 acres of meadow. In the time of king Edward, and afterwards, and now, it (was and) is worth 20 shillings.

The same Haimo holds half a hide of the selfsame Abbey. Ulward held it in the time of king Edward, and could seek what lord he pleased (*potuit se vertere quo voluit*).

[3] These 2 hides which Haimo holds were assessed for 2 hides in the time of king Edward; now for a half.

There is 1 cottar; and 5 acres of meadow. It is worth, and was worth, 5 shillings.

IN BRIXISTAN [BRIXTON] HUNDRED

The same Haimo holds TOTINGES [Lower Tooting] of the Abbot of Chertsey. It was assessed for 6 hides less 1 virgate in the time of king Edward; now for nothing. The land is for 3 ploughs. In demesne there is 1 plough; and (there are) 3 villeins and 2 bordars with 1 plough. There is a church; and 4 acres of meadow. In the time of king Edward it was worth 40 shillings, afterwards 20 shillings; now 70 shillings.

The same Haimo holds in TOTINGES [Lower Tooting][4] 1 hide of the Abbot of Chertsey. Osward held it of king Edward, and could seek what lord he pleased (*potuit ire quo voluit*). There is 1 villein, with half a plough; and 1 acre of meadow. In the time of king Edward (it was worth) 15 shillings; now 10 shillings.

IN CERCHEFELLE [REIGATE] HUNDRED

William de Wateville held TEPESTEDE [Chipstead] of the Abbot of Chertsey. Turgis and Ulf held it in the time of king Edward. The land of Turgis belonged to (*erat de*) the Abbey. Ulf could seek what lord he pleased (*poterat ire quo volebat*). It was then assessed for 5 hides; now for 1 hide. There are 2 villeins and 1 bordar. When William relinquished the land (*abiit*), it was farmed out at 40 shillings (*erat ad firmam de xl solidis*).

p. 34, a. 1.

Ulwin holds of the selfsame Abbey BIFLET [Byfleet].[5] The same man held it in the time of king Edward. It was then assessed for 8 hides; now for 2 hides and a half. The land is for two ploughs. In demesne there is 1 plough; and (there are) 7 villeins and 2 bordars with 2 ploughs. There is a church; and 3 serfs; and a mill worth 5 shillings. 1½ fisheries, worth 325 eels; and 6 acres of meadow. Wood worth 10 hogs from the pannage. In the time of king Edward (it was worth) 100 shillings; now 4 pounds.

IN WOCHINGES [WOKING] HUNDRED

The Abbey itself holds CLANEDUN [East Clandon].[6] In the time of king Edward it was assessed for 10 hides; now for 4 hides. The land is for 5 ploughs. There are 6 villeins and 12 bordars with 7 ploughs. Wood worth 6 hogs. In the time of king Edward it was worth 6 pounds. Now (it is worth) 4 pounds; and yet the villeins who hold it render 6 pounds.

In the time of king Edward the Abbot of Chertsey bought 2 hides in Clanedun [East Clandon], and laid them (*misit in*) to this manor. Anschil held them of the King. The Bishop of Bayeux laid them (*misit in*) to

[1] The latter entries must refer to the land of Odmus and Corbelin.

[2] The site of the chapel is lost.

[3] This clause is an insertion, and in the original is written before the previous entry.

[4] The manor called Tooting Graveney, properly Gravenell. In the *Testa de Nevill* Richard de Gravenell holds 1 knight's fee in Tooting of the Abbey of Chertsey.

[5] The heading *In Godelei Hund'* is no doubt accidentally omitted. Byfleet, in Godley Hundred, was always held of Chertsey.

[6] East Clandon or Clandon Abbatis. See 31, a. 2, for the bishop of Bayeux's encroachment, also mentioned here.

Brunlei [Bramley] wrongfully, as the men of the Hundred testify.[1]

The Abbey itself holds HENLEI [Henley in Ash]. Azor[2] held it until he died, and gave it to the church for his soul in the time of king William, as the monks say, and they have the King's writ therefor. In the time of king Edward it was assessed for 8 hides; now for 5½ hides. The land is for 5 ploughs. In demesne there is one plough; and (there are) 10 villeins and 6 bordars with 5 ploughs. There is a church; and 2 serfs; and 4 acres of meadow. Wood worth 50 hogs from the pannage. In the time of king Edward it was worth 6 pounds; now 100 shillings.

THE LAND OF ST. WANDRILLE[3]

IN BRIXIESTAN [BRIXTON] HUNDRED

IX. The Abbot of St. Wandrille holds WANDESORDE [Wandsworth], the gift of (*per*) Ingulf the monk. Suein held it of the King, and could seek what lord he pleased (*potuit ire quo voluit*). It was then assessed for 1 hide; now for nothing. There are 3 villeins and 2 bordars with 1 plough. It was worth 20 shillings, and is worth (the same).

THE LAND OF ST. LEUTFRED[4]

IN AMELEBRIGE [EMLEYBRIDGE] HUNDRED

X. The Abbot of the Cross of St. Leutfred holds 7 hides and 3 virgates of land in AISSELE[5] (Esher) by gift of king William. Tovi held it of king Edward. The land is for 2 ploughs. In demesne there is 1; and (there are) 4 villeins and 11 cottars with 2 ploughs. It is worth 3 pounds. Since the Saint has held it, it has never paid geld.

THE LAND OF THE CHURCH OF BATTLE

IN TENRIGE [TANDRIDGE] HUNDRED

XI. The Abbot of Battle (*Labatailge*) holds LIMENESFELD [Limpsfield]. Harold held it in the time of king Edward. It was then assessed for 25 hides. Now, since the Abbot received it, it is not assessed. The land is for 12 ploughs. In demesne there are 5 ploughs; and 25 villeins and 6 bordars with 14 ploughs. There is a mill worth 2 shillings; and a fishery; and 1 church; and 4 acres of meadow. Wood worth 150 hogs from the pannage. Two stone quarries[6] (*fossæ Lapidum*) worth 2 shillings; and 3 nests of hawks in the wood, and 10 serfs. In the time of king Edward it was worth 20 pounds, and afterwards 15 pounds; now 24 pounds. Brameselle[7] belonged to this manor in the time of king Edward, as the men of the Hundred say.

THE LAND OF THE CHURCH OF BARKING

IN AMELEBRIGE [EMLEYBRIDGE] HUNDRED

XII. The Abbey of BARKING has 7 hides at WESTONE[8] [Weston]. It is now assessed for 3 hides and one virgate. The land is for 3 ploughs. There are 9 villeins with 3 ploughs. It is worth 40 shillings, and was worth (the same).

The Abbey itself has 2 hides of land in WALETONE [Wallington] Hundred.[9] In the time of king Edward it was assessed for 2 hides; now for 1. There are 2 villeins with half a plough; and 6 acres of meadow. In the time of king Edward it was worth 1 mark of silver;[10] now 20 shillings.

THE LAND OF ST. PAUL OF LONDON

IN BRIXISTAN [BRIXTON] HUNDRED

XIII. The Canons of St. Paul of London hold

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[1] See 31, a. 2. Where following the rest of Bramley they have a cottar.

[2] This Azor, or others of the name, held land from the time of king Edward.

[3] The Abbey of St. Wandrille [Wandregisilus] in the diocese of Rouen, near Caudebec. The land was perhaps the manor of Dunsfold, in Wandsworth, which afterwards belonged to the Canons of Merton.

[4] The Abbey of La Croix Saint Leufroy [Leofridus] in the diocese of Evreux.

[5] This was the principal manor of Esher, conveyed to the See of Winchester in 1284.

[6] No doubt in the Upper Green Sand, of Malmstone or Firestone, as it is locally called.

[7] Brameselle is not certainly recoverable. It may be represented by Broomland in Titsey, a farm.

[8] Weston, in Thames Ditton, which belonged to the Nunnery at Barking till shortly before the Dissolution, when Henry VIII. bought it to add to the Honour of Hampton Court.

[9] Not known where. A manor in Wandsworth had the alternative names of Alfarthing or Barking Fee; but it is in Brixton Hundred, and is not recorded as Barking property.

[10] *i.e.* 13 shillings and 4 pence.

BERNE [Barnes]. In the time of king Edward it was assessed for 8 hides. These hides have paid, and do pay, geld with Mortlake, the Archbishop's manor, and are there accounted for.[1] The land is for 6 ploughs. In demesne there are 2 ploughs; and 10 villeins and 4 bordars with 3 ploughs; and 20 acres of meadow. In the time of king Edward it was worth 6 pounds; now 7 pounds.

THE LAND OF THE CHURCH OF LAMBETH

IN BRIXISTAN [BRIXTON] HUNDRED

XIV. St. Mary is a manor which is called LANCHEI [Lambeth].[2] Countess Goda,[3] p. 34, a. ii. sister of king Edward, held it. It was then assessed for 10 hides; now for 2½ hides. The land is for 12 ploughs. In demesne there are 2 ploughs; and [there are] 12 villeins and 27 bordars with 4 ploughs. There is a church; and 19 burgesses in London who render 36 shillings; and there are 3 serfs; and 16 acres of meadow. Wood worth (*de*) 3 hogs. In the time of king Edward, and afterwards, it was worth 10 pounds; now 11 pounds. The Bishop of Bayeux has 1 piece of arable land (*unam culturam terræ*) of this manor, which before and after the death of Goda lay in the land attached to this church (*jacuit in ista ecclesia*).

[1] See 30, b. 2, under Mortlake. Barnes parish was a peculiar of the See of Canterbury.

[2] The form of this entry is unusual. It nowhere exactly asserts that the church of Lambeth was the holder of the manor; only in the final words that the Bishop of Bayeux had annexed some land which formerly was attached to the church. There is no holder 'on the day when king Edward was alive and dead,' for Countess Goda died 10 years before him, in 1056 (*L'Art de Vérifier les Dates*, II. 762). The Rochester Registers, near the beginning, say that part of Lambeth was granted to Rochester by Eustace, Goda's husband. Henry I.'s charter to Rochester, quoted by Dugdale, says that Lambeth had formerly belonged to Rochester, had been taken away, and restored again. See below for another manor in Lambeth.

[3] Goda, or Godgifu, sister to king Edward, wife of Eustace II. of Boulogne.

THE LAND OF COUNT EUSTACE[4]

IN TENRIGE [TANDRIDGE] HUNDRED

XV. Count Eustace holds ACSTEDE [Oxted]. Gida, the mother of Harold, held it in the time of king Edward. It was then assessed for 20 hides; now for 5 hides. The land is for 20 ploughs. In demesne there are 2 ploughs; and (there are) 34 villeins with 18 ploughs. There are 2 mills worth 12 shillings and 6 pence; and 4 acres of meadow. Wood worth 100 hogs from the pannage; and in Sudwerca [Southwark] 1 house worth 2 pence; and 6 serfs and 9 bordars. There is a church. In the time of king Edward it was worth 16 pounds; when he received it, 10 pounds; now 14 pounds.

The Count himself holds WACHELESTEDE [Walkhampstead or Godstone]. Osward held it of king Edward. It was then assessed for 40 hides; now for 6 hides. The land is for 30 ploughs. In demesne there are 3 ploughs; and (there are) 39 villeins and 2 bordars with 22 ploughs. There are 10 serfs; and a mill worth 6 shillings; and 3 acres of meadow. Wood worth 100 hogs. To this manor belong 15 houses in Suduuerca (Southwark) and in London, worth 6 shillings and 2,000 herrings. In the time of king Edward it was worth 20 pounds, and afterwards 16 pounds; now 20 pounds; yet it renders 28 pounds by weight.

IN CHERCHEFELLE [REIGATE] HUNDRED

XVI. The Countess of Boulogne[5] holds of the King NOTFELLE [Nutfield]. Ulwi held it of king Edward. It was then assessed for 13½ hides; now for 3 hides. The land is for 12 ploughs. In demesne there are 3 ploughs; and (there are) 25 villeins and 10 bordars with 13 ploughs. There is a church; and 10 serfs; and a mill worth 2 shillings; and 10 acres of meadow. From the herbage, 12 hogs. In the time of king Edward it was worth 13 pounds, and afterwards 10 pounds; now 15 pounds of 20 (pence) to the ore.

[4] Eustace, Count of Boulogne. Mr. Freeman, *Norman Conquest*, vol. iv., Appendix N., was misled by a mistake of Sir Henry Ellis in supposing that Eustace II. was certainly dead in 1086.

[5] Ida of Lorraine, wife to Count Eustace II.

THE LAND OF THE COUNT OF MORTAIN[1]

In Brixistan [Brixton] Hundred

XVII. The Count of Mortain holds Lanchei[2] [Lambeth]. The Canons of Waltham held it of Harold. It was then assessed for 6½ hides; now for nothing. The land is for 6 ploughs. In demesne there is 1 plough; and (there are) 5 villeins and 12 bordars with 3 ploughs. There is 1 serf; and 6 acres of meadow. In the time of king Edward it was worth 100 shillings, and afterwards, and now, 4 pounds.

The same Count has in Bermundesy [Bermondsey] 1 hide of the King's land, where his house is situated.[3] There is 1 bordar. It is worth 8 shillings.

In Waletone [Wallington] Hundred

The same Count has 2 hides of land and 1 virgate of the King.[4] Ailmar held it of king Edward. It is not now assessed. There are 4 villeins and 9 cottars with 3 ploughs; and 9 acres of meadow. In the time of king Edward, and now, it (was and) is worth 40 shillings; when he received it, 20 shillings. It was assessed for 2 hides and 1 virgate.

The Count himself holds Estreham[5] [Streatham ?]. In the time of king Edward it was assessed for 5 hides; now for nothing. Harold held 1½ hides; the Canons of Waltham 1½ hides. Three sokemen held 2 hides, and could seek what lord for them they pleased (*quo voluerunt cum eis ire potuerunt*). The land is for 2 ploughs. There are 3 villeins and 3 bordars with 2½ ploughs. In the time of king Edward it was worth 30 shillings, and afterwards 15 shillings; now 43 shillings.

THE LAND OF EARL ROGER[6]

In Wodetone [Wotton] Hundred

XVIII. Earl Roger has of the King 1 hide, which belongs to (*jacet in*) Contone [Compton], his manor in Sudsexe [Sussex]. In the time of king Edward he who held Contone held this hide of the King. It was then assessed for 1 hide; now for nothing. There is in demesne one plough. In the time of king Edward it was worth 20 shillings, and afterwards, and now, 15 shillings.

p. 34, b. i.

Turald holds of Earl Roger Borham[7] [Burgham].[8] Osmund held it of king Edward. It was then assessed for 4 hides; now for 3 hides. The land is for 5 ploughs. In demesne there is 1 plough; and (there are) 7 villeins and 2 bordars with 3½ ploughs; and (there is) a mill worth 15 shillings; and 25 acres of meadow. Wood worth 80 hogs (from the) pannage. There are 4 serfs. Of these hides, Godric has 1 hide which is called Wucha [Wyke in Ash], in which was the hall belonging to this manor in the time of king Edward; and there is in demesne 1 plough; and (there are) 4 villeins and 3 bordars with 1 plough, and 1 serf. Wood worth three hogs. The whole manor in the time of king Edward, and afterwards, was worth 8 pounds; now the lord (has) 7 pounds, his homagers 20 shillings.

Turald holds of the Earl Werpesdune [Worplesdon]. Osmund held it of king Edward. It was then assessed for 8 hides, now for 6½ hides. The land is for 7 ploughs.

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[1] The Conqueror's half-brother, Robert of Mortain, Earl of Cornwall.

[2] South Lambeth, or Stockwell; for the manor in Edward the Confessor's charter, confirming Harold's grant to Waltham (quoted by Dugdale), has boundaries which nowhere touch the river. This manor subsequently belonged to Baldwin de Redvers, who held other forfeited lands of the Count of Mortain's.

[3] See 30, a. 2.

[4] Possibly at Waddon, in Croydon, which was granted by Henry I. to Bermondsey in 1127, before which date the lands of the Count of Mortain had been forfeited.

[5] See, perhaps, 32, a. 2, under Patricesy. But the 1½ hides of the Count of Mortain's there are attributed to another Hundred. This is possibly Ham, in Croydon, called Estham, or Escheham, in 1 and 2 Philip and Mary, which is on or close to the probable line of a Roman 'Street.'

[6] Roger de Montgomery, lord of Shrewsbury and of Arundel in Sussex.

[7] Burgham, Wyke, and Worplesdon are in the middle of Woking Hundred, and have always been considered as belonging to it. Probably it is only a mistake of the clerks, reading Wochinges as Wodetone, which leads to their being here attributed to Wotton. The converse mistake appears in the case of Ockley.

[8] Burgham in Worplesdon parish. The manor came to Robert, Earl of Gloucester, by marriage, and thence ultimately to the De Clares.

In demesne there is 1 plough; and (there are) 13 villeins and 3 bordars with 6 ploughs. There is a church; and 1 serf; and 8 acres of meadow. Wood worth 60 hogs from the pannage. Of this land 2 knights hold 2 hides and 1 virgate; and they have there in demesne 2 ploughs, and 3 villeins and 2 bordars, and a mill worth 30 pence. The whole in the time of king Edward, and afterwards, was worth 10 pounds; now, in like manner, 10 pounds among the whole.

In Godelminge [Godalming] Hundred

Turold holds of the Earl Losele [Loseley]. Osmund held it of king Edward. It was then assessed for 3 hides; now for 2 hides. The land is for 2 ploughs. In demesne there is one plough; and (there are) 7 villeins and 1 cottar with 3 ploughs. There are 2 serfs; and 5 acres of meadow. In the time of king Edward it was worth 40 shillings, and afterwards 20 shillings; now 60 shillings.

THE LAND OF RICHARD SON OF COUNT GILBERT[1]

In Tenrige [Tandridge] Hundred

XIX. Richard de Tonebrige holds in demesne Civentone [Chivington in Blechingley]. Alnod held it of king Edward. It was then assessed for 20 hides; now for 6 hides. There is land for 12 ploughs. In demesne there are 2½ ploughs; and (there are) 23 villeins and 1 bordar with 9 ploughs. There are 9 serfs;[2] and a mill worth 32 pence. From the herbage, 12 hogs. Wood worth 50 hogs from the pannage; and 16 acres of meadow. Of these hides Roger holds half a hide, and he has there in demesne 1 plough with 5 bordars. In Sudwerche [Southwark] (he has) 3 closes worth 15 pence, and in London 2 houses worth 10 pence. In the time of king Edward it was worth 11 pounds, and afterwards 6 pounds; now 10 pounds.

Richard himself holds Blachingelei [Blechingley]. Ælfech and Alwin and Elnod held it of king Edward. It was then assessed for 10 hides; now for 3 hides. The land is for 16 ploughs. There were 3 manors; now it is in one. In demesne there are 3 ploughs; and (there are) 20 villeins and 4 bordars with 9 ploughs. There are 7 serfs; and 14 acres of meadow. From the wood, 40 hogs; and from the herbage, 18 hogs. In London and Sudwerche [Southwark] (there are) 7 houses worth 5 shillings and 4 pence. Of these 10 hides, Odm[us] holds 2½ hides, and Lemei 2 hides, and Peter 1½ hides. In demesne there is 1 plough; and (there are) 3 villeins and 2 bordars with one plough; and 3 acres of meadow. The whole manor in the time of king Edward was worth 13 pounds, and afterwards 8 pounds. Now what Richard holds (is worth) 12 pounds; what his homagers (hold) 73 shillings and 4 pence.

Robert de Watevile holds of Richard Celesham [Chelsham].[3] Ulward held it of king Edward. It was then assessed for 10 hides; now for 2 hides. The land is for 4 ploughs. In demesne there are 2 ploughs; and (there are) 6 villeins and 11 bordars with 3 ploughs. There are 4 serfs. One hog for customary payment. In the time of king Edward it was worth 6 pounds, and afterwards 3 pounds; now 8 pounds.

The wife of Salie holds of Richard Tenrige [Tandridge]. Torbern held it of king Edward. It was then assessed for 10 hides; now for 2 hides. The land is for 10 ploughs. In demesne there are 3 ploughs; and (there are) 20 villeins and 10 bordars with 11 ploughs. There is 1 mill worth 50 pence; and 5 acres of meadow. Wood worth 40 hogs from the pannage. From the herbage, 11 hogs. In the time of king Edward it was worth 6 pounds, and afterwards 40 shillings; now 11 pounds.

p. 34, b. ii.

The very same (*ipsa eadem*) wife of Salie holds of Richard Tellingedone [Tillingdon]. Alnod held it of king Edward. It was then

[1] Richard de Tonbridge, lord of Clare, the ancestor of the De Clares, Earls of Gloucester and Hertford, and the largest landholder in Surrey.

[2] A rather large proportion of serfs, as in the same neighbourhood at Nutfield, Godstone and Buckland. About one-sixth of all the *servi* in Surrey, 83 out of 503, are in Tandridge Hundred, and an unusually large proportion is in places near it.

[3] The name is evidently Chelsham. There were 2 manors of Chelsham, Chelsham-Watevyle and Chelsham Court. See the entry of Chelesham below. This is probably the former. The Church of St. Leonard, perhaps the 'Ecclesia' of the second entry, is close to the farm of Chelsham Court, but the 2 manors have been amalgamated since 1639. Manning and Bray suppose that one of these two entries corresponds to Warlingham, which is not otherwise mentioned.

assessed for 10 hides; now for 1½ hides. The land is for 4 ploughs. In demesne there are 2 ploughs; and (there are) 5 villeins and 8 serfs with 2½ ploughs. There is a church. Wood worth (*de*) 30 hogs (from the) pannage. In the time of king Edward it was worth 7 pounds, and afterwards 3 pounds; now 6 pounds; and yet it renders 7 pounds.

Robert de Watevile holds of Richard a manor[1] which Azor held of king Edward. It was then assessed for 14 hides; now for 2 hides. The land is for 4 ploughs. In demesne there are 2 ploughs; and (there are) 11 villeins and 7 bordars with 3 ploughs. Wood (worth) 5 hogs from the pannage. There is a church. In the time of king Edward, and now, it (was and) is worth 7 pounds; when he received it, 100 shillings.

The same Robert holds of Richard CHELESHAM [Chelsham].[2] Tochi held it of king Edward. It was then assessed for 10 hides; now for 2 hides. The land is for 4 ploughs. In demesne there are 2; and (there are) 11 villeins and 7 bordars with 4 ploughs. There is a church, and 3 serfs. In the time of king Edward and now it (was and) is worth 7 pounds. When he received it, 4 pounds.

The same Robert holds of Richard FERLEGA [Farley]. Tovi held it of king Edward. It was then assessed for 6 hides; now for half a hide. The land is for 2½ ploughs. In demesne there is 1; and (there are) 4 villeins and 1 bordar with 1 plough. There is 1 serf, and one ox. In the time of king Edward, and now, it (was and) is worth 60 shillings; when he received it, 20 shillings.

John holds of Richard WALLINGEHAM [Woldingham].[3] Ulstan held it of king Edward. It was then assessed for 8 hides, now for 1. The land is .[4] In demesne there are 1½ ploughs; and (there are) 6 villeins and 3 bordars with 3 ploughs. There are 3 serfs. In the time of king Edward, and now, it (was and) is worth 4 pounds; when he received it, 20 shillings.

IN BRIXIESTAN [BRIXTON] HUNDRED

St. Mary of Bech[5] holds TOTINGES [Tooting Bec] by gift of Richard. Estarcher held it of king Edward. It was then assessed for 11 hides, and now in like manner—for 1 hide.[6] The land is for 4 ploughs. In demesne there are two ploughs; and (there are) 5 villeins and 4 bordars with 3 ploughs. There are 10 acres of meadow. In the time of king Edward, and now, it (was and) is worth 100 shillings; when he received it, 20 shillings.

The very same church holds of Richard ESTREHAM [Streatham].[7] Erding held it of king Edward. It was then assessed for 5 hides, and now in like manner—for 1 hide and 1 virgate of land.[8] The land is for 3 ploughs. In demesne there is one plough; and (there are) 4 villeins and 5 bordars with 2 ploughs. There is a chapel paying 8 shillings. There are 4 acres of meadow. Wood worth 10 hogs. From the herbage, 1 hog out of 10 (*unus porcus de x porcis*). In the time of king Edward it was worth 50 shillings, and afterwards, and now, 60 shillings.

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[1] Probably Warlingham, but possibly Caterham. Ralph, Earl of Stafford, who had married the daughter of one of the co-heiresses of the De Clares, representatives of Richard de Tonebrige, died in 1372 seised, *inter alia*, of the fee of Caterham and of Porkele in Caterham parish. But in the reign of king John, Roger de Gaist had a manor of Caterham, and gave the church of St. Leonard at Caterham to the abbey of Waltham (charter cited in Dugdale). The church at Caterham was afterwards known as St. Lawrence.

William de Watvile, and Robert his son, gave the manor of Warlingham to the Priory of Bermondsey in 1144, and William or Robert de Watvile, with the consent of his sons, the churches of Warlingham and Chelsham to the same Priory in 1158 (Dugdale). This distinct connexion of the De Watviles with Warlingham makes it more probable that this nameless manor is Warlingham. But the fact that the De Clares were overlords of all three places—Chelsham, Caterham and Warlingham—makes the identification uncertain, but less important.

[2] Perhaps Chelsham Court; see Celesham above.

[3] Certainly Woldingham, a De Clare manor.

[4] A blank in the MS.

[5] The Abbey of Bec-Hellouin in Normandy.

[6] *Pro i hida* is written over *similiter*, as a correction. Exactly the same mistake and correction occur in the next entry.

[7] Streatham, held with Tooting Bec of the Earl of Gloucester, Gilbert de Clare, who was killed at Bannockburn, by Ogbourne Priory in Wilts, a cell of Bec in Normandy.

[8] See above ([6]).

IN CHERCHEFELLE [REIGATE] HUNDRED

William,[1] nephew of bishop Walchelin,[2] holds of Richard TEPESTEDE [Chipstead]. Ulnod held it of king Edward. It was then assessed for 15 hides; now for 2 hides. The land is for 7 ploughs. In demesne there are 2; and (there are) 8 villeins and 5 bordars with five ploughs. There are 5 serfs; and a mill worth 20 shillings. Wood worth 5 hogs. Richard has retained another wood for himself. In the time of king Edward it was worth 7 pounds, and afterwards 100 shillings; now 6 pounds.

Siward holds of Richard ORDE [Worth in Sussex].[3] Oswol held it of king Edward. Then, and now, it (was and) is assessed for half a hide. There is 1 villein with half a plough. In the time of king Edward it was worth 30 shillings, and afterwards 2 shillings; now 20 shillings.

John holds of Richard BOCHELANT [Buckland].[4] Alnod held it of king Edward. It was then assessed for 5 hides; now for 2 hides. The land is .[5] In demesne there are 1½ ploughs; and (there are) 17 villeins and 8 bordars with 10 ploughs. There is a church; and 10 serfs; and a mill worth 6 shillings. In the time of king Edward, and afterwards, it was worth 100 shillings; now 8 pounds.

IN WALETON [WALLINGTON] HUNDRED

Robert de Watevile holds of Richard BEDDINTONE[6] [Beddington]. Azor held it of king Edward. It was then assessed for 25 hides; now for 3 hides. The land is for 6 ploughs. In demesne there is 1 plough; and p. 35, a. 1.
(there are) 16 villeins and 14 cottars with 5 ploughs. There is a church; and 5 serfs; and 2 mills worth 40 shillings; and 24 acres of meadow. Wood worth 5 hogs. Fifteen houses in London, which belong to this manor, pay 12 shillings and 3 pence. In the time of king Edward, and now, it (was and) is worth 10 pounds; when he received it, 6 pounds.

Richard himself holds in demesne ODEMERESTOR [Woodmansterne].[7] Azor held it of king Edward. Then and now it (was and) is assessed for 15 hides, but it never paid geld. The land is for 3 ploughs. In demesne there are 2 ploughs; and (there are) 1 villein and 12 cottars with 3 ploughs. There are 18 serfs; and a church; and a mill worth 20 shillings; and 4 acres of meadow. Wood worth 10 hogs. In the time of king Edward it was worth 10 pounds, and afterwards 100 shillings; now 8 pounds.

IN COPEDEDORNE [COPTHORNE] HUNDRED

John holds of Richard WALTONE [Walton-on-the-Hill]. Alwin and Lefelm and Coleman held it of king Edward as 3 manors, and they could take what lord they pleased (*potuerunt ire quo voluerunt*). It was then assessed for 15 hides; now for 2 hides and half a virgate. The land is for 5 ploughs. In demesne there are 2½ ploughs; and (there are) 10 villeins and 1 bordar with 2 ploughs; and 7 serfs. Of these hides, Roger holds 2 hides, and he has 1 plough there; and (there is) 1 house in Suduuerche [Southwark]. The whole in the time of king Edward was worth 6 pounds, and afterwards 6 pounds, and now 6 pounds.

IN AMELEBRIGE [EMLEYBRIDGE] HUNDRED

Richard himself holds of the King 1 hide, which Almær[8] held of king Edward, and he

[1] Possibly De Watevile. See p. 33 for Chipstead, which was part of the De Clare inheritance. It looks as if the Earl's tenant had encroached upon the Abbey lands, and then given up his claim.

[2] Of Winchester.

[3] Not named in the Sussex Survey. De Clare land. There is a church there not mentioned here, which has claims to date from before the Conquest.

[4] De Clare land later (*Testa de Nevill*).

[5] A blank in the MS.

[6] The manor called Home Beddington. De Clare property. There was another manor called Beddington Huscarle. See 36, b. 1 below.

[7] Woodmansterne subsequently belonged to the De Clares. There could be no water mill in the later parish of Woodmansterne, high up on the chalk downs, with no stream; and wind mills did not exist in England in 1086. See mills at Banstead and Chipstead also. I am informed by Mr. F. A. H. Lambert of Banstead, that the mill was probably on the Wandle at Carshalton, where there seems to have been land counted in Woodmansterne manor, *circa* 1280, according to the charters in possession of the Lamberts of Woodmansterne. The 18 serfs are the highest number in any Surrey manor.

[8] Almar held Long Ditton (see below). This hide was probably adjacent, but in the next Hundred.

could put it under what lord he pleased (*potuit cum ea ire quo voluit*). It never has paid geld after Richard had it. It is worth 6 shillings and 9 pence.

In Copededorne [Copthorne] Hundred

Oswold holds of Richard Michelham [Mickleham].[1] The same man held it of king Edward. It was then assessed for 5 hides; now for 2 hides. The land is for 5 ploughs. In demesne there is 1 plough; and (there are) 8 villeins and 6 bordars with 4 ploughs. There are 2 serfs; and 1 acre of meadow; and 1 hog from the pannage of the wood. In the time of king Edward it was worth 100 shillings; now 6 pounds.

In Chingestun [Kingston] Hundred

Picot holds of Richard Taleorde [Talworth].[2] Alwin held it of king Edward, and he could seek what lord he pleased (*potuit ire quo voluit*). It was than assessed for 5 hides. . . .[3] The land is for 3 ploughs. In demesne there are 2 ploughs; and (there are) 7 villeins and 8 bordars with 3 ploughs. There are 7 serfs; and a mill without rent (*sine censu*); and 5½ acres of meadow, and half a v[irgate]. In the time of king Edward, and now, it (was and) is worth 60 shillings; when he received it, 20 shillings.

Picot holds of Richard Ditune [Long Ditton].[4] Almar held it of king Edward. It was then assessed for 5 hides. This land, and that above, are now assessed for 4 hides. The land is for 4 ploughs. In demesne there is 1 plough; and (there are) 2 villeins and 9 bordars with 2½ ploughs. There is a church, and mill worth 9 shillings. Wood worth 15 hogs. There is 1 serf; and in Sudwerche [Southwark] 1 house paying 500 herrings. In the time of king Edward it was worth 60 shillings, and afterwards 30 shillings; now 50 shillings; yet it is farmed out for (*est ad firmam*) 4 pounds.

Picot holds of Richard a (piece of) land which is called Limeurde.[5] Edwin and another homager held it in the time of king Edward, and they could seek what lord they pleased (*potuerunt ire quo voluerunt*). It was then assessed for half a hide; now for nothing. There are 6 oxen ploughing, with 2 bordars. It was worth 5 shillings, always.

Robert de Watevile holds of Richard Meldone [Malden]. Erding held it of king Edward. It was then assessed for 8 hides, now for 4. The land is for 5 ploughs. In demesne there is 1 plough; and there are 14 villeins and 2 bordars with 4 ploughs. There is a chapel; and 3 serfs; and a mill worth 12 shillings; and 4 acres of meadow. From the herbage, 1 hog out of 7 hogs. Of these hides, a knight holds 1 hide and a virgate, and there he has 1 plough, and 1 villein, and a bordar, and 1 acre of meadow. The whole in the time of king Edward was worth 7 pounds, and afterwards 100 shillings; now 6 pounds and 12 shillings.

The same Robert holds of Richard Cisendone [Chessington].[6] Erding held it of king Edward. It was then assessed for 5 hides, now for half a hide. The land is for 2 ploughs. There are 3 villeins and a bordar with 1 plough; and a moiety of a mill worth 2 shillings. Wood worth 30 hogs. In the time of king Edward it was worth 4 pounds, and afterwards 40 shillings; now 70 shillings.

p. 35, a. ii.

A hide in Meldone [Malden] which Robert de Watevile holds remains in dispute (*calengio*); and the men of the Hundred say that Edward of Salisbury (*Sarisberie*) and Robert de Oilgi have proved their right to it against Richard de Tonebrige; and it has remained unchallenged (*remansit quieta*) in the King's hand.

In Amelebrige [Emleybridge] Hundred

Richard himself holds Waletone [Walton Leigh].[7] Erding held it of king Edward. It was then assessed for 6 hides; now for 3 hides. The land is for 8 ploughs. In demesne there are 2 ploughs; and (there are) 8 villeins and 3 cottars with 3 ploughs. There is a church; and a mill worth 12 shillings and 6 pence; and a fishery worth 5

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[1] The manor of Norbury in Mickleham; De Clare property later.

[2] Talworth, or Talworth Court, both in Long Ditton; De Clare property later. See another Taleorde below.

[3] A blank in the MS.; but see next entry.

[4] Held of the Honour of Clare in 1315.

[5] Sometimes identified with Immerworth or Ember Court. But Ember Court was not De Clare land later. In 1223 Ralph de Immerworth died, seised of this manor, and of the dues of all Emleybridge Hundred, in which Hundred Ember Court lay and lies, not in Kingston.

[6] Since reckoned in Copthorne Hundred.

[7] Walton-Leigh, a manor near Walton-on-Thames; De Clare land later.

shillings. In the time of king Edward it was worth 8 pounds, and afterwards 100 shillings; now 14 pounds.

The same Richard has six hides in the manor of EBSA (Apps Court),[1] which Abbot Wulfwold delivered to him in augmentation of WALETONE [Walton Leigh] as Richard's homagers say. But the men of the Hundred say that they have never seen the King's writ or livery officer who had given him seisin thereof. Nine thegns held this land, and they could seek for it and for themselves what lord they pleased (*cum ea se poterant vertere quo volebant*). There are 10 villeins and 6 cottars with 4 'cot'.'[2] There are 2 serfs; and 46 acres of meadow. Wood worth 6 hogs. In the time of king Edward it was worth 3 pounds, and afterwards 40 shillings; now 4 pounds.

In EBSA [Apps Court] a villein holds half a hide, for which up till now he has given Richard's homagers 30 pence for rent (*de gablo*). Now it remains undisputed (*remanet quieta*) in the King's hand.

And Picot holds of Richard in EBSA [Apps Court] half a hide which Ælmar held without gift of the King; now Picot holds it because his predecessor Ælmar held it. It is now worth 5 shillings. Moreover, Picot holds of Richard in Ebsa [Apps Court] half a hide which Ælmar held in the time of king Edward, and could put under what lord he pleased (*cum ea potuit ire quolibet*). Now it is worth 12 shillings.

John holds of Richard MOLESHAM [Moulsey Prior, in East Moulsey parish].[3] Alvric held it of king Edward. It was then assessed for 3½ hides, and now for five virgates. The land is for 3 ploughs. In demesne there is 1 plough; and (there are) 7 villeins and 8 bordars[4] with 2½ ploughs. There are 16 acres of meadow. Wood worth 4 hogs. In the time of king Edward, and now, it (was and) is worth 60 shillings; when he received it, 40 shillings.

In that manor John holds of Richard 1 hide, which was given in augmentation of WALETONE [Walton Leigh]. Ulward held it of king Edward. There are 2 villeins there with 2 oxen. It is, and was, worth 5 shillings.

Roger d'Abernon holds of Richard MOLESHAM [Moulsey Prior].[3] Toco held it of king Edward. It was then assessed for 6 hides and a half; now for 6 virgates. The land is for 3 ploughs. In demesne there is 1 plough; and (there are) 4 villeins and 4 cottars with 2½ ploughs. There are 6 serfs; and 16 acres of meadow; and wood worth 6 hogs. In the time of king Edward it was worth 3 pounds, and afterwards 40 shillings; now 70 shillings.

Richard himself holds STOCHE (Stoke d'Abernon). Bricsi Cild held it of king Edward. It was then assessed for 15 hides; now for 2 hides and 5 acres. The land is for 6 ploughs. In demesne there are 2 ploughs; and (there are) 10 villeins and 9 cottars with 2 ploughs. There is a church; and 7 serfs; and a mill worth 7 shillings; and 4 acres of meadow. Wood worth 40 hogs. In the time of king Edward, and now, it (was and) is worth 4 pounds; when he received it, 3 pounds.

In the same manor the same Richard has 5 hides. Otho held them of king Edward. Now it is assessed for half a hide. There are 2 villeins with 6 oxen; and a mill worth 6 shillings. The land is for 2 ploughs. It was, and is, worth 20 shillings.

IN FINGEHAM [EFFINGHAM] HUNDRED

In DRITEHAM[5] Richard holds 1½ hides. Ælmar held it of king Edward as a manor. The wife of Salie holds it of Richard, and she has there 1 villein and 2 bordars. It was worth 40 shillings; now 30 shillings.

p. 35, b. i.

In the same Driteham there are 1½ hides which Alvric held of king Edward as a manor, and he afterwards gave that land to the church of Certesy [Chertsey] for his wife

[1] Apps Court, formerly spelt Apse.

[2] Perhaps a slip for *car'* (carucis), perhaps for *cotagiis* (probably the former.—*J. H. R.*).

[3] Both these entries must refer to parts of Moulsey Prior. West Moulsey is accounted for below (36, b. ii.). Between 1129 and 1135 Engelram d'Abernon granted this manor to Merton Priory, and the grant was confirmed by Gilbert de Clare as overlord.

[4] One of the only two cases in Emleybridge Hundred where bordars occur instead of cottars; Weybridge, held by the Bishop of Bayeux, is the other. Both places are on the frontier of the Hundred.

[5] Driteham is not certainly known. The name occurs in a charter to Chertsey in A.D. 987. It must apparently have been in the northern part of the small Effingham Hundred; the rest being accounted for otherwise.

and daughter,[1] as the men of the Hundred testify. Richard claims it.[2] It does not belong to any manor (*non iacet ulli manerio*), nor does he hold it as a manor, but it was delivered to him, and now 3 hides [3] pay geld for 1½ hides. The land is for 2 ploughs. In this land of Alvric there is in demesne 1 plough, and 2 bordars, and 2 serfs. It is worth 40 shillings.

In Blacheatfeld [Blackheath] Hundred

Roger holds of Richard Eldeberie [Albury]. Azor held it of king Edward. It was then assessed for 4 hides; now for 2½ hides. The land is for 6 ploughs. In demesne there is 1; and (there are) 11 villeins and 5 bordars with 6 ploughs. There is a church; and 4 serfs; and a mill worth 5 shillings. Wood worth 30 hogs. Of these hides, a knight holds 1 hide; and (he has) there in demesne 1½ ploughs, and 1 villein and 1 serf; and there is an acre of meadow. The whole, in the time of king Edward, was worth 10 pounds, and afterwards 100 shillings; now 9 pounds.

Robert [4] holds of Richard Scaldefor [Shalford]. Two brothers held it in the time of king Edward. Each one had his own house, and yet they resided in 1 domain (*in una curia*), and could seek what lord they pleased (*quo voluerunt ire potuerunt*). Then, and now, it (was and) is assessed for 4 hides. There is land for 6 ploughs. In demesne there are 2 ploughs; and (there are) 29 villeins and 11 bordars with 9 ploughs. There is a church; and 10 serfs; and 3 mills worth 16 shillings; and 4 acres of meadow. Wood worth 20 hogs. Of these hides, a knight holds a virgate, where he has half a plough, and 1 serf, and 5 bordars. The whole, in the time of king Edward, was worth 16 pounds, and afterwards 9 pounds; now 20 pounds. To this manor belongs a close (*haga*) in Geldeford [Guildford] worth 3 shillings.

In Chingeston [Kingston] Hundred

Ralph holds of Richard Taleorde [Talworth].[5] Edmer held it, and could take what lord he pleased (*quo voluit ire potuit*), in the time of king Edward. It was then assessed for 5 hides; now for 2½ hides. The land is for 4 ploughs. In demesne there is 1 plough; and (there are) 6 villeins and 1 bordar with 2 ploughs. There are 2 serfs; and 5 acres of meadow. In the time of king Edward, and afterwards, it was worth 40 shillings; now 60 shillings.

In Copedorne [Copthorne] Hundred

Richard himself holds in demesne Tornecrosta [Thorncroft].[6] Cola held it of king Edward. There are now in demesne 2 ploughs; and (there are) 5 villeins and 4 bordars with 2 ploughs. There are 9 serfs; and a mill worth 20 shillings; and 5 acres of meadow. Wood worth 1 hog.

With that manor these lands were made over to Richard: Becesuuorde [Betchworth] [7] for 6 hides; 1 hide and 1 virgate which Mervin held, and 1 hide which Alric and Almer held as a manor, and another hide which Coleman the huntsman held as a manor. These men were so free that they could seek what lord they pleased (*quod poterant ire quo volebant*); and these lands together with (*iunctæ cum*) Tornecroste [Thorncroft] were assessed in the time of king Edward for 25½ hides less 1 virgate; now for 4 hides less 4 acres. In the hide which Alric and Elmer held there is half a plough and 2 oxen in demesne; in Mervin's hide there is 1 plough in demesne, and 3 acres of meadow; in Coleman's hide there are 2 bordars. Altogether the land is for 5 ploughs. In the time of king

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[1] *Uxori suæ ac filiæ ad æcclesiam*, etc. Apparently he tried to put his wife and daughter's inheritance under the protection of the Church.

[2] Ricard' hanc calũniañt'. We must read the word as *calumniatur* grammatically.

[3] *i.e.* the 3 hides comprised in these two entries (*J. H. R.*).

[4] De Watevile, probably. A De Watevile sold his interest in the manor in the time of Henry II.

[5] Talworth Court, or Talworth, see above 35, a. i.; or it might be the small manor called Turbervil, which was united later with Talworth.

[6] Thorncroft, a manor in Letherhead, De Clare land in 1314.

[7] West Betchworth, I believe, though it is now in Wotton Hundred. See another Becesworde below, 35, b. ii., in Wotton Hundred. But this latter Betchworth has a church. There is a church at East Betchworth, now in Copthorne Hundred, with Norman work in it, but there is no record of a church at West Betchworth. West Betchworth, moreover, is nearer to Thorncroft than East Betchworth is. West Betchworth was certainly held of the Honour of Clare in 1313. The boundaries of the two Hundreds have probably been altered; those of Copthorne have been altered in several other cases.

Edward Tornecroste [Thorncroft] was worth 100 shillings; when he received it, 60 shillings; now 110 shillings. Two hides always (were worth) 30 shillings.[1] Coleman's hide (was worth) 10 shillings.

In this Hundred the Abbot of Westminster holds 2 hides, but they are appraised in another Hundred.[2]

In Midham [?] there lies 1 hide which Seman held of king Edward, and now holds of king William. He has in demesne there a plough, and 3 bordars, and half an acre of meadow. It is, and was, worth 20 shillings.

In the same place Godwin holds a virgate of king William. The same held it of king Edward. It is worth 30 pence by the year.

In the same Hundred, William son of Ansculf holds 2 hides, but they are appraised in another Hundred.[3]

p. 35, b. ii.

In Fingeham [Effingham] Hundred

Oswold[4] holds of Richard Epingeham [Effingham]. Azor[4] held it of king Edward. It was then assessed for 6 hides, now for 2½ hides. With these 6 hides Oswold holds 1 hide and 1 virgate of land which a free man held under king Edward, but for a certain need of his he sold it to Azor in the time of king William. The land is for 5 ploughs altogether. In demesne there are 2 ploughs; and (there are) 6 villeins and 5 bordars with 2 ploughs. There are 6 serfs; and 4 acres of meadow; and wood worth 5 hogs. From the herbage, 3 hogs. In the time of king Edward it was worth 100 shillings, and afterwards 4 pounds and 10 shillings; now 6 pounds.

In Wochinges [Woking] Hundred

Richard himself holds Bocheham [Ockham][5] in demesne. Ælmar held it of king Edward. It was then assessed for 9 hides; now for 1½ hides. The land is for 4 ploughs. In demesne there is 1 plough; and (there are) 6 villeins and 2 bordars with 2 ploughs. There is a church; and 3 serfs; and 2 fisheries worth 10 pence; and 2 acres of meadow. Wood worth 60 hogs. It is worth, and was always worth, 100 shillings.

Ralph holds of Richard Hoclei [Ockley].[6] Almar held it of king Edward. Then, and now, it (was and) is assessed for 1 hide. The land is for 4 ploughs. In demesne there is 1; and (there are) 9 villeins and 3 bordars with 4 ploughs. Wood worth 20 hogs; and 2 serfs. In the time of king Edward it was worth 70 shillings, and afterwards, and now, the like.

In this manor Richard himself holds half a hide.[7] Alwin held it in the time of king Edward, and could put it under what lord he pleased (*potuit cum ea ire quo voluit*). Then it was assessed for half a hide; now for nothing. It is appraised in Hoclei [Ockley].

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[1] These are the 2 hides (and 1 virgate) which Mervin, Alric and Almer had held (*J. H. R.*).

[2] These 2 hides do not appear under the holding of the church of Westminster. At the Dissolution Westminster held one quarter of the manor of Hedley, which may represent these hides (See also here p. 293 above).

[3] See under Milton, 36, a. i.

[4] An Azor, dead by 1086, kept his land from the time of king Edward. Oswold, an Englishman, not only kept most of his, but acquired more. See 36, b. ii., under Wotton; and above it, for an Englishman putting his land under Oswold's protection from the time that king William came into England. Oswold was a prudent man rather than a patriot. Oswold also held at Effingham under Chertsey.

[5] Ockham, pretty certainly, for it was De Clare land later. If the spelling be correct, it disposes of the alleged Celtic derivation of Ockham.

[6] There is no reasonable doubt that this is Ockley, though Ockley is in Wotton Hundred. The clerk wrote *In Wodetone Hundredo* below the entry by mistake, or rather omitted it above. Ockley was a De Clare manor; they had a small castle there. There is an outlying piece of 23 acres belonging to Ockham parish and manor, and to Woking Hundred, adjacent to Ockley parish. Possibly Ockley may for some reason have been counted with it in Woking Hundred formerly.

This manor, with, perhaps, Arseste below, are the only two named in Surrey upon the Wealden clay; they were accessible from the north by the Roman Stone Street, which runs through them. If Horley is the nameless manor of Chertsey, it adds another on the clay, and Gosterwood adjacent to Ockley is another, if that is Richard's holding in Wotton. See note p. 328.

[7] *Dimidia hida*, in the original, but the accusative must have been meant. The carelessness of the clerk bears out the probability of the mistake noticed above. This may be Gosterwood, unless that is the land mentioned under Wotton. See note on Wotton, p. 328.

In Wodetone [Wotton] Hundred

Richard himself holds in demesne Becesworde [Betchworth].[1] Cola held it of king Edward. It was then assessed for 6 hides and now for 2 hides. The land is for 7 ploughs. In demesne there is 1 plough; and (there are) 6 villeins and 10 bordars with 3 ploughs. There are 6 serfs; and a mill worth 10 shillings; and 3 acres of meadow. Wood worth 80 hogs. From the herbage, 6 hogs. There is a church. In the time of king Edward, and afterwards, (it was worth) 9 pounds; now 8 pounds.

Richard himself holds Arseste [? Hartshurst[2]]. Almar held it of king Edward. Then, and now, it (was and) is assessed for 2 hides. The land is for 4 ploughs. There are 8 villeins with 3 ploughs. Wood worth 15 hogs. In the time of king Edward, and afterwards, it (was and) is worth 45 shillings. This land belonged to a certain freeman, and he could put it under any lord he pleased (*potuit cum ea ire quo libuit*); nor does it belong to any manor of Richard's.

THE LAND OF WILLIAM DE BRAIOSE

In Copededorne [Copthorne] Hundred

XX. William de Braiose holds Tadorne [Tadworth],[3] and Halsart (holds it) of him. Godtovi held it of earl Harold and could seek what lord he pleased (*potuit ire quo voluit*). It was then assessed for 5 hides; now for half a hide. The land is for 3 ploughs. In demesne there is 1 plough; and (there are) 2 villeins and 5 bordars with 1 plough. Wood worth 3 hogs. In the time of king Edward it was worth 100 shillings, and afterwards 20; now 45.

In Fingeham [Effingham] Hundred

Halsard holds of William Bocheham [Little Bookham].[4] Godtovi held it of earl Harold. It was then assessed for 5 hides, now for 2 hides. The land is for 3 ploughs. In demesne there is 1; and (there are) 3 villeins and 4 bordars with 1 plough. There are 4 acres of meadow. From the pannage and herbage, 11 hogs. In the time of king Edward, and afterwards, it was worth 50 shillings; now 60 shillings.

THE LAND OF WILLIAM SON OF ANSCULF

In Waletone [Wallington] Hundred

XXI. William son of Ansculf[5] holds Witford,[6] and William the Chamberlain (holds it) of him. Lanch held it of king Edward. It was then assessed for 2 hides; now for 1 hide. The land is .[7] In demesne there is 1 plough; and (there are) 2 villeins with 1 plough; and a mill worth 20 shillings; and 24 acres of meadow. In the time of king Edward it was worth 50 shillings, and afterwards 22 shillings; now 60 shillings.

The same William holds Michelham [Mitcham].[8] Lemar held it of king Edward. Then, and now, it (was and) is assessed for 2 hides and 1 virgate. There are 2 villeins and 6 cottars; and half a mill worth 20 shillings. In the time of king Edward, and now, it (was and) is worth 40 shillings; when he received it, 13 shillings and 4 pence.

In Brixistan [Brixton] Hundred

William himself holds Wendelesorde [Wandsworth]. Six sokemen held it of king Edward, and they could seek what lord they pleased (*potuerunt ire quo voluerunt*). There were 2 halls. Then, and now, it (was and) is p. 36, a. 1.
assessed for 12 hides. The land is for 4 ploughs. Ansculf had this land after he received the sheriffdom; but the men of the Hundred say that they have not seen the (King's) seal nor livery officer.

Ansfrid (was assessed) for 5 hides; now for 1 hide. Heldred for 3 hides; now for

[1] Probably East Betchworth, with a church, now in Copthorne Hundred. See above, 35, b. i., under Becesuuorde. It subsequently belonged to the De Warennes. Before 1199 earl Hamelin and his wife Isabella gave the church of East Betchworth to St. Mary, Overie.

[2] In Wotton, near Ockley.

[3] Probably North Tadworth. Land in North Tadworth and Little Bookham was given to St. Mary Overie in 1273, by one gift. Halsard holds both here.

[4] De Braiose land later.

[5] William Fitz-Ansculf, lord of the Honour of Dudley.

[6] Wykford Lane, Mitcham, preserves the name perhaps, see 31, b. i. Alexander de Wickford owed the service of half a knight's fee, held of the Honour of Dudley (*Red Book of the Exchequer*).

[7] A blank in the MS.

[8] Perhaps the manor called Biggin and Tamworth, in Mitcham. The 't' in Mitcham is a late insertion only.

nothing. Ulward for 3 hides. Walter the vineyard keeper for 1 hide.[1] They did not pay geld. In their land there are 2½ ploughs in demesne; and (there are) 5 villeins and 22 bordars with 2 ploughs. There are 22 acres of meadow. The whole manor in the time of king Edward was worth 110 shillings, and afterwards 50 shillings; now 8 pounds altogether.

In Wodetone [Wotton] Hundred

Baldwin holds of the selfsame William Mildetone [Milton].[2] Uluric held it of king Edward. It was then assessed for 6 hides; now for 4½ hides. The land is for 5 ploughs. In demesne there is 1 plough; and (there are) 10 villeins and 9 bordars with 4 ploughs; and 4 serfs; and a mill worth 2 shillings; and 2 acres of meadow. Wood worth 9 hogs. From the herbage, 10 hogs. In the time of king Edward it was worth 70 shillings, and afterwards, and now, 60 shillings.

In the Hundred of Copededorne [Copthorne] there are 2 hides which belong to this manor.[3] They are worth 20 shillings.

The same Baldwin holds of William 1 hide at Hanstega [Anstie Farm].[4] Ordui held it; and Baldwin holds half a hide at Litelfeld.[5] Alfer held it. These two could put their land under any lord they pleased (*potuerunt ire quo voluerunt cum terris suis*). There is 1 plough in demesne, with 1 bordar. It is worth 11 shillings and 3 pence.

William himself holds Abinceborne [Abinger].[6] A yeoman of the guard (Huscarle)[7] held it of king Edward. It was then assessed for 6 hides; now for 4 hides. The land is for 9 ploughs. In demesne there are 2 ploughs; and (there are) 10 villeins and 7 bordars with 5 ploughs. There is a church; and 5 serfs; and a mill worth 6 shillings; and 3 acres of meadow. From the herbage and pannage, 40 hogs. In the time of king Edward it was worth 8 pounds, and afterwards, and now, 7 pounds.

William himself holds Padendene [Paddington in Abinger].[8] A yeoman of the guard (Huscarle) held it of king Edward. It was then assessed for 4 hides; now for 3 hides. The land is for 9 ploughs. In demesne there is nothing; but there are 12 villeins and 5 bordars with 6 ploughs; and a mill worth 6 shillings; and 4 acres of meadow. Wood worth 40 hogs. From the herbage, 15 hogs. Of this manor, Hugh, a homager of William, holds 3 hides, with a hall, and (there is) 1 plough in demesne. The whole manor in the time of king Edward was worth 9 pounds, and afterwards 7 pounds. Now, in like manner, 7 pounds.

THE LAND OF WALTER SON OF OTHER

In Godelminge [Godalming] Hundred

XXII. Walter son of Other holds Contone [Compton].[9] Brixi held it of king Edward. It was then assessed for 14 hides; now for 11 hides. The land is for 10 ploughs. In demesne there are 3 ploughs; and (there are) 21 villeins (*villanus* in original) and 8 cottars

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[1] It seems as if these 4 men, with their holdings, formerly assessed for 12 hides, were the representatives of the 6 sokemen T.R.E. who survived till Ansculf's shrievalty. If so, *modo* above is a mistake.

[2] Milton, in Dorking parish. In 1210–12 Simon Fitz-Giles owed one knight's service for Milton, held of the Honour of Dudley.

[3] See 35, b. 1, under Tornecrosta.

[4] Anstie Farm in Dorking parish; later in the manor of Dorking.

[5] A Littlefield might exist anywhere. It is impossible to identify this one with Littlefield in Worplesdon parish, Woking Hundred, half across the county. It is clearly contiguous to Hanstega, or Mildetone. In an *Extensio* of Dorking manor, of 1622, Ladiefield is named near Snookshatch in Milton. The name does not seem to exist now. It may be this place.

[6] In 1210–12 Gilbert de Abingworth owed one knight's service, holding of the Honour of Dudley.

[7] I venture on a free translation of Huscarle, but I am not confident that it is not a proper name.

[8] There were 2 manors, Paddington Pembroke and Paddington Bray, named from later owners. In 1210–12 Peter de Mauley owed one knight's service in Paddington, holding of the Honour of Dudley. This first-named manor is Paddington Bray probably; for in an Inquisitio p. m. of 33 Edw. I. there appears a mill on this manor. The 3 hides held by Hugh seem to be an additional holding, and may be Paddington Pembroke.

[9] Walter Fitz-Other, governor of Windsor, was founder of the family called De Windsor. In *Testa de Nevill* Compton is among the fees held of the Honour of Windsor.

with 6 ploughs. There are 7 serfs; and 7 acres of meadow. There is a church. In the time of king Edward it was worth 8 pounds, and afterwards 6 pounds; now 9 pounds.

Tezelin holds of Walter HORMERA [Hurtmore[1] in Godalming]. Alwin held it of king Edward. It was then assessed for 15 hides; now for 3 hides. The land is for 3 ploughs. In demesne there are 2 ploughs; and (there are) 3 villeins and 2 cottars with 1½ ploughs. There is 1 mill worth 11 shillings; and 6 acres of meadow. In the time of king Edward it was worth 50 shillings, afterwards 30 shillings; now 100 shillings.

The selfsame Walter, and Girard under him, holds PIPEREHERGE [Peperharow].[2] Alward held it of king Edward. It was then assessed for 5 hides; now for 3 hides. The land is for 3 ploughs. In demesne there are 2 ploughs; and a mill worth 7 shillings; and 15 acres of meadow. There are 4 villeins and 3 cottars with 1 plough. In the time of king Edward, and afterwards, it was worth 30 shillings; now 100 shillings.

IN CHINGESTUN [KINGSTON] HUNDRED

Walter himself holds one man of the soke of CHINGESTUN [Kingston], to whom he has committed the charge of the King's brood (*silvaticas*)[3] mares, but we know not on what terms (*nescimus quomodo*). This man holds 2 hides, but he has no right in the land itself (*non habet rectum in ipsa terra*).[4] It was assessed for 2 hides; now for nothing. There is 1 plough in demesne, with 3 serfs; and 1 fishery worth 125 eels; and 1 acre of meadow. It is, and always was, worth 30 shillings.

Walter son of Other holds ORSELEI [West Horsley].[5] Brixi held it of king Edward. It was then assessed for 10 hides; now for 8 hides. The land is for 6 ploughs; in demesne there are 2 ploughs; and (there are) 14 villeins and 5 bordars with 5 ploughs. There is a church; and 8 serfs. Wood worth 20 hogs. In the time of king Edward it was worth 8 pounds, afterwards 100 shillings; now 6 pounds. Of this land, an Englishman holds 1 hide; and he has 1 plough there with 1 bordar. It is worth 20 shillings.

THE LAND OF WALTER DE DOWAI

IN WALETON [WALLINGTON] HUNDRED

XXIII. Walter de Doai holds two hides of the King, as he says. But the men of the Hundred say that they have never seen the King's writ or commissioner (*nuncium*) who had given him seisin thereof. But this they testify, that a certain free man holding this land, and able to put himself under any lord he pleased (*quo vellet abire valens*), committed himself to Walter's guardianship for his own protection. This land is, and was, worth 20 shillings.

THE LAND OF GILBERT SON OF RICHER

p 36, a. 11.

XXIV. Gilbert son of Richer de Laigle (d'Aigle) holds WITLEI [Witley].[6] Earl Godwine held it. It was then assessed for 20 hides; now for 12 hides. The land is for 16 ploughs. In demesne there are 2 ploughs; and (there are) 37 villeins and 3 cottars with 13 ploughs. There is a church; and 3 acres of meadow. Wood worth 30 hogs. In the time of king Edward, and afterwards, it was worth 15 pounds; now 16 pounds.

THE LAND OF GEOFFREY DE MANDEVILLE

IN BRIXISTAN [BRIXTON] HUNDRED

XXV. Geoffrey de Mandeville holds CLOPEHAM [Clapham]. Turbern held it of king Edward. It was then assessed for 10 hides; now for 3 hides. The land is for 7 ploughs. In demesne there is one plough; and (there are) 8 villeins and 3 bordars, with 5 ploughs.

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[1] Hurtmore is a tithing of Godalming parish. It was, as a manor, granted by Thomas de Hertmere to Newark Abbey, Surrey, to be held of William de Wyndesore, some time subsequent to the accession of Richard I. See *Inspeximus* of charters quoted by Dugdale.

[2] In *Testa de Nevill* Peperharow is held of the Honour of Windsor.

[3] *Silvaticas*, sc. 'Unbroken,' therefore only kept for breeding.

[4] He is only there as keeper of the mares.

[5] West Horsley, belonging later to De Windsor. This entry is out of place, and is indicated by a note in the original as belonging to the previous column.

[6] In 1235 Witley was part of the Terra Normannorum, which had been held by Gilbert de Aquila, and was then in the hands of the Earl Marshal. (*Red Book of the Exchequer.*)

There are 5 acres of meadow. In the time of king Edward it was worth 10 pounds, afterwards the like; now 7 pounds and 10 shillings. The men say that Geoffrey has this manor wrongfully, because it does not belong to Asgar's land.[1] What Geoffrey gave away in almoigne (*per elemosinam*) from this manor is worth 20 shillings.

In Waleton [Wallington] Hundred

Geoffrey himself holds Aultone [Carshalton].[2] Five freemen (held it) of king Edward, and they could 'take what lord they pleased (*potuerunt ire quo volebant*). Of these, one held 2 hides, and four 6 hides apiece. There were five manors. Now it is thrown into 1 manor. It was then assessed for 27 hides;[3] now for 3½ hides. The land is for 10 ploughs. In demesne there is 1; and (there are) 9 villeins and 9 cottars with 5 ploughs. There is a church; and 7 serfs; and 12 acres of meadow. The men of the county and of the Hundred say that they have never seen the writ or the livery officer who on the King's behalf had given Geoffrey seisin of this manor. In the time of king Edward it was worth 20 pounds; when he took seisin of (*saisivit*) it, 100 shillings; now 10 pounds. Of these hides Wesman holds 6 hides of Geoffrey son of Count Eustace.[4] Geoffrey de Mandeville gave him (sc. *Eustachii filio*) this land with his daughter. In demesne there is 1 plough; and (there are) 3 villeins and 1 cottar with 3 ploughs; and a mill worth 35 shillings; and 3 serfs; and 10 acres of meadow. Wood worth 2 hogs. The land is for 2 ploughs. In the time of king Edward it was worth 4 pounds, and afterwards 40 shillings, and now 110 shillings. Of the same hides, a certain smith of the King's has half a hide, which in the time of king Edward he received with his wife, but he has never done any service for it.

[1] Geoffrey had evidently received a grant of Asgar's land, which did not include Clapham nor Wanborough (see below, and p. 284). Clapham was De Mandeville land later.

[2] Carshalton, De Mandeville land later.

[3] But only 26 are accounted for just before (*J. H. R.*).

[4] Geoffrey, son of the Count of Boulogne, grandfather of Faramus of Boulogne, whose heiress, Sibyl, married Enguerrand de Fiennes. The De Fiennes family held land at Carshalton *temp.* Henry III. (See for details Mr. Round's paper in *Genealogist* [N.S.], xii. 145–151.)

In Wochinges [Woking] Hundred

Geoffrey himself holds Weneberge [Wanborough].[5] It is no part of Asgar's land. Suen and Lewin,[6] brothers, held it of king Edward. It was then assessed for 7 hides; now for 3 hides. The land is for 7 ploughs. There were two manors; now it is one. In demesne there is 1 plough; and (there are) 12 villeins and 17 bordars with 8 ploughs. There is a church; and 8 serfs; and 6 acres of meadow. Wood worth 30 hogs. The whole in the time of king Edward was worth 7 pounds; afterwards 100 shillings; now 7 pounds.

In Wochinges [Woking] Hundred

XXVI. Geoffrey Orlatele holds Belgeham[7] [Balham], without the King's gift and without warrant. Anschil held it of earl Harold. It was then assessed for 5 hides; now for nothing. The land is for 2 ploughs. In demesne there is 1; and (there are) 1 villein and 1 bordar with half a plough. There is 1 serf; and 8 acres of meadow. In the time of king Edward it was worth 6 pounds, afterwards 20 shillings; now 40 shillings.

THE LAND OF EDWARD[8] OF SALISBURY[9]

In Amelebrige [Emleybridge] Hundred

XXVII. Edward of Salisbury (Sarisberien-

[5] Under Henry II. Geoffrey de Mandeville confirmed by charter the sale of Wanborough by Faramus of Boulogne to Waverley Abbey. (Charter cited by Dugdale.)

[6] Scarcely Sweyn and Leofwine sons of Godwine. The former was dead long before 1066, and the latter is always elsewhere called *Comes*.

[7] Balham, probably. The entry is, in the original, written in the margin, against the De Mandeville lands. In 1103 a Nigel de Mandeville granted land in Belgeham to the Priory of Bermondsey, with consent of his wife; and in a grant to the Abbey of Bec land in Belgeham is described as being part of the manor of Clapham.

(I think that the above Nigel was Nigel de Mundevilla, living at the time, who married the heiress of William d'Arques of Folkestone. —*J. H. R.*)

[8] Ancestor of the first earls of Salisbury.

[9] Sarisber[iensis].

sis) holds WALETONE [Walton-on-Thames].[1] Azor held it of king Edward. It was then assessed for 6 hides; now for 3 hides. The land is for 8 ploughs. In demesne there are 2 ploughs; and (there are) 8 villeins and 3 cottars with 7 ploughs. There are 8 serfs; and a mill worth 12 shillings and 6 pence; and 40 acres of meadow. Wood worth 50 hogs. There is a forester, of 10 shillings (rent). In the time of king Edward it was worth 8 pounds, afterwards 100 shillings; now 12 pounds; yet it yields 14 pounds.

IN GODELMINGE [GODALMING] HUNDRED

Randulf holds of Edward HAMELEDUNE [Hambledon].[2] Azor held it of king Edward. It was then assessed for 5 hides; now for 3 hides. The land is for 4 ploughs. In demesne there are 2 ploughs; and (there are) 8 villeins and 1 cottar with 5 ploughs. There are 13 serfs; and a mill worth 30 pence; and 3 acres of meadow. Wood worth 30 hogs. It is worth, and always was worth, 100 shillings.

IN WOCHINGES [WOKING] HUNDRED

Hugh holds of Edward CLANEDUN [West Clandon].[3] Fulcui held it in the time of king Edward. It was then assessed for 5 hides; now for 2½ hides. The land is for 3 ploughs. In demesne there is 1; and (there are) 4 villeins and 5 bordars with 1½ ploughs. (There is) a mill worth 3 shillings. There is a church; and wood worth 5 hogs. It was worth 50 shillings; now 60 shillings.

THE LAND OF ROBERT MALET

p. 36, b. 1.

IN WOCHINGES [WOKING] HUNDRED

XXVIII. Robert Malet holds SUDTUNE [Sutton].[4] Wenesi held it of king Edward. It was then assessed for 5 hides; now for 3 hides. The land is for three ploughs. In demesne there is 1; and (there are) 5 villeins and 5 bordars with 2 ploughs. There are 6 serfs; and a mill worth 5 shillings; and 20 acres of meadow. Wood worth 25 hogs. In the time of king Edward, and afterwards, it was worth 8 pounds; now 100 shillings. Durand has taken seisin of this land, and the men say that he has it wrongfully, for no one of them has seen the King's writ or livery officer.

THE LAND OF MILES CRISPIN

IN WALETON [WALLINGTON] HUNDRED

XXIX. Miles Crispin holds BEDDINTONE [Beddington];[5] and William son of Turold (holds it) of him. Ulf held it of king Edward. It was then assessed for 25 hides; now for 3 hides. The land is for 6 ploughs. In demesne there is 1 plough; and (there are) 13 villeins and 13 cottars with 6 ploughs. There is 1 serf; and two mills worth 35 shillings; and 20 acres of meadow. Wood worth 5 hogs. In the time of king Edward it was worth 10 pounds, afterwards 6 pounds; now 9 pounds and 10 shillings. From this manor (*an erasure in the original*) have been taken 21 houses which Roger the Earl holds, 13 in London, 8 in Sudwerche [Southwark]. They yield 12 shillings.

Miles himself holds CISEDUNE [Chessington].[6] Magno Suert held it in the time of king Edward. It was then assessed for 5 hides; now for 1 hide. When king William came into England, Wigot[7] was not holding it. The land is for 3 ploughs. This land used to belong to (*iacebat in*) Beddinton [Beddington]. Villeins used to hold it. In demesne there is now 1 plough; and (there are) 6 villeins with 2 ploughs. In the time of king Edward it was worth 4 pounds, afterwards 40 shillings; now 70 shillings.

THE LAND OF HAIMO THE SHERIFF

IN TENRIGE [TANDRIDGE] HUNDRED

XXX. Haimo the sheriff holds TICESEI

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[1] Walton-on-Thames. It passed with Edward's daughter to the De Bohuns, and this manor was De Bohun property later.

[2] Held later of the Honour of Salisbury.

[3] Probably West Clandon, called Clandon Regis, but not known to be a royal manor. It is not East Clandon, which was Clandon Abbatis, and belonged to Chertsey.

[4] Sutton, near Guildford.

[5] Beddington Huscarle. It took its name from Roland Huscarl, a tenant of the Honour of Wallingford under John, or from one of his family (*J. H. R.*). See 34, b. 2 for the other Beddington.

[6] Chessington, probably. Since reckoned in Copthorne Hundred.

[7] Wigod of Wallingford, an Englishman, made his peace at once with king William. He was probably father-in-law to Miles Crispin, who seems to have claimed it unwarrantably as heir to Wigod (see p. 284).

[Titsey].[1] Goltovi held it of king Edward. It was then assessed for 20 hides; now for 2 hides. The land is for 8 ploughs. In demesne there are 4 ploughs; and (there are) 14 villeins and 31 bordars with 5 ploughs. There is a church; and 9 serfs. For the pasture (*pro pastura*), the 7th hog of the villeins. In the time of king Edward it was worth 10 pounds, afterwards 6 pounds; now 11 pounds.

In Brixistan [Brixton] Hundred

Haimo himself holds Cambrewelle [Camberwell].[1] Norman held it of king Edward. It was then assessed for 12 hides; now for 6 hides and 1 virgate. The land is for 5 ploughs. In demesne there are 2; and (there are) 22 villeins and 7 bordars with 6 ploughs. There is a church; and 63 acres of meadow. Wood worth 60 hogs. In the time of king Edward it was worth 12 pounds, afterwards 6 pounds; now 14 pounds.

THE LAND OF HUMFREY THE CHAMBERLAIN

In Chingestun [Kingston] Hundred

XXXI. Humfrey the chamberlain holds of the Queen's fee (*feuo*) Cumbe [Coombe].[2] Alvred held it of the King, and could seek what lord he pleased (*poterat ire quo volebat*). It was then assessed for 3 hides; now for nothing. The land is for 2 ploughs. In demesne there is 1; and there are 3 villeins and 4 bordars with 1 plough. There are 8 acres of meadow. In the time of king Edward it was worth 4 pounds, afterwards 20 shillings; now 100 shillings. In the time of king William the woman who held this land put herself with it under the Queen's protection.

THE LAND OF RALPH DE FELGERES

In Copededorne [Copthorne] Hundred

XXXII. Ralph de Felgeres holds Hallega [Hedley ?]. The Countess Goda[3] held it of king Edward. It was then assessed for 7 hides; now for 2 hides and 1 virgate. The land is .[4] In demesne there is 1 plough; and (there are) 9 villeins and 5 bordars with 5 ploughs. There are 8 serfs. Wood worth 15 hogs. In the time of king Edward it was worth 7 pounds, afterwards, and now, 100 shillings.

In Wodeton [Wotton] Hundred

Ralph himself holds Wescote [Westcott].[5] Abbot Alsi[6] held it of king Edward. It was then assessed for 10 hides; now for 3 hides. The land is for 7 ploughs. In demesne there is 1 plough; and there are 14 villeins and 5 bordars with 7 ploughs. There are 3 serfs; and a mill worth 30 pence; and 2½ acres of meadow. Wood worth 30 hogs. In the time of king Edward it was worth 9 pounds, afterwards, and now, 8 pounds.

XXXIII. THE LAND OF ALVRED DE MERLEBURGH.[7]

p. 36, b. ii.

In Wochinges [Woking] Hundred

Alvred holds of the king Sande [Send]; and Rainald holds it of him. Carlo held it in the time of king Edward. Then, and now, it (was and) is assessed for 20 hides. The land is for 10 ploughs. In demesne there are 2 ploughs and 8 serfs; and (there are) 14 villeins and 10 bordars with 6 ploughs. There is a mill yielding 21 shillings and 6 pence. There is a church; and 5 fisheries yielding 54 pence; and 100 acres of meadow, less 16. Wood worth 160 hogs.

Of this land, Walter (holds) 1½ hides,

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[1] Titsey and Camberwell descended from Haimo to his niece's husband, Robert Earl of Gloucester, and were part of the Honour of Gloucester. The statement in *Testa de Nevill* that Titsey was held of the Honour of Gloucester from the Conquest is in itself absurd, as the Honour of Gloucester did not exist.

[2] In the list *de Serjantiis* in the *Red Book* of 1212–1217, Ralph Postel held land in Coombe by the service of collecting the Queen's wool. See above, under Kingston, 30, b. i.

[3] Godgifu, countess of Boulogne, sister to king Edward. Hedley was afterwards a De Clare manor, and this may not be the same place. There is an Elderbury Wood in Hedley, and there is just a possibility that Hedley might be meant by the manor of Richard de Tonebrige called Eldeberie (35, b. i.), only that is in Blackheath Hundred, which makes the identification with Albury more likely.

[4] A blank in the MS.

[5] Probably Westcott, in Dorking parish.

[6] Æthelsige, abbot of St. Augustine's and of Ramsey.

[7] His name does not appear in the list of *tenentes in capite*. Rainald, his tenant, is substituted for him.

and Herbert 9 of the land of the villeins. There are 2 ploughs in demesne, and 7 serfs and (there are) 1 villein and 16 bordars. There is a mill yielding 2 shillings. The whole in the time of king Edward was worth 20 pounds. Now the demesne (is worth) 10 pounds, and the rest 110 shillings.

XXXIV. THE LAND OF ALBERT

In Waleton [Wallington] Hundred

Albert the Clerk holds of the King Eddintone [Addington].[1] Osward held it of king Edward. It was then assessed for 8 hides, now for 2. The land is for 4 ploughs. In demesne there are 2 ploughs; and (there are) 5 villeins and 4 cottars with 1½ ploughs. Wood worth 20 hogs. In the time of king Edward, and now, (it was and is worth) 100 shillings.

XXXV. THE LAND OF ODARD

In Amelebrige [Emleybridge] Hundred

Odard the crossbowman holds of the King 4 hides in Aissela [Esher].[2] Tovi held them of king Edward. It is now assessed for 1 hide. There are 10 villeins with two ploughs; and 2 acres of meadow. It is worth 40 shillings.

The same Odard holds Molesham [West Moulsey].[3] Tovi held it of king Edward. It was then assessed for 6 hides and 1 virgate; now for 1 hide. The land is for 3 ploughs. In demesne there is 1; and (there are) 10 villeins and 5 cottars with 4 ploughs. There is a church; and two serfs. In the time of king Edward it was worth 100 shillings, afterwards 50 shillings; now 4 pounds.

[1] Part of Addington; see below.

[2] Part of Esher; see other manors, or parts of manors, held by the Bishop of Bayeux, the Abbey of Chertsey, and the Church of the Cross of St. Leutfred under the same name. This might be Sandon (*vulg.* Sandown) in Esher, but there is no certainty.

[3] Moulsey Matham, chiefly in West Moulsey. In 1212–17 Samson de Moulsey held half Moulsey by tenure of providing a crossbowman. This was Moulsey Matham; for Moulsey Prior was then held by the Priory of Merton.

XXXVI. THE LANDS OF OSWOLD AND OTHER THEGNS

In Fingeham [Effingham] Hundred

Oswold holds of the King Pechingeorde.[4] He himself held it of king Edward. Then, and now, it (was and) is assessed for 1 hide. The land is for 3 ploughs. In demesne there is 1 plough; and (there are) 3 villeins and 2 bordars with 2 ploughs. There are 2 serfs. . . . In the time of king Edward, and afterwards, and now, it (was and) is worth 40 shillings. The men of the Bishop of Bayeux claim from this land every year for the King's use 2 marks of gold[5] or 2 hawks, and this by grant of the Abbot, brother to Oswold, for the battle, to wit, which he ought to have fought against Geoffrey the Little.[6]

In Copededorne [Copthorne] Hundred

Seman holds 1 virgate of land which he held of king Edward. But from the time when king William came into England he has done service to Oswold, rendering him 20 pence. This man could seek what lord he pleased (*se potuit vertere quo voluit*) in the time of king Edward.[7]

Oswold himself holds Feceham [Fetcham]. He himself held it of king Edward. It was then assessed for 11 hides; now for 3 hides. The land is .[8] In demesne there is 1 plough; and (there are) 12 villeins and 6 bordars with 5 ploughs. From a mill, 6 shillings and 6 pence. There are 10 acres of meadow. Wood worth 4 hogs. In the time of king

[4] Pechingeorde is not certainly known. The name occurs in Chertsey charters of A.D. 812 and 1062 as belonging to the Abbey. Oswold, we may remember, was brother to the Abbot. Now, Pickets Hole, on the edge of the chalk downs, about half way between Effingham village and Wotton House, may preserve the name. The later manor of Polesden would be then included in it, and Oswold would hold a compact estate from Effingham to Wotton.

[5] *i.e.* £12 (*J. H. R.*).

[6] Wulfwold, abbot of Chertsey, who apparently paid a composition in place of providing a champion for a wager of battle.

[7] See above, 35, b. ii., under Effingham, for Oswold's position. (And compare 35 b. i. for a holding of Seman's in this hundred.—*J. H. R.*)

[8] A blank in the MS.

Edward it was worth 4 pounds; now 100 shillings.

In Wodeton [Wotton] Hundred

Oswold himself holds Odetone [Wotton].[1] Harold held it in the time of king Edward, but the men of the Hundred say that they do not know how Harold had it. It was then assessed for 6 hides; now for 5 hides. The land is .[2] In demesne there is 1 plough; and (there are) 20 villeins and 7 bordars with 8½ ploughs. There is a mill worth 20 shillings; and 3 acres of meadow. Wood worth 50 hogs. For the herbage, 23 hogs. In the time of king Edward, and afterwards, it was worth 8 pounds; now 7 pounds.

Of these hides, Richard de Tonebrige holds 1 hide,[3] and Corbelin of him. Tedric held it of Harold as a manor. It was then assessed for 1 hide, now for half. There is half a plough; and 2 villeins, and 1 serf. It was then worth 20 shillings; now 10 shillings.

In Wochinges [Woking] Hundred

Oswold himself holds Wiselei [Wisley]. He himself held it of earl Harold. It was then assessed for 3½ hides; now for 1½ hides. The land is for 2 ploughs. In demesne there is 1; and there are 4 villeins and 4 bordars with 2 ploughs. There is a church; and 2 serfs; and a mill worth 10 shillings; and 6 acres of meadow; and a fishery worth 5 pence. Wood worth 6 hogs. . . In the time of king Edward it was worth 40 shillings; now 60 shillings.

In Brixistan [Brixton] Hundred

Teodric the goldsmith holds of the King Chenintune [Kennington]. He himself held it of king Edward. It was then assessed for 5 hides; now for 1 hide and 3 virgates. The land is for 2½ ploughs. In demesne there is 1 plough; and (there are) 4 villeins and 3 bordars with 2 ploughs. There is 1 serf; and 4 acres of meadow. It was, and is, worth 3 pounds.

In Waleton [Wallington] Hundred

Tezelin the cook holds of the King Edintone [Addington].[4] Godric held it of king Edward. It was then assessed for 8 hides; now for 1 hide. The land is for 4 ploughs. In demesne there are 2 ploughs; and (there are) 8 villeins and 9 cottars with 2½ ploughs. Wood worth 20 hogs. It is, and was, worth 100 shillings.

In Chingestun [Kingston] Hundred

Ansgot[5] the interpreter holds of the King Cumbe[6] [Coombe]. Cola held it in the time of king Edward. It was then assessed for 3 hides; now for 1½ hides. The land is for 3 ploughs. In demesne there is 1; and (there are) 6 villeins and 1 bordar with 1 plough; and 4 acres of meadow. From the herbage, 4 hogs. It is worth 60 shillings.

In Wochinges [Woking] Hundred

Chetel the huntsman holds of the King Lodesorde.[7] His father held it of king Edward. It was then assessed for 1 hide; now for half. The land is for 2 ploughs. In demesne there is 1; and (there are) 2 villeins and 5 bordars with 1 plough. There is a mill worth 2 shillings; and 4 acres of meadow. Wood worth 20 hogs. It is, and was, worth 50 shillings.

In Godelminge [Godalming] Hundred

Wulwi the huntsman holds of the King Liteltone [Littleton].[8] He himself held it of king Edward. Then (it was assessed for) 2 hides, but they did not pay geld; now (it is assessed) for 1 virgate. The land is for 1 plough. It is there in demesne, with 1 villein and 1 cottar with 1 plough. There are 2 acres of meadow. It is, and was, worth 20 shillings.

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[1] No doubt Wotton, though spelt differently from the Hundred. It is contiguous to the rest of the old estate of Oswold. The hide of Richard de Tonebrige is represented by De Clare land at Wotton in 1314.

[2] A blank in the MS.

[3] Perhaps the small manor of Gosterwood or Gostwood in Wotton. In 1300 Nicholas Malemeyns, sub-tenant of Gilbert de Clare at Ockley, also held Gostwood, which is adjacent to Ockley.

[4] Peter, son of the mayor of London, held half Addington by service as cook, 1212–1217.

[5] Ansgot was an extensive holder of land as an undertenant at Mitcham and Streatham. An Ansgot had also, T.R.E., held Farncombe. They need not be all the same.

[6] See above, 36, b. i., for another part of the same.

[7] Not known in Surrey. Probably Lodsworth in Sussex, there being no definite boundary running through the forest between the counties. In that case, however, the ascription to Woking Hundred is arbitrary.

[8] Littleton, near Guildford and Loseley.

POLITICAL HISTORY

THE undoubted facts about the early history of Surrey are few. Certain negative propositions are indisputable, and have their value as throwing light upon the origin of the county as a separate district. It had for instance no special political and no ecclesiastical connexion with Sussex, from which it was separated by a forest, which as late as 1086 was very sparsely inhabited. It was clearly distinguished from Kent. It was not always in the West Saxon kingdom. On the positive side we can say that its name is compounded with the word 'south.' It is possible that the *Suthrige* were a tribe,[1] but it does not follow that they inhabited the whole of the modern county. Barren and slightly inhabited tracts, in the south and west, might be included subsequently in the territory bearing their name. There is reason for suspecting that the post-Conquest writers in Latin connected the name with *regio*. But in any case the southern district is regarded as distinguished from something north of it. Only Ethelwerd's chronicle, under the year 823, places in it the *Medii Angli* or *Medii Saxones*. Wulfhere King of the Mercians was overlord of Surrey when Chertsey Abbey was founded in 666.[2] It had then an underking named Frithwald, who lived near Chertsey. Ceawlin of Wessex and Ethelbert of Kent had probably fought in it a hundred years earlier, 568, for the West Saxon and Kentish kingdoms could hardly then come into collision anywhere else. So perhaps a political conquest by the West Saxons preceded a political conquest by the Mercians. There is no record of its being included in any other diocese than that of Winchester, which also points to West Saxon supremacy. Moreover, in 823, after Egbert of Wessex had defeated the Mercians, he received the submission of the men of Kent, the men of Surrey, the South Saxons and the East Saxons, 'who had formerly been unjustly forced from his kin.'[3] The expression implies only a political supremacy in Wessex, then finally re-established, for Surrey is classed with three other kingdoms which were certainly not West Saxon by race.

[1] See article in *Home Counties Magazine*, July, 1901, 'The Derivation of Surrey,' by T. Le Merchant Douse, where a strong argument is made in favour of Surrey preserving the name of a tribe. That the tribe were the Rugii seems to me doubtful. No one since Camden has derived Surrey from words meaning 'south of the river.'

[2] That is if the preamble and signatures of the alleged foundation charter of Chertsey are genuine. The abbey was said to be founded in 666, Wulfhere died in 675. But apart from this evidence it is certain that the great Mercian kings were overlords of London and the south-east.

[3] *Anglo-Saxon Chronicle*, 823.

Two possible traces of some early occupation of part of the county, and of West Saxon occupation of the western parts, may be added. The system of compact villages, as opposed to scattered hamlets, which Professor Maitland has taught us to see preserved on the face of the Ordnance Survey,[1] strikes the eye in Surrey in the country which stretches along the edge of the chalk downs from the Kentish frontier in the north-east away towards Guildford south-westward, and in the Thames valley; less markedly in the land between them. This represents the country most easily accessible to people coming over the Thames and most attractive to them generally. The slopes of the chalk downs were open and dry, yet had springs of water, and were probably already cultivated by the provincial Britons. Over precisely this same tract of country the common fields are known to have still existed comparatively recently, while there are very few traces of them elsewhere. Here in 24 places there were in Domesday 570 *villani* with ploughs. In 126 other places named in Domesday there were 1,812, an average of $23\frac{3}{4}$ to the former, of $14\frac{8}{21}$ to the latter places. It is possible that here we have the original village settlements of the early inhabitants.

In the county west of the Wey, or south of the chalk, in places separated from these former villages, with the one exception of Ockshot which lies more east, the suffix *shot* occurs in local names. Without discussing the meaning of the syllable, we may note that it is also common in the West Saxon lands in Berkshire and Hampshire, but uncommon elsewhere.

The geographical position of Surrey is the key to its history, and its history is to be found in its roads. It was traversed by roads coming from every harbour, and converging upon London, from Southampton on the south-west to Richborough on the south-east, or by roads to the Roman bridge at Staines, *Ad Pontes*, and by the British trackway along the North Downs which later took the name of the Pilgrims' Way. This system of roads was of more ancient origin than London Bridge, perhaps than London itself.

The absence of any great centre of population within the borders of Surrey, except in the outskirts of London, have caused its history to take a peculiar form. Its historical events are those concerning people or armies traversing its roads with the aim of reaching something beyond the county, not moving upon something in the county itself. It is a thoroughfare, with the all-important centre of the whole country, London, upon its borders, the old English capital of Winchester on one side of it, the Kentish ports and the ecclesiastical metropolis on the other. It also lies between the Sussex ports and the Thames valley. It is to London and the continent what the Megarid was to Athens and the Peloponnesus. Armies operated in Surrey because their bases and their objects were continually upon its opposite sides.

After the establishment of the English people in Britain 300 years elapsed without any fresh invasion.

[1] *Domesday Book and Beyond*, p. 16.

POLITICAL HISTORY

Continental invaders reappeared in England in the ninth century. The mere plundering incursions of the Danes and Norsemen were succeeded by forays on a larger scale, aiming at richer prey and preparatory to settlement in the country. In 851 the most formidable Danish attack so far made upon the south of England, perhaps upon any part of Britain, was frustrated in Surrey. The course of the story illustrates very fairly the kind of events of which the position of the county made it the scene, for the Danes were defeated on this march through Surrey, while aiming at something beyond.

The invasion came about in this wise.[1] About Duurstede, near the mouth of the Rhine, two Scandinavian chiefs, Harold and Ruric, either brothers or an uncle and nephew, had extorted a settlement from the emperor Lewis the Pious. They were intended to bar the mouth of the river against others, as Rollo was expected to bar the mouth of the Seine.[2] Harold was killed and Ruric quarrelled with the emperor Lothair and was expelled, but reinstated himself by the aid of a body of Danish adventurers set free by the cessation of a civil war in Denmark and Scania, and turned loose to seek their fortunes. Ruric seems to have stayed at the mouth of the Rhine, but his followers finding the place too strait for them, and probably not thinking the then swamps and sands of Friesland very desirable habitations, broke off into two raiding parties. One plundered in Flanders, the other came by ship to Sandwich. Ethelstan, underking of Kent, Sussex, Essex and Surrey under Ethelwulf his father,[3] had already had a fight with a roving squadron of Danes and had beaten them, but now collapsed before the invasion of the main body. By one account they had 350 ships, big fishing boats we should call them, sufficient in size for coasting from Denmark to Holland and for running across to Kent. It is impossible to say how many men they carried, nor need we rely implicitly on the number of ships given. Clearly it was a great invasion. The three kings of the south and midlands were in arms against it. The Danes sacked Canterbury, Ethelstan being apparently overmatched. They then went up the Thames to London and defeated Beorhtwulf, King of the Mercians, who fled amongst his own people, and according to Henry of Huntingdon never held up his head afterwards. Ethelwulf of Wessex, overlord of Beorhtwulf and Ethelstan, was the only king left in the field, and his city, Winchester, the only unsacked great city of the south.

There were three roads by which the Danes could seek Winchester. They would use roads if they could, and not strike across country through forests and marshes. They usually seized horses where they came; they would want to carry some supplies and plunder with them, and they would find more inhabitants and more supplies on the line

[1] The *Annales Bertiniani* attributed to Prudentius of Troyes, connect the Danish civil war with this invasion. If they are his they are strictly contemporary. They claim to be contemporary whoever the author was.

[2] Rudolf of Fulda *Annales*, anno 850 (ed. Pertz, p. 366). Compare for the whole story *Annales Bertiniani*, anno 850, and *Chronicon de Gestis Normannorum in Francia*, anno 852.

[3] Or his brother, according to one version of the *A.-S. Chronicle*.

of a road than elsewhere. The Roman road to the south-west, which crossed the Thames at Staines, ran through north-west Surrey to Silchester and had a branch to Winchester. The Stone Street from London to Chichester cut the old Pilgrims' Way, a British track, just north of Dorking, and the Pilgrims' Way ran along the chalk downs past Guildford and Farnham and thence bent south-westward to Winchester. The Stone Street itself continued through the forest of Andred to Chichester, and ways along the South Downs and the coast connected it with Clausentum on Southampton Water, and so with Winchester beyond.

The first way offered them the shortest line. But the first and second were entirely inland. The third would bring them again to the sea, where they could meet their ships coming round from the Thames, and could attack Winchester from their real base, their fleet. So, according to the chronicle, they came over Thames into Surrey. Ethelwulf with his son Ethelbald had probably been guarding the south coast, and came up the Stone Street to intercept the march of the Danes. He took his stand on the northern skirts of the great forest, where he could close the narrow defile of the Roman Stone Street where it entered the forest, and where he had a cross road by which he could easily march upon the Pilgrims' Way. It is a still faintly traced Roman road, which came from somewhere on the Sussex coast, and went north-westward up the hills near Ewhurst towards Guildford or Merrow Downs, and probably onward towards Staines. Had the Danes turned off from Dorking, he might have caught them by this road at the passage of the Wey. But the invaders had no desire to avoid a battle. They perhaps occupied the ancient British camp of Anstiebury, which crowns a now wood-clad sand hill, 800 feet above the sea, four miles south-south-west of Dorking. Local tradition used to call it the Danish Camp. The ensuing battle was fought 'hard by Ockley Wood.' It still lives in the memory of the country side, and the traditional place of slaughter is Ockley village green, where 'the blood stood ankle deep.' This is the current version but is unlikely, for Ockley Green must have been a swamp and a thicket then; it easily becomes the former still in a wet season. Rather we must look for the actual site of the battle on the higher and drier and more open slopes above Ockley towards Leith Hill. Here human remains in the last stage of decay were discovered in 1882.[1] The Danes were defeated after a great struggle and, looking at the circumstances, were probably cut to pieces. Tradition tells of the destruction by the inhabitants near Gatton of a body of fugitive Danes escaping from some defeat. There was an old cross-country road from Ockley through Gatton. It was in the words of the chronicle 'the greatest slaughter among the heathen men which we have heard of to the present day.' Asser copies this and expands it: 'there the

[1] By the late Mr. Sparkes, tenant of Etherley Farm. The writer possesses a fragment of one of two rude coffins of hollowed out oak trees which were found nearly fallen to pieces. Something like organic remains stretched in a line on each side of them across the field. In the coffins were bones very fragmentary and much decayed.

greater part of the heathen host was destroyed, so that we never heard of their being so defeated either before or since, in any country, on any one day.' He uses no such strong language of any of Alfred's victories. It was no doubt celebrated in song, for Henry of Huntingdon seems to be quoting from a war ballad when he writes: 'The battle was fought between armies of the greatest size, and was greater and more obstinate than any that had been heard of in England. You might see there the warriors thick as ears of corn charging upon either hand, and rivers of blood rolling away the heads and the limbs of the slain. God gave the fortune of the war to those who believed on Him, and ineffable confusion to those who despised Him.' Still more significant is the mention of the victory abroad, for Prudentius of Troyes, noticing the going over of the host from the mouth of the Rhine against the English, says: 'ab eis auxilio Domini Nostri Jesu Christi superantur.' Prudentius adds that he never heard of such a victory. It is a matter of regret that the Song of Ockley does not exist as the Song of Brunanburh does, to tell us how the eagle and the kite and 'the grey deer the wolf of the Weald' scented the carnage from afar, and came up from cliff and forest to the corpse-strewn slopes of the Surrey hills, to the pleasant glades where now the primroses and the wild hyacinths bloom and the oaks grow green, and the peace of a quiet country side has brooded for a thousand years above the graves.

After Ockley, with the exception of fighting about Thanet and in Kent, and one attack from Southampton Water upon Winchester, which was defeated, no recorded invasion vexed the southern counties for about twenty years. The West Saxon dynasty had won a notable advantage in time for its consolidation. The date of Ockley was 851. The years 851 and 853 are given in the chronicle in various MSS. But 850 is the date given by the foreign authorities for the recovery of his settlement on the Rhine by Ruric. If the superfluous force of his Danes went on in the next cruising season to England, this would place Ockley in the spring of 851. Moreover, Beorhtwulf of Mercia seems to have been dead before 853, and he was alive in the year in which Ockley was fought. Huda, the only ealdorman of Surrey whose name is preserved, was killed fighting against the Danes in Thanet, soon after Ockley. When the great Scandinavian invasion of some twenty years after this occurred, in Ethelred's reign, Surrey was the scene perhaps of some fighting, and no doubt of much devastation. The Danes were in possession of East Anglia, Essex, London and Mercia, or allied with the inhabitants of these places, so that the whole Thames frontier of the West Saxons lay open to attack. The army, as the chronicler calls it, came to Reading in 871, and nine great battles, 'folk-fights,' were fought, chiefly in Berkshire and Hampshire, in the year. One battle has been commonly attributed to Surrey. Ethelred, and Alfred his brother, fought the invaders at 'Meretun,' and at first were victorious, but the Danes at last had possession of the place of slaughter. The subsequent fame of the religious house at Merton in Surrey made

the place well known, and this battle has been placed there. So far, however, as we can follow the probable course of the campaign, it would seem likely that the battle was fought further west. The sole undoubted victory of the West Saxons had been at Ashdown in Berkshire. This was not decisive, and was followed by a defeat at Basing in Hampshire. Then came this battle of 'Meretun,' then the death of Ethelred, then a defeat, though not a decisive defeat, of Alfred at Wilton near Salisbury. The Danes may have fallen back towards London after Basing; but Marton in South Damerham in Wiltshire, in Domesday Mertone, seems a more likely place in which to find them after their success at Basing than anywhere in Surrey. But there is no certainty. Soon after the battle at 'Meretun' Ethelred died. Later stories say that he died of wounds received in the battle, and the brass to his memory in Wimborne Minster, of many centuries later date, says that he was killed by the Danes. The silence of the chronicle which records the death of the bishop of Sherborne at 'Meretun' makes it improbable that the king fell there. But the Danes, after all, found the better organized West Saxon kingdom a less easy prey than the chaotic north and Mercia, and retired to London in 872, probably through the confines of Surrey. In the earlier part of Alfred's reign, when the Danes again came over the Thames from Mercia and overran the West Saxon lands westward, cooping up the king himself amongst the Somersetshire marshes, the whole of south-east England, Surrey included, must have been at their mercy. The county must have suffered terribly in these wars, and Chertsey Abbey was sacked by the Danes.[1] Surrey took no share in the national recovery and victory of the year 878. The peace of Wedmore in that year restored it to the West Saxon kingdom.

In 886 Alfred was sufficiently master in the south-east to restore the fortifications of the probably ruined city of London, making it an important barrier upon the movements of his lately baptized godson Guthrum and his people in Essex, and a protection to the passages up and down and across the Thames.

In 893 two Scandinavian bands established themselves in fortified camps, at Milton near Gravesend, and at Appledore on the Rother, behind Romney Marsh. The king lay between them, ready to move against either should they endeavour to penetrate westward north or south of the Andred's Weald respectively. His headquarters may possibly have been at Tonbridge,[2] on a road reaching towards Hastings on the one side and London on the other. Certainly he was guarding the eastern side of Surrey. In three years the enemy were continually checked by his vigilance, till in 896 the Appledore force penetrated by forest roads[3] through the Weald and plundered in Hampshire and

[1] Before Edgar's reign; therefore probably at this time. See William of Malmesbury, *De Gestis Pont.* lib. ii.

[2] Where the mound of the de Clares' castle may possibly represent an early English fortification.

[3] Ethelwerd's chronicle.

Berkshire. They possibly came up the almost forgotten Roman way which ran north-westward from the Sussex coast towards Staines, which we have mentioned in connexion with Ockley, and burst into Surrey from the forest glades between Ewhurst and Guildford. They may have been returning towards the same line for retreat, when the king came upon them from the east, 'outrode' them according to the chronicle, by which we may understand anticipated their movements and intercepted them at Farnham, cutting off their retreat. There was a battle, and the Danes were forced away northwards, retreating across the Surrey and Berkshire heaths to the Thames, which they crossed where there was no ford, seeking shelter, by a march round London, with their friends in Essex and on the lower Thames. For the short remainder of Alfred's lifetime the enemy were kept away from the heart of his kingdom, and Surrey too was safe behind the bulwark of London.

The building of fortresses, which consisted in the raising of mounds surrounded by palisades, was beginning to be recognized as a necessary means of defence against the Vikings. Alfred's son and daughter Edward and Ethelflæd, lady of the Mercians, deliberately consolidated their reconquest of central and eastern England from the Danes by this device.

We are probably justified in regarding the reigns of Edward and of his son Ethelstan as the period of the formation of the present midland counties as districts, contributing each to the defence of one or more burhs where the inhabitants were charged with what a later age would have called the service of castle-ward.[1] The Burghal Hidage is a document of perhaps tenth century origin, which seems to give us a view of the similar defensive arrangements in the old West Saxon kingdom and its dependencies, where the original tribal or local divisions had not been obliterated by Danish conquest as was the case further north. Two burhs seem to belong to Surrey in this list, and are given a territory of 1,800 hides. The Domesday hidage of Surrey is close upon 2,000 hides more or less.[2] The names of these two are *Eschingum*, that is 'at the Eschingas,' and *Suthringa geweorc*. The latter is pretty clearly Southwark. London is not mentioned and may have been of sufficient importance to have its defence separately organized and recorded, neither was it in the old kingdoms of Wessex, Kent or Sussex, to which this list seems to be confined. But the defensive purpose of London was not complete without a fortification upon both sides of the river, nor probably without the bridge, which certainly existed before the end of the tenth century. The name of Southwark implies a fortification. The Roman defences had apparently been at both ends of this bridge. The other burh is less readily placed. Eashing represents the name, but there is no extant burh at Eashing in Godalming parish. However Eastbury and Westbury are manors in Compton parish close to Eashing. The present Eashing is out of the way on no ancient

[1] Maitland, *Domesday Book and Beyond*, pp. 183–88, 502. But compare Mr. Round's remarks in his Introduction to the 'Domesday Survey.'

[2] It is impossible to be sure whether certain hides are enumerated more than once.

road. Seeing how commonly the ancient or later county town of other counties appears as the site of a burh, sometimes first so appears, we should have expected a Surrey burh at Guildford, close to where the Pilgrims' Way crosses the river Wey and where the existing mound of the castle is suggestive of an Early English work. Both Eashing and Guildford are named in the document known as Alfred's will as royal possessions. Possibly Eastbury and Westbury may represent the original strongholds of Alfred's time, Guildford a new fortification of Edward's.[1]

Wherever the central fortress of Surrey was, it was round the border fortress of the county, part of the central fortress of the kingdom, that the waves of Danish war broke in the latter part of the tenth century. The consolidated Danish kingdom,[2] encouraged by the confusion of western Europe and the weakness of Ethelred the Unready, seeing too Scandinavian dynasties established at Rouen, in Orkney and the Isles, and in Ireland, began to try to recover the Scandinavian conquests in England, where Danes and Norsemen still were in some cases distinguishable from the English among whom they dwelt. But the Danes were not content to recover the Danelaw, they fell upon Wessex also. The great fortress of London with its citizens—not merely traders but good fighting men too—was the chief barrier against them, and the fortunes of Surrey and of Southwark its share of the fortress were as usual involved with the fortunes of London.

In 994 Sweyn king of the Danes and Olaf Tryggvasson, not yet what later ages would have called king of Norway but king of the Norwegians, came together up the Thames against London with ninety-four ships, and were beaten back from the two fortresses and their connecting bridge. It was on September 8, the Nativity of the Virgin, and the saint was supposed to have specially shielded the Londoners. For they 'did more harm to the Norsemen than they thought any borough men could do.'[3] But the fortresses were not enough to shield the whole country under such a miserable rule as Ethelred's. Sweyn and Olaf passed ravaging through Surrey to the south-west, brought their ships round to Southampton and wintered there. Then Olaf made his peace with the English and swore never to come again as an enemy to England. The chronicler adds in evident surprise that he kept his vow. With his presence in the Thames that year is connected probably a legend of St. Olaf of a later date. St. Olaf, we are told in the Heimskringla,[4] came to the aid of the English against the Danes, when the latter were holding London, and cut the Danish force in two by carrying off London Bridge by hawsers fastened to his ships. The exploit is probably impossible, even with a wooden bridge, and the Danes never held London, for they could never take it. St. Olaf

[1] The mound at Guildford must be fairly old. It is partly artificial, yet it had a square keep built partly upon it before 1202. The ground must have had some time in which to settle before even part of the weight of a keep could rest upon it.

[2] Ancient Denmark was not only the modern kingdom. Besides including what Germany has taken in Sleswick, it included the southern part of modern Sweden.

[3] *A.-S. Chronicle.* [4] Saga of King Olaf the Saint (vol. ii. p. 9, Laing's translation).

The Mound, Guildford Castle.

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apparently did come to the coasts of Britain on Viking raids in his unregenerate days. Later ages, which thought of him as a saint, transferred him to the side of Christianity. But the story of his presence in the Thames at all is merely another instance among several of confusion between him and Olaf Tryggvasson. St. Olaf's church upon the Surrey side in Tooley Street, that is St. Olaf's Street, owes its dedication merely to his subsequent popularity in the north of Europe, not to any local connexion with the neighbourhood of London Bridge. There were three St. Olaf's churches north of the Thames too.

The Thames and Surrey formed the bases from which the next most famous attempt upon London was made by the Danes. Sweyn had been received generally as king when Ethelred fled the country. Then on Sweyn's death Ethelred had been recalled, and Cnut carried on the contest with him and his son Edmund for the English crown.

Three times at least in those calamitous years there is direct mention of the Danes having traversed Surrey. In 1009 they had crossed the Thames from north to south at Staines and marched through Surrey to the lower Thames. In 1013 Swegen himself had marched from Winchester to London. In 1015 Cnut had gone westward from Kent to Frome in Somersetshire. In 1016, on May 7, a fortnight after Ethelred's death, Cnut brought his fleet into the Thames and beset London. He there made the famous ditch round the works at the foot of London Bridge whereby his ships might come above the bridge. Two opposite mistakes have been made about this exploit. It has been on the one hand derided as impossible, and on the other hand the course of Cnut's channel has been laboriously traced. The Norsemen had done a similar thing at Paris more than a hundred years earlier, dragging their ships round on the left bank of the Seine. The feat was easier in the Surrey marshes, for every spring tide, if not ordinary high tides, overflowed a good deal of what is now Southwark and Lambeth, so that it was only needful for Cnut to cut through two or three causeways and embankments to enable his vessels to scrape over the flats. But what made the feat easy has made any attempt to recover his exact line of action impracticable. When the gaps in the causeways were mended no marks remained of the route. At any rate the attack on London failed. Later in the year it was renewed, but Edmund, the new English king, crossed the Thames into Surrey at Brentford and cleared the southern side of the river of the Danes, pursuing them to Sheppey, whence they crossed into Essex. Edmund followed them and was defeated in Essex. The kingdom was then divided between the rivals, Edmund taking Wessex and Cnut Mercia and East Anglia. London went with the latter and admitted the Danes, who had failed to enter by force before. It would be interesting, but it is impossible, to know whether Southwark was included with London, or whether the Danes had one end of the bridge, the Englishmen the other. Edmund's death on November 30 of the same year left both to the former. More than twenty years of continual warfare and ravage must have left few houses

or churches unsacked between the Thames valley and the Pilgrims' Way, the two main lines for the operation of armies. There can have been but few churls who had not bowed themselves for need to the protection of some strong man.

There was peace under the strong rule of Cnut and under his two worthless sons. But in the time of Harold the elder a deed of violence was done in Surrey which made great stir at the time and has been since a subject of keen debate. In 1036 Alfred son of Ethelred and Emma came from Normandy to join his mother, who also was the mother of Harthacnut, Harold's rival and half-brother, at Winchester. He sailed from Wissant, no doubt landed in Kent, and was proceeding by the Pilgrims' Way towards Winchester when he was seized at Guildford, handed over to Harold and put to a cruel death. One version of the chronicle and later authorities make Earl Godwine the author of his arrest and impute some sort of treachery to the great earl. Looking to the persistent anti-Norman policy of Godwine there is nothing incredible in this. Alfred was a possible pretender, son of a Norman mother, coming from Normandy, and no doubt, like his brother Edward, of Norman tastes. The want of cohesion in England had made it certain to fall either under direct Scandinavian or Norman-French influence, and Godwine, allied by marriage to Danish and Swedish kings, preferred the former.

In 1042 the Danish king, Harthacnut, died in Surrey, at Lambeth, when drinking himself drunk at a marriage feast in the house of Osgod Clapa. Ten years later Godwine and his son Harold, returning from exile, came to Southwark, and negotiated thence their return to power and the exile of King Edward's Norman favourites, the first step towards the ill-starred attempt to transfer the crown to their house, which ended in handing over the country entirely to the influence against which they had always striven. Because Harold died like a hero and a patriot at Hastings, we need not forget that a king of either the West Saxon or the Danish royal house would have had a better chance of preserving a native rule of some sort for English and Danes in England, nor that this more nearly kindred rule would have been a worse misfortune in the long run than the rule which united England to western rather than to northern Europe.

One curious mark of distinction belonged to Surrey in the tenth century : all the West Saxon kings of that century are said by one writer or another to have been crowned at Kingston. Ethelstan was crowned there according to good early authority, Ethelred according to the unimpeachable authority of the contemporary chronicle. The others are included by various later historians. If Edgar was crowned at Kingston he was also crowned thirteen years later at Bath. But he must have been crowned somewhere at the beginning of his reign. It is difficult to assign any reason for the choice of the place of coronation. Kingston was not the capital of the West Saxons, neither was it, like Scone, an early place of crowning, so far as we know, nor, like Reims, a

sacred place hallowed by the crowning of the first Christian king of a nation. It was probably then, as later, a royal possession. A possible origin of the custom is that this happened to be the place of meeting of the Council in 836 or 838, when Egbert and Ceolnoth the archbishop seem to have made a lasting league between the West Saxon crown and the metropolitan see, with the aim and the result of ruling all southern Britain between them.

The first wave of the Norman invasion necessarily broke upon Surrey, along with the other counties between the coast and London, the objective point of all invaders. William, after securing the coast of Sussex and Kent, turned the flank of the forest of the Weald and came from the eastward to Southwark. He probably had divided his forces and sent part due west along the Pilgrims' Way into Surrey, on the road to Winchester, his second most important point. London however was always impregnable in the Middle Ages to an enemy attacking from the south. The fortified end of the narrow bridge was a very strong position of defence and no ships could pass the bridge to aid an attack from the river, nor could boats pass it against the will of those who manned it. William burnt some houses outside the bridge head, ravaged the neighbourhood as far up the Thames valley as Walton, and specially Harold's lands at Mortlake and Battersea, but then went down the Stone Street to join the rest of his forces near Dorking. The marches of the two bodies had devastated most of east Surrey between them. From Dorking westward the line of ravage is narrow and along the road towards Winchester, sparing the lands of the only considerable English Surrey tenant in Domesday, Oswold, who evidently at once made his peace with the invader,[1] and the lands of Edith the widow of the Confessor. Winchester anticipated a visit from the Normans by a surrender, and London gave in when William had crossed the Thames and was coming down upon it from the north-west.

Two men stand out prominently among the *tenentes in capite* of Domesday as great local lords in Surrey : Richard son of Earl Gilbert, called Richard de Tonebrige, and Odo Bishop of Bayeux, the king's half-brother, Earl of Kent. Kent was Odo's earldom, and he, an ecclesiastic, would in no case have become the founder of a territorial power in Surrey.[2] His quarrel with the Conqueror led to his arrest. Odo's release under William Rufus was followed by his rebellion in favour of Robert, which led to his final exile from England. His lands lapsed to the Crown.

Richard de Tonebrige founded one of the two houses which disputed the pre-eminence among the baronage of Surrey. He held 38 manors in Surrey, forming a fairly compact territory towards the south-east of the county, with outlying possessions reaching north-westward by Cobham to the Thames at Walton and Moulsey, and westward to

[1] See 'The Conqueror's Footprints in Domesday,' Baring, *English Historical Review*, January, 1898 ; *History of Surrey*, Malden, p. 63, and the Introduction to Domesday in this History.

[2] The collateral heir of the younger half-brother of the king would, in practice, have been the king.

Shalford near Guildford. He or his descendants had a principal castle at Blechingley in the main division of his lands, and a small castle at Ockley close to the Roman road from London to Chichester. He had even larger possessions in other counties, as in Suffolk, where his castle the head of the Honour of Clare gave his family their later name of de Clare.

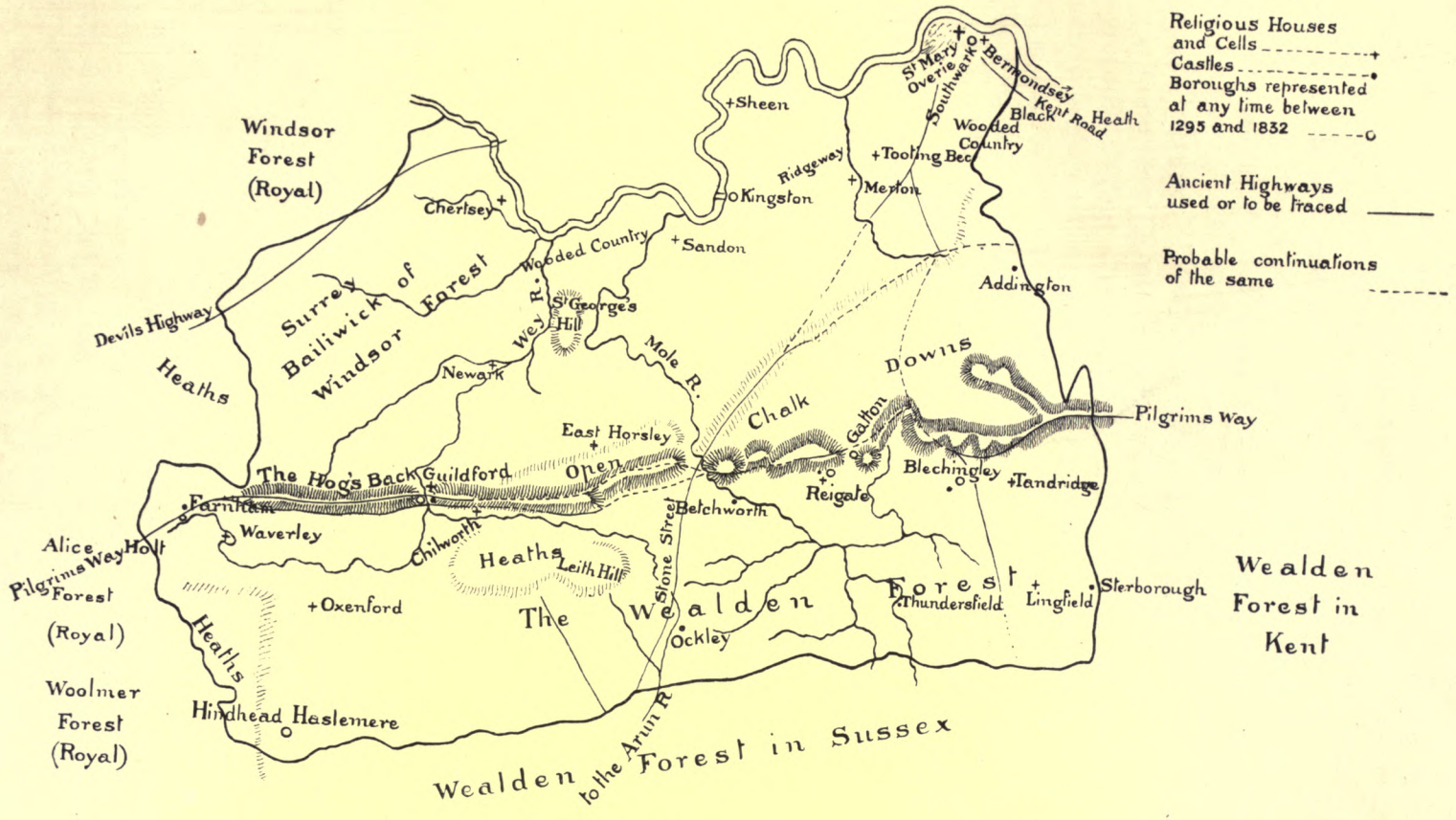
It was perhaps his great position elsewhere which led to a rival being raised to his supremacy in Surrey. In 1075 Richard and William de Warenne were justiciars for the absent King William, and had a great share in putting down the rebellion of earls Ralph and Roger. But in 1078 Richard's second son, Roger de Bienfaite, was involved in the first rebellion in favour of the Conqueror's eldest son Robert; and in 1088, after the death of William, the de Clare castle of Tonbridge was held by the rebels who supported the party of Duke Robert against William Rufus, Gilbert son of Richard being on Robert's side [1] then and later. His lands however escaped confiscation. It was probably the untrustworthy attitude of the de Clares which led William Rufus to endow one of the few of the great nobility of the Conquest who had adhered to him with the earldom of Surrey in 1088 or 1089. William de Warenne had already considerable Sussex possessions, besides other estates, and grants in Surrey to him erected a local counterpoise to the power of the de Clares. Gundrada, the wife of de Warenne, was not a daughter of the Conqueror but it is possible that she was his step-daughter, and at any rate the de Warennes had been so far faithful to the king.[2] With the earldom and perhaps its endowment of the 'third penny,'[3] its dignity and share in county government, de Warenne received lands at Reigate, where there was, or was shortly built, a castle, in convenient neighbourhood to de Clare's castle at Blechingley, and probably Dorking, with lands at Betchworth, Shiere and Fetcham, thus including all that had come to the Crown by the death of the queen Edith, widow of the Confessor. These formed the bulk of the lands held subsequently in Surrey of the Honour of Warenne. Their possession by the earl planted a strong rival interest to

[1] Henry of Huntingdon.

[2] The controversy about Gundrada's parentage is acute and complicated. But at all events there is no reason for calling her King William's daughter, and there is much to be said in favour of her being Matilda's daughter. See Stapleton in *Archæological Journal*, 1846; Freeman, *Norman Conquest*, vol. iii. appendix O, and in *English Historical Review*, October, 1888; Malden, *History of Surrey*, pp. 101–2; Round, in *Complete Peerage*, vii. 322.

[3] There is an uncertainty about the endowment of the earldom of Surrey. By *Close Rolls* 40, H. iii. m. xi. it appears that John de Warenne was granted the third penny out of the issues of the county of Surrey, as William de Warenne his father and his other ancestors had it. But by the *Placita de Quo Warranto*, 7 Ed. I. Exemplification Pat. R. 25 Eliz. July 9, it appears that John de Warenne in 1279 claimed the third penny *redditus burgi* in the towns of Guildford and Southwark, as belonging to his ancestors, but said nothing about the third penny of the pleas of the county. Moreover I am told by Mr. Round that there is no trace in the Pipe Roll of 1130 of the payment of the third penny of the pleas of the county to the earl in Surrey, while there is evidence of the payment in some other counties. It appears however that the earls of other counties, Oxfordshire for instance, claimed subsequently that their ancestors had received the third penny, though no extant grant of it remains nor trace of its payment; see Round, *Geoffrey de Mandeville*, App. H, p. 287–96. It seems safe to assume that the earl in Surrey had commonly received the third penny of Guildford and Southwark, and that whatever he said to other people he did not think fit to tell Edward I. that he had an ancestral right to anything else.

Mediaeval Surrey.



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the de Clares upon the Pilgrims' Way, upon the old way or *gate* through Reigate, and upon the Stone Street. The establishment of the great Sussex baron in Surrey led also to the subsequent drawing together for administrative purposes of the two counties, no sign of which previously exists. More than one de Warenne was sheriff of both counties. The first earl died in the year of his investiture, 1089. For a short time under Henry I. the purpose of his creation was nullified, for the second earl joined the party of Robert and was consequently deprived of his earldom in 1101. In the next year however, on the temporary reconciliation of Henry and Robert, he was restored, and continued henceforth steady in support of King Henry. The energy of the de Clares was mainly devoted during this period to enterprises in the Welsh Marches, where they were carving out for themselves a dominion in the region which was ultimately the greatest seat of their power.

The opening troubles of Stephen's time saw both the great Surrey barons upon his side. William de Warenne II. died in 1138, an old man. His son, William de Warenne III., witnessed Stephen's charter in 1136, but was accused of intriguing with the empress in the next year. In 1141 however he was in arms for Stephen at the battle of Lincoln, was taken prisoner, went over to the empress, was taken when fighting on her side at Winchester, and reverted to Stephen's party. He was a type of the great barons who by their constant self-seeking made confusion apparently endless. False to both parties and trusted by neither, he left England on the second crusade in 1147, and was killed by the Turks in the disaster which befell the crusaders near Laodicæa the next year.

Richard de Clare fell in a skirmish with the Welsh in 1136. His son Gilbert was created Earl of Hertford by Stephen, but turned against the king about the time that de Warenne left the country. He was succeeded by his brother Roger, whose son was another Richard.

It is unknown how far Surrey suffered from that great curse of Stephen's reign, unlicensed and unlimited castle building. It is probable that to this time belongs the raising of a shell keep of stone round the mound of Farnham. The position of Henry de Blois the Bishop of Winchester enabled him to retain his improved fortifications when Henry II. threw down the palisades and levelled the mounds of so many castles. The mound at Guildford, with perhaps no keep on it yet, was in royal hands. The de Clare and de Warenne interests were allowed to watch each other from Blechingley and Reigate.

So far the two great houses of Surrey are in frequent opposition to each other. The time was coming when one of them became closely allied with the Crown, while the other was more definitely united with the party of baronial opposition to the king.

The last de Warenne had left an only daughter Isabel, who was married to William the eldest surviving son of Stephen. He was Earl of Surrey or Earl de Warenne in right of his wife, Count of Mortain in right of his father, Count of Boulogne in right of his mother, and possessed of what his father had held before his accession in England,

besides Godalming in Surrey. He resigned his English castles and Godalming to Henry II., perhaps not quite spontaneously, but died in 1159. His widow was then married by Henry to his own illegitimate half-brother, Hamelin of Anjou, who became Hamelin de Warenne. Their son kept the name of his mother's house as William de Warenne, and was for a long time a steady supporter of his cousin King John in his quarrels with his people, barons, clergy, the Papacy and the French. By his support to John in 1204 he lost his Norman estates when the French overran the duchy. He was compensated by John with lands at Stamford, at Grantham and in Sussex.

Meanwhile Richard de Clare, who had married Amicia, the sister of John's repudiated first wife, Hawisia of Gloucester, became one of the more prominent of those barons who were seeking means to control the king's excesses. The royal and the baronial parties were shaping themselves for the great struggle which fills the thirteenth century, and de Warenne was by his connexions as decidedly upon the one side as de Clare was upon the other. Tradition as usual plays fast and loose with the facts of history, and the vaults of de Warenne's castle of Reigate have been selected by it as the place where the barons met to consult upon the means of obtaining the great charter. Blechingley Castle would have been a happier suggestion, but the preliminary meetings of the baronial party had been at St. Albans, Bury St. Edmunds and in London, and the actual march of their army was from Stamford to London. They only passed through the extreme northern edge of Surrey when they went up to Runnymede to meet John.

There on Surrey soil was consummated one of the greatest series of transactions in our history. So far as the constitution of England has a beginning of days at all its birthday was June 15, 1215, and the place a meadow between Windsor and Staines. The charter itself is sufficient witness that it came into force in Surrey. It was given 'in prato quod vocatur Runingmede,' to quote itself.[1]

John had accepted the charter under necessity, with no intention of keeping to it longer than the time that was necessary to him for gathering mercenaries and securing papal support. In the course of the autumn the archbishop was sent for to Rome, thus removing the strongest moderating influence from both king and barons. The two parties began war and the barons summoned Louis of France to supersede John as king. The French invasion began in the same winter, John's fleet being dispersed by a storm. London was in the hands of the French and barons, but John lay near the Kentish coast intending to resist Louis himself when he should arrive. His papal ally had done his best by excommunicating the barons, including Richard de Clare and his son Gilbert, on December 16, 1215.[2] John seems to have held the

[1] The tradition which assigns the grant to Magna Charta Island in Buckinghamshire is tradition, and is contradicted by the charter itself. The idea that it was never signed at all rests upon the mistake that 'to sign' means only 'to write a name.' *Signum* is a mark, especially the sign of the cross or a seal. *Signare* means to seal in classical as well as in mediæval Latin.

[2] Rymer, *Fœdera*, i. 211.

southern castles, including those of Surrey. The earls of Arundel and Surrey were still with him. De Clare under the pressure of the excommunication was seeking to make his peace. The landing of Louis at Stonor on May 21 changed matters. John's French mercenaries could not be trusted to fight against him. The king retreated hurriedly through Kent and Surrey to Winchester. Louis took the damaged keep of Rochester, which John had breached by a mine the year before, and went to London. Thence he proceeded to secure the other castles on the road between Kent and Winchester. Perhaps Blechingley had always been held by de Clare. Reigate, de Warenne's castle, surrendered; Farnham, belonging to the Bishop of Winchester, Peter des Roches, followed; Guildford, the royal castle, was taken. We do not know if there was any siege of Guildford. The castle is first named in 1202. The earthworks are probably much older; the keep probably rather older than this. But it had been a favourite abode of John, who was often there. Like his son Henry he resided in the buildings outside the keep, which was a prison and a citadel. The fortunes of John became worse and worse. He was driven from Winchester too. De Warenne thought it time to secure his possessions by a change of sides. He went over to the French about June or July.

The scene changed rapidly after this. The pope died in July. John died in October. The English barons and their French ally distrusted each other. The papal legate felt himself at liberty to concur in a reissue by the young king's advisers of the charter which Innocent III. had condemned. In a few months Louis was successful in reducing the eastern counties, but he had to return to France for a time, and concluded a truce. He returned to England in April to find his side falling to pieces. Gilbert de Clare—his father Richard was an old man and died in the following November—had made his peace with Henry's regent on March 27. De Warenne in a lordly style had made a truce with his king on April 16.[1] Farnham Castle was retaken for Henry and its lord the bishop. Guildford probably remained in the hands of Louis' party till the defeats at Lincoln and off Dover compelled them to give up the contest. The final peace was negotiated in Surrey. The regent, the Earl of Pembroke, conducted the young king as near to London as Kingston and Lambeth. Negotiations began at the former place. The final treaty was concluded at the latter on September 11, 1217. On September 14 a safe conduct was issued from Kingston for Louis himself to depart out of the kingdom. On September 19 a similar safe conduct was granted to his followers at Merton.[2] The court was at Lambeth in October; in November it had crossed the river and royal documents are dated from Westminster or London.

De Warenne had secured his own position in Surrey. He was sheriff of the county from 1217 to 1226. In spite of his temporary lapse he was looked upon as a far safer support to the young king's government than de Clare, a pronounced baronial leader. In 1227 both

[1] *Fœdera*, i. 216. [2] Ibid. i. 221, 222.

the great men of Surrey, de Warenne and de Clare, who had two years before become Earl of Gloucester, were acting together on behalf of the king's brother Richard in a dispute with the king's foreign favourites, but it was the de Clare interest only which was steadily upon this side. The de Clares were already related to the Marshals, Earls of Pembroke, who were the very centre of opposition to the foreigners, and Gilbert de Clare, the first Earl of Gloucester of this house, married one of Pembroke's daughters. Their great estates in Wales and the Marches raised them to a position of local importance there which made them almost of necessity asserters of the baronial cause, which was also the cause of local independence. De Warenne too had married as a second wife the eldest daughter of William Marshal, the same Earl of Pembroke, but he was also the king's cousin. The son of this marriage, John de Warenne, was brought more nearly into the royal family by marriage. Succeeding to the earldom as a child in 1240, he was brought up with the king's sons at Guildford, and was married while still a boy to Alice de Lusignan, daughter to the king's mother, one of the Poitevin family which, with the family of the queen, formed the very centre of the faction of foreigners which engrossed the favours of the king. It is curious how the marriages of the two rival families followed each other. Gilbert de Clare, grandson to Gilbert who witnessed the charter, married Alice de Lusignan, niece to de Warenne's wife and to the king. But his father Richard—the de Clares were alternately Richard and Gilbert—was a consistent opponent of the foreigners.

In 1258, in the arrangements made at Oxford, Richard de Clare appears on all the baronial committees, de Warenne among those members of the council of twenty-four who were nominated by the king. In 1263 there was actual civil war; and de Montfort with young Gilbert de Clare—Richard de Clare had died in 1262—marched through Surrey. He was coming from the Welsh Marches with the intention of seizing Dover, and his march is interesting from its speed and direction. He was at Reading on June 29, at Guildford on June 30, at Reigate on July 1. He must have come across the open country from Reading to Guildford and there hit the Pilgrims' Way. His force was probably mounted.

In 1263 Southwark nearly became the scene of the crushing of de Montfort. The king and his son had made a fruitless attempt to secure Dover from Richard de Grey, its baronial custodian, when they heard that Earl Simon was lying slightly attended in Southwark. Certain royalist citizens offering their help in a *coup de main*, the king's forces marched rapidly into Surrey and their partisans closed the gates of London Bridge so that the earl was nearly captured. His friends however opened the bridge to him again and he escaped into London. The king from Croydon vainly demanded his surrender. London was on the whole staunch to the baronial cause. The abortive arbitration of Louis IX. of France followed, and then the more vigorous and decisively conducted military operations in 1264. These turned chiefly upon the

control of the castles and communications of the south, including Surrey. We must look for a moment beyond the county itself to understand the part which it played. The barons held London, the Cinque Ports, except perhaps the castle of Hastings, certainly the castle of Dover, and also the castles of Canterbury, Tonbridge and Blechingley. The king's friends held Rochester, Farnham, Guildford, Reigate, and the castles of the mid-Sussex ports, Arundel, Bramber, Lewes and Pevensey. The king's army was in the midlands, a hostile country, and his object was to transfer the war to the south and to master the coast sufficiently to enable his foreign friends to communicate with and support him. His wife was gathering an army abroad. The barons meantime were besieging Rochester, hoping to complete their hold of the roads from the Kentish ports. The king, probably really guided by his brother's advice or by that of Edward his son, marched from the midlands as if to attack London. Turning aside however from the city he seized Kingston Bridge. There was a bridge at Kingston in the seventh year of Henry III.,[1] very possibly for long before. It was a most important passage, for there was no bridge below it except London. Above it Staines Bridge, which is said to have existed under Henry III., was the only other one in Surrey.[2] He took a castle of de Clare's at Kingston.[3] But the de Clares did not hold land at Kingston, and the castle was probably only a temporary fortification erected to guard the crossing at this time. The threat to London or the transference of the royal army to the southern counties caused de Montfort and de Clare to raise the siege of Rochester and to retreat to London before the king could come upon their rear. He skirted the hills south of London, being at Croydon on April 27, the same day on which he left Kingston. He marched probably by the old track, of which the Ridgeway at Wimbledon is a part. He dispersed a small party of baronial troops who had been left in observation of Rochester, took de Warenne with him out of the fortress, stormed de Clare's castle of Tonbridge, capturing the Countess of Gloucester, and went to the south coast, where, with de Warenne's castles and lands as his base, he prepared to establish himself to await the coming of his foreign allies.

De Montfort and de Clare determined to fight before the king could further strengthen himself. Their direct road for reaching him, and indeed the only road to the coast now open to them, was the old Roman road which ran near Croydon, through Godstone, near de Clare's castle of Blechingley, and thence probably by two branches towards the mouth of the Ouse on the one hand and Pevensey on the other, with perhaps a branch westward to Shoreham also. The castles at or near the extremities of all these lines, at Pevensey, Lewes and Bramber, were in the hands of the king's partisans. On the left flank of the barons as they advanced was the castle of Tonbridge, now occupied by a considerable royalist garrison, who were not far by a cross march from the baronial line of communications in Surrey. It was a bold venture by the baronial

[1] Close Rolls, 7 Hen. III. m. iv. [2] There is no record of Chertsey Bridge so early.
[3] Hemingburgh, i. 313, *E. Hist. S.* ed.

leaders, but it was crowned with complete success by their victory at Lewes on May 14, a victory which was rendered decisive by the capture of the king, his son and his brother. But what a risk was run by the victors is shown by the events in Surrey. The Tonbridge garrison, no doubt acting on a pre-arranged plan of Edward's, made their cross march into Surrey and got on to de Montfort's rear, in a position which might well have caused his destruction if the fight at Lewes had gone the other way, and would have seriously embarrassed him had his success there been less complete. Across their front straggled the retreating Londoners, who had been driven off the field by Edward at Lewes and who never rallied till they reached Croydon far back on the road by which they had advanced. Here the Tonbridge garrison came upon them and further routed them,[1] having also, it is said, mastered de Clare's castle at Blechingley. But what might have been a decisive movement was rendered of no avail by the complete collapse of the main royalist army; and the Tonbridge men went westward, no doubt by the Pilgrims' Way, past their friend's strongholds at Reigate and Guildford.

The spoils passed to the victors. De Warenne, who was specially an object of enmity to the baronial party, fled abroad for a time. His estates passed into the custody if not into the possession of de Montfort and de Clare. The former took his Surrey castle at Reigate. A tenant of Gloucester's, Sir John d'Abernon, became guardian of the royal castle at Guildford, and the earl was gratified by another grant of Surrey lands at Sheen.

But the royalist party got the upper hand next year. Not that it was a mere royalist victory, for the baronial party divided and Gloucester himself took the part of the king, and fought at Evesham against his old leader Leicester. De Warenne returned from the continent in 1265. He was not at Evesham, but was in joint command of the force which at Chesterfield in 1266 overthrew the irreconcilable remnant of the baronial party under the Earl of Derby.

De Warenne, a turbulent, probably selfish, and not very capable man, was uncompromisingly royalist unless it suited his own passion or interest to oppose the forces of law and order as represented by the Crown. De Clare was not improbably the best statesman of his age among the barons now that Leicester was gone. By a change of sides he incurred the charges of treachery and ingratitude, but he was a moderating force representing a true popular party. He acted as a young man with de Montfort against the king's foreign favourites and incapable government. He opposed the grasping ambition of the younger de Montforts—another foreign influence—and the strong measures of their father, who was being irresistibly impelled into the position of dictator. Then, after that by his help Edward had won the victory, de Clare helped, in 1267, to check the excesses of the royalist party, took decisive steps to enforce the compromise arrived at, even threatened civil war again if the terms were not observed. His action in

[1] Nicholas Trivet, p. 261, *E. Hist. S.* ed.

occupying London with an armed force to compel a settlement with the remains of de Montfort's party was no doubt a strong measure. But the armed demonstration of those days merely answered to a speech and vote against the government in these. He remained as a strong champion of the baronial privileges which our age would count rank abuses, such as the right of waging private war, but which were perhaps essential then to the strength of the class which could most effectually check royal power if pushed too far.

One picturesque incident of the end of the civil war is related by Trivet as occurring upon the borders of Surrey. Adam de Gurdon, a baronial partisan, continued, he says, to hold Farnham Castle, and waged guerilla warfare, or brigandage, in the neighbourhood. Edward, the king's son, riding from Guildford, encountered him, in single combat away from his stronghold, induced him to submit, and brought him to Guildford, where he was received into his conqueror's service.[1]

Gloucester took the cross with Edward, and went to Tunis, but like many of the crusaders returned thence when he found that St. Louis, whom they intended to join, was dead. Edward proceeded to Acre with only a few personal followers. De Warenne remained in England as a source of possible turmoil. In 1268, before the crusade, he attacked Alan de la Zouche and his son in the very precincts of the royal palace of Westminster, merely because the other was getting the better of him in a lawsuit, and wounded him so sorely that he died some time afterwards. De Warenne then shut himself up in Reigate Castle, and prepared to defy the king's justice. De Clare and Henry son of the king of the Romans hardly persuaded him to a grudging submission. In 1278 de Warenne further distinguished himself, up to a certain point, by a defiance of the government. The king, Edward I., issued the *quo warranto* writs, to the great indignation of the baronage, by which he made inquiry into the titles by which they held their lands and franchises. De Warenne's rusty sword flung upon the council table, and his bold assertion that as the Conqueror had won his land by the sword so the barons' ancestors had won theirs, and that for his part by the sword he would keep them, has passed into a commonplace of history. As de Warenne's name came only in the female line from a companion of the Conqueror, his father's father having been an illegitimate son of a count of Anjou, who owed all that he possessed in England to the marriage which Henry II. planned for him with the heiress of the de Warennes, the boast was rather an idle flourish, and it ended in nothing more so far as his Surrey estates were concerned. The Patent Rolls of 25 Eliz., July 9,[2] quote the answer of the earl, delivered by his attorney in much more decorous form before John de Reygate and

[1] Nicholas Trivet, p. 269. The traditional form of the story that de Gurdon was an outlaw in the woods seems to be later. But the whole story is untrustworthy. See *Genealogist*, n.s. vol. iv.

[2] *Quo warranto* writs, 7 Edw. I. *Exemplificatio* Patent Rolls, 25 Eliz., July 9, Philip Howard Earl of Arundel.

his fellow justices in Guildford, saying that he held his lands and rights by a title of undated antiquity, *a tempore a quo non extat memoria*, by the traditional grant that is of William Rufus, but with no original charter to be shown. De Warenne was much employed by Edward I. in the Welsh and Scotch wars, partly perhaps to keep him quiet, partly because he was allied to the royal house by descent, marriage and previous political connexion—just as the royal connexion Aymer de Valence, Earl of Pembroke, was also employed. Baliol and Bruce were too much like rebellious great barons for any or every great baron to be employed alone against them. The earl was made guardian and lieutenant of Scotland in 1296, but in 1297 was badly defeated by Wallace at Stirling.

The rival house of de Clare was meanwhile being drawn closer to the king. De Clare had married Alice de Lusignan, granddaughter to Isabella d'Angoulême, King John's wife, and when he divorced her he was married to Joan of Acre, Edward's own daughter. Their son, Gilbert de Clare Earl of Gloucester, fell at Bannockburn, 1314, and the de Clare inheritance, in Surrey as elsewhere, passed to his three sisters and co-heiresses. Two of them were twice, the third thrice, married. The two elder were each married to favourites of their uncle, Edward II. —to Hugh le Despencer and Piers Gaveston. The second afterwards married Hugh de Audley, whose daughter marrying Ralph de Stafford brought part of the Surrey inheritance to the Staffords, afterwards Dukes of Buckingham. But the wide lands that had descended from Richard de Tonbridge and been augmented by his successors were broken up for good and all in 1314.

In 1347 John de Warenne, grandson to the earl of Edward I.'s time, died with no legitimate children. His sister was married to Edmund Earl of Arundel,[1] and their son Richard took the de Warenne estates intact into his hands on his mother's death in 1361. The de Warennes were thus succeeded by a yet more powerful house with their chief seat in Sussex, and the effect upon the county of Surrey may be considered as the drawing still closer of that administrative union with Sussex which had begun with the endowment of the de Warennes.[2] The Earls of Arundel and Surrey were Commissioners of Array, Justices of the Peace, Wardens of the Counties, and heads of extraordinary commissions for Surrey and Sussex together till the death of Thomas in 1415 with no children. The Arundel inheritance then went to a cousin not descended from the de Warennes ; the de Warenne inheritance passed to Thomas's three sisters and co-heiresses. Two great-grandsons of one of them, Elizabeth, were successively created Earls of Surrey. John Mowbray, Duke of Norfolk, was the first in 1451 ; Thomas Howard, son to John Howard, Duke of Norfolk, was the second in 1483. Subsequent intermarriage in the sixteenth century brought back the reunion of some of the de Warenne lands in Surrey with the earldom of Arundel ; and the

[1] Commonly called Fitz Alan, but the real designation of the family then was de Arundel.

[2] The last two de Warenne Earls of Surrey were also Earls of Sussex since 1282.

Dukes of Norfolk, Earls of Arundel and Surrey, were again great men in both Surrey and Sussex.

The great local influence of the earldom may be said to have ceased with the death of Thomas de Arundel in 1415. During the Wars of the Roses, the de Clare inheritance being permanently broken up and the de Warenne inheritance being also divided, there was no one great baron of overwhelming importance in the county. The succession of earls after the last de Warenne till Elizabeth's reign was as follows: Richard II. of Arundel succeeded *iure matris* as Earl of Surrey and Warenne in August, 1361 ; died in 1376. Richard III., his son, was beheaded by King Richard II. in 1397. Thomas Holland, nephew to the king and to the late earl, whose sister's son he was, was made Duke of Surrey in 1397, was deprived in 1399, and beheaded in 1400. Thomas de Arundel, son of the earl beheaded in 1397, was restored in 1399, and died in 1415. John Mowbray, great-grandson of a daughter of Richard III. of Arundel, was created Earl of Surrey and Warenne in 1451. He succeeded his father as Duke of Norfolk in 1461, and died in 1476. Richard, son of King Edward IV., having married Norfolk's only child, Anne, was created Earl of Warenne (perhaps of Surrey) in 1478, and was murdered in the Tower in 1483. Thomas Howard I., son to John Howard Duke of Norfolk, and great-grandson to a daughter of Richard III. of Arundel, was created Earl of Surrey in June, 1483. He was attainted after Bosworth, where his father was killed. He was restored as Earl of Surrey in 1489. After winning Flodden Field he was created Duke of Norfolk, and resigned the earldom of Surrey in favour of his son Thomas Howard II. in 1514. Thomas II., narrowly escaping death at the hands of Henry VIII., was attainted in 1547, restored in 1553, and died in 1554. His son Henry Howard, executed in 1547, was only Earl of Surrey by courtesy. Thomas Howard III., grandson to Thomas Howard II., succeeded as Duke of Norfolk and Earl of Surrey in 1554, and was beheaded in 1572. His son succeeded only as Earl of Arundel *iure matris*, and died a prisoner in the Tower. James I. restored his son as Earl of Arundel and Surrey. Charles I. created him Earl of Norfolk ; and his grandson was restored as Duke of Norfolk by Charles II. in 1660. The titles of Duke of Norfolk and Earl of Surrey have continued ever since united in his representatives.

The influence of the two great houses in the county left its mark upon the parliamentary arrangements which were beginning to be made when the names of de Clare and de Warenne were formidable, and when Blechingley and Reigate Castles were the capitals or citadels of potentates, possible rivals to each other or to the king. Hence the representation of these two places in Parliament from Edward I.'s reign till 1832 and 1867 respectively. The county town, Guildford, was of course represented as all other county towns were. Guildford was the ancient county town so far as we know. In 1259 certainly a complaint was made to the king of the inconvenience of the justices sitting in the County Court

at Guildford instead of at Letherhead 'as had always been the custom.'[1] But in 1195 the justices in eyre had sat at Guildford, not Letherhead; and in 1202 Guildford Castle had been the county gaol, which would make us infer that justice was there administered. At all events the continual residence of John and Henry III. at Guildford, and the existence of the castle prison and fortress with its outbuildings of royal houses, would raise Guildford to an importance unapproached by any other place in Surrey except the London suburbs. It was also a corporation with an early merchant guild. Southwark was also represented on its merits. As times went Southwark was an important place, and like Guildford partly in the hands of the king as a royal manor.

Kingston was not represented under Edward I. but returned members in 1311, 1313, 1353[2] and 1373. It is rather remarkable that Kingston was not represented earlier and continuously. It was royal demesne, specially favoured by successive kings with grants of markets, tolls and so on, and clearly a place of some ancient importance. Traditionally the inhabitants used the royal favour to beg themselves off from the expense of returning members,[3] but the wonder is that such dutiful subjects were allowed to be excused. Down to Charles I.'s civil wars the men of Kingston were also king's men. But when we go beyond these places there was nothing that even the thirteenth century could have reckoned as a large centre of population in Surrey. Reigate and Blechingley returned members for de Warenne and de Clare that the leaders of influential opinion in the country might have a voice in the popular House. On the same principle de Clare was also represented by Tonbridge and the Earl of Arundel by Arundel and Midhurst. Similarly Farnham returned members in 1311 and 1460 in fact for the Bishop of Winchester. The other formerly existing Surrey parliamentary boroughs extinguished in 1832 were Gatton, a rotten borough called into existence by Henry VI. to gratify a favourite, and Haslemere, little better than a rotten borough, created by Elizabeth to strengthen royal influence in the Commons.

The mercantile interest in Surrey was on one occasion at least represented by others besides the borough members. In 1340 Edward III. called a council of merchants to sit with the Parliament, and three merchants were returned from Surrey, residents in Guildford, Epsom and Merrow respectively.[4] The name of the last, William le Chapman, is suggestive of the travelling trader, whose home at Merrow was upon the great cross road, the Pilgrims' Way.

In the Parliaments of the thirteenth and fourteenth centuries there also sat besides the earls the representatives of three baronies by writ whose titles came from Surrey. John de St. John was summoned by writ as lord St. John of Lagham, in Godstone, in 1299. Roger Hussey

[1] 'Comitatus qui semper solebat teneri apud Leddrede,' Assize Roll 873, 43 Hen. III.
[2] Prynne's *Registers*, p. iv. But no names preserved of representatives this year.
[3] The petition is not extant. Lysons mentions it as preserved at Kingston.
[4] *Parl. Writs and Returns*, sub anno 1340.

was summoned by writ as Lord Hussey of Betchworth in 1348. The baronies of St. John of Lagham and Hussey of Betchworth became extinct in 1353 and in 1361 respectively, the holder of the latter dying of the Black Death in its second great visitation. Reginald de Cobham, summoned to Parliament as Lord Cobham of Sterborough (in Lingfield) in 1342, left a son who sat in 1370 and 1372 and survived till 1403, but was never summoned after 1372.[1] He and his representatives furnish an exception to the alleged rule that a writ of summons furnished always a right to a summons in perpetuity. There were also representatives of the first baron St. John of Lagham alive after 1349 who were never summoned.

Of the spiritual lords of Surrey the Bishop of Winchester ranked alone as always a lord of Parliament. The Abbot of Chertsey, the Abbot of Waverley and the Prior of Merton all sat in de Montfort's Parliament in 1265, when the clergy were very fully represented. The Abbots of Chertsey were summoned at intervals down to the reign of Edward III., when they ceased to attend. It is probable that the Abbot of Waverley, the chief in dignity of the Cistercian abbots in England, might have kept his place if he had cared to do so; but the spirituality preferred their own convocations to Parliament, and the Cistercians had also assemblies of their own order to attend.[2] The heads of Benedictine abbeys of royal foundation usually continued to be summoned to Parliament after Edward III., but the Benedictine house of Chertsey, though a royal foundation in fact, was founded by a king of the Mercians and by an under king of Surrey, not by a king of all England. It had been refounded by Edgar, but preferred to date back to Wulfhere and Frithwald. As a county Surrey sent knights of the shire to Parliament from the time probably when county representation first began in the reign of Henry III. The earliest names extant of those returned are Roland de Acstede and William Ambesac in the Parliament at Westminster of 18 Edward I.[3]

The elections were in the County Court, which was undoubtedly held at Guildford. Who exercised the franchise is a question of very considerable uncertainty. To the County Court came originally free landholders and the reeve and four men from each township who might not be free men, and there were certainly men whose tenure included the obligation of attendance at the County Court, so that we must infer that there were others who were not bound to attend and who probably would not attend as a rule. Taking part in county government as in

[1] Two Reginalds de Cobham of Sterborough, father and son, were summoned to Parliament from 16 to 46 Edw. III. See Prynne's *Registers of Parliamentary Writs*, where however the two Reginalds are treated as one. The elder died in 1361, a year of the Black Death.

[2] The Abbot of Chertsey was summoned to the Parliaments of 49 Hen. III.; 23, 27 Edw. I.; 22, 23 Edw. III. The Abbot of Waverley was summoned to those of 49 Hen. III.; 28, 30, 32 Edw. I. See Prynne's *Registers of Parliamentary Writs*.

[3] See *Original Writs and Returns Printed by Order of the House of Commons*, 1878. Manning and Bray give wrongly Henry Hussee and William de Echingham. Their lists are incomplete and incorrect.

national government was quite as much of an obligation as a right. Indeed the burden usually outweighed the privilege.

The elections were held in the next regularly recurring County Court after the receipt of the writ, and the statute of Marlborough, 1267, had released nearly all important people from the duty of attendance at the ordinary meetings of the County Court. Of the practice of the thirteenth and early fourteenth centuries we can say little, but in 1406 the sheriffs were ordered by Parliament to make proclamation in all the market towns of their counties of the day and place of election fifteen days beforehand. The order was not always observed nor enforced, and the sheriff might in practice give notice to whom he chose or none at all. At all events in 1406 it was enacted that the election should be made by 'all that be there present, as well suitors duly summoned for the same cause as others.'[1] This might include persons attending as suitors in small actions for debt with no other qualification.

In fact people were not often keen to be represented at all. County members had to be paid four shillings a day and their expenses. The tenants-in-chief of the Crown and ecclesiastics were represented in the House of Lords and in Convocation. It was only by degrees that the smaller landed gentry who furnished the knights of the shire attained a position of sufficient independence of the Crown and great men to make their position in Parliament very valuable. In the same County Court, irregularly attended and often casually composed, took place the formal return of the names of the borough members. Persons from Southwark, Reigate, Blechingley, Kingston and Farnham would give the sheriff the names selected by their town's meeting or in fact nominated by their overlord. How easily the wrong name might be substituted, or how difficult it must have been to prevent the *plenus comitatus*, the rabble of the county, from having a voice in naming the Guildford borough members, we can easily conceive. Irregularities in returns are so common that the practice of indentures was introduced in 1406, whereby the persons electing affixed their names and seals to an indenture containing the names of the persons chosen which was returned with the writ. *Plures alii, cum multis aliis, in pleno comitatu* are expressions which are added to the actual names on the indentures, but those named and sealing are probably the real electors speaking for or assuming the consent of the rest. Nineteen persons so elected for Surrey in 1414, thirty in 1447.[2] Yet an Act of Parliament in 1430 regulated the elections owing to the disorderly crowd which attended the County Court and established the forty shilling freeholder as the county elector. It is really possible that it may have been in practice an extension of the franchise, not a restriction; that the forty shilling freeholders would really vote themselves, while the previously existing irregular crowd had been obliged to delegate their powers.

[1] 7 Hen. IV. c. 15.

[2] See Prynne's *Registers of Parliamentary Writs*, ii. 128–32 for lists of the electors sealing the indentures. In 1447 John Basket and Robert Wynteshull and twenty-eight others named on the indentures but unnamed by Prynne returned the Surrey knights of the shire.

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THE GREAT HALL, GUILDFORD CASTLE.

In 1327 the county of Surrey had chosen not to be represented. It was the first year of Edward III. Parliament was called to meet at Lincoln, and its business was chiefly to provide money for a Scotch war and to take measures against the Scots overrunning the northern counties. The sheriff of Surrey endorsed the writ to the effect that no County Court was to be held between the day on which he received the writ and the day fixed for the meeting of the Parliament and that therefore he held no election.[1] It seems conclusive evidence that elections were held at the ordinary meetings of the County Court. But in fact Lincoln was a long way off, and expenses there and back would be heavy. The Scots were still further off, and for long after this time the south of England could not find much interest in a Scotch war. In geographical proximity to the seat of Parliament Surrey was as a rule much better off than many counties. Parliaments usually met at Westminster, and though sometimes they went far afield to York, Gloucester, Leicester and once even to Carlisle the more common places besides Westminster were London and Winchester and once Windsor, all near Surrey.

The reluctance to be represented was marked in the towns. The dropping out from the list of parliamentary boroughs of Kingston and Farnham may be ascribed to this general feeling. Boroughs were assessed more highly than counties for extraordinary taxation, paying tenths instead of fifteenths, and their methods of election were as we have seen still more unsatisfactory than those of counties.

If the county of Surrey was not compelled often to send her representatives far afield, the reason that the court was in her neighbourhood was not altogether a benefit. A mediæval king lived and travelled at the expense of the lieges. Purveyance meant that supplies could be bought up compulsorily for the king's service at a rate not fixed by the sellers, and carts could be impressed for the carriage of the royal household goods when the court changed its quarters. Later under the Tudors 220 carts were required, and when the court moved within or upon the borders of the county Surrey usually had to provide from 80 to 110 of them. John and Henry III. were continually at Guildford. John, by nature and circumstances restless, never stayed very long in one place, but was at Guildford more often than at most other royal houses in England. He kept the Christmas feast of 1200 there with his newly captured second wife Isabella d'Angoulême, and he was there nineteen times in eleven different years. Henry III. made extensive additions to the castle as a royal palace, erecting no doubt the buildings which remain as ruins south-west of the keep. The keep itself was the prison for Surrey and Sussex. Henry's sons were brought up at Guildford for some time as children. These buildings were badly in want of repair in Richard II.'s

[1] 'Nullus fuit comitatus ante diem in brevi isto contentum tenendus, et ideo electio militum nec breve istud ballivis civitatum et burgorum pro brevitate temporis fieri non potuerunt. Et ideo de executione istius brevis nihil actum est ad presens' (*Returns Printed by Order of House of Commons*, 1878). The sheriff's Latin is curious but his meaning is clear, that elections were held at the regular not special meetings of the *comitatus*.

reign; but Edward IV. seems to have been in actual residence at Guildford for a short time at least in 1479, when he made a treaty with Burgundy there. The kings also lay sometimes in the religious houses of Surrey, Waverley, Merton, Bermondsey, or in the archbishops' houses at Croydon and Lambeth. Some of the itineraries of John and Edward I. are recoverable from writs and letters dated at various places, and show us how they traversed Surrey.

John in 1199 when he came from Normandy to be crowned went in haste through Surrey, for he was at Shoreham on May 25, left it on the 26th, and was in London on May 27. In 1208, leaving Southampton on March 31, he spent April 2, 3 and 4, Good Friday and the two preceding nights, at Waverley Abbey, moving on to Guildford on the 5th. The wine which his train drank at Waverley had been landed on the Sussex coast at Pagham, and so probably was not brought to Waverley by the route the king followed through Southampton but by a road through Sussex and west Surrey, the use of which can be traced at other times.

In 1211 John was at Lambeth on April 5, and at Knepp Castle in Sussex on April 6. In 1215 he was at Guildford and Knepp on the same day, January 21. John astonished his contemporaries by the rapidity of his journeys, but these movements imply passable roads. The old Roman road which we have noticed as perhaps used by the Danes in Alfred's reign—the road heading from south-east to north-west near Summersbury and Ewhurst in Surrey, with the Adur estuary and Staines as its probable extremities—must have been in good repair still. Both Guildford and Knepp were near it, if not on it.

In 1294 Edward I. was on May 14 at Betchworth in Surrey; on the 16th at Holebrook near Warnham, just over the Sussex border; on the 17th at Dadesham, also just in Sussex; and on the 19th at East Dene on his way to Chichester. We can say with certainty that he must have followed the Pilgrims' Way from Betchworth for a very few miles till near Box Hill it cut the Stone Street, which connected London and Chichester; that he went down the Stone Street, turning off from it a little way to sleep at Holebrook, then crossed it to sleep at Dadesham, then followed it again, probably to the South Downs, where he turned off beyond the forest to East Dene.

In 1305 Edward was at Stoke d'Abernon on May 29, from June 2 to June 7 at Guildford, from the 8th to the 12th at the nunnery at Witley, and went thence by way of Midhurst and Cocking to Chichester. This seems to imply the use of the road spoken of above through west Surrey. It is likely that the British trackways through the forest, which the Romans had converted into hard roads, were more practicable than they were two hundred years ago or less, for no one in the interval knew how to keep them in repair.

But the main lines of mediæval traffic through Surrey were no doubt to be found upon the Roman road which came across the north-west side of the county from Hampshire to London, and upon the

Roman road from London towards Kent by which Chaucer's Canterbury pilgrims rode, and upon the transverse road along the North Downs to which the crowd of pilgrims going to Canterbury from Winchester and Southampton gave the name of the Pilgrims' Way. We have seen how de Montfort came by this road from the west to rescue Dover, and how the Etheling Alfred was intercepted upon it at Guildford, when journeying from the Kent coast to Winchester ; how the Norman army moved upon it and upon the Stone Street, and then upon it alone, in their ravage-marked advance from Kent and Southwark towards the west. On or near this line were several of the market towns of Surrey, and the county town, Farnham, Dorking, Reigate, Blechingley, Godstone and Guildford. On it or close to it were the four chief castles, Farnham, Guildford, Reigate, Blechingley, the latter three close to where cross roads cut the Pilgrims' Way. But the traffic was mainly peaceful. Besides the pilgrimages, the equivalent to tourist traffic in that age, the wool and woolfells of much of the south-west came this way to the Kentish ports, to be shipped to the staple fixed at Calais, or at the Flemish cities and Antwerp, where it was placed for a time. The annual fairs in the towns and villages, at Shalford and on St. Catherine's Hill, between which points the mediæval road crossed the Wey,[1] were important centres of business for more than the neighbourhoods. The cloth of Guildford, the pottery of Farnham, the glass of Chiddingfold, employed at St. Stephen's, Westminster, in the fourteenth century, the fuller's earth of Nutfield and Godstone, the fire-stone for hearths of Merstham and the whole range of the Upper Greensand and the iron of the Weald would all there find their market.

More and more was the traffic of Surrey directed east and west. It is clear that the roads through the forest from the Sussex ports were less and less frequented, and in parts disused entirely. After John's loss of Normandy, Shoreham ceased to be an important port of departure for France. The streams of war and of business between the Thames valley and the coast flowed rather upon either side of Surrey. The Cinque Ports on one side and Southampton on the other covered the accessible ways from the continent to London, and the Sussex forest, with Surrey behind it, lay as a scarcely penetrable screen between. No army traversed Surrey from north to south, nor the reverse way, after 1264. It seems doubtful if any sovereign went through it from north to south after Edward I. till Elizabeth did so in one of her progresses.

The most important product of the Sussex Weald, iron, seems to have gone down to the coast, much of it by the Ouse and Rother, and to have reached London by sea, not through Surrey. From the Surrey Weald firewood and 'coals,' that is charcoal, went to Kingston and London. Perhaps iron did also, though we do not hear of it till 1553,

[1] From Farnham to the Mole the course of the Pilgrims' Way appears to have been double. The old British trackway ran along the top of the chalk downs, and crossed the Wey at Guildford. The mediæval road ran on the sand hills south of the downs, past Puttenham, Compton, Shalford, Albury and Shiere.

and some Sussex iron may have come through by the Godstone and Croydon road. But for the most part the 'backwoods' of Surrey were impenetrably sealed to any considerable commerce and to warlike operations. It throws light upon the preparations against invasion, more than once, to remember that an enemy landing upon the Sussex coast before about 1750 could not have marched upon London by the shortest line with baggage and artillery beyond the lightest.

The character of the woodland skirts of the county led to a curious chapter in its mediæval history. Besides the great forest which made the southern parts of Surrey a wilderness in the earlier Middle Ages, and which at the time of the Domesday Survey had rendered useless or impossible any strict delimitation between it and Sussex, a forest country lay upon the north-west of the county also. The whole of the west was girdled by it indeed. The Wealden Forest was originally connected with Woolmer Forest and Alice Holt Wood in Hampshire. North of the Wey valley about Farnham the barren heaths of Bagshot Sand, sandy commons studded with clumps of thorn and fir, with peat bogs in the hollows between them, extended to the slopes above the Thames valley and the mouth of the Wey, where the local names bear witness to woods existing in early days. This was a thinly inhabited country, all forest in the original sense of the word, that is wild uncultivated land. On what particular principle the boundary line between Hampshire and Berkshire and Surrey had been drawn through it does not appear. Probably the limits of the Chertsey lands at Egham and Chobham, the latter including at least part of Windlesham, and the limits of Pirbright, detached from Woking and belonging to the de Clares, served to fix part of the boundary, so as to throw into Surrey the estates of these essentially Surrey landowners. The fact that the Surrey boundary was recognized as including all these places helped to limit later an attempted extension of royal rights which forms an interesting episode in mediæval Surrey history.

The extension of the royal forests was an important object to the king. Their creation may have been due to a love of hunting; their continuance and enlargement certainly aimed at other ends. Forests embraced in their limits inhabited places and cultivated lands, and the king was master in his forests in a way in which even an early Plantagenet king was not master elsewhere. Justices of the forests, bailiffs and stewards over-rode the jurisdiction of the sheriff and the ordinary law. Local franchises, and even ecclesiastical rights, could not stand against them; and there no earl intercepted the third penny of the royal revenues. Windsor was a forest in the time of the Conqueror, and even then included land in Surrey.[1] Henry II. further proceeded to afforest his manors of Guildford, Woking, Brookwood and part of Stoke, and finally declared the whole county to be forest.[2] So at least it was subsequently affirmed with apparent truth, though the stretch of power

[1] Domesday, 32, a. 2, *Pirford*.

[2] Close Rolls, 9 Hen. III. m. 6.

was so outrageous that the modified view that he only afforested all royal demesne in Surrey may be entertained.[1] Be that as it may, Richard I. in his second year agreed to disafforest everything in the county eastward of the Wey and south of Guildford Down, in return for 200 marks of fine. This left the parishes and townships of Chobham, Bisley, Horshill, Byfleet, Pirford, Wanborough, Pirbright, Ash, Windlesham, Tongham, Worplesdon, Woking and Stoke, and Guildford Park of course, exempt from the jurisdiction of the sheriff, and subject to a bailiff, as the Surrey bailiwick of Windsor Forest. In the same district Chertsey, Egham and Thorpe, belonging to Chertsey Abbey, were free of the bailiff's jurisdiction. The concession of Richard was not apparently carried out. In 1205 Surrey had to pay 100 marks more for the confirmation of Richard's charter,[2] and in 1207–8, as noted, the county paid 500 marks, in addition perhaps to what had been paid already, for disafforesting. The great charter stipulated for the disafforesting of all forests made by Henry II. and Richard I., which should have included most of the Surrey bailiwick. But it was not till 1226 that, in return for a subsidy, Henry III. agreed that the charter of the forests should be carried out with regard to all land not in royal demesne.[3] This practically disafforested west Surrey, for all the royal demesne there had been alienated except at Guildford. A perambulation was made, which seems to have followed the county boundary, fixing that as the limit of the royal forest of Windsor. Whether the county boundary was known already and followed deliberately, or whether the line taken for other reasons, of ownership or natural features, was adopted as the county boundary, cannot be determined. For once perhaps the Crown suffered a slight injustice. The land belonging to Pirford which was in the king's forest in 1086 was not newly afforested land, yet it was excluded now from the forest. The abbey of Chertsey however allowed the king hunting rights, but not forest jurisdiction, in Egham and Thorpe. The boundaries fixed were as follows—

From Tussholt to Wulpit
„ Wulpit to Werebourn
„ Werebourn to Glorney
„ Glorney by Glambrugge to Lillford
„ Lillford to Colford
„ Colford to Bredeford
„ Bredeford to Bagsete
„ Bagsete to Bromhull
„ Bromhull to Sorbeshull
„ Sorbeshull to Harpesford and la Knappe
„ la Knappe to Loderslake and the Thames

Close Rolls, 9 Hen. III. m. 6.

[1] In the *Red Book of the Exchequer*, sub annis 1207–8, it appears that 'in Surreia finem (fecit) de D.m. (500 marks) pro deafforestatione tota Surreia' (Rolls Ed. ii. 748). Commissioners meeting before the chief justice of the forest in 8 Edw. I. found that Henry II. died seised of the whole county as forest. On the other hand, the ordinary civil government of Surrey seems to have gone on continuously under Henry II. There was always a sheriff, and there appears no sign that the whole county was administered as forest.

[2] Mag. Rot. 5 ; John Rot. 18.

[3] Charter of the Forests, 9 Hen. III.

Manwood (*Treatise and Discourse of the Laws of the Forest*, 1598, p. 266) printed another version of the latter part of this boundary produced by the county in the first year of Edward III.—

> From Bredeford along the road from Frimley to Wishmere
> By Ralph's cross to Gonerichford, formerly called Batechesford
> Through the middle of la Shete to Horton
> From Horton by la Lee towards the Watercourse
> Thence along the water called Sideway to Thornhull
> From Thornhull to Harpesford
> „ Harpesford along the water to Inggfield
> „ Inggfield to Loderlake-huch, where the counties of Surrey, Berks and Buckingham meet

The latter part of the boundary is clearly to be traced. Bredeford is the old name of the ford of the Blackwater at the place so called, Bromhull is Broomhill, Sorbeshull is Shrubshill, Bagsete is Bagshot, Wishmere is close to Bagshot Park, Horton is north-east of Bagshot Park, Harpesford was a place where Virginia Water is, Inggfield seems to be Englefield Green, Loderslake is on the Thames. Before Bredeford, the boundary is that of Surrey and Hampshire.

In 1280 however the Crown made a new attempt to extend the forest into Surrey. Commissioners were appointed to make a new perambulation, and a court was held at Lambeth before Philip de Say, chief justice of the forests, where twelve sworn men of the county declared that Henry II. died seised of the whole county as forest, that Richard I. had disafforested only such part of it as was east of the Wey and south of Guildford Down, and that no part of the county had been made forest by Henry II. The effect of this verdict was intended to be that the country west of the Wey and north of Guildford Down could not be touched by a charter annulling the afforesting of new forests, but that it was an ancient forest, excluded from the list of encroachments which the Great Charter was intended to restrain. The verdict of 1226 was of course completely reversed.

It is quite impossible now to arrive at the exact rights of the case. The assertion that Henry II. newly afforested no part of the county is not the fact, but on the other hand it would be rash to assert positively that the north-western part of the county was never counted as forest before Henry's reign. Some part of it apparently was. In 1327 the sworn men of the county certainly mixed up fiction in their condemnation of the judgment of the court of 1280, when they affirmed that the inquiry had been set on foot by Hugh Despencer without the privity of the county. A jury had been sworn, and Hugh Despencer, who was only twenty years old in 1280, was not chief justice of the forests south of Trent till 1294. It is of course possible that he may have done something to sustain the judgment of 1280 afterwards. On the evidence of these same sworn men of 1327 it is said that no perambulation was made after all in 1280. The Wey and Guildford Down seem however to have been taken as the bounds of the forest, and the extension was among those complained of under Edward I. At last in

1301, in the Parliament at Lincoln, which made the famous repudiation of papal claims to interfere in the temporal relations of the British Isles, perambulations with the purpose of doing away with new afforestations were definitely ordered. The king had struggled to keep his position by the words *Salvis jure coronæ nostræ rationibus nostris et calumpniis*, but had been obliged at last to make a full concession. Yet no perambulation of Windsor Forest was made, despite of complaints under Edward II., till in 1327, when Edward III. was king and reforms of various kinds were in the air, Parliament petitioned that forest perambulations made should be observed, and that where not made, pursuant to the promises of 1301, they should be undertaken. Letters patent were accordingly issued, and commissioners ordered to call a court at Chertsey, where a jury was impanelled and an inquiry held. Overruling the objection that Surrey was ancient forest according to the inquisition of 1280, and falsely, as we have said, attributing that to Despencer, who in 1327 had just been hanged and was unpopular, the court found that no part of Surrey was in the forest of Windsor. They admitted however that the inquisition of 1280 had been held, but said that no perambulation had been made under it. In accordance with this verdict the king's writ directed a perambulation to be made, which was done along the county boundary from the mouth of the Wey to where Berkshire, Hampshire and Surrey join. A report of the proceedings, was sent to the Court of Chancery. In the Court of Chancery the county summoned the constable of Windsor to show cause why the perambulation should not be confirmed, and after some delay a charter was granted in the sense desired by the county, excluding all Surrey from the forest jurisdiction. Yet north-west Surrey, from beyond the Wey and the Hog's Back, remained a purlieu of Windsor Forest. The king's ranger had special duties there of driving back beasts of chase which escaped from the forest, and the king had rights over deer so straying. In the Loseley correspondence constant complaints and disputes about strayed deer are found as late as the reigns of Elizabeth and James I. In Queen Anne's reign, when Woolmer Forest as well as Windsor was full of deer, the most lordly beast of chase must have been fairly common in the once forest lands of Surrey. Certainly well within 200 years ago the poaching of wild deer and black game was possible within thirty miles of London. The blackcock may linger there still.

There must, even in the thirteenth and fourteenth centuries, have been a strong contrast between the outlying forests and the suburban parts of Surrey. In the *Chertsey Ledger* (fol. 173*b*) it appears that prisoners being removed from the abbot's prison at Chertsey for trial at Guildford were liable to be rescued by their friends when passing through the wild lands of the forest.

In the north of the county Southwark, Lambeth and Bermondsey shared in the life of London, and were made more prosperous by the great suburban houses of several ecclesiastical dignitaries, the archbishop,

the Bishops of Winchester and Rochester, the Abbot of Battle and the Prior of Lewes. Kingston was a more or less important market town, owing to the river and the bridge. Sheen was a royal palace. Guildford was the seat of a cloth manufactory, and perhaps sent heavy agricultural goods and timber to London by the river, even before its canalisation. Four at least of the religious houses were places of importance, and the Cistercians of Waverley, the Benedictines of Chertsey, the Austin canons of Merton and the Cluniacs of Bermondsey all formed centres of learning and of industry. The first are named among those who supplied the Florentines with wool in 1315.

The feudal institutions of the county, the system in which de Warenne and de Clare had been the great leaders under or in despite of the king, offer a few curious features, the discussion of which will fall more naturally under the description of the places for the tenure of which the services were due. The knights' fees, whence knight service, the *servitium debitum*, was due, seem to have been not more than about eighty in the county, or perhaps less,[1] and something near half of this service was owed by the de Clares for their manors in the county, belonging to the Honours of Gloucester and of Clare. The Earl de Warenne owed the services of perhaps sixty knights from his manors all over England, but he was far inferior in his following in Surrey to the other great baronial house. Centuries later, when the Armada was expected, the county was only expected to furnish ninety-six 'demi-lances,' who may be taken as equivalent to mounted men-at-arms, not much more than the twelfth and thirteenth century muster. But besides the military tenures there were in Surrey many curious tenures by serjeanty, or service of one kind or another to the king and his household, which owe their origin to the presence or neighbourhood of the court at Guildford and at Windsor, and specially to the royal needs in sport in Windsor Forest and its bailiwick in west Surrey.

The military levy of the county distinct from the feudal levy, under the general obligation to bear arms expressed by the statute of Winchester, amounted in practice to only a few hundreds. In 1322, when the Scots were in Yorkshire and the whole realm of Edward II. seemed to be crumbling away in ruin, the levy of Surrey and Sussex, apart from the city of Chichester, was only 500 men. In 1339, when Edward III. was beginning his French wars, he raised from Surrey 20 men-at-arms, 80 armed foot and 80 archers. But these 180 men were really intended to be professional soldiers for a continued contest. The modern county, raising men in the same proportion, should be able to send 9,000 regular soldiers abroad on foreign service, for the population was then somewhere about 25,000 to the present 1,500,000.

[1] The two lists in *Testa de Nevill*, 53–60, of the knights' fees in Surrey amount to $63\frac{1}{8}$ and $65\frac{1}{8}$ knights' services respectively. No knight service appears for Blechingley and the surrounding manors of de Clare, nor for Dorking and some other manors of de Warenne. Yet some was probably owing, for the *Red Book* mentions them as *quorum servitia ignorantur*. Blechingley is also recorded as 'unknown' in *Testa de Nevill*. The *Red Book* return referred to and that of the *Testa de Nevill* were probably drawn from one original, as Mr. Round has shown in his *Commune of London*, etc.

In 1381, according to the poll tax returns, there were 11,778 persons in rural Surrey above fifteen years old, and 844 lay persons above that age in Southwark.[1] These may be at least doubled for the whole population. The Black Death had come three times since 1339, and though there was time for some recovery since the last visitation in 1369, there was not a chance of much increase since the earlier date. The pestilence had no doubt raged in Surrey as elsewhere. In 1349, during the first visitation, the Prior of Reigate died, and it is said the prior and all the brethren of the hospital at Sandon. In the second, in 1361–2, a baron, the Abbot of Chertsey and the Prior of Merton died. In the third, 1369, the Prior of Merton. Only one of these deaths, apart from the great mortality at Sandon, is recorded as owing to the pestilence, but the coincidences of date suggest other deaths from this cause. In the year of the first visitation the benefices in Surrey changed occupants about twice as often as usual. At all times changes were frequent, and every change did not mean a death by any means. The mediæval chronicler habitually exaggerates numbers, whether of soldiers, population, victims of a plague or sums of money. The certain exaggeration of the number of knights' fees in England may perhaps be distantly imitated by the statement that half of the population died of the Black Death. We can correct one statement more easily than we can check the other. But the phenomena of mediæval social life and the accidents of the time, the military system, the dominance of great landowners, the splendour of ecclesiastical establishments, the busy life of petty trading towns, under the protection of king, lord or abbot, the absolute insignificance of the mass of the suffering population, the difficulties of travel, the miseries of civil war and the ravages of disease all find their expression in the records of mediæval Surrey.

In 1381, when social discontent, commercial depression, unsuccessful war, bad government and religious agitation all combined to produce insurrection, Surrey, being close to Kent, one of the *foci* of the rebellion, and lying between Kent and London, was sure to be involved.

Early in June Essex, Kent, Surrey and Sussex were up in arms, the labourers compelling, we are told, others to join with them, slaying men and burning houses. The country parts of Surrey were as backward as any part of England. Though we need not believe Aubrey when he says that the very worst outrage of feudal oppression existed in the customs of the manor of Dorking,[2] yet villenage was not extinct in Surrey in the middle of the sixteenth century. In Kent it was practically extinct before 1381, and it is in accord with analogy to find most violent social uprisings in countries near a better state of things.

At Chertsey there was a riot among the tenants of the abbey, who

[1] Q. R. Lay Subsidies, $\frac{184}{31}$ and $\frac{184}{32}$.

[2] See on Dorking Aubrey's *Perambulations*. The alleged right is probably mythical in England.

burnt the Court Rolls,[1] and the townsmen of Guildford complained in 1383 that their charters were lost in the disturbances of 1381. The county town was probably in the hands of the mob, who burnt the charters after their common practice. The privileges of the *probi homines* of the corporation were an object of indifference to the villeins, and no doubt of dislike to the unprivileged workmen in the town. We do not hear that they mastered the castle, where many of them expiated their offence later in the year. The main body of insurgents entered Southwark on June 12 and broke open the Marshalsea and King's Bench prisons, plundered the houses of obnoxious persons, and incited doubtless by the Lollard and Franciscan preachers who were with them, demolished the houses of ill-fame which the bishop of Winchester leased to Walworth the Lord Mayor, who sub-let them to 'the frows of Flanders.' The Essex men, on the same day, sacked the palace of the archbishop at Lambeth and burnt the Chancery Records. There must therefore have already been communication by boat with the Essex, Middlesex and Hertfordshire men who were in London. The bridge was still being held by the authorities with the drawbridge up. On June 13 the Surrey men 'cried to the warders of the bridge to let it down, whereby they might pass, or else they would destroy them all.'[2] These Surrey men were doubtless the people of the Surrey side of the Thames, appealing to their London neighbours. So the mob passed over, and Sir William Walworth avenged the cause of order and his own private injuries together upon Wat the Tiler.

But with the dispersal of the mob from London, undirected, puzzled perhaps and terrified at their own success, the state of confusion by no means ceased in the southern counties. The ruling classes drew armies together, and put down the Essex villeins after severe fighting, and marched through the counties south of the Thames with sword and halter. An extraordinary commission was appointed to deal with the offenders in Surrey and Sussex. At its head was the Earl of Arundel and Surrey, with William de Percy the sheriff, and five leading gentlemen. Guildford Castle, the common gaol of the two counties, was full of prisoners, and the earl was directed to bestow the rest in his castles of Arundel and Lewes. The number at Guildford was too great to be kept securely, and one had escaped. Violent suppression was being answered by new threatenings of insurrection. In December, 1381, the Patent Rolls, whence we gather these particulars, show that commissioners were appointed to preserve the peace, separate bodies for Surrey and Sussex with the earl at the head of each. They were commanded to arrest persons meeting in unlawful assemblies or who incited to insurrection, to suppress assemblies and to put down rebels by armed force. The words of the commission reveal to us the villeins and others—they were not by any means only *villani* in the technical sense who were involved in the risings

[1] *Chertsey Ledger Book*, fol. 173*b*. Not all however, for a Court Roll of Thorpe is said by Manning and Bray to be in existence of an older date than 1381.

[2] Stowe.

of these years—drawing together in the woods and in recesses of the Surrey hills, to listen to the desperate counsels of the wandering preachers who conducted the ramifications of discontent throughout England. Not only was the trouble not over with June ; it had begun before the actual rising. John Mylot of Mitcham received a pardon for treasons and felonies committed from May 1 to November 1, 1381. In March, 1382, meetings of the discontented were still being held, and a new commission was issued to suppress rebels and to lead the armed force of the shire against them, directed to most of the same men as before with the additions of the Bishop of Winchester and William Weston the new sheriff of Surrey. Again in December of the same year a similar commission was issued. Surrey in these years was much in the same state as Wexford and Wicklow in 1799—in a more dangerous state, and that is saying much, than Surrey was in 1830.

Later in the reign of Richard II. the Queen Anne of Bohemia died in Surrey, at Sheen. Edward III. also had died there. But on the death of Queen Anne, Richard, not entirely sane in his grief, pulled down the royal house there. Henry V. rebuilt it, and founded at the same place the Carthusian house of Sheen, the last great royal monastic foundation of England. It was endowed with the estates of suppressed alien priories. In the time of his son history seems to repeat itself to the careless reader or to the diligent reader of the play of Henry VI. part ii. A popular insurrection from Kent, Sussex and Surrey invaded Southwark again in 1450, as in 1381, and passed the bridge into London. Jack Cade was perhaps a Surrey man by marriage and residence. Passing as Aylmer a physician, he had married the daughter of a gentleman at 'Taundede,' which is more like Tandridge than any Kentish name, and as his land was confiscated on his attainder, she was perhaps an heiress. But Cade's insurrection was a political movement, not social, and was openly supported by landed gentry and corporate towns. A mixed multitude no doubt gathered round the rebels. A contemporary says : 'They kept no order among them, for as good was Jack Robin as John-a-Noke, for they were all as high as pigs' feet.' They took possession of Southwark, and Cade fixed his headquarters at the White Hart. It is written in the *Paston Letters*[1] how Sir John Fastolfe the old soldier, who lived in Southwark, meditated armed opposition to them, but was persuaded to send his servant Payn to them to try to induce them to disperse, and how Payn was nearly murdered, how Fastolfe's house was plundered, and how he was nevertheless accused of complicity with the rebels. Cade was at first allowed free passage over the bridge. Afterwards the citizens, supported by soldiers from the Tower, held it against him, for he had neglected to secure it, and as usual it appeared that London could not be forced from the Surrey side. Then Cade broke open the Marshalsea, King's Bench and Clink prisons and plundered Southwark. The mass of his followers dispersed on promise of pardon, while he with the more desperate withdrew to Rochester. The counties

[1] *Paston Letters*, No. 99, Mr. Gairdner's edition.

which had supported him, Surrey included, were mainly Yorkist in the coming Wars of the Roses. The Arundel interest was Yorkist. The de Clare lands had long been broken up, and the part of them which had fallen to the Staffords, Dukes of Buckingham, was the only important Lancastrian strength in Surrey. There was no fighting of any consequence south of the Thames in those wars till 1471. In 1452 the Duke of York, coming from the west and being refused entry into London, had crossed by the bridge at Kingston and marched through Surrey to Blackheath. In 1460 the Earls of Salisbury, Warwick and March—the last was the future Edward IV.—came the other way through Surrey on their road from Calais, to London, which they entered without fighting. In 1470, when Warwick and Clarence declared for King Henry, the men of Kent rose 'consueta necquicia' apparently in this same cause, and plundered Southwark but shortly withdrew.[1] In 1471 however, when Edward IV. was away winning Tewkesbury, the Bastard of Falconbridge had come from Calais with supporters of the Warwick-Lancaster alliance, had landed in Kent, and came by land to the foot of London Bridge, while his ships came up the Thames so far as the batteries of the Tower allowed. Falconbridge would have had a party in London for him if he had not alienated the citizens by assaulting Aldgate with a force from his ships and the bridge also from the south, burning some houses and firing on the city. His ships lay at Redcliff, Ratcliffe we now call it, out of reach of the Tower guns. Had they been able to face the batteries, he might have succeeded and got the captive Henry VI. into his hands. He was repulsed, but the attack seems to have been the most serious made upon the city since Cnut's siege, and was singular in being delivered from both sides of the river. Falconbridge then marched all his forces to Kingston with the intention of meeting Edward on his return from the west. But he allowed himself to be overpersuaded into retreating again to Blackheath, where his followers dispersed. The news of the battle of Tewkesbury had no doubt become generally known. The impregnable position of London to attacks from Surrey evidently depended upon the narrow pass of the fortified bridge, supported to some extent by the Tower batteries on one side. It defied mediæval assailants, as Orleans defied Salisbury and Suffolk from across the Loire. It was perhaps the jealousy of London, always striving to acquire rule over Southwark, which prevented the Surrey side from being walled and erected into a separate city in the Middle Ages. The various suburbs spread along the Thames from Bermondsey to Lambeth made up a more populous and important place than many corporate towns. But a fortified Southwark would not have made London at all more secure.

The reign of Henry VI. added a borough, a rotten borough, to Surrey. In 1449 Henry granted to John Tymperley certain rights of free warren and so on in his manor of Gatton, and in 1450 called up two

[1] This rising is recorded in the *Brief Latin Chronicle*, edited by Mr. Gairdner for the Camden Society, 1880, and is briefly mentioned by Polydore Vergil.

burgesses thence to Parliament. There was no population to speak of. In 1547 Sir Roger Copley described himself as 'burgess and oonly inhabitant of Gatton,' and had no difficulty in returning two burgesses 'freely elected and chosen.' The manor had been in the hands of the Crown between the time of John Tymperley and the Copleys, who got it in 1540, whence perhaps the right of returning members had been continued. The Tudors liked to have members in their interest in the Lower House. In the reign of Edward IV. the king was once more residing for a time at Guildford. He concluded there, August 16, 1479, a treaty with Maximilian and Mary of Burgundy for the marriage of his daughter Anne to their son Philip, as a further tie in their alliance against the French.[1] Anne was four years, Philip fourteen months old. The former subsequently married Thomas Howard, who became Duke of Norfolk and Earl of Surrey.

Under Richard III. Surrey was the scene of an abortive insurrection. When the murder of his nephews had driven his former ally Buckingham to conspire with the Lancastrians against Richard, a general insurrection was planned for October 18, 1483, in conjunction with an invasion by the Earl of Richmond from Brittany. The rebellion broke out prematurely in Kent before October 10,[2] giving Richard warning. But on the appointed date the Surrey insurgents met at Guildford. The rapid march of the king from the midlands westward and the collapse of Buckingham's own force beyond the flooded Severn, his capture and execution, led to the breakdown of the attempt everywhere. Richard returned from the south-west through the disturbed districts of the south, being at Winchester on November 26 and reaching London on the 28th. The movement in Surrey had been probably under the direction of his brother-in-law Sir Thomas St. Leger, the husband of the widowed Anne Duchess of Exeter, Richard's sister. But St. Leger, who held property at Field Place, Compton, was not personally at its head. He was taken in the west apparently and beheaded at Exeter. Sir George Browne of Betchworth in Surrey had joined the Kentish rising at Maidstone and was executed. Nicholas Gaynsforde of Carshalton was attainted for his share in the rising but was pardoned.

A far more dangerous agent in the insurrection was left at large. Reginald Bray not yet a knight was not yet a Surrey man, but he received lands in Surrey in Henry VII.'s reign. He had been acting in these matters as negotiator between conspirators in England and the Earl of Richmond abroad. He became the powerful and able minister of the new Government. Part of his reward was the Surrey manor of Shiere-Vachery. The question of previous ownership has difficulties about it which are discussed elsewhere, but it had certainly been granted by Edward IV. to John Lord Audley who was a Yorkist.

Audley was buried at Shiere as late as 1491, but his successor did not hold the manor. His son James Lord Audley was a ruined man, and when the Cornishmen rose in rebellion in 1497 against the king's

[1] Rymer, xii. 110. [2] *Paston Letters*, iii. 876.

ministers Bray and Morton, it may have been a personal grudge against Bray which partly induced Lord Audley to throw in his lot with them. The insurgents marched through Salisbury, Winchester and Farnham to Guildford. The king's forces under Lord Daubeny, another of the fugitives of 1483, were mustered in St. George's Fields, Southwark. Probably they could not be gathered in time to crush the rising in its birth, and Henry's advisers may have thought that the Cornishmen could be dealt with more decisively away from home. If so it was a dangerous experiment; the Yorkist party was far from dead, and a possible victory for the Cornishmen in the neighbourhood of London would have been, like their actual defeat, more decisive than one far away. On June 14 there was a skirmish near Guildford between them and Daubeny's outposts, who then fell back on his main body. On June 16 he had evidently lost touch of them, for he made a reconnaissance towards Kingston, on the direct Guildford road, supposing that they were coming straight towards him or seeking to cross the river. They were marching however on the invulnerable side of London. The fame of the rebellious character of Kent attracted them with the idea that they were sure to find sympathizers there. They had marched thither following no doubt the Pilgrims' Way, which must have been familiar to some among them already as pilgrims, or as carriers of tin for shipment from the Kentish ports to the staple at Calais.[1] Had they marched anywhere further north Daubeny could hardly have lost sight of them. But Lord Abergavenny and others kept Kent quiet, and the Cornishmen returned towards London and encamped upon Blackheath. There the king's artillery overcame their archery and they were completely defeated. Of the competing dates for the battle, June 17 and 22, the former has rather better authority behind it, but is incompatible with Daubeny's reconnaissance south-westward on the 16th, when, if the battle was going to be the next day, the rebels must have been encamped on Blackheath and would not be looked for towards Kingston. De Montfort, with a probably mounted force, took a day to march from Guildford to Reigate. If the Cornishmen were skirmishing near Guildford on the 14th, they would not be at Reigate before the evening of the 15th. They would be on the borders of Surrey and Kent on the 16th. A few days would be necessary to try the temper of the Kentishmen, and they were long enough at Blackheath for their position to be surveyed and surrounded before the battle.[2]

With the accession of the Tudors Surrey became again a county of royal residence. Henry VII. rebuilt the palace of Sheen, after a fire in 1501, and again repaired it after a second fire in 1506, and usually lived there. He named it Richmond, after the earldom which he held before

[1] It is said that pieces of tin have been found on the Pilgrims' Way.

[2] The Venetian correspondence, *Calendar S. P.* Venetian series, vol. i. §743, mentions advices from London of June 13, that 20,000 insurgents were then 20 miles from London. The subordinate leaders were executed on the 27th, Lord Audley on the 28th—tardy justice for those days if the battle was on the 17th. The Venetian correspondent calls Audley M. de Deber. Is it possible that he held not Shiere-Vachery but Shiere-Eboracum?

his accession. Henry VIII. resided there less constantly. Elizabeth was there continually and died there. Henry VIII. had begun to build another Surrey palace Nonsuch, in the land which he acquired in 1539. It stood as a flagrant instance of the high-handed selfishness of the king. In 1525 he had acquired Hampton Court by gift from Wolsey, and by degrees in later years he added large estates to it, by purchase, exchange or confiscation, the two former being generally more decent forms of the latter process. He got into his hands the Surrey manors of Cuddington, Esher, Malden, Weybridge, Byfleet, Imber Court, Weston, Moulsey Prior, West Moulsey, Walton Leigh and Oatlands. Cuddington, where Nonsuch stood, was taken in exchange for the rectory with tithes and glebe of Little Melton in Norfolk, granted to a layman. He erected them all with some Middlesex manors into the Honour of Hampton Court by Act of Parliament, 31 Hen. VIII. 7, constituting it as a royal forest. At Cuddington he pulled down the manor house, all other houses and the church, and enclosed two parks of 1,600 acres. His government several times by Act of Parliament had expressed itself in vigorous terms of rebuke against the misdeeds of the makers of enclosures, who evicted husbandmen and poor persons and caused the decay of towns, that is of farmsteads.

The palace at Nonsuch was unfinished at the death of Henry. The Earl of Arundel bought it from Queen Mary and his son-in-law Lord Lumley sold it to Elizabeth in 1591. Oatlands was also a royal residence at this time. Henry had acquired that too by not very reputable means. The owner was John Rede, a minor. The king's minister, Cromwell, was appointed his guardian, and as such, with the formal consent of his ward, conveyed Oatlands to the king in exchange for the suppressed priory of Tandridge. The Redes were only newcomers themselves at Oatlands; the de Codingtons, who had to exchange the site of Nonsuch, were a family established there for some 300 years. Esher, surrendered by Gardiner, Bishop of Winchester, had belonged to his see since the days of Peter des Roches. The presence and the removals of the court between these various palaces pressed grievously upon Surrey. When the court left Richmond the county had to provide 80 carriages, when it left Nonsuch 110, when it left Oatlands 100. The counties across the Thames supplied the rest. Mr. Bray, quoting from a manuscript belonging to the cathedral of Canterbury, gives a remonstrance from the county against the strict enforcement in its case of the 'Act for the increase of Horses,'[1] because being one of the least and most barren of English counties 'it is most charged of anie by reason that her Majesty (Elizabeth) lieth in or about the shire continuallie, and thereby (it) is chardged with contynualle removes and caridge of coles, wood and other provision to the Court; and likewis with contynuall caridge for the Admiraltie and the Master of the Ordynance; also by my Lord Treasurer for the reparacions of her Majesty's houss.' It was also heavily assessed in subsidies, for it lay so near the court 'that both

[1] 27 Hen. VII. 6.

gentlemen's livings and others are verie well knowen, so as if any defaulte should be it is streight waie subject to controlment.' Clearly, timber and iron guns from the Weald were brought through Surrey for the Admiralty and Master of the Ordnance, and the inhabitants were uncomfortably close to the eye of the Exchequer.

But the grievance of royal purveyance was a legitimate cause of complaint, and the royal example of enclosure of parks for pleasure was likely to be readily followed in a county so near the usual neighbourhood of the court.

The Act for the increase of horses compelled private owners of parks of more than a mile in circumference to keep brood mares in them. There were in Surrey, under Elizabeth, the following parks of this size belonging to the Crown and to private owners: Oatlands, Guildford, Woking, Byfleet, Witley, Bagshot, Mortlake, Esher. All these belonged to the Crown. There were two at Nonsuch belonging to the Crown under Henry VIII., and again at the end of Elizabeth's reign. Two at Farnham belonging to the Bishop of Winchester. Others, belonging to private owners, were at Henley, two at Pirford, one at Betchworth, Hartswood-in-Buckland, Reigate, Blechingley, Sterborough, Beddington, Sutton, Clandon. There were two small parks at Richmond, united and enlarged by Charles I. Loseley, Hascombe, Vachery, Baynards, Burstow, Crowhurst, Hackstal and South Park (north and south of Godstone respectively), Chobham, Stoke d'Abernon, Wimbledon and others also existed.[1] Some were made, some enlarged about this time. Over the whole of the old bailiwick of Windsor Forest the Crown rights in deer were rigorously enforced, as the Loseley papers abundantly testify. Lord Montague the bailiff is in constant correspondence with the sheriffs and deputy lieutenants concerning deer stealing, taking of hawks' nests and other offences there. It is noticeable that not one of the parks named above is on the naturally waste ground of Surrey, about Leith Hill, Holmbury, Blackheath or Hindhead. They are thick on the Bagshot Sand wastes, but otherwise they are nearly all upon what should have been the better agricultural land.

The enclosure of these parks and the annoyance of the deer in the Surrey purlieu of Windsor Forest no doubt caused a feeling of irritation among the husbandmen. A letter is preserved from Lord Montague[2] of Elizabeth's reign touching certain disorders in the forest, and certain strange demands for the restitution of the forest by the Crown. The old dispute of the thirteenth century was not dead, and the Crown was

[1] Speed's map, temp. James I., shows 36.

[2] Loseley MSS. July 29, 1565, x. 26. This very large collection of papers, relating mostly to the sixteenth and early seventeenth centuries, is preserved at Loseley near Guildford. The bulk of it consists of the official and private correspondence of three generations of the More family, Sir Christopher, Sir William and Sir George, ob. 1549, 1600 and 1632 respectively, and of Sir Thomas Cawarden, ob. 1559. It has never been exhaustively edited, and the catalogue done for the Historical MSS. Commission is imperfect and in places erroneous. A certain number of the letters, etc., are collected into volumes. These are referred to below in Roman figures for the volumes, Arabic figures for the number of the document in the volume. A great many papers however are lying loose, and can only be referred to by dates.

treating the bailiwick as forest, the county complaining that it was treated even as a purlieu. The general sixteenth century grievance of enclosures, other than parks, no doubt affected Surrey. Materials do not seem to exist in our county to help us to decide the vexed question of what the unpopular enclosures were. They were partly without any doubt the enclosure of waste, with the eviction of squatters and with the curtailing of the rights of commoners. Besides this, they were either the conversion of private estates from arable into pasture, or the enclosing of the common arable fields for private use. It is certain that very considerable common arable fields existed in a great part of Surrey in the eighteenth century, and were enclosed by Acts of Parliament at known dates since then, and that over another considerable part of the country, the Weald, there are no traces of common arable fields nor of any enclosures of such.[1] But there were common woods in the Weald of sufficient extent to become the care of the law. The Act of 35 Henry VIII. 17, which forbade the cutting of wood of a certain size for conversion into charcoal, exempted the woods of private owners in the Weald of Kent, Sussex and Surrey, but applied to the common woods. These common woods were no doubt encroached upon by private owners. They were a valuable property. The encroachment has now triumphed everywhere beyond the chance of successful reclamation. We seem to catch a glimpse of popular resistance when in Elizabeth's reign Lord Montague writes to Mr. More[2] begging him to redress certain disorders which have arisen from certain women 'set a-worke' by their husbands to resist the clerk of the works, who superintended Lord Montague's iron works, in the use of 'his owne wodes.' The clerk has been 'disorderly and daungerously abusyd.' This was either at Pophole beyond Haslemere, near the Sussex and Hampshire boundaries of Surrey, or in Chiddingbold parish, where Lord Montague had iron works at Imbhams. He also claimed an iron mine at Hambledon. Perhaps the woods in question were Hambledon Hurst. The women's husbands of course considered that they were not my lord's 'owne wodes.' The same nobleman's interests were looked after in another case, when the Earl of Lincoln wrote to 'Master Moore'[3] begging him to use his interest with the magistrates to stop a private person from enclosing the waste at East Horsley, as it would injure the writer, 'lord Mountygewe and divers tenants.' The last were lucky in having the two noblemen on their side.

At any rate the grievances of the poor against the upper classes, in whatever way they were caused, were felt in Surrey enough to make the county share in the general unrest which broke out into insurrection in several English counties under Edward VI. in 1549. The Earl of Arundel wrote from Guildford on June 29 to Sir William Petre, another

[1] The great region of common arable fields recently existing is along the northern slope of the chalk hills from Croydon to Guildford. They also existed in the Thames valley and at a few intermediate places. There are few on record south of the chalk, and none apparently on the Wealden clay.

[2] Loseley MSS. February 20, 1570, x. 28.

[3] Ibid. January 5, 1572, viii. 67.

member of the Council, that the county was ill-affected, and that though there was no open outbreak it remained 'in a quavering quiet.'[1] The people were specially incensed against Sir William Goring who was sheriff the next year. On June 30 Sir Christopher More of Loseley was ordered by the Council to assemble and equip as many men as possible, both horse and foot, his friends, favourers, servants, tenants and others, and to hold them ready for immediate service.[2] It is significant that the county levies are not called out, as Henry VIII. as recently as 1545 had called them out for the French war. The people could no more be trusted by the Government than they were in 1381. On July 1 noblemen and gentlemen only, from all parts, were ordered to repair to the protection of the king at Windsor.[3] At the same time it was proposed to destroy Staines Bridge to hinder a junction of the disaffected north and south of the Thames. Kingston was probably secured by troops. Chertsey Bridge was out of repair rather later, perhaps broken down now. The inhabitants of Staines protested successfully and the panic passed away. But Surrey men were among those hanged later in the year. As Guildford Castle had proved insufficient to hold all the prisoners in 1381, so now it was complained of as insecure. In the last year of Henry VII. the care of the prison and prisoners had been farmed out to a private person, who took 40 shillings a year and the fees to look after them.[4] If a similar arrangement continued, the keepers might well be unprepared for such an emergency. It had ceased to be the county gaol by Elizabeth's reign. Sir Christopher More, the right hand man of Henry VIII.'s government in the county, died immediately after this trouble, and his son, William More, became a justice, and reigned in his stead as chief administrator of the county in practice, till the end of the reign of Elizabeth.

At this time the title of lord lieutenant first appears as that of the military commander of a county. The office came into existence under Henry VIII., when his administration in Church and State met with local resistance which needed new machinery of local repression. The Act 3, 4 Edward VI. 5 turned it from an extraordinary and temporary appointment into a regular office, transferring to the lord lieutenant the former duties of the sheriff as summoner and commander of the local levies of his county, for suppressing domestic disorder or guarding against foreign invasion. In 1536 Sir Anthony Browne, father to the first Viscount Montague, commanded, and in the first instance paid for, the Surrey levies when called out for thirty-two days' training.[5] Not being sheriff, he was presumably lieutenant. In 1549, from his presence at Guildford and from his obvious responsibility for the peace of the county, as shown in the letter quoted above, the Earl of Arundel was apparently lord lieutenant. He seems to have been appointed by the regency on August 17, 1547.[6]

[1] *State Papers, Dom.* Edw. VI. 1549.
[2] Loseley MSS. June 30, 1549, vi. 3.
[3] *State Papers, Dom.* Edw. VI. 1549.
[4] *Surrey Arch. Trans.* 1900.
[5] Loseley MSS. December 10, 28 Hen. VIII. vii. 19*a*.
[6] *Acts of Privy Council*, n. s. vol. ii. date cited.

The Marquis of Northampton, William Parr, was lieutenant in 1551–2 [1] and in 1553.[2]

At the beginning of Queen Mary's reign, during Wyatt's insurrection, Lord William Howard was exercising the functions of lord lieutenant in Surrey and Sussex, in command of the local forces, but under a special commission and not by that title. In 1557, on May 3 and 4, Lord Montague wrote to Mr. More of Loseley, and sent a warrant, addressed to him and to others, for the arraying of soldiers within his lordship's 'rules and offices.' He was exercising the functions of a lord lieutenant though no record of his appointment seems to be known.[3]

The Earl of Arundel was lord lieutenant in the last year of Queen Mary, from March, 1558,[4] to the queen's death in November. He was reappointed by Elizabeth from November, 1558, to April, 1559. Lord Howard of Effingham, Lord William Howard as he had been, was appointed from May 1, 1559, till his death in January, 1573. His son Charles, subsequently Earl of Nottingham, succeeded him immediately in 1573. He was reappointed in January, 1585, but probably had been continually in office from year to year. His latter appointment was for Surrey, Sussex and the city of Chichester.

The history of every county under the Tudors is largely concerned with the progress of ecclesiastical changes and with the disturbances arising from them. The dissolution of the religious houses affected the county seriously, as it affected the rest of England, including as it ultimately did the suppression of charitable as well as of religious foundations and also that of certain chapels. The social effects of the substitution of lay owners, anxious to make the most of their newly acquired property before some counter revolution should deprive them of it again, in the place of ecclesiastical corporations, probably slow to move and averse to new adventures in farming, were likely enough more provocative of immediate discontent than really injurious in the long run to the prosperity of the tenants.

The leading men who administered the affairs of the county naturally had their share of the spoils. Sir Anthony Browne, father to the first Lord Montague, received the sites of Newark Priory and of St. Mary Overie, where his son built Montague House, and some of the Chertsey estates. William Fitz William, Earl of Southampton, got Waverley, and left it also to Sir Anthony, who was his half-brother. Lord William Howard had the site of Reigate Priory and some of the Chertsey lands. Sir Thomas Cawarden had the college at Lingfield, Sir Christopher More got half the manor of Westbury and the advowson of Compton, which had belonged to a monastery in Sussex. The successive recipients of Sheen, the Dukes of Somerset and of Suffolk, being both attainted, the monastery came back to the Crown. Hence its

[1] *Warrant Book.* [2] Loseley MSS. July 11, 1553, i. 3. [3] Ibid. May 3–4, 1557, x. 1.
[4] He wrote to the Surrey justices announcing his appointment on March 25, 1558. See Loseley MSS. date cited, xii. 19.

resuscitation by Mary. Bermondsey went to Sir Robert Southwell, Master of the Rolls. For good or for evil a great effect was wrought upon the life of the county by these confiscations or forced surrenders. An aggregate income of over £3,800 for the six larger houses alone, or something like the income of a duke, was withdrawn from uses which were partly at least religious, charitable and educational, and appropriated by the Crown or put into the hands of ordinary lay proprietors. The dissolution of religious guilds touched the poor still more nearly, and, with the confiscations of chantries and chapels, in some cases affected the parochial organization. Okewood Chapel in Wotton parish was in practice a parish church, and on the petition of the neighbourhood was preserved as such on a sorely diminished income. Other chapels, like St. Catherine's at Artington, Hallibourne and Watenden near Sutton, Stamford Chapel near Epsom, Brookwood, a chapel near Chobham, and others, disappeared altogether or went to ruin. Cuddington Church, as we have seen, was demolished. The dissolution of the religious houses had affected parishes too. Capel had belonged to Reigate Priory, and the dissolution left it at the caprice of a lay impropriator of the tithes to put in the cheapest priest he could get to perform the services. St. Martha's-on-the-Hill, the chapel that is in reality *Sancti Martyris*, St. Thomas of Canterbury, had been served by canons of Newark, and was left to decay. One Southwark parish was suppressed when St. Mary Overie fell, and that church was made a parish church for St. Mary Magdalen's and St. Margaret's combined. The Bishop of Winchester throughout these changes was Stephen Gardiner, ruling from 1531 to 1551, when he was deprived. Gardiner the statesman, as opposed to Gardiner the ecclesiastic, was a supporter of the royal supremacy and of the party of Catholic reform. Whether he approved in his heart of the dissolution as it was carried out is of course very doubtful. But he could not preserve even his episcopal estates from the greed of the king, and probably thought it safer to concur in what he could not prevent. But Surrey under Henry VIII. was not the scene of any violent resistance to ecclesiastical changes.[1] It furnished of course some victims to Henry's policy. One gentleman of Surrey, Sir Nicholas Carew of Beddington, was involved in the ruin which overtook the relatives of Cardinal Pole, the relics of the Yorkist party, in 1538. They were pretty certainly plotting, or at least looking out for a revolution to stay the violent courses of the king, and paid the penalty of losers in the game. The principal charge however against Carew was that he had talked with the Marquis of Exeter about a change in the times. He suffered in 1539. No one was too great or too small for Henry's resentment to touch him. John Griffiths, vicar of Wandsworth, his servant, and a Franciscan named Waire were hanged in 1539 for denying the royal supremacy. In 1541 Sir David Genson, a knight hospitaller, was hanged at St. Thomas's Waterings, on the Kent road, near the boundaries of Newington and

[1] The great agent of change, Thomas Cromwell, is said to have been a Surrey man by birth, son of a Putney blacksmith.

Camberwell parishes, for the same offence. It was one of the favourite spots for executions, being on a frequented road into London and therefore valuable as a place for advertising the vigour of the Government. Chaucer's pilgrims had ridden past the 'Watering of Seint Thomas.' Pilgrims no longer passed it since 1538, when the shrine of St. Thomas was destroyed. The holiday crowd of mediæval tourists, who no doubt had been dwindling for years, no longer passed along the great central Surrey highway, intent on devotion, pleasure and business combined. The ruin which according to Lambarde overtook the inns, lodging-houses and shops of Canterbury must in a minor degree have been felt through Surrey from Farnham to Tatsfield. But whatever discontent may have been stirred in the county by Henry's policy there was no popular outbreak. The disturbances of Edward's reign were no doubt partly religious in Surrey as elsewhere. Nor at this period do we find many sufferers for new religious opinions in Surrey.[1] Under the Act of the Six Articles, which outran in threatened severity the old Act *De Heretico comburendo*, not many people were executed anywhere. Foxe says that it was under this Act that one Saxy, a priest, was hanged in the porter's lodge of the Southwark house of the Bishop of Winchester. Some more evidence would be desirable before accepting so singular an execution as a fact at all.

In the reign of Mary, Surrey was of course affected as usual by a rising in the southern counties, which aimed at entering London. This was the insurrection of Sir Thomas Wyatt against Mary's Catholic and Spanish policy. The brief usurpation of Queen Jane had been accepted in Surrey, as in London, for the moment. On July 8, 1553, two days after Edward had died at Greenwich, the Lords of the Council wrote to the deputy lieutenants, sheriff and justices of Surrey a letter to be delivered to 'Mr. Carden and Mr. Saunders'—was it mere inadvertence and hurry which caused them so to designate Sir Thomas Cawarden and Sir Thomas Saunders?—to the effect that the Lady Mary is 'sodenly departed with her trayne and famyly toward the sea coast of Norfolk,' 'eyther to flye the realme or to abide there some foreyne power.' They were required to take measures for the defence of the county and for suppressing disturbances.[2] The Council drew their attention to the fact that they are required to stand fast by such ordinances 'as be prescribed unto us by his Majestie, signed with his own hande and sealed with the great Seale of England.' The Council was acting in the name of a dead king whose death was ignored. The ordinances and decrees to which they appeal are 'sett foorth and established for the succession of the imperiall crowne of this realme after his deceasse if God shall call him out of this lief without issue of his owne body.' On July 11 the death of the king was no longer concealed. It had been in fact known for several days. A writ under the sign manual and signet of Jane the queen was

[1] Stowe says that in 1540 three Anabaptists were burnt near Newington. Two were foreigners by their names.

[2] Loseley MSS. July 8, 1553. The letter is among the bundles of Cawarden papers at Loseley.

addressed to the Marquis of Northampton, lieutenant of Surrey, the deputy lieutenants and magistrates, announcing her entry as queen into her Tower of London, and expressing confidence that the marquis will do all in his power to maintain her right against the claim of the 'Lady Mary, bastard daughter to our grete uncle Henry the eight.' The commission of lieutenancy to the marquis granted by King Edward is confirmed and the queen promises to renew the same.[1]

On July 16 Jane the queen wrote to admonish the gentry of Surrey to stand fast in their allegiance, and on the same date the lords of the Council who yet remained in London wrote with ill-disguised alarm to the sheriff and justices that reports were daily spread against the queen, and 'falsely also of some of us of her Majesties Privey Counsell.' Wherefore they thought fit to declare the great dangers to the realm and to the 'true preaching of Goddes worde' if the bastard daughter of the late King Henry were to be allowed to succeed. They significantly ordered the application of the 'punishment of the laws ordeyned for suche as shall attempt anything against their Sovereign lord or lady being in possession of the Imperiall crowne.' The Lady Jane was, they wished to suggest, at all events queen *de facto* and it was not treason to support her.[2] The lieutenant of Surrey was not among those who wrote this from the Tower. He was in the field against Mary, but already meditating the change of sides, which he always executed in time to save his head though not on this occasion in time to escape revisiting the Tower.[3] Three days later the Earls of Arundel and Pembroke and others who had signed the letter proclaimed Queen Mary. On that day, July 19, Queen Jane sent her last warrant perhaps to Sir Thomas Cawarden to provide tents for the troops who had already forsaken her.[4] On July 21 Arundel ordered Sir Thomas, as keeper of Nonsuch Park, to provide two bucks for the royal household of queen Mary.[5] Cawarden would probably have gladly supported Queen Jane if she had had a chance of success. Sir Thomas Saunders, the sheriff, was of the family to which Nicholas Saunders or Saunder, the well-known Romanist and controversialist, belonged, and more likely inclined throughout to the other side.

On July 19, the day on which the Council in London proclaimed Mary, a letter was written from the Lord Abergavenny and other Kentish gentlemen to Sir Thomas Cawarden announcing their proclamation of Mary.[6] T. Wyatt is among the signers. This is pretty certainly Sir Thomas Wyatt. The nation was unmistakably for Queen Mary. The steps towards reconciliation with Rome agitated a comparatively small body of genuine reformers and some of the holders of abbey lands. The scheme for a Spanish marriage alarmed many, especially in the south-east, who knew what Spanish rule meant in the Netherlands. On January 26, 1554, Wyatt was in arms in Kent against Queen Mary's

[1] Loseley MSS. July 11, 1553, i. 3.

[2] Ibid. July 16, 1553. This and other documents at Loseley are among the Cawarden papers not in the volumes of collected letters.

[3] He was attainted but pardoned, and was shortly released from the Tower.

[4] Loseley MSS. July 19, 1553. [5] Ibid. July 21, 1553. [6] Ibid. July 19, 1553.

Spanish marriage in his avowed intention, but embarking on a course which, if successful, must have meant the overthrow of the queen's Government. He seized Rochester Bridge and repaired the fortifications of the castle. On January 29 the Duke of Norfolk's attempt to force Rochester Bridge failed, the Londoners under him going over to Wyatt. On February 1 Wyatt was at Deptford and on the 3rd he entered Southwark. He had already delayed too long for success. He should have been at the foot of London Bridge while the alarm following Norfolk's misadventure was still acute. He had wasted his time offering terms of submission to a daughter of Henry VIII. and a granddaughter of Isabella the Catholic.

It was possible that Wyatt might be supported from Surrey. On January 25 a warrant was issued under the queen's signet and sign manual to Sir Thomas Cawarden at Blechingley, bidding him arm his servants and watch over the order of his own neighbourhood.[1] On the next day the queen commanded the sheriff, Sir Thomas Saunders, to obey in all things Lord William Howard, the admiral, who had received a certain commission for the affairs of Kent and Surrey.[2] On Sunday, January 28, Lord William Howard commanded from Reigate Sir Thomas Saunders, the sheriff, and William Saunders, Esq. of Ewell, to seize all Sir Thomas Cawarden's arms,[3] and on the 29th he repeated the order to them 'and to all the queen's lieges in Surrey.' It was clearly believed that Sir Thomas's arms were likely to be employed on the wrong side. This was the reason for their seizure. Wyatt's success at Rochester was not till the 29th. On the 28th it could hardly be expected that he would come into Surrey and seize the arms himself. From Sir Thomas's own complaints we learn that he was arrested on the 25th, and brought before the Council, but discharged. But he was re-arrested by Lord William Howard on the 27th, taken to Reigate, then after the rebellion of course to Lambeth, and to the Clink in Southwark, and finally compelled to stop in his own house at Blackfriars. Nothing was proved against him, and he was soon at his usual work of providing for the amusements at court. But the inventory of the goods seized at his house is startling. There were 24 demi-lances, 86 horsemen's staves, 100 pikes, 100 morris-pikes, 100 bows, two hand-guns, other weapons and defensive armour in proportion, besides sixteen great pieces of ordnance.[4] He could have armed 110 horse and over 300 foot. A great man liked to have armour hanging in his hall, but the great guns were scarcely necessary furniture of a gentleman's house. They were no doubt made in the Weald close by, but for what purpose? The rebellion was not long foreseen nor meditated. The whole arsenal was considered by the Government to be better bestowed in the Tower. In spite of Sir Thomas's expostulations Elizabeth seems to have preferred to keep them there when she succeeded. He complained that he got very little back again.

[1] Loseley MSS. January 25, 1553–4.
[2] Ibid. Order, January 26, 1553–4.
[3] Ibid. January 26–9, 1553–4, ii. 84; and vide Kempe, Loseley MSS.
[4] Ibid. January 26–9, 1553–4, ii. 84.

Wyatt meanwhile had advanced to Southwark. Gardiner was the head of the Government against which they had risen, and his house, Winchester House in Southwark, was given over to pillage. Another claimant to Gardiner's see and to Winchester House was with Wyatt. This was Poynet, who had been translated from Rochester to Winchester by a warrant under the privy seal when Gardiner had been deprived in 1551. The queen by her own act had restored Gardiner, and Poynet no doubt hoped that the rebellion might result in a new act of the royal supremacy in his favour.[1] He had now to look on while the library of Winchester House was ransacked by Wyatt's followers, described by Stowe as 'being gentlemen as they said.' They ate and drank the bishop's victuals, and carried away even the locks of the doors. We do not hear of Lambeth Palace being plundered, but it was still nominally Cranmer's who was not deprived. From February 3 to 6 Southwark and Lambeth were in the hands of the sufficiently disorderly rebels. The drawbridge was up on London Bridge, and the guns of the Tower threatened Southwark. Wyatt was learning the usual lesson, that London was impregnable from the Surrey side. No sympathy incited the Londoners to lower the drawbridge, as they had done to Tyler's rioters, and on the 6th Wyatt marched to Kingston. He repaired the broken bridge and went across, to fail hopelessly on the other side. Gardiner resumed possession of his plundered house, but Rochester House seems to have remained in possession of Thomas Copley, a recusant of the next reign, who held it in 1562.[2] In 1556 Reginald Pole was installed at Lambeth. The abbey at Sheen opened its doors to some of its old inmates in 1557. The queen was at Richmond in the summer of 1554 with her newly married husband. Earlier in the year her sister Elizabeth had come there on her way from the Tower to Woodstock, and either feared or affected to fear that she might be murdered there.

The persecution of Mary's reign did not specially affect Surrey. Gardiner sat at St. Mary Overie to examine some of the more notable clergy accused of heresy, and the memorials of their sufferings remain in the painful earlier nineteenth century windows of the Lady Chapel there. But they were not Surrey men in any sense. Three martyrs suffered in the county, in St. George's Fields, Southwark, in May, 1557. Their names were Stephen Gratwicke, William Morant and King. Gratwicke was a Brighton man. The other two were evidently residents in the diocese of Winchester, for they did not complain like Gratwicke that they were not tried by their own ordinary. They were probably Surrey men from the suburbs. White, Gardiner's successor in Winchester, sat as judge of several martyrs in other dioceses, but found no one to punish in his own, at least in Surrey. The strong religious opinions, generally more akin to those of the sectaries of the ensuing reigns than to the

[1] The royal supremacy did not die with Edward. Mary reappointed John Voysey, who had resigned, to Exeter, by sign manual warrant (Rymer, xx. 340). She appointed to the livings of East Horsley and Newdigate in Surrey by letters patent (Rymer, xx. 342).

[2] Loseley MSS. November 25, 1562, vi. 137.

opinions which Elizabeth preferred, were chiefly prevalent in London and in the commercial districts of the east and south-east. Rural Surrey lay back from the stir of foreign trade and of the opinions which came in its train. Neither Gardiner nor White would have hesitated to condemn heretics had they found any. The same sheriffs of Surrey and Sussex, John Covert, William Saunders and Sir Edward Gage, who were responsible for putting the law in force in Sussex against twenty-seven persons, put none to death in Surrey. John Ashburnham was sheriff of both counties when the three were burnt in Southwark. He executed none in Sussex. The opinions were driven into concealment there perhaps. In Surrey they must have been throughout rare and obscure.

In May, 1557, Lord Montague, from his house at St. Mary Overie's, sent his warrant to William More of Loseley and John Skynner of Reigate to muster men in Surrey for the defence of Calais.[1] War with France was imminent then. When in the next year Calais was taken, the men gathered in the southern counties were at Dover hindered from crossing by bad weather. The ill-starred reign ended on November 17, 1558, and Cardinal Pole died at Lambeth the next day. It was not till December, 1559, that Parker reigned in his stead at Lambeth, consecrated there on December 17. John White, Bishop of Winchester, had been deprived earlier in the year, and was succeeded by Robert Horne. In the secular rule of Surrey there was not much change. The Earl of Arundel was continued as lord lieutenant till April, 1559, and was then succeeded by Lord Howard of Effingham, late Lord William Howard, who though uncle to Anne Boleyn had been a steady supporter and privy councillor of the late queen. William More became sheriff. He had been continued as a justice of the peace under Mary. His immediate care was the return of two knights of the shire to Elizabeth's first Parliament who might be trusted to vote for the restoration of the royal supremacy. It was by no means universally expected, even by some who wished it, that a freely elected Parliament would do this. It is interesting to find how generally men who knew what they were about applied to the sheriff as the person who could direct the elections. Charles Howard, afterwards Lord Admiral and Earl of Nottingham, was recommended by the powerful voice of his father, Lord Howard of Effingham. Sir William Fitz William and Richard Bydon, a gentleman of influence and a justice, had their views. Thomas Browne and Sir Henry Weston and Sir Thomas Copley recommended themselves. Thomas Browne indeed changed his mind, and at one time declined to be put forward, recommending Sir Thomas Cawarden and Copley, but on the persuasion of his father again named himself.[2] Weston and Copley were at least doubtful on the ecclesiastical question ; perhaps Charles Howard also was thought so then. Sir

[1] Loseley MSS. May 4, 3 & 4 Ph. & M.

[2] Ibid. December 7, 1558, ii. 35 (Copley) ; December 14, 1558, ii. 16 (Browne) ; December 16, 1558, ii. 45 (Fitz William) ; December 18, 1558, ii. 17 (Browne) ; December 29, 1558, ix. 12 (Lord William Howard) ; December 27, 1558, ii. 25 (Bydon).

Thomas Cawarden, a safe courtier, was elected with Thomas Browne as his colleague. It seems from Browne's first letter that he had been already approached by the sheriff; and Mr. Bydon, who recommends Copley, does so on the ground that he is a friend to Cawarden—as if he knew that Cawarden was to be one of the members. Cawarden had sat in the Parliament which had restored the papal supremacy. Charles Howard and More himself sat for the county in the next Parliament.

For this first Parliament of Elizabeth we have the names of rival candidates for nomination, the nomination being evidently decisive. In 1586 the Government wished to nominate members *en bloc* for the county and the boroughs in it. The Council then wrote to the sheriff desiring him to call two or three well-affected gentlemen to join with him, and then to summon the leading people of each constituency before him, and to explain to them that in their 'free election' to the ensuing Parliament it would be well for them to choose if possible the same members who had represented them in the last, as these had proved themselves to be 'wise and well-affected gentlemen.'[1] Most of the constituencies were obedient; the change of one member at Gatton, and of both at Haslemere, hardly proves those notoriously pocket boroughs to have been independent on this occasion. When in 1597 Sir William Howard, eldest son of the Earl of Nottingham, was called to the Upper House just after his election for the county, the earl wrote to Sir William More recommending his second son, Charles Howard, instead; and Charles was accordingly elected.[2]

The first Parliament however was the critical occasion, when the choice of fit persons was specially desirable to the queen. The representation was duly arranged.

The desired changes were peacefully accomplished, but there is one evident note of anxiety in the orders of the Council at this time. On December 31, 1558, they wrote to Cawarden and others touching the late order for a general muster, 'it is not a thing usuall to have the bishoppes and clergie come to any musters, and yet we well understand that they have of late tyme procured to their possession a greate quantitie of armer and weapons.'[3] The Council desired particulars of this. Such bishops and clergy as were likely to be recalcitrant were yet in possession of their benefices, and there seems to have been some fear of their promoting a rising. The fear was groundless or the attempt too hopeless. The former alternative is more likely. Nicholas Heath, ex-Lord Chancellor and deprived Archbishop of York, gives an example of a very general feeling. He could not as a minister be responsible for the new policy, but he lived at Chobham in Surrey on really friendly terms with the queen, who used to see and converse with him as a private friend.

[1] Loseley MSS. September 19, 1586, vii. 73.

[2] Ibid. October, 1597. Compare August 25, 1597, xii. 101, where the earl in the first instance recommends his elder son William.

[3] Ibid. December 31, 1558.

POLITICAL HISTORY

For the history of the reign of Elizabeth in Surrey very full materials exist, owing partly to the official greatness of the two lords lieutenant who ruled throughout the reign.

The high positions filled by the two Lords Howard of Effingham in the queen's Government, for both were privy councillors, both on occasions ambassadors, the former Lord Privy Seal for a year, the latter for many years Lord High Admiral, resulted in the devolution of some of their work upon deputy lieutenants. This caused the preservation for us in the Loseley papers of records of the administration of a county under the Tudors. Sir Christopher More of Loseley had been one of those country gentlemen, below the higher ranks of the nobility, in whom Henry VIII. preferred to place his confidence. He was justice of the peace for Surrey when justices were not so common as they now are, ulnager[1] for Surrey and Sussex, and a verderer of Windsor Forest. He was also Remembrancer of the Exchequer. He died in 1549, and was succeeded in his local offices by his son, who became Sir William, and was also deputy lieutenant of the county from 1569, twice sheriff of Surrey and Sussex, and vice-admiral of Sussex. Sir William also represented both the county and Guildford, and once Reigate, in Parliament at different times. Towards the end of Elizabeth's reign his son, Sir George as he became, was associated with him as deputy lieutenant in 1596. Another favourite of Henry in the county had been Sir Thomas Cawarden, Master of the Revels, who died in 1559,[2] and to whom Sir William More was executor. Cawarden was steward and collector of various royal manors in Surrey, and custodian, with the reversion of the fee-simple, of Blechingley, where the ex-queen Anne of Cleves sometimes lived,[3] more tranquil though less eminent than she would have been at Whitehall and Windsor. The Council and the lords lieutenant were in constant communication with these men upon the affairs of the county and upon the application of general measures of administration to their district. In these letters and warrants the varied political life of a sixteenth century county is abundantly illustrated. What strikes us at once is how very much the county was governed, and by how simple a machinery it was done. The Home Office, the Local Government Board, the Education Department, the Charity Commissioners, the Board of Agriculture, and sometimes the County and District Councils of to-day, were all represented then by the one undelegated authority of the Lords of the Council, who certainly needed all the 'grace, wisdom and understanding' which they could get to discharge their rigorously careful functions. The local magnates are required by them to take care that fit persons, well-disposed to the Government, are returned as county and borough members.

[1] Examiner of cloth and collector of the duties on cloth. Practically the superintendent of the most important industry of the counties after iron.

[2] Just after the session of Parliament closed.

[3] She retired first to Richmond. She was deprived of that by Edward VI. in 1548. In 1553 she wrote to Mary from Blechingley.

The borough of Gatton, in the nomination of Mistress Copley, a recusant, is to be furnished with two suitable and loyal burgesses. Tenths and fifteenths, granted by Parliament, are to be carefully collected, February 20, 1573. Exertions are to be made to induce people to take up more freely the State lottery, devised to bring in £200,000 to Elizabeth's Government in 1567, which seems to be neglected. A flaring prospectus[1] was issued setting forth the advantage of the lottery, with pictures of pieces of plate, presumably the prizes, looking not unlike old church plate. It was not apparently as attractive as was hoped. In 1568 the lottery was still unsuccessful, and a special commissioner, John Johnson, gentleman, was sent round Surrey and the neighbourhood to induce well-affected persons to subscribe. Loans are demanded through the local magnates; persons of sufficient means are to have the obligation of advancing money strongly represented to them. The arrears of loans are to be collected, and those persons who would not advance money are to be made to enter into 'good bonds' for their appearance before the Council, 'to answer for their obstinate refusal,' February 23, 1597.

There were many legal prohibitions or regulations to be put in force, to which the Council drew the attention of the justices. Unauthorized cottages, erected without land attached, and cottages in the Surrey bailiwick of the forest were to be pulled down. The Acts against wasting of woods for charcoal making were to be put in force. A glasshouse started by an Italian near Guildford was to be put down. 'The useless multitude of corn badgers and corn brokers' in the county was to be reduced, June 7, 1573.[2] Bonds of sufficient security were to be required of tanners for their observance of the laws 'for the true and sufficient tannynge of lether,' November 7, 1574.[3] No plays or shows were to be allowed in Surrey within 10 miles of London, from November 15, 1574,[4] till after the next Easter, because of the plague. For a similar reason in 1563 the fair on St. Catherine's Hill, near Guildford, was to be forbidden.[5]

Of course the levying of troops and the keeping up of beacons were constantly required. On August 28, 1576,[6] the Council ordered Sir William More and Sir Thomas Browne to see that the ironmasters cast no more iron guns than were needed for her majesty's service, as the superfluity was only bought for strangers and pirates. Priests and foreigners were continually being inquired after, and when arrested remitted for examination backwards and forwards. The names of recusants were to be returned; their horses and arms were to be taken away. Sectaries, of the most obscure station apparently, were to be arrested. *De Minimis Curabat Concilium.* Lord Burgley wrote to Sir William More about 'a strong speech' said to have been made by Sir Edward Bray to one Mellersh, and wrote also to the body of justices on

[1] It exists at Loseley among the loose papers.
[2] Loseley MSS. vii. 72. [3] Ibid. vii. 20*b*. [4] Ibid. vii. 21*b*.
[5] Ibid. September 12, 1563, ii. 53. [6] Ibid. vii. 9*b*.

the same matter, October 29, 1573.[1] A commission was issued by the Council (June 4, 1567)[2] to William More and others to inquire into the truth of a charge of 'subtle, crafty and vexatious dealings' brought by an inhabitant of Godalming against one of the sub-bailiffs of the town.[3] In July, 1544, the Lords of the Council committed the 'lewd and naughtie' curate of Witley to examination in the Tower by Sir Christopher More. His offence consisted in having 'used words,' but what words we are not told. What is remarkable is that the obscure fault of an obscure man is so gravely dealt with. On October 7, 1562,[4] the return was made to an inquisition taken at Letherhead, set on foot by order under the great seal, and taken by the oath of twelve lawful men, touching 'apparelle of mens wyffes.' The jury found that these were not too extravagantly dressed—a verdict more prudent than courageous from women's husbands. No feature of country life was too minute for the all-seeing Council. The relief of the poor, the checking of 'regrating and forestalling' of corn, the supply of corn in the markets, were closely looked after, farmers being compelled to bring a certain proportion of their stock every week, and to sell it at prices to suit the poor. The justices had to undertake the supervision of all markets to compel cheap sale, and were to commit to prison without bail farmers who 'repyned.'[5] They were ordered to restrain the 'brewing of beer of greater strength in this tyme of scarcety than was used in other tymes when mault was good cheape'; matters of purveyance for the needs of the court; the reduction of the number of sellers of poultry, butter and eggs, as they caused prices to be raised for their supplies—an odd effect of competition—the punishment of riotous apprentices in Southwark; the revoking and regranting of pedlars' licences; all formed subjects of the letters and orders of the Council. When the central Government grasped at such a minute control in every county, it is obvious that the leading men in each, such as the Mores, the Lord Montague, the Lords Howard of Effingham and such like in Surrey, must have exercised immense local influence upon the fortunes and daily life of their neighbours. The Council was really forced to trust to them and to their representations for what was or should be done.

It is easy to understand both how the central Government might be looked to as a refuge from the caprice of local rulers, and how the whole system might be violently resisted if once confidence were lost in the capacity and good intentions of the central power. The hopes of Wentworth at his best, and the action of the Long Parliament before it became itself despotic, are both to be clearly forecast from the history of the local administration in Surrey. The justices themselves were educated in a knowledge of affairs which enabled them at last to criticize and resist the Council in Parliament.

[1] Loseley MSS. [2] Ibid. dates cited.

[3] It is an interesting example of how matters cognizable in the ordinary courts were brought before the Council, and remitted by them to special commissioners.

[4] Loseley MSS. date cited. [5] Ibid. August 3, 1596, vii. 18*b*.

A cause of perpetual anxiety was found in the vagabonds. The Surrey heaths and the great extent of woodland on the borders of Surrey and Sussex seem to have harboured a disorderly population. The local name for them in Surrey was 'heathers,' that is men of the heaths. It is still a Surrey surname. 'A great stoare of stout vagabonds and maysterlesse men able enough for anie laboure which do great hurte in the country by their idle and naughtie life,' is the official description of them in 1585.[1] They were then ordered to be pressed as soldiers for the Low Countries, and this expedient for getting rid of them was tried more than once. There is also an undated scheme among the Loseley papers 'touchinge wandringe rooges, masterles men and bastardes,' suggesting punishment for immorality among them, but adding a somewhat inconsistent prohibition of the marriage of 'any roge' without leave of the nearest justice, and fines upon those who gave them lodgings—the fines to be devoted to the poor of the parish. In the latter part of Elizabeth's reign, in 1595, the drastic measure was adopted of the appointment of a provost marshal to execute such persons if assembled in riotous sort by martial law. He was empowered to arrest vagabonds on the highway, to bring them before the justices, and if they were found to be 'notoriously culpable in the unlawful manner of life' to hang them without further trial.[2] This was to be done in other counties round London as well as in Surrey. Such martial law had been executed before, in 1589, when George More, a gentleman of a position to be sheriff and deputy lieutenant, had begged to be excused from the office of provost marshal, and the choice of a fit person had been recommended who should perform his duty mostly on the high roads near Southwark, Lambeth, Croydon and Kingston, 'where vagarant persons and masterles men do moste resorte.'[3]

The task of maintaining truth, supposed to be incumbent upon all Governments then, had to be performed in Surrey at the expense of Protestant sects and Romish recusants. The first act of authority of this kind under Elizabeth is against some obscure sectaries. On September 19, 1560, More received a warrant from the Council for the arrest of David Orch and other leaders of the sectaries, who proposed to meet at the fair on St. Catherine's Hill on October 2.[4] Though the days of the pilgrimage were over, yet this spot where the Pilgrims' Way crossed the road through Guildford to Portsmouth was a natural meeting place where much besides merchandise would be exchanged. It is significant that as usual opinion was expected to show itself in the tracks of commerce. David Orch's opinions and fate are matters of conjecture. But on May 28, 1561, Thomas Chancellor of Wonersh, clothier, and Robert Stert of Dunsfold, clerk, made depositions before More of their knowledge of certain sectaries, 'thayer doctrines, practises and divylish devyces.'[5] Some years later, in 1580, the 'Family of Love,' whose

[1] Council to Lord Howard ; copy at Loseley, xii. 61.
[2] Rymer, *Fœdera*, xvi. 279.
[3] Loseley MSS. March 24, 1589–90, i. 30.
[4] Ibid. September 19, 1560.
[5] Ibid. May 28, 1561.

practices were not so harmless as their name, had adherents in west Surrey, and these may have been their forerunners. The Brownists were not yet in existence, and the Calvinistic reformers in the Church were not sectaries. Later on in the reign a Baptist is in prison in Southwark. The Surrey suburbs were apparently not so distinctly reforming in opinion as London. A great many people in Southwark and Lambeth must have been dependants upon religious houses and great ecclesiastical establishments, and had suffered by the dissolution and the lessened expenditure of the bishops. Southwark too was notoriously the abode of persons destitute in both purse and character, who took advantage of the conflicting jurisdictions of liberties and manors and of the corporation there to make it a practical sanctuary. The people as a whole were irreligious. The modern zealot, of whatever party, who appeals to the precedents and history of the Reformation period seldom realizes that nine-tenths of the people of England were neither Romanists nor Protestants, as at present understood, but went to church equally under every changing rule. Like Elizabeth herself, More, Cawarden,[1] Copley, Lord Howard of Effingham, Lord Montague and the rest had attended the Communion service under Edward, the Mass under Mary and the Communion service under Elizabeth. In her reign the process began by which the influence of the Jesuits and the seminary priests developed scruples in the minds of men like Copley and others, which turned them into conscientious recusants, refusing to attend the English services and denying the royal supremacy. Also the process began by which the counter influence of the Genevan Bible turned the mass of the next generation of the middle classes into Calvinists. Above all, in her reign, the feeling was created which made adherence to the royal supremacy and support of the ecclesiastical laws a test of patriotism. But recusancy began to make its appearance among the landed gentry. There was plenty of it among that generation in other classes too, but they left less mark on the course of history. The Government was not above taking notice of the absence from church of yeomen and tradesmen and of women, though principally of gentlewomen.

To do the authorities justice, the prosecutions of the recusants, domiciliary visits to search for concealed priests and for compromising books, seizures of arms and horses, fines and confiscations became more frequent in Surrey as the alarm of possible foreign attack increased. The justices were very active after the date of the St. Bartholomew massacre, when Spain and France were, fortunately erroneously, supposed to be cordially allied for the overthrow of heresy. There was a new spasm of activity when war with Spain was coming on, after the severe recusancy Act of 23 Elizabeth, from about 1582 till after the defeat of the Armada. About 1594 there is less sign of recusancy in Surrey, but it and the punishment of it did not cease. Here, as elsewhere, though

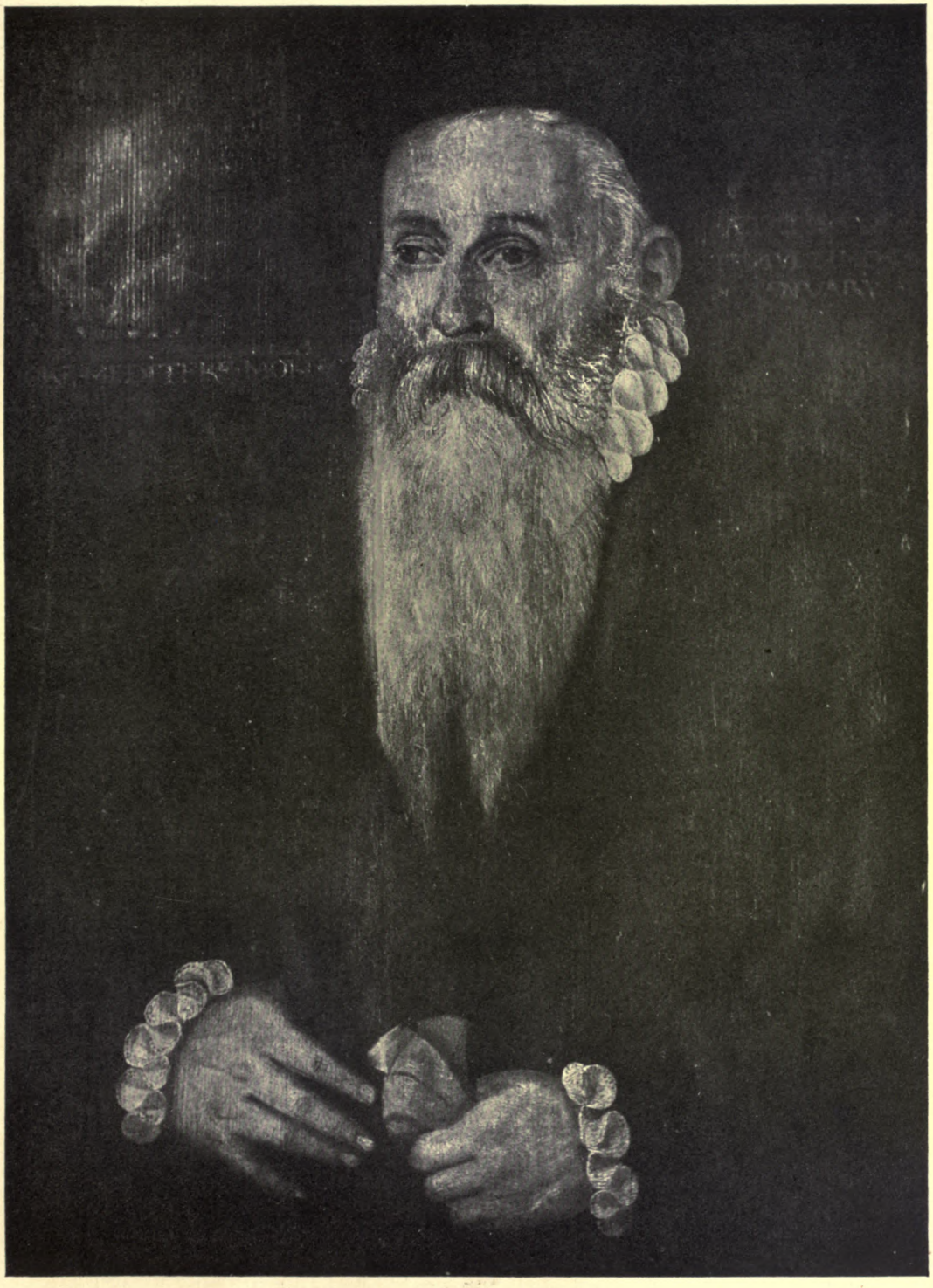
[1] Sir Thomas Cawarden had sat in the Parliament which restored papal supremacy and simultaneously secured the abbey lands. He quickly got over his difficulties about Wyatt's rising. He was a thorough-going follower of his own interests under every Government.

the number of those who were Catholics by birth and habit was greater at the beginning of the reign, active Roman recusancy was partly the effect of deliberate missionary incitement only applied later on. But the missions probably did not take so strong a hold of Surrey as of some counties, though recusants were by no means scarce.

From 1572 to 1579 120 recusants whose names are preserved were indicted at sessions in Surrey. In 1582 there were thirty-eight persons in prison on account of recusancy in the Marshalsea, five in the Clink, and thirteen in the White Lion in Southwark.[1] These were not all Surrey men, some being from Sussex. In 1585 there were forty in the King's Bench and many in the other prisons, who declared that they had neither 'livings nor goods,' poor men or ruined men.

The plight of such was most miserable. At some unknown date the prisoners on account of religion lying in the White Lion, Southwark, petitioned More 'to take some pity upon us your poor and obedient subjackes whiche lye heare in prysson upon your commandement, whear that wee are licke to perishe for defayet of Systenauncis yf your wurshipes favourable and marcyfull hand be not streatched fourthe to take some mercy upon vs.'[2] Poor men often died, sometimes starved, in prison. Those who had goods could compound for their recusancy, though they were in continual danger of suffering from warrants of search to discover lurking priests or forbidden books in their houses, and to arrest on lightly aroused suspicion. In 1581 a return of recusants who were regularly compounding gives the large proportion of sixty-five in Surrey among over 1,100 in England.[3] But probably in some northern and western counties some who would have been on this list had been weeded out by actual rebellion and outlawry, as in 1569 in the north, and some simply evaded the law where authority was weaker than near London. Surrey was a peaceful county and under the close supervision of the Government. The queen lay too often in Surrey for open recusancy to be allowed there. In 1586 Sir William Catesby of Lambeth, with an estate of £500 a year, offered £100 a year for relief from further proceedings. John Southcote of Westham, in Surrey, with £160 a year, offered £40,[4] yet in the same year Southcote was in danger of being again indicted. The Lord Admiral would not decide to proceed against him nor to recommend no proceedings, a fact notified to Sir William More as if the decision were to be left to him.[5] An income tax of 20 or 25 per cent. represented what the Council had described to More on February 25, 1586, as her majesty's gracious purpose to relieve the recusants, for an adequate pecuniary consideration in the way of a yearly tribute to her exchequer, of the vexatious operation of the laws against recusants.[6] There was a deliberate purpose to ruin the

[1] Loseley MSS. July 21, 1582, and July 23, 1582, xii. 52–3.
[2] Ibid. v. pt. ii. 42. It is undated.
[3] *St. P. Eliz. Dom.* clvi. 42.
[4] Loseley MSS. March 9, 1585–6, v. pt. ii. 29–33.
[5] Ibid. April 27, 1586, v. pt. ii. 35.
[6] Ibid. date cited. It is wrongly dated 1581 in H. MSS. Comm. Report. The indulgence is shown because the recusants have furnished light horses for the expedition to the Low Countries, probably on compulsion. See below.



Sir William More.

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more considerable of them, which was accomplished. They gradually died, sank into obscurity or got away abroad. In 1586 there is a return of such recusants as remained in the county of Surrey paying a regular composition for their estates. They were only Sir William Catesby of Lambeth, John Talbot of Mitcham, Francis Browne of Henley Park, Edward Bampster of Putney, the Lady Katherine Copley of Gatton, Thomas Pounde of Kennington, and some others owning property but not actually resident in Surrey. Others are returned as dead or gone away out of the country.[1] In 1587 there is a list of persons who stand indicted as recusants in the county, comprising Jane Furnivall of Egham (gentlewoman), Jane Saunder of Ewell, Lady Mary Vauxe of Southwark, John Mollinax of Nutfield, and fourteen of lower rank; all indicted and convicted. There are thirty-three more names of those who stand indicted but not yet convicted. Further, there are fifty-four names of those who, having been indicted, have been discharged by order of the Council, or have conformed, or are in prison in the various Southwark prisons.[2] Some of these prisoners may have owed their indictment to a letter from the Council to the Lord Admiral and his deputy lieutenants, of January 4, 1588,[3] bidding them, in the present time of national danger, arrest recusants of property or station in the county, and imprison them in the common prisons or in the houses of some of her majesty's well-affected and competent subjects. Perhaps it was thought decent to indict, after arrest, those who were in the common prisons. But Sir Francis Browne of Henley Park, brother to Lord Montague, was at this time a prisoner in Sir William More's house at Loseley, and is not in the lists above. These therefore do not represent the total number under arrest that year. The ladies thrust into the common prisons could hardly have been a serious menace to the State. Priests were of course liable to be hanged if caught. Four ecclesiastics and one layman were certainly executed in Surrey under the penal laws, all towards the end of Elizabeth's reign. William Way, *alias* Flower, and William Wiggs, priests, were hanged at Kingston on September 23 and October 1, 1588. In 1598, a Franciscan friar; in 1600, John Rigby, a layman; in 1601, John Pibush, a priest, were hanged at St. Thomas' Waterings. The Government seem to have searched vainly in Sir Henry Weston's house at Sutton for Morgan, a priest[4]; and once the beneficed clergy of Surrey are connected with recusancy, when on July 10, 1591, orders were given to search for a priest apparently, a papist certainly, concealed in a 'certain parsonage house' in Surrey known to Sir William More.[5]

The prominent county families among the recusants were the

[1] *St. Pap. Eliz. Dom.* clxxxix. 48.

[2] Loseley MSS. 1587, no further date, v. pt. ii. 68. [3] Ibid. January 4, 1587–8, v. pt. ii. 30.

[4] Ibid. June 14, 1591, v. pt. ii. 57. Morgan was 'sometime of Her Majesty's chapel,' and 'perhaps is not called by his right name.' In the same year, January 12, the house of one Richard Lumleighe of Wintershull was to be searched 'for Popish books, instruments and relics, and also for suspected or unknown persons,' a general warrant of the most outrageous kind.

[5] Ibid. July 10, 1591, v. pt. ii. 51.

Saunder or Saunders families of Charlwood and Ewell, the Talbots of Mitcham, Gages of Hayling, Copleys of Leigh and Gatton, Fromondes of Cheam, Brownes of Henley Park, Catesbys of Lambeth, and a son of Sir William Monson. Some of these do not appear in the lists referred to above, because at those dates their fortunes were worse still. Thomas Copley, a distant kinsman to the queen through her mother, M.P. for Gatton under Mary and Elizabeth, developed scruples about conformity, not because he was dissatisfied with Jewell's *Apologia* as Parsons the Jesuit said, for he was in opposition before Jewell's book came out, but probably because he was an amateur theologian on his own account.

Copley thought a good deal of his own learning, which was not very extensive. However he was imprisoned for a time, and then went abroad and served the Spanish king before the war between England and Spain. He never took arms against his country. Had he done so his estates would certainly have been lost. He died abroad in 1584. His wife returned to England and got into trouble. She is the Lady Katherine Copley who was in prison in 1587. A curious fact in her history is that her husband left her the borough of Gatton, with the nomination of the two burgesses. She did not actually exercise a female franchise,[1] for the Lords of the Council instructed More, through Walsingham, to see that two well-disposed persons were returned to the Parliament of 1586; Mistress Copley being a recusant. Her son William also was arrested in England, but gave a show of conformity, and then escaped abroad again. He was able to redeem his estates for £2,000 at the beginning of James' reign, and thenceforward paid a regular composition (£240 a year). One of his brothers, Antony, was a poet, but also a turbulent fellow and a conspirator in Watson's plot, and a weak conspirator who did his best to get what was certainly a hopeless plot found out. He made a full confession of it, and was only banished. He died abroad.[2] A third brother lived to conform and to be a Church of England parson, a high churchman, and did not die till just after the Restoration. Among other Surrey Romanists, John Gage of Haling lost his lands for harbouring a priest. His brother, Robert Gage, lost his life for complicity in the Babington conspiracy. A member of the Saunders family was Nicholas Saunders or Saunder, the famous controversialist, author of *De Visibile Monarchia Ecclesiæ* and of *De Origine et Progressu Schismatis Anglicanæ*, a work which has discoloured the historical views of the common run of Catholics abroad rather more seriously than Foxe and Burnet have distorted the views of the common run of Protestants at home. He died

[1] As her husband's mother had done, in 1554, returning her own son, a minor, as member for Gatton (see *Parliamentary Writs and Returns printed by Order of the House of Commons*, 1878).

[2] Antony Copley wrote *A Figge for Fortune*, which has been republished by the Spenser Society. He, unlike his father, did serve Spain when Spain was at war with England. As for his turbulence, he threw a dagger at the vicar of Horsham in church, and shot at a gentleman and killed an ox with a musket. The fortunes of the Copleys, through exile, fines and difficulties with one of them conforming and becoming a high churchman and quarrelling with his Puritan squire, Sir Edward Dering, is fairly typical of many recusant families.

miserably in the mischievous enterprise of stirring up the unfortunate Irish into fanaticism, which was not their previous character, and into rebellion which was unjustifiable because it was hopeless. The Saunders, Copley and Gage families were all connected, more or less, and the Copleys in the third generation below Sir Thomas intermarried with the Westons of Sutton.

The Westons of Sutton, new comers of the reign of Henry VIII., are not to be confounded with the old Surrey family of Weston of Albury and elsewhere in the county. Sir Henry Weston, the representative of the Surrey family under Elizabeth, is a probable example of the numerous class who would have been recusants if they had dared, or cared sufficiently for anything but their safety and comfort. He was a friend of Copley. His house, as we have said, was searched for a priest. His grandson was certainly a recusant. He himself, after being appointed to a command of levies in 1584, begged to be excused on the ground of business in the north. It is less likely that he, formerly a soldier and certainly not a fanatical Romanist, backed out of the office than that the Government, on second thoughts, preferred to let him honourably retire in order to appoint a man more trusted by their supporters. He was one of the men whose attitude Elizabeth thought fit to wink at. The memory maybe of his young father, who was involved in the fate of her mother, may have made the queen inclined towards him. Lord Montague was another man whose notorious religious attitude did not prevent his keeping trust as well as favour. He had spoken boldly in Parliament against the imposition of the oath of royal supremacy. There was no doubt which way his sympathies lay in religion. He was an extensive holder however of abbey lands, and his political so far outwent his ecclesiastical allegiance as to enable him to sit as a judge of Mary Queen of Scots as well as to take arms against the Armada. Lord Howard of Effingham was not a Romanist at all, and certainly must have taken the oath of supremacy as a Privy Councillor. He sat on several commissions for the discovery of priests and Jesuits. Yet no doubt he would have gone contentedly to mass, as he had done in his youth, if Elizabeth had done the same. As some of the great men were, so were a great number of the Surrey people, not differing from those of many other counties. Political outweighed ecclesiastical or religious interests. Of the last in the true sense they had little. They were not enthusiastic for services of this kind or of that, but they were supporters of the national sovereign representing national independence. Every year that she maintained what had been so precarious a throne made them still more thoroughly her supporters in the cause of settled government and order.

Surrey, like other counties, had to arm herself in defence of the Government, and, being a bulwark of London towards the south, was perhaps a more special care to the authorities than some others.

There was a general obligation upon all persons to provide themselves with arms for the public defence, and the forces thus available

were under the command, at this time, of the lieutenant in each county. The common administration of Surrey and Sussex under one sheriff was continued under one lieutenant; and the commander of the forces of the two counties during the warlike part of Elizabeth's reign was Lord Howard of Effingham, the Lord Admiral, acting as such in 1581 onwards, and appointed by letters patent in 1585. He was practically the head of the War Department for the country. He was appointed lieutenant-general of the forces by land and sea in December, 1587. The immediate command therefore of local levies fell of necessity into the hands of his deputies, generally Sir William and Sir George More and Sir Thomas Browne.[1] Besides calling out the general levy, the Government had or exercised the power of impressing men for foreign service. The process was to issue a commission to the local authorities to raise so many men, the means being left to them to determine. We have a probably not much over-coloured picture of the process, as it went on everywhere, in the scene where Robert Shallow, Esq., justice of the peace, and the royal officer, Sir John Falstaff, pass in review Mouldy, Bullcalf and Feeble. The vagrant population of the Weald and of the heaths offered a tempting field for impressment. Orders were sent on September 8, 1585, to seize the idle and masterless men.[2] On July 18, 1597, fifty men were to be taken from this class in Surrey, and, as a preliminary to service, clapt up in Bridewell, whence they were to be drafted to Picardy to help Henri IV. against the Spaniards.[3] It is no great wonder if military service was not popular with respectable people. Now and again some great man, the Earl of Derby or Lord Montague for instance, writes to the deputy lieutenants to beg off some servant or their humble suitor from service to which he has been constrained. None of the militia, nor the pressed men, were trained soldiers in any real sense. The obligation to provide arms, and occasional musters to inspect them, were not equivalent to drill. The practice of archery was decaying, if we may trust the complaints of the Statutes, of Latimer, of Roger Ascham and of Sir John Smythe, and the Government was not eager to encourage the use of other weapons. Possibilities of turbulence, or even of insurrection, had to be considered. The use of guns was discouraged. Gunnery interfered with archery, and archery was still a care to the Government. A proclamation of Elizabeth's, to which the attention of the Surrey justices was drawn on February 28, 1560, forbade people to carry daggers and hand-guns on their journeys.[4] Yet the roads were not altogether safe from highway robbery, and to ride armed might be advisable where the 'masterless men' abounded. But firearms were considered too dangerous. Even in Scotland guns and pistols were forbidden on the highway, and of course used. Sir Thomas

[1] In 1579 and later the Earl of Lincoln, Edward Clinton, was First Commissioner for levies in Surrey and several other counties. This was during Charles Lord Howard's lieutenancy (*Eliz. St. P. Dom.* cxxxiii. 14; and compare Loseley MSS. December 10, 1583, viii. 71). In 1588 Lord Buckhurst was appointed joint lieutenant for Sussex with Lord Howard.

[2] Loseley MSS. date cited, xii. 61 (see above).

[3] Ibid. date cited, vi. 114.

[4] Ibid. date cited, xii. 22.

Cawarden's armoury, seized in 1554, shows what store of weapons might be collected in a private house. After his death in August, 1559, Elizabeth's Council forbade any further proceedings against those who had taken his arms and horses, and kept the former for the queen's service at the Tower. Kingston and Guildford became the places where such warlike stores as were provided for the county were kept. The county should have been provided with powder. If we may trust John Evelyn's information, coming through Aubrey, the earliest powder mills in England were erected in Henry VIII.'s time near Wotton. In 1570 they moved down the stream of the Tillingbourne to their present site at Chilworth. The abundance of charcoal already made in the neighbourhood was a probable reason for the choice of both sites. On May 5, 1584, it was suggested that there should be a public subscription to provide powder, lead and match for the county.[1] But on April 7, 1586, Lord Howard had to confess that the Council was finding fault with him because of the want of supply of powder in Surrey.[2] In fact, a change was passing over the art of war, and English archery was becoming obsolete. The practice of it was decaying, and the great Netherland wars were witnessing improvements in firearms and the introduction of tactics founded upon their use. A controversy was raging in England, and Sir John Smythe wrote vehemently, but ineffectually, as late as 1590 in favour of archery. The Surrey records show how the practical difficulties of providing stores told against new improvements. The county was evidently short of powder and lead and match for muskets. When the Armada was expected a levy of 1,800 men was ordered in Surrey. The county sent 1,500, but the authorities had to admit that they could not send the remaining 300 unless they were allowed to substitute archery for 'shot.' It was not the men but the weapons which were wanting. It was not till 1600 that, in a levy for the Irish war, archery was altogether wanting, completely superseded by the new weapons.[3]

To return however to the arming of Surrey against the Spaniards. The musters of the county in 1574–5 had produced 96 demi-lances, 1,800 armed men and 6,000 able men. The demi-lances were the heavy cavalry in practice of the day. 'Lances' men cased in complete armour on horseback were limited to a few noblemen and gentlemen. Armed men were those who could provide themselves, or could be equipped by their landlords or masters, as soldiers, pikemen, billmen, musketeers, archers or light horsemen. Able men were men fit for service, who might no doubt muster bills and bows among them, but who looked for complete equipment to the county magazines. They would serve as infantry. The light horsemen no doubt represented the yeomanry and farmers, who could mount themselves, but who could not provide the 'great horses' necessary to carry a demi-lance in helmet, breastplate and cuisses. The numbers appear satisfactory, but after a few hundreds had been drafted off at different dates for service in the

[1] Loseley MSS. date cited, vi. 53. [2] Ibid. date cited, xi. 41.
[3] Ibid. January 14, 1599–1600.

Netherlands, it appears that the county was not actually ready to provide the number of armed men shown in these musters without great difficulty. It was an easier matter to bring them together to the musters in peace time than to equip them to march against an anticipated invader, when even the amateur soldiers who organized and commanded them understood that it was useless to send men without sufficient warlike stores. The Council was throughout dissatisfied with the force of cavalry. On September 30, 1585, just after formal war had begun, Lord Howard was directed to take steps to increase the numbers and the efficiency of the demi-lances and cavalry.[1] It is certainly somewhat surprising that the number of demi-lances furnished should be so little in excess of the number of knights whom knight service was supposed to produce in the county in the thirteenth century. Population and wealth must certainly have increased in 350 years. In the year of great peril, on March 30, 1588, Lord Howard was busy trying to make levies of horsemen.[2] But he met with discouraging answers when he might have expected support. The Bishop of Winchester wrote on June 19, regretting that he could not provide horsemen.[3] Yet the bishop was undeniably wealthy, as times went,[4] in spite of certain losses to the see, and by act of Parliament should have had 'great horses' in his park at Farnham. He was also undeniably and of necessity a strong supporter of the queen. It is fair to add that the clergy had provided 100 men at the instigation of the bishop. The arms of recusants had been seized before, May 8, 1585,[5] to eke out supplies of weapons. There is no record of their horses being seized in Surrey till 1597, but it is unlikely that they were spared before.

The general impression conveyed by the frequent orders and exhortations which were directed to the local authorities in 1588 is that of zeal there was plenty, and of men not a few, but of real preparation and training very little. The attempt to organize any large force of cavalry seems, wisely perhaps, to have been abandoned altogether. Of infantry 2,000 were to be provided, armed in the following proportions: 400 'shot,' 400 pikes, 600 bows, 600 bills. But 2,000 really well-armed men were not forthcoming. On June 27, 1588, when the Spanish fleet was well upon its way from Lisbon,[6] the Council called for 1,800 men from Surrey; that is all that they expected to get of the 2,000. These 1,800 were despatched to the mustering places with bows, as has been mentioned, substituted for 'shot' in the case of 300 men. On July 23 the whole county force was warned to be

[1] Loseley MSS. date cited. [2] Ibid. date cited. [3] Ibid. xi. 18, date cited.

[4] The value of the see when Wolsey died was £4,095 16*s.* 5¾*d.* per annum. There is a return in Loseley papers under 22 Hen. VIII. to this effect. There is another, of November 28, 1568, showing that in the past year the clear annual value of the whole bishopric was £2,380 2*s.* 4¾*d.*, and the expenses of the bishop's household for the same time £1,488 11*s.* 1½*d.*

[5] Loseley MSS., date cited, v. p. ii. 36. The seizure perhaps throws light upon the provision of light horses by the recusants for the Netherlands expedition later in the year (see above).

[6] Ibid. June 27, 1588, xii. 69. The Armada sailed June 1 from Lisbon, but put into Ferrol owing to bad weather. It sailed again July 11.

in readiness. By July 28 the number of trained men from Surrey had been raised to 1,871; of these 1,000 were ordered to join the Earl of Leicester's army, which was gathered on the Thames with headquarters at Tilbury, 500 were sent to the force near London, under Lord Hunsdon, which was to guard the queen's person.[1] To Leicester too went the scanty cavalry force, 8 lances, gentlemen in full armour with servants attending them as perhaps demi-lances, and 90 light horsemen.[2] On July 19 the Spanish fleet had been first seen off the Cornish coast, and by this time was known to be coming to the narrow seas. They reached Calais roads on July 27. It was doubtful where they might attempt to throw troops on shore, but appearances pointed now to an attempt on Kent or Essex. The watchers in every county stood by the beacons, prepared to flash the news of the landing far and wide. This was the purpose for which the beacons were prepared. They were never lighted in this year. On July 23, when the court at Richmond was in possession of the news that the Armada was coming up the Channel, the orders of the Council to Surrey are explicit, that the county levies were to hold themselves in readiness to march when the beacons were fired, the direction from which the signal came giving warning of where the landing had been made.[3] Twice before the beacons had been fired by mistake or by mischievous intent. On December 28, 1579, Walsingham himself wrote to apologize to Sir William More, explaining that the alarm had been raised 'by an error conceaved throughe a fyre made about Portsmouth downe by hunters that had earthed a badger, and thought to have smouthered him.'[4] Forces had then hurried off to the seaside. We were not actually at war then, but a Spanish force was known to be assembled in reality for the conquest of Portugal, but regarded with suspicion in England. Again on July 14, 1587, persons were discharged from the Marshalsea who had been committed for firing the beacons.[5] We trust not the unsportsmanlike hunters of eight years before. The alarm in 1579 must have come over Hindhead. Now in 1588 the watchers in Surrey looked anxiously eastward and north-eastward, to Knockholt and Shooters Hill; or south-eastward, where Crowborough Beacon would catch up the alarm from Hastings cliffs or from hills far off above the Medway. There was great discouragement at Richmond 'that my Lord Admiral hath suffered them to passe on so farre without fight, and that he prevented not the opportunity they have now gotten of refreshing their men.'[6] Lady Lincoln so wrote to Sir William More, asking him to come to her house at Horsley, with small hope that he could stay there. In fact two nights before the letter was written the fire-ships had been sent down into the Spanish fleet, and the decisive action, as it proved, had begun. But it was not recognized as decisive for long. On August 2 the whole muster of Surrey was called to arms. The eastern

[1] *Acts of Privy Council, Eliz.* 1588.
[2] Stowe's *Chronicle.*
[3] *Acts of Privy Council, Eliz.* July 23, 1588.
[4] Loseley MSS. date cited.
[5] *Acts of Privy Council, Eliz.* 1587.
[6] Loseley MSS. July 30, 1588, xi. 172.

side of the county was evidently still thought to be exposed to imminent attack. At Godstone 836 infantry were to assemble, the same at Reigate, the same at Dorking, and at Croydon 2,500 infantry and 120 horse.[1] Counting four or five servants as attending on each lance in Essex, this makes a total of about 260 horse and 6,600 foot from the county. They did well if so many men really assembled. But we may fairly doubt if they were soldiers in any sense besides being Englishmen prepared to fight for their country. Arms supplies and, above all, trained officers and commanders must have been sadly wanting to this last levy *en masse*. Happily by August 2 the Spanish fleet was scattered in the North Sea, and Parma was, by report, chafing at Ostend 'like a bear robbed of her whelps.' In fact, though, he was not sorry to be honourably rid of an enterprise of which he scarcely approved. But it was fortunate that the first commander and the finest army in the world, at that time, did not have the chance of meeting the Surrey levies, under their valiant squires, directed by the incompetence of Leicester and Hunsdon. It was impossible to keep the troops together for want of supplies. On August 4 the cavalry, such as they were from Surrey, were ordered home,[2] it being impossible to feed all the men collected near London; and the 500 foot of Lord Hunsdon's force followed.[3] They were ordered however to keep themselves in readiness for service. The danger had passed, for weather and their demoralization prevented the Spanish fleet from throwing troops ashore in the north. The fear remained for a time. On August 12 the Bishop of Winchester wrote to More for intelligence concerning the 'dismal and depressing rumour' that the Admiral had returned from the sea with the navy.[4] So he had, with no powder and failing supplies, but the invader was in full flight. On August 24 Leicester wrote to More that the county levies must be still kept ready for service.[5] On September 4 Leicester died, and the more peaceful atmosphere that had suddenly supervened on the turmoil of the last few months is shown by the light in which Lord Montague regards his kinsman's death. It is an event which will render necessary some new arrangement for keeping the deer in the bailiwick of Surrey.[6]

The inevitable process of paying the bill at once began. On December 26 Lord Howard inquired for the names of persons in Surrey competent to advance money to the queen on privy seals.[7] For the rest, the warlike remainder of Elizabeth's reign, the demands for money were constant. Besides Parliamentary subsidies, loans were in continual demand. In February, 1589, instant payment was ordered from those who had promised money, and a list of the names of those who had had the hardihood to refuse to lend.[8] Pressure was often being

[1] Lord Buckhurst to Sir W. More and others, Canterbury Cathedral Library, MS. y, 7, 5.
[2] The Surrey horse therefore were not at Elizabeth's famous review at Tilbury on August 9.
[3] Loseley MSS. date cited, vi. 55. [4] Ibid. date cited, xi. 20. [5] Ibid. date cited.
[6] Lord Montague to Sir W. More, Loseley MSS. September 8, 1588, x. 108.
[7] Loseley MSS. date cited, xi. 44 (misdated in Hist. MSS. Comm. calendar).
[8] Ibid. February 7, 1589, xii. 72.

applied, and it is no wonder that it was needed. On March 11, 1595, the repayment of a loan due six months earlier was postponed for another six months. On February 23, 1597–8, another repayment was put off for six months.[1] The unfortunate men who declined to lend in these circumstances were compelled to enter into 'good bonds' for their appearance before the Council. This meant that they were liable to be called up to London, to be kept an indefinite time waiting on the pleasure of the Council, and when called before it might expect to be examined and browbeaten by what we should call Cabinet Ministers, who in addition to their dignity wielded the formidable power of summary punishment by fine and imprisonment. Warlike levies continued in the county. There were three chief theatres of action, to all which Surrey contributed men; the war in the Low countries, operations in northern France on behalf of Henri IV. against the Spaniards and the League, and ultimately the war in Ireland. There were also expeditions to attack the coasts of Spain and Portugal. The unfortunate expedition to Portugal, under Drake and Norris in 1589, was the occasion of a quarrel in which a long-standing difficulty of Surrey politics appears. Southwark was a debatable land, over which the Lord Mayor and Corporation of London were always striving to extend their jurisdiction, while the county authorities were continually aiming at preserving their biggest town and richest source of revenue for their own use. The strangely jumbled up jurisdiction of Southwark and the neighbouring suburbs will be better explained in another place. But for military purposes Southwark was under the Lord Lieutenant of Surrey. In January, 1590, the people of Southwark appealed to the Lord Mayor against the excessive burden of military contributions put upon them by the deputy lieutenants of Surrey. The latter were summoned before the Star Chamber to answer the complaint of the Lord Mayor.[2] The immediate result is not told to us, though Walsingham himself wrote to smooth matters down. Probably Southwark got little by its complaint, for on January 14, 1593–4, reference is made to the refusal of the borough of Southwark to contribute towards the relief of the maimed soldiers of the county of Surrey, though the most part of the maimed soldiers to whom pensions were assigned at the last sessions at Croydon belong to and reside in the said borough.[3] It is clear that there were many Southwark men enlisted after all, and that there was a sense of grievance still existing in Southwark. The traces of this friction between town and county seem to appear in a letter of Lord Howard's, of November 5, 1595,[4] directing that the 'two decayed bands of soldiers' furnished by the borough of Southwark and part of Brixton should be amalgamated into one band, the said places alleging that they cannot supply the vacancies, most of their wealthiest inhabi-

[1] Loseley MSS. dates cited, i. 69, 70.
[2] Ibid. February 1, 14, 1889–90, vi. 56, xii. 71.
[3] Ibid. January 14, 1593–4, vi. 62.
[4] Ibid. date cited, vi. 89. They, the county magistrates, altogether denied the rights of the Lord Mayor in Southwark, probably on this occasion; but their protest in the Loseley MSS. is undated.

tants being dead or gone. The intention at least of the authorities was good with regard to 'maimed soldiers,' those who were 'at the town's end for the rest of their lives.' Lord Howard himself wrote to the magistrates on behalf of a poor disabled soldier, Thomas Tayler of Cobham, desiring that he should be properly relieved.[1] General directions appear to the same purport several times. The duties of the deputy lieutenancy were so arduous that the number had to be raised. Besides Sir William More, they were Sir Thomas Browne, Sir William Howard of Lingfield, brother to the Lord Admiral, and Sir Francis Carew of Beddington, son to that Sir Nicholas Carew who had been executed by Henry VIII. in 1539, himself restored to land and favour by Queen Mary. He was now an elderly man. But Sir Thomas Browne was lax in his attendance to his duties,[2] and Sir William More was growing old. George More was associated with them in 1596. These were all rather civilian ministers of war than soldiers. The experience of real service was bringing forward a different class of man to exercise actual command. In 1595 there were 1,600 men in training in the county under a Captain Geoffrey Dutton, a man 'well exercised in the wars.' At another time the county levies are under Colonel Thomas Baskerville, also an experienced soldier. A considerable body of men in the country must have become really trained by service, for the foreign expeditions were continuous. In 1593 fifty men were raised to serve under Sir Francis Vere in the Netherlands. In 1594 a levy of 100 men was ordered to go to Brittany, but on the next day the number was reduced to fifty. In 1596 Surrey sent infantry to serve under Vere in the Netherlands and some horse to Ireland. Towards the victualling of the fleet in the same year it was called upon to supply bacon, the supply from other counties having failed.[3] In 1596 fifty men were raised for the garrison of Flushing. There was some anxiety in this year about the defence of the coasts. The care of the beacons had been relaxed by three several orders in 1591, 1593 and 1595, the last describing the business as being 'verie chargable unto the inhabitantes.'[4] But in 1596 they were ordered to be looked after again. The Spaniards took Calais from Henri IV.; 500 men were hurriedly raised in Surrey to go to its relief,[5] but the French king declined to have Calais saved by English troops within forty years of its having been an English town, and the force was countermanded. The troops were apparently used to go on the Cadiz expedition in the same year.[6] When the Spaniards proceeded to threaten Boulogne also, aid from England was accepted, and 100 men were raised in Surrey to go thither.[7] The menace to England of Guisnes and the Boulonnais being overrun by the Spaniards was thought so serious that all the southern counties were fully armed, and in October 3,000 men were put in training in Surrey

[1] Loseley MSS. October 17, 1593, xi. 57.
[2] Ibid. March 23, 1595–6.
[3] Ibid. March 24, 1595–6, vi. 75.
[4] Ibid. November 5, 1595, vi. 88.
[5] Ibid. April 9, 11, 1596, vi. 95.
[6] Ibid. January 17, 1596–7, vi. 105. Sir Richard Wingfield commanded them.
[7] Ibid. September 20, 1596, vi. 98. Colonel Baskerville commanded them.

under competent command.[1] In 1598 and 1599, when the Spaniards had made peace with France, the fear of invasion became acute again. Lord Howard, now the Earl of Nottingham, was made captain-general by sea and land to meet it. On August 10, 1599,[2] he required all the Surrey trained men to be brought to Southwark, as the enemy were supposed to be coming. They were sent home again on August 26, the Spanish fleet, which had really put to sea, having returned home. But they were ordered to keep themselves in readiness. Levies for the Irish wars are also fairly frequent; and it is in the case of an Irish levy on January 14, 1600, that we first learn as has been said that there was no archery employed. Twenty-four men in a hundred had muskets and 'bastard muskets,' twelve of each; forty had calivers, a lighter fire-arm; twenty had pikes, and ten halberts; the remaining six were probably officers and sergeants.[3] It was in 1599 when the invasion was expected, when perhaps the Surrey levies were hanging about the taverns and play-houses in Southwark, that *Henry V.* was acted at the Globe. The warlike enthusiasm of the great epic play is a reflection of the ardour of the audience, some of whom had served under a King Henry in France, and who were all expecting possibly to be called upon to fight against a foreign invader in England.

The existence of the Globe Theatre is significant of a change that had passed over Surrey's greatest town by this time. In the first instance the villages on the south side of the Thames had been Surrey villages, with no more connexion with London than had the Middlesex villages which lay beyond the city wards.

When the original Southwark which guarded the foot of London Bridge had decayed these places chiefly consisted of several large religious houses and ecclesiastical palaces, and the abodes of those dependent upon them, with a small waterside population engaged in a commerce which was independent of that of London. The narrow bridge, with its gate through which one horseman could pass at a time, was not an encouragement to close communication. The drawbridge upon it was the boundary of London's fortifications, excluding the Surrey side. There were four manors in and about Southwark, and liberties besides, with rights of sanctuary belonging to the religious houses. In these circumstances it naturally became a resort for Londoners in trouble, the conflicting jurisdictions and immunities of a growing suburban neighbourhood being an excellent defence for such persons. To give London some control over them Edward III. in his first year[4] had granted the administration, though not the revenues, of the vill of Southwark to the corporation so far as his power extended, that is over what was called the Guildable[5] Manor, but of course not over the Great Liberty Manor, which belonged to the priory of Bermondsey, nor over the King's Manor, which, despite

[1] Loseley MSS. vi. 98, 99, 100, 103, 104, and *State Papers Dom. Eliz.* passim sub anno 1596.
[2] Ibid. xi. 73.
[3] It is not recorded how every levy was armed, but we have here a specific exclusion of archery.
[4] Patent Rolls, 1 Ed. III. March 6. [5] So called; no doubt *Geldable* really.

its name, was really the archbishop's, nor over the Manor of the Maze, which was in private hands, ultimately in those of the Copleys, nor over the Clink Liberty, which belonged to the Bishop of Winchester. Henry IV. in 1406 had given the City further powers, or confirmed those granted by Edward III., allowing them to appoint a clerk of the markets in Southwark and to convey prisoners thence to Newgate. Edward IV. in 1462[1] and 1466 had given the City the assize of bread, wine, beer and all other victuals in Southwark, with amercements and fines arising from the same, and had commanded the sheriff of Surrey to observe the liberties and jurisdictions granted to the corporation. This obviously the sheriff had not always done. Offenders in Southwark were arrested by London constables and carried off to Newgate, to the discontent of the sheriff and of the inhabitants of Surrey. But the City was too strong, by reason of its wealth, to be beaten ; and the changes under the Tudors had given the corporation the chance of completing their conquest of the Surrey town. In 1550 they obtained full confirmation of all previous grants, the possession of the great Liberty Manor which had belonged to Bermondsey, of the King's Manor of Southwark, which had been the Archbishop of Canterbury's till Cranmer sold it to Henry VIII., and of several houses in Southwark, Lambeth and Newington which had belonged to Charles Brandon Duke of Suffolk, and of the site of the dissolved abbey of Bermondsey. For all this they paid £647 2*s.* 1*d.* They further paid 500 marks for the dissolved hospital of St. Thomas, which was refounded by the corporation and the Crown.[2] The whole annexed territory was erected into the ward called Bridge Ward Without ; but the alderman was not chosen by the ward, and the inhabitants were not represented in the Court of Common Council. The disorderly 'sanctuary men,' and the discharged servants of the dispossessed ecclesiastics, were a subject population, ruled over by the adjacent City. Thrust into the middle of this dominion however were the Clink Liberty and the Manor of the Maze. Close upon it was the Paris Garden Manor. These all were still parts of the county of Surrey for all purposes, as even the rest of Southwark was for some, being under the military rule of the lord lieutenant. Southwark also contained the gaols used as county prisons, and was assessed for county rates and levies. But under Elizabeth Southwark seems to have accepted its connexion with London and to have been invaded by Londoners, as well as annexed to the City. The dramatic development of Elizabeth's reign made the Surrey suburbs the theatrical suburb of London.

The rage for the legitimate drama, and for the still more popular and exciting spectacle of bear-baiting, were not viewed at all favourably by the City authorities. London was Protestant as a rule when most of England was Catholic, and London had become Puritanical when most of England was even as Gallio on the subject of religious observances or even of moral strictness. The mass of the inhabitants of a great city are never likely to be very Puritanical, but the respectable and leading

[1] Patent Rolls, 2 Ed. IV. November 9. [2] Ibid. 4 Ed. VI. April 23.

inhabitants who formed the corporation were, and they objected to stage plays altogether, and with good grounds objected to the disorder which surrounded the play-houses and bear-pits. When these were erected therefore they were just outside the jurisdiction of the City. The Blackfriars, where Sir Thomas Cawarden had had a house when he was Master of the Revels, had been a centre for amusements, close under the eyes of the corporation, from which it was protected by the ancient liberties of the friars; but the Surrey side offered a more extensive field for braving their displeasure, while keeping close to the population who were to be amused. The rogues and vagabonds of the southern boundaries of Surrey had their more civilized counterpart in the stage players who hung about Southwark. So in 1580 a theatre was opened at Newington Butts, called after the name of the place. In 1585 the Rose and the Hope were opened near Bankside, and in 1588 the Paris Garden Theatre. The Rose and the Paris Garden, perhaps the Hope also, could be used as either theatres or bear-pits. In 1595 the Swan was opened, and in 1599 the Globe.[1] They were all in the Clink Liberty or Paris Garden Manor, being very close together. The corporation prevailed upon the Privy Council to close all the theatres in Surrey, except the Globe, in 1601; but bear-baiting remained too popular for suppression. In James' reign theatres were opened again. But the era of the building of these houses marks the period when Southwark was, as we have said, more than merely annexed by London. It as a district became then a necessary part of London, developing a distinctive character of its own, and attracting a population of a particular kind, which separated it entirely in spirit and manners from the rural districts and country towns. It was no more a possibly debatable land; there could henceforth be no question but that it was London. The theatres were outside the jurisdiction of the corporation, the actors of course lived inside. Shakespeare, Beaumont and Fletcher all lived in Southwark at various times. Massinger at least died there, as did Shakespeare's brother Edmund. Not strictly contemporaneously, but within some ten years, from 1590 to 1600, Surrey contained four residents whom she could scarcely equal for their various claims to distinction by four at any other time. The lord admiral lived at Haling, Sir Francis Walsingham at Barn Elms, the queen constantly lay at Richmond, and Shakespeare had a house at the Boar's Head opposite St. Mary Overie. The first three died in Surrey.

When the great queen had passed away in gloom and loneliness at Richmond there was no revolution in Surrey government. The queen had died early on March 24, 1603. That day the Earl of Northumberland thrust himself into the Council, claiming a place in their deliberations. On the 25th, when they wrote to the Surrey justices ordering them to proclaim King James, it is amusing to find Northumberland's signature in the place of honour, far more prominent than the humble

[1] The dates are Mr. Fleay's; see *Transactions R. Hist. S.* 1888. See Topographical Section for a more detailed examination of the Surrey side theatres.

'Rob. Cecyll' below.[1] The lord admiral was still lord lieutenant; Sir George More, as he had become, was his deputy; Sir William More was gone in 1600. But Sir George was never of quite the same importance as his father in the county, though he played some part at Court. Surrey again got an earl in 1603. Thomas Howard, son of the last Earl of Arundel, grandson of the last Duke of Norfolk, was restored in blood as Earl of Arundel and Surrey by James, and recovered most of the ancient Arundel property and some of his ancestral position. He was ultimately created Earl of Norfolk in 1644. He was lord lieutenant of Surrey in 1635. He was a Romanist, as might be expected from his ancestral relations with the Tudors. Surrey had gained another Parliamentary borough under Elizabeth. The small town of Haslemere had been part of the possessions of the Bishop of Salisbury from the time of Henry II. to that of Henry VIII. It was in the manor of Godalming and in the parish of Chiddingfold, evidence that it was not a place of great importance formerly. But in 1584 Elizabeth summoned it to send two burgesses to Parliament, and in 1596 she incorporated it by charter, declaring therein that the inhabitants had sent members to Parliament since the days before the memory of man. It was pure fiction, meant to cover the deliberate creation of a borough to support the Crown. The manor was in the hands of the Crown. It is possible that neighbouring ironworks had made Haslemere slightly more important than it had been formerly. It was not of course singular in having its choice of burgesses controlled.

The interest of the reign of King James, so illustrious in literature, important in colonial expansion and trade, ominous in Parliamentary strife, is not reflected in Surrey history. The king often resided in the county, at Nonsuch chiefly, but also at Oatlands and at Richmond, and Surrey grumbled as usual under the expenses of royal purveyance. But the most lasting result of the royal residence was the establishment of horse racing in the county. The king used to ride over to witness the sport of 'running horses' on Banstead Downs. Judging from the old maps the name included what we call Epsom Downs. The old four mile course, finishing near the present grand stand on Epsom Downs, began far away on Banstead Downs as we call them. It is curious how little if anything is heard of horse racing before this date, and how constantly popular it remained from the early seventeenth century onwards. James was a lover of sport, but he did not care for unnecessary risks. He found that the holes made by swine rooting in the ground in the Surrey bailiwick of the forest of Windsor endangered his neck when hunting. The Earl of Nottingham wrote to Sir George More and the other verderers of the forest that his highness in his reasonable displeasure ordered his keepers to kill all hogs found in the riding grounds, but to spare the loss to the owners the earl would have them remove their swine and fill up the holes.[2] The consequences of the king's harsh order were evidently averted by his more considerate minister. In 1611

[1] Loseley MSS. March 25, 1603, vii. D. 82.

[2] Ibid. June 8, 1608, i. 55.

the king was inquiring for the names of persons in the county capable of advancing money to him by way of loan on Privy Seals,[1] a measure which called forth a remonstrance from the gentlemen of Surrey to the lord lieutenant, representing the impoverishment of the county and its extreme barrenness, great part of it being given up to forests, chaces and parks.[2] On January 10, 1613, the Council ordered the justices to see again to the disarming of the recusants in Surrey,[3] leaving them however sufficient to protect their houses. The marvel is that the recusants, so often disarmed, had any weapons left worth the taking. The act was a consequence no doubt of the state of foreign politics. The murder of Henri IV. in 1610, the revived activity of the Catholic party abroad under Spanish leadership, and the design of raising the Archduke Albert, the Cardinal Infant, son-in-law to the late Philip II., to the imperial throne, had driven James and the German Protestants, Holland and even France into concerted resistance to Catholic projects. But England was not engaged in war in this most peaceful of reigns till just before the end in 1624, when volunteers were called for from Surrey, and these not being forthcoming in sufficient numbers, orders were issued for the impressing of 200 men to serve under Count Mansfeld.[4] Under him they suffered much and performed little.

The end of the reign of Elizabeth and that of James are marked by one meritorious feature of another kind. Some of the ruin of the Reformation spoliations was being repaired. The monasteries, which had been swept up by a grasping king and greedy courtiers, might some of them have been preserved for good uses. They were gone, and some schools and colleges had received a small part of their wealth. Other new foundations of a different kind were now being made. Under Elizabeth Archbishop Whitgift founded his hospital at Croydon, which was begun in 1597. Under James, Edward Alleyne the player, joint proprietor of a theatre and bear-pit and 'keeper of the king's bears,' founded Dulwich College in 1619. Both foundations were to provide for needy old people, and each had a school attached for the young. These were the very purposes which some monasteries had once answered. In 1622 the Hospital of the Holy Trinity in Guildford was incorporated for the maintenance of old people, and in its first conception for the apprenticing and setting to work of the young. It was the munificent foundation of George Abbot, the archbishop, a native of the town. All three places were as much religious foundations as any of the mediæval age. The changed spirit of the times was shown in their making a provision for the opening and the closing years of life only. The world outside was not too rough a place for those in the vigour of their age.

In 1612 Guildford Castle was granted by the Crown to Francis Carter, gentleman, of Guildford. It had ceased to be the county gaol for Sussex under Henry VII. and for Surrey some time in the latter

[1] Loseley MSS. October 31, 9 J. I. xi. 78.
[2] Ibid. November, 1611, xii. 72.
[3] Ibid. January 10, 1612–3, v. pt. ii. 65.
[4] Ibid. October 22, 1624.

half of the sixteenth century. The old royal apartments outside the keep must have been ruinous, for Mr. Carter took up his abode in the keep, opening windows and making chimneys to render it habitable as a house.

The manor and royal park of Guildford were granted to John Murray, afterwards Earl of Annandale, for life in 1611, and in 1620 in fee simple. The friary house was included. The grant was confirmed, with rights of free warren, in the sixth year of Charles I. This ended royal residence in Surrey, except at the houses in the Thames valley and for awhile at Nonsuch.

The earlier part of the reign of Charles I. saw of course levies of soldiers, on no great scale, for the wars in Germany and with the French. But mismanaged war, under the direction of a mistrusted minister like Buckingham, was unpopular. The troops intended for the expeditions which sailed from Portsmouth were quartered mostly on the coast or along the roads leading to Portsmouth. Some were at Farnham, on one road to the Hampshire coast from London. The grievance of the billeting of soldiers was one of those taken up in the Petition of Right in 1628, and Farnham seems to offer an instructive example of the worth of the Petition. On June 7, 1628, the king had answered the Petition favourably with the ancient form *Soit droit faict* and the rest. On July 10, Parliament having been dissolved on June 26, the lords of the Council wrote to the deputy lieutenant of Surrey to suppress the discontents in Farnham which had arisen from the billeting of soldiers, and to see that the soldiers continued in their billets. The Farnham people had in some cases turned them out of doors, but they were to be reinstated.[1]

The letter exemplifies the doctrine of the king and Council that the Petition laid down general rules, but that their application must be determined by the discretionary authority of the Crown as cases arose. Nor indeed, though the doctrine seemed to annul the use of the Petition, could it well be otherwise. The whole Petition laboured under the drawback of being merely a negative instrument, protesting against abuses, but devising no means by which the abuses could be avoided if Government continued to be carried on. War was being waged with the approval of Parliament in principle, though they might object to the means employed. The relief of La Rochelle was ardently desired. The soldiers intended for the service had to be somewhere; no barracks existed, and no money was voted for providing quarters of any kind. No means existed for putting the soldiers under canvas. It was inevitable that for a time at least they should remain in their billets. When the Parliament had an army of its own it had to be billeted in the same way. In the late autumn of 1628, when Buckingham was dead, La Rochelle taken, and the force which had failed to relieve it dispersed, the Council wrote to the deputy lieutenant of Surrey to see after the transport back to Scotland of Scottish troops who had been employed

[1] Loseley MSS. July 10, 1628, vi. 132.

Sir George More.

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in his majesty's service.[1] These must have been quartered in Surrey, and if some of them had been at Farnham in the summer it further explains the discontent there. The time had by no means arrived when Scottish troops were especially popular in England.

The stout old lord admiral was no longer at the head of the county. His eldest surviving son, Charles Howard, had been associated with him as lieutenant, July 27, 1621,[2] and on August 26, 1624, John Ramsay Earl of Holderness, a Scotchman of vigorous character, had been associated with them.[3] He died prematurely two years later. The old lord admiral died in December, 1624. On December 18, 1626, Charles Howard, now of course Earl of Nottingham, had been reappointed joint lord lieutenant with Lord Wimbledon.[4] Under them were Sir George More, Sir Ambrose Browne, and Sir Richard Onslow as deputies. Two were men of the old leading families and one of a house that was going to be famous in the county. Sir George More died in 1632; his son, Sir Robert, had predeceased him. The grandson, Sir Poynings More, received licence to travel abroad on his grandfather's death, anywhere except to Rome. He was neither of age nor character to take up the former position of his family. Sir Ambrose Browne and Sir Richard Onslow sat as county members in the Parliament which passed the Petition of Right, and were afterwards elected to both the Short and Long Parliaments in 1640. In 1634 Richard Evelyn, of another rising name, was sheriff.

One trouble of this time was the decay of the cloth trade in the county. Archbishop Abbot took notice of the decay of the trade in Guildford in 1614. His father had been a clothier of the town. In 1630 the ever careful Council directed the magistrates to see to the relief of the poor people who were thrown out of work in the Godalming neighbourhood by reason of the depression.[5] Guildford had had a considerable clothing trade shared by villages near. Chalk downs were then put to their proper use of feeding sheep, and wool was grown on the spot. But the absurd protection and fussiness of old corporate towns and of craft guilds often drove industry elsewhere.[6] Aubrey says that Wonersh used to manufacture blue cloth which was exported to the Canary Islands, but that the trade was lost through the dishonesty of the makers who stretched their webs. The blue cloth may throw some light on the cultivation of woad in the county, which was evidently practised but objected to by some economists and by Elizabeth because it interfered with her customs on imported dyes.[7] Yet the age generally was as keen for the use of home products as any fair trader could be. There was a 'die-house' in Southwark which annoyed Lord Montague in 1617. The Surrey glass and iron manufactures were also probably languishing

[1] Loseley MSS. November 19, 1628, xii. 128. [2] Patent Rolls, 19 James I. 13.
[3] Ibid. 22 James I. 17. [4] *St. P. Dom.* xxvi. 33.
[5] Loseley MSS. November 30, 1630, i. 142.
[6] Yet as late as the latter half of the seventeenth century tradesmen's tokens in Guildford used to have woolpacks on them.
[7] See several letters in Loseley MSS. especially April 10, 1585, xii. 60.

at this period—the former had been nearly or quite suppressed. The iron masters had eluded the vexatious trammels of the Tudor legislation sometimes, but now in the unparliamentary period of Charles' government they were marked down as a source of money, commissioners being appointed to compound with them for breaches of the law on pain of Star Chamber proceedings. This was in 1636 and 1637.[1] Yet the county must have been fairly flourishing. In the assessment to ship money in 1636, while Kent and Berkshire and the counties in the south-east Midlands were assessed at between £7 and £6 a square mile, Surrey was assessed at between £6 and £5 on the same scale as Essex, Suffolk, Wiltshire, Somersetshire, Dorsetshire, Warwickshire, Worcestershire and Leicestershire ; higher than Norfolk, Hampshire and Devonshire and many others ; more than twice as highly as Yorkshire, three times as highly as Lancashire and the three northern counties. Though the impost was unconstitutional there is no reason to suppose that it was not fairly assessed. Southwark raised the average of the Surrey assessment. It was naturally the most highly rated place in the county, £350 being required from it in 1636. Farnham parish stood at £94, Godalming at £90, Kingston at £88, Guildford at only £53.[2] There must have been a genuine decay of trade for the county town to have sunk so far in rateable value ; Reigate at £60 and Dorking at £58 were both above it. Ship money was assessed on both real and personal property. It was trifling in amount on individuals, but was generally disliked and often resisted in inland shires as being unusual. The successive sheriffs of Surrey, Sir Anthony Vincent in 1637 and Nicholas Stoughton in 1638, had difficulty in collecting it.[3] In the first instance none had refused to pay,[4] but a spirit of resistance grew up in Surrey as elsewhere. Stoughton wrote to the Council on May 7, 1638, that people refused payment and threatened the collectors with actions, and the distresses could not be executed. Cattle taken for distress at Blechingley were forcibly rescued.[5] In fact Nicholas Stoughton, a Puritan and friend to the Dutch, against whose naval insolences ship money was needed, member for Guildford in the Long Parliament and active opponent of the king, was not very anxious that ship money should be collected if he could get out of it decently. Most of it seems ultimately to have been paid. On January 28, 1638, only £300 was in arrear for the whole county, £54 in Southwark, £10 5*s.* 2*d.* in Guildford, and small sums from individuals, such as 15*s.* from the Earl of Annandale.

Another hardship had befallen Surrey which though not general to the whole kingdom had also affected many counties. In the straits to which Charles' government was driven for money in the time when Parliaments were suspended and direct taxation in the form of subsidies was out of the question, and forced loans were given up in accordance with the Petition of Right, the king had turned to a strict definition of

[1] Rymer, *Fœdera*, xx. 68, 161.
[2] See Appendix, *Ship Money Assessment.*
[3] Bruce's *St. P. Dom.* Ch. I. 1638.
[4] Ibid. Ch. 1. November 15, 1635.
[5] Ibid. 1638, vol. cccxlviii.

old forest boundaries and to the imposition of fines and compositions upon persons who had encroached upon the forests. The old controversy upon the limits of the forest of Windsor towards Surrey, supposed to have been laid to rest under Edward III., was revived again. The Earl of Holland, Chief Justice in Eyre of the forests south of Trent, was directed to hold a justice seat at Bagshot in 1632,[1] where Noy the Attorney General claimed the whole Surrey bailiwick, that is the whole county west of the Wey and north of the Hog's Back, as part of the forest of Windsor. Several of the oldest inhabitants swore that to the best of their remembrance in the two preceding reigns it had always been reputed forest. Whereupon the Court unanimously affirmed this to be the fact. It is not likely that the oldest inhabitants were very clear in their minds about the difference between forest and the purlieus of the forest, and probably this is another of the many cases in which usurpations of power had been accorded to previous sovereigns but were opposed and treated as grievances when Charles tried to have them confirmed. Not only the royal parks at Guildford, Woking and Byfleet, but the district generally had been treated as forest, as when the inhabitants had been compelled to remove their pigs for fear of upsetting His Majesty King James when riding in this 'district of the forest.'[2] Forest courts had been held within it. There is reference to a swaine moot at Bagshot on September 14, 1623.[3] Poaching in this neighbourhood was commonly referred to as disorder in Windsor Forest. The inhabitants had themselves taken refuge in the assumption that it was forest when they wished to escape other burdens. They had excused themselves from loans because so much of the county was taken up by forest and parks.[4] In the late reign the county had petitioned against having to carry wood for the king from Alice Holt Forest in Hampshire on the ground of the many burdensome services in the county and of the large proportion of the county which as part of the forest of Windsor was exempt from these services, making the burden heavier to the rest.[5] It is fairly plain that though since the old delimitation of the forests three hundred years before Surrey had been properly excluded from the forest of Windsor, yet the encroachments of the Crown had been more than tacitly accepted for at least two generations. But the attempt to define the encroachment ended, as is not uncommon, in its complete defeat. Under the Long Parliament a commission was issued, under the Act for inquiring into the boundaries of all forests, for an inquiry into those of Windsor in Surrey. The commissioners included a majority in opposition to the Crown, and at the inquest held at Guildford on January 7, 1642, they found that in the twentieth year of King James the only forest in Surrey was bounded by the pales of Guildford Park, and that as the grant of the park by Charles to the Earl of Annandale in 1630 had expressly declared it to be outside any forest whatever, the whole of the

[1] *St. P. Dom.* September 19, 1632, vol. ccxxiii.
[2] Loseley MSS. June 8, 1608, i. 55. See above.
[3] Ibid. date cited, ii. 97.
[4] Supra, p. 71.
[5] Loseley MSS. J. 1. undated.

county of Surrey was thereby disafforested.[1] The part of the Honour of Hampton Court, established as forest by Act of Parliament under Henry VIII., was only constructively disafforested by the Long Parliament. The former Act constituting it does not seem to have been specifically repealed.[2]

In 1635 Charles made another smaller encroachment under legal form upon some people in Surrey, at Richmond. He was desirous of enclosing one large park from the smaller park and the waste at Richmond and from certain land in the hands of private persons which lay between them. He offered a high price, but some of the owners and tenants and parishes which had common rights in the waste were hesitating to sell, when he began to build a brick wall round the intended circuit as a hint that he intended to have his way. The recalcitrant persons then gave way and accepted his terms. But dissatisfaction was caused, and the nearness of London led to comments being made in the city, Laud, the treasurer, opposing the stretch of power and the extravagance. Cottington, the Chancellor of the Exchequer, opposed the extravagance privately, and then when he found Laud's opposition to be displeasing to the king turned round and defended the proposal with absurd arguments in order to gain advantage over Laud.[3] When Charles, virtually a prisoner to the army, hunted in Richmond Park in 1647, he may have remembered and regretted his neglect of the advice of the murdered archbishop. Henry VIII. had done worse in the matter of Cuddington and the Honour of Hampton Court, but times had changed.

The Long Parliament met in 1640, and Surrey with the rest of England became speedily involved in the Civil Wars which began in 1642. The county as a whole was secured for the Parliament from the beginning. The division of the country was, we must remember, partly geographical. Though there were supporters of the king and Parliament respectively everywhere, and numbers of really neutral persons, who so far as they gave willing support to either did so in hopes of putting an end to war and confusion and restoring a legal government, yet ideas and opinions were very decidedly distributed according to locality. The parts of England which had accepted the Reformation by preference and not by force, the sea-coast counties and the parts which had been permeated by foreign Protestants and by sectarian opinions, the manufacturing places where such opinions had gained ground, were Puritan and Parliamentary as a rule. Where on the contrary Catholicism had lingered longest there were fewer Puritans though there might not be many recusants left. Surrey was by this time unmistakably Puritan, and was influenced by Puritan and Parliamentary London. There were few recusants in it now. In Charles' first year such as there were had been disarmed again, and the measure had been extended not

[1] Harl. MSS. 546.

[2] For the boundaries of Windsor Forest in the reign of King James see Norden, *Description of the Honour of Windsor*, dated in 1607, in the Harleian coll., le Neve MSS. No. 3749.

[3] Clarendon, i. 208, who gives the date as 1636. But see Gardiner, *Hist. of England*, ch. 77.

only to known recusants but to such as were suspected of disaffection in religion.[1] These recusants were now powerless, and such gentry and yeomen as were Royalist were overawed by the other side. The new Earl of Nottingham, Charles Howard the younger, had been made lord lieutenant on the death of the Lord Admiral in 1624. The Long Parliament named him again as lord lieutenant on February 28, 1642, when they took the executive power into their own hands. His three deputy lieutenants were Sir Poynings More, Sir Robert Parkhurst, member for Guildford, and Nicholas Stoughton. He summoned them to a meeting on August 12, 1642, 'to settle the country in a posture of arms.'[2] It was just before the king's standard was raised at Nottingham, and there was no doubt that the arms were not for the king's service. Already in that month before the king's standard was raised, a Mr. Quennell of Lythe Hill, Haslemere, had got a small Royalist band together. They were overpowered and disarmed by the county authorities. Of his seventy-two men only twenty-two were fully armed, and five were not armed at all, a comment on the state of preparation of the militia to which these men potentially belonged.[3] The Surrey trainbands had shown their feelings in May, 1640, when they were called out on the occasion of the riots in Southwark and Lambeth against Laud, attacked as 'the breaker' of the Short Parliament, and had displayed marked sympathy for the rioters. Nottingham died on October 3, and two days later Parliament nominated the Earl of Northumberland as lord lieutenant. Northumberland was too great and busy a man to carry on the county affairs personally. He named Sir Poynings More a deputy lieutenant on October 15,[4] but Sir Richard Onslow became the most prominent of his subordinates. He was zealous in the cause and was one of the county members. He raised a regiment in the county for the Parliament, mostly officered by local gentlemen, and commanded it till the passing of the Self-Denying Ordinance.[5] He was also a deputy lieutenant. According to George Wither, his opponent, Sir Richard was supreme head in the county in all causes and over all persons civil and ecclesiastical.[6] This was an exaggeration; but Onslow's power was undoubtedly great, and as he was at least honest and moderate might have been in worse hands.

The members elected in the county to the Long Parliament were nearly all found on the Parliamentary side when civil war began. To a certain extent we can gauge the Royalist or Parliamentary sympathies of various counties by the action of their representatives. The majority continued to sit at Westminster or otherwise gave active support to the Parliamentary side. Some attended the king's Parliament at Oxford, and were presently 'disabled' by the Parliament at Westminster for so doing, and other members were elected in their room.[7] Constitutional

[1] Loseley MSS. October 8, 1625, v. pt. 2, 66. [2] Ibid. date cited, vi. 133.
[3] Ibid. August, 1642, vi. 174. [4] Ibid. vi. 141.
[5] Account of the Onslow family by Arthur Onslow the Speaker: Onslow Papers, *Hist. MSS. Comm.* 14, 9, p. 477.
[6] Wither, *Justiciarius Justificatus.* [7] See Appendix, *Members for the County of Surrey.*

action was as completely thrown overboard by this party as ever it had been on the king's side. A few members tried to keep out of the struggle altogether. Generally *esprit de corps* made the members rather more Parliamentary on the whole than their constituents, or perhaps it would be safer to say than the inhabitants of the counties with or without votes.

In Surrey Sir Richard Onslow and Sir Ambrose Browne, knights of the shire, were Parliamentarians to begin with. In Southwark Edward Bagshawe and John White were elected in 1640. The former was disabled for adhering to the king and Mr. White died. Mr. George Thompson and Mr. George Snelling were respectively elected in their room. Sir Robert Holbourne, member for Southwark in the Short Parliament of 1640, was a Royalist. In Guildford Sir Richard Parkhurst and Mr. George Abbot, nephew to the archbishop, were both Parliamentarians. The latter died and was succeeded by Nicholas Stoughton. In Reigate Lord Monson was a keen Parliamentarian; Sir Thomas Bludworth, or Bludder, the other member, was disabled for adhering to the king and George Evelyn elected in his room. In Blechingley Sir John Evelyn and Edward Bysshe, in Gatton Sir Samuel Owfield and Thomas Sandys, in Haslemere John Goodwyn and Sir Poynings More were Parliamentarian. Sir Samuel Owfield died in the course of the war and was succeeded by William Owfield. Sir Poynings More died in 1649, having forsaken the party, as indeed did others, before the execution of the king. The proportion of 12 members to 2 for the Parliament and king respectively at the beginning of the war may be compared with the proportion in the adjacent counties. Middlesex and Essex were all Parliamentary, Kent was 15 to 3, Sussex was 17 to 11, Hampshire 14 to 6, Berkshire 8 to 1, Buckinghamshire 10 to 4. Surrey was by this test rather more Parliamentary than Kent and Buckinghamshire, less so than Berkshire, decidedly less so than Middlesex and Essex. But it had not so much Royalist feeling as Hampshire and decidedly less than Sussex. Rather more than one quarter of the beneficed clergy were deprived as 'malignants,' though many other accusations, false and true, were added to that of their malignancy. At all events the county was from the first almost completely under the control of the Parliament. It was a necessary acquisition. It contained the most important gunpowder mills in the country, at Chilworth,[1] and cannon foundries. It lay between London and the more important cannon foundries of Sussex—those at Worth for instance. The furnaces near the southern part of the Weald of Sussex sent their produce to London by sea, not by road through Surrey. One furnace, Mr. Quennell's at Imbhams, near Chiddingfold, which had been Lord Montague's, supplied the king with guns till it was stopped by force, and other ironmasters would have done so if they could, being Royalists. This was the Mr.

[1] Sir Richard Onslow is said to have been accused after the Restoration of having ruined the king's powder mills at Chilworth (see art. in *Dict. of Nat. Biography*); but the mills continued making powder for the Parliament.

Quennell who had the king's commission and tried to get a force together even before the raising of the king's standard.

The north-west of the county, beyond a line drawn from Farnham to Kingston, was involved in the operations of the first campaign of the civil wars in 1642. As early as January, 1642, there were rumours of a Royalist plot to seize Kingston. It was supposed to be part of a larger design for securing Portsmouth. Colonel Lunsford and Lord Digby were at Kingston, other cavaliers were collected about Windsor and Hampton Court. A wagon load of supplies was said to have reached Farnham from Windsor on its road to Portsmouth, and the occupation of Kingston would prevent aid from London being sent readily down the Portsmouth road. Moreover since Elizabeth's reign one of the storehouses of the arms of the Surrey trainbands was at Kingston. Perhaps it was the only magazine since Guildford Castle had become a private house. The Parliament ordered the sheriffs of Surrey and of the neighbouring counties to call out the trainbands to guard against any design. The king gave no definite orders, after his manner. Lunsford allowed himself to be arrested, and Digby left the country.

In August the Civil War broke out in earnest. Sir Richard Onslow was in command of the Surrey trainbands, but at the outset any fighting seemed likely to be far away from Surrey. It was not thought that the king could assemble a really effective army. He had little money or stores. Of the three chief magazines of the kingdom, the Tower and Hull were in the hands of the Parliament, and Portsmouth was quickly seized. The king had got it into his hands after all, but Goring his governor had to evacuate it before the Earl of Hertford could succour him from the west.[1] It was hoped that Essex would overwhelm the king's half organized forces near the Welsh marches, and that no war would come near London. Kingston however, so important for its bridge, and a town of Royalist sympathies, as was natural to a place chartered and favoured by nearly every king who had reigned since Henry III. and not least by Charles, was occupied by Sir Richard Onslow. Farnham, where the bishop's palace was in a naturally strong position, and where the road passed from London to Winchester and Southampton and by one route to Portsmouth, was made a garrison. George Wither the poet, who lived near at hand in Hampshire, was made governor of Farnham Castle on October 14. We know a good deal from one side about his tenure of the post. Wither is not now a popular poet. 'The Shepheard's Hunting' is nearly forgotten. But his poetry deserves to be remembered, and he was the kind of man who was determined that no one should forget him if he could help it. He was in his own estimation one of the moving forces of the age, and Farnham Castle received new importance from the fact that he was commander. His pamphlets *Se Defendendo* and *Justiciarius Justificatus*

[1] Hertford and the Earl of Bedford had a skirmish at 'Evill,' which the editor of the *Calendar of the St. P. Dom.* Ch. I. 1642 seems to read as Ewell in Surrey. But it must have been some other place, probably Yeovil.

would have become the commander of a Plevna or a Ladysmith rather than the governor of a post of not half the importance of a score of castles and houses held by either side in these wars. Yet Wither was really zealous and active. The castle was not a strong fortress, the townspeople were Royalists, and in the four hundreds of Surrey adjacent to Farnham there were not, he declared, six gentlemen well affected to Parliament. As he included so stout a Parliamentarian as Onslow in his suspicions of disaffection, we may doubt this sweeping judgment. He had two squadrons recently raised and only half armed, a few irresolute volunteers whom he did not trust, and only sixty muskets.[1] He set to work to collect stores, to strengthen his works and to dig a well. But he plied Onslow with demands for men, cannon and supplies which did not exist, or if they did were wanted elsewhere. For the want of them he wrote Onslow down a traitor.[2]

On October 23 Edgehill had been fought. The king had occupied Oxford, and early in November began his march down the Thames towards London, while Rupert's horse swept the country far and wide. An attack upon Farnham seemed very likely. In his vindication, called *Se Defendendo*, published very soon after this time, Wither says that he was ordered to come to London with a troop of horse, leaving another officer in charge at Farnham. Some years later injurious reports were spread about him to the effect that he had run away from Farnham. Then in 1646 he, still quarrelling with Onslow, published the *Justiciarius Justificatus*, in which he says that Sir Richard Onslow advised him to leave Farnham on the ground that his charge of the garrison was only temporary, and that he would enjoy a better position and do better service at the head of cavalry in the field. Considering the nature of the charges against him, it is improbable that he would have failed in 1646 to produce an order telling him to abandon Farnham if such an order was given. He probably came up to London without orders, but it is likely enough that Sir Richard, tired of his unreasonable requests for aid, may have told him to go and ask for it himself at headquarters if he wanted it. What is clear is that he left his garrison and came up to London, and actually got an order for culverins from the Tower to be taken to Farnham. On the next day, November 9, came the news of Rupert being in north Surrey, and the culverins were counterordered for fear of capture. Wither begged to be allowed to take light guns,

[1] See Wither's pamphlet, *Se Defendendo*, for his position at Farnham.

[2] Onslow was no doubt falsely accused of an understanding with the king. He was not a Republican nor a fanatic, but an honest supporter of a constitutional government. The Onslow family tradition of Wither as a 'low fellow, well known in those times for his fanatic poetry and ribald writings' (Arthur Onslow, in Onslow Papers, *Hist. MSS. Comm. Reports*, 14, 9, p. 477), is almost as wide of the truth. Wither was a gentleman and a poet. Onslow later on was apparently, by his own confession, really playing a double part when he delayed to come up with some Surrey militia in time to fight at Worcester (see the Report referred to above, p. 478). Whitelocke says that Onslow with the Surrey regiment and Walter St. John with a troop of horse marched hard to be in time. I am indebted to Mr. Firth for the suggestion that Whitelocke probably wrote the truth, but that after the Restoration Onslow had good reasons for letting it be supposed that he had not been eager to fight Charles II. He was a more honest man than revolutions often produce, but his credit must suffer on one horn of the dilemma or the other. Either he was not true to his military duty, or he said what was not true.

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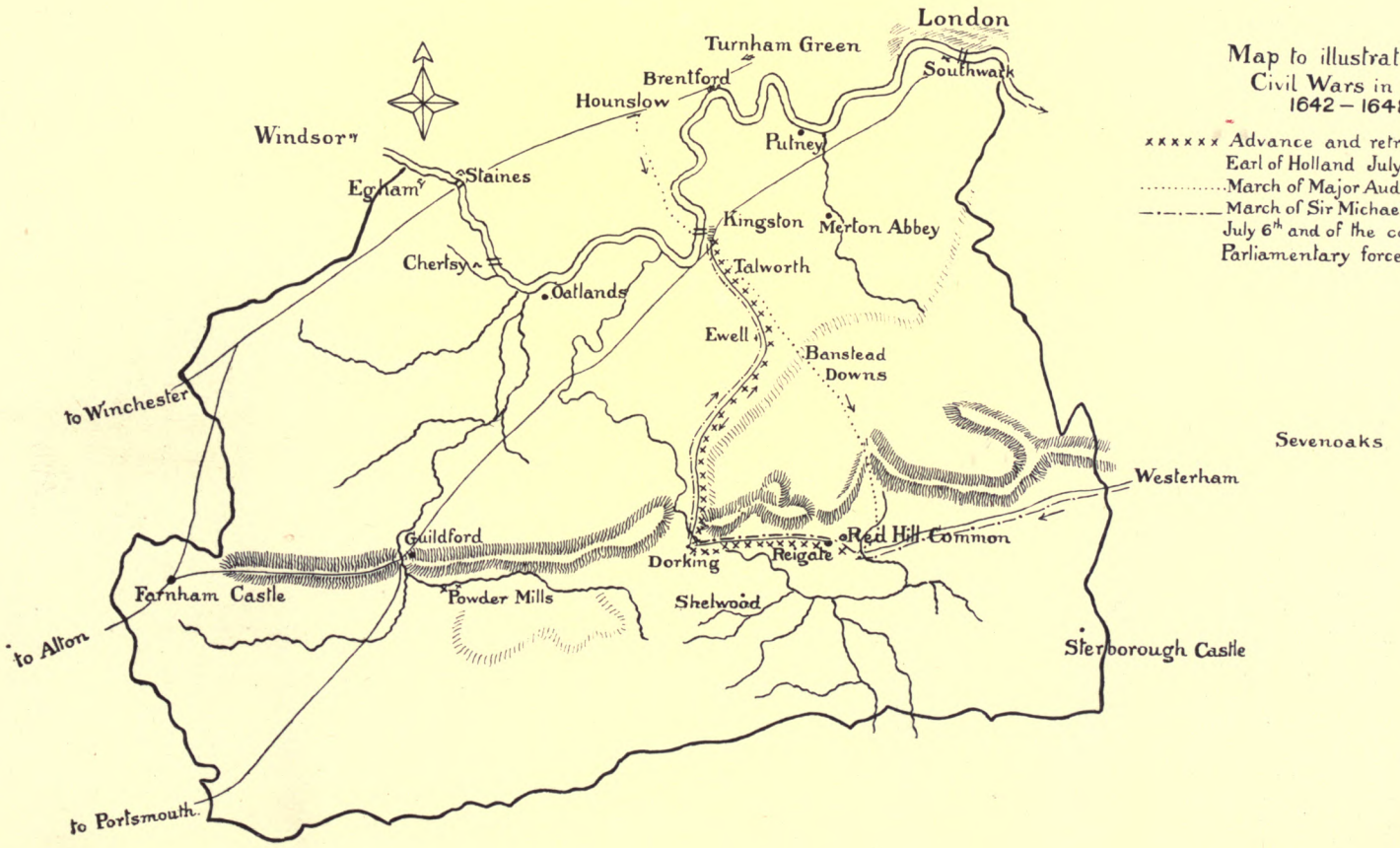


Map to illustrate the Civil Wars in Surrey 1642 – 1648

xxxxxx Advance and retreat of the Earl of Holland July 6th 7th 1648

..... March of Major Audley July 6th

—.—.— March of Sir Michael Livesay July 6th and of the combined Parliamentary force July 7th

falconets, instead, which he undertook to convey safely by byroads. They were refused however, and he was told that the fortress must be evacuated. He then rode down on a good horse alone, avoiding the Royalist parties, to his own house. There he impressed some carts and horses, and took them through the park to the castle, and managed to bring away safely most of his stores and men. The Royalists shortly took possession, and another poet, Sir John Denham, a Surrey man living at Egham, was made governor. He was pricked as sheriff of Surrey by the king for 1643.

The county was now on the verge of the field of serious war. The king's army was just north of the Thames and Rupert's cavalry were south of it. He had tried to take Windsor Castle by a *coup de main*, but found it impracticable and drew off. On November 9 his headquarters were at Oatlands. Kingston was now held for the Parliament by Sir James Ramsay, a Scotch soldier of fortune from the German wars, with 3,000 men. Sir Richard Onslow and the Surrey trainbands had been withdrawn, from a view of the importance of the place, its Royalist feeling, and the chance of certainly either infection or friction between Surrey men of opposite politics. Strangers were more safe. On November 10 Rupert had withdrawn his headquarters to Egham. He crossed the Thames at Staines on the night of the 11th, and in the early morning of the 12th fell upon the advanced guard of the Earl of Essex's army left too far advanced in Brentford.[1] Though reinforced, the garrison of Brentford were overpowered and badly beaten. On November 13 the king's army was face to face with Essex at Turnham Green. But there was no battle. The king had the smaller force, and not enough powder as was afterwards known.[2] Essex was strongly posted for defence, and Ramsay's force at Kingston on the king's flank and rear if he were beaten made it impossible for him to venture much. Ramsay indeed was intended at first to attack the king while Essex manœuvred round his left flank, but the idea was abandoned, and Ramsay was brought round by a circuitous march over London Bridge to Turnham Green, where he would have been too late for a battle if one had been fought on the 13th. He arrived late in the evening. The king fell back without fighting, but Essex did not follow. His force consisted largely of trainbands from London, who were not to be quite trusted for movements under fire in the face of an active cavalry. He fell back close to the fortified lines which had been begun round London. A bridge of boats was thrown across the Thames at Putney, to enable him to march if necessary to stop the king from going east through Surrey, and the ends of the bridge were fortified with *têtes du pont*. The remains of that on the Surrey side are said to have been traceable early in the nineteenth century.[3] There had been a skirmish in Surrey, which

[1] For Rupert's movements see 'Journal of Prince Rupert's Marches' in *English Hist. Review*, October, 1898, and Clarendon, Whitelocke and Rushworth. The king's infantry advanced from Colnbrook to Brentford, but Rupert had been south of the Thames and came across to join in the attack.

[2] Whitelocke's *Memorials*. [3] Faulkner, *Hist. of Fulham*, says that it was visible in 1812.

report magnified into a sharp fight. A contemporary broadside[1] narrates how the Cavaliers advanced through Surrey, and though the professional soldiers were looking anxious, the valiant trainbands overthrew Rupert on the 11th, between Oatlands and Kingston, with the loss of 300 horse to the Royalists. No one else knows anything of the battle, for such it is in the account. It is precise in the date, Friday, November 11; but beyond doubt on the 11th Rupert had withdrawn far from Kingston and was preparing for his attack on Brentford. It is very possible that he let some cavalry make a feint towards Kingston on that day, to deceive the Parliamentarians as to his point of attack, and that an affair of outposts between them and the troops at Kingston was magnified into a battle. After the day at Turnham Green Charles marched into Kingston, whence Ramsay had marched out, and took up his abode for a short time at Oatlands. But he could not safely maintain himself so near his enemies' strength, and on November 18 withdrew to Oxford for the winter. Sir John Denham, left at Farnham as badly provided as Wither had been, proved as unfortunate as his brother poet and of less resource. Sir William Waller appeared before the walls, and though he had no artillery on December 1 blew in the gates with a petard, on which Denham surrendered. Waller cleared the frontiers of Surrey, Sussex and Hampshire of Royalist posts that winter, and took Chichester. Thence on December 29 he sent orders for blowing up the wall of the shell-keep on the mound at Farnham. The habitable castle was nevertheless kept as a Parliamentarian post for the next two years, and Waller himself often had his headquarters there.

On February 14, 1643, a Parliamentary ordinance raised 500 dragoons, mounted infantry, in Surrey, under the command of Nicholas Stoughton. The South-Eastern Association was formed of Kent, Surrey, Sussex and Hampshire, for the support of the Parliament, and Sir William Waller took command of the troops belonging to it, both of the trainbands and troops raised for permanent service. The sequestration of the land of delinquents provided some of the necessary support,[2] and a Board of sequestrators was nominated for Surrey, including such active Parliamentarians as Sir Richard Onslow, Sir Ambrose Browne, Sir John Evelyn, Sir Richard Parkhurst, Nicholas Stoughton, Mr. Goodwyn member for Haslemere, George Evelyn member for Reigate; but also George Evelyn of Wotton and others, who cannot be considered certainly as on that side. On April 14 the Commons ordered that commissioners who refused to act should themselves be treated as delinquents, an order which shows that there were some refusals.[3] Delinquents were all who

[1] *King's Pamphlets*, 83, 10. The reference is incorrect in Manning and Bray and in Brayley. The account is incorrect in the latter, and the original account is itself a manifest exaggeration. It incidentally says that Rupert lost 240 men attacking Windsor.

[2] *Journals of the Commons*, March 7, 1643.

[3] The whole list is Sir Richard Onslow, Sir William Elliot, Sir Robert Parkhurst, knights; Nicholas Stoughton, George Evelyn (of Wotton), Henry Weston (of Ockham), Arthur Onslow, esquires; Sir Ambrose Browne, bart.; Sir Antony Vincent, knight and bart.; Sir John Dingley, Sir Matthew Brand, knights; Edward Sanders, Robert Holman, Robert Houghton, George Evelin (*sic*), Francis Drake, Thomas Sands, George Myn, William Muschamp, esquires; Sir John Holland, Sir

assisted the king with arms or money, except under constraint, and all bishops and cathedral chapters. On May 23, 1643, the House issued an order for impressing horses in Surrey or for taking an equivalent in money. At the same time a weekly assessment was levied in every parish for the service of the war.[1]

In the latter part of 1643 the war again approached the borders of Surrey. In November Sir William Waller, at the head of the regiments raised in the south-east and of trainbands from London and the neighbourhood, had advanced to attack Basing House in Hampshire, where a Royalist garrison dominated the main road from London to the south-west. His troops were ill paid and mutinous. The London trainbands, who no doubt thought that they had done enough in one year by relieving Gloucester and fighting at Newbury, were as impatient as militia generally are of prolonged operations. They refused to assault, cried out 'Home! home!' and insisted on retiring. Waller was forced to fall back upon Farnham, while the Royalists recovered Winchester, and on December 9 took Arundel Castle and came on to the borders of Surrey. There was skirmishing about Farnham. Petersfield and Alton were both occupied by Royalist troops, and the enterprising Royalist commander, Lord Hopton, was in hopes of penetrating right into the south-eastern district.

Waller however, with some fresh troops and some of the men who had failed at Basing House but were now shamed into a better mind, surprised Alton on December 13, and completely cut up or captured the force there. The English soldiers brought over from Ireland, who were among the prisoners, mostly enlisted in his army. The Royalists then abandoned Petersfield, and Waller recovered Arundel on January 6, 1644. The war was again pushed away from the borders of Surrey. The Parliamentarian victory at Cheriton near Alresford on March 29, 1644, rendered the south-east quite safe from invasion. But with untrustworthy militia for his principal support Waller was unable permanently to get away from Surrey till September. He twice had to return to Farnham. On September 2 he was there with only 1,400 men, and only three weeks' pay for these in hand. Yet by calling in his cavalry, who were further west, and receiving reinforcements and supplies, he was able to leave Farnham for good and all in the latter part of September. The Parliament sent him orders to march on September 16. The campaign ended with the second battle of Newbury. Farnham was either left ungarrisoned altogether, or was occupied by only a trifling force. The county levies seem to have been kept in arms at Guildford. On January 9, 1645, the old Royalist forces made their last appearance in Surrey. General Goring, who had been given an independent commission to see what he could do in the south, made

John Evelyn (of Ditton), knights; Robert Goodwyn, George Fairwell, John Goodwyn, esquires; Richard Wright, Cornelius Cook, gentlemen. See *Severall Ordinances and Orders, etc., for Sequestring Estates of Delinquents* (London, 1645), pp. 1, 2, 16.

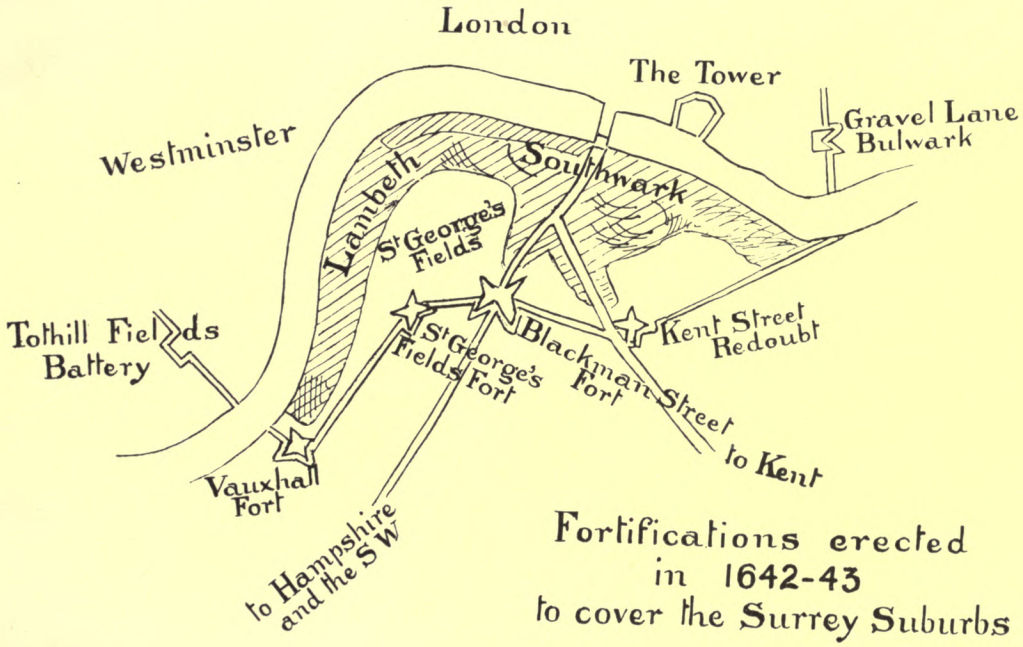
[1] *St. P. Dom.* May 23, 1643.

a dash upon Farnham with a body of horse and occupied the place. But what Hopton could not manage in the far more prosperous state of the king's affairs a year before could not be managed by Goring now. An invasion of the south-east to any good purpose was impracticable. Unable to maintain himself so far from any support and with no money, Goring retired again the next day. He was gone before the belated order of the Committee of the Two Kingdoms, issued on January 13 to General Middleton, to take what horse and foot there were at Guildford to Farnham against him, could be acted upon. The only other war alarm in Surrey in the course of the year was from men impressed in Kent for the New Model Army, who were reported to be in revolt and to be marching into Surrey. However they never came. Troops were despatched from the county to the west, and men were raised for the New Model. In the course of 1645 the Committee of the Two Kingdoms took precautions about the gunpowder mills at Chilworth. They forbade the manufacturer to keep more saltpetre than was necessary to make the powder which they required from time to time. They were apprehensive that the powder might be supplied to the king's friends.[1] Waller had already disabled the Royalist ironworks in the country.

The Civil War, in its first phase, ended in 1646, and the task of restoring a peaceful government began—a task destined soon to lead to further war among the conflicting interests which the first contest had left powerful.

The original Royalist party had been beaten out of the field, but almost at once the quarrels began, or became acute we should rather say, between the really discordant parties who had opposed the king. Like other counties which had been wholly in the hands of the Parliament in the earlier war, Surrey became the scene of disturbance and of actual fighting in the later contests. The first threatening of renewed war was in June, 1647, when the army seized the king's person and impeached eleven members of Parliament. The eleven members were allowed leave of absence, and Parliament began to treat with the army which was supposed to be their servant. The Speaker himself, Lenthall, who had been a justice of the peace for Surrey, with certain lords and commoners, fled to the army ; but the temper of London was uncertain and the troops closed upon it. The capital had been fortified against the king in 1642 and 1643. It was covered by forts connected by lines of earthworks extending over a circuit of twelve miles. On the Surrey side there was a fort at Vauxhall, another near St. George's Fields, a third by Kent Street. The gatehouse and drawbridge of London Bridge formed an interior defence to the passage into the City. The army was substantially in the same position which the king had occupied in the autumn of 1642, being at Colnbrook, Hounslow and Kingston, but was much stronger than he had been, and was opposed to a divided enemy. They were strong enough practically to invest the

[1] See *St. P. Dom.* 1645, for this, and *passim*, with Letter Book of the Committee of both Kingdoms for Civil War above.



Fortifications erected
in 1642-43
to cover the Surrey Suburbs

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city by seizing Tilbury and crossing to Gravesend, so as to command the river. But now for the first time London was taken from the south. Southwark declined to join hands with the City in resisting the advance of the army,[1] the old jealousy of the suburbs against London possibly helping to decide their attitude. But the southern bank of the Thames was thereby thrown open to the army. It was intimated to the army that the Surrey trainbands were not prepared to defend Southwark.[2] At 2 o'clock in the morning of August 4 Colonel Rainsborough, marching from Kingston, took possession of the Surrey side fortifications. Two pieces of cannon planted opposite the gate of London Bridge persuaded the defenders to open the passage, and Rainsborough occupied the bridge. On August 6 the army took possession of the City and Westminster. The headquarters were afterwards fixed at Putney; and here were chiefly carried on the debates in the council of the army during the autumn of 1647 for the settlement of the kingdom. It was in effect the centre of English politics, where the proposals and suggested terms of settlement propounded by the officers, the king and the Parliament were discussed.

It was not easy to make these terms between the utterly opposed fanatics for Presbyterianism and Independency, the conscious and unconscious Republicans and the mass of quiet people who desired the restoration of the old Constitution with both king and Parliament in their right places. The Royalist fanatics were down and their wishes disregarded, but they were ready to take any advantage that they could of the contentions among their conquerors. The king was regarded by so many people as indispensable that it is small wonder that he thought himself so. The monarchical and Presbyterian Scots were jealously regarding the course of all English negotiations. Naturally the alliance was drawn together between English Presbyterians, Scots, Moderate people, and old Royalists, which after twelve years more of uncertainty and military rule was to prove irresistible in 1660. But in 1648 it was hampered by the life and character of Charles and was opposed by an army admirably organized and led, which had not begun to lose faith in its work as God-appointed. Surrey shared the wishes of most of the country for a settlement on the lines of the old Constitution and for the disbanding of all armies. Like the rest of the country it underrated the difficulties of the task and was not organized to enforce its views. The crying grievance to all people was the burden of the soldiery. On December 17, 1647, the Surrey farmers presented a pitiful petition to Parliament to the effect that for six years they had endured the charge of soldiers quartered upon the county, and that their landlords nevertheless demanded their full rents, though the tenants were impoverished by free quarters.[3] The landlords also were in many cases impoverished by

[1] Rushworth, vii. 741.

[2] When the Parliament was again in accord with the army it passed on August 11 a vote of thanks to the Southwark trainbands for their attitude. Rushworth, vii. 772.

[3] *Rushworth Collections*, pt. iv. vol. ii. December 17, 1647.

fines and sequestrations. The petition refers to one of a similar purport from Blechingley. A strong feeling was excited against the continuance of the state of things which made an army a necessity.

In May, 1648, there were wars and rumours of wars all over the country. South Wales had risen against the army under old Parliamentary officers. Kent was all but in arms. There were riots everywhere. A Scotch army was coming some day to aid the new Royalist party. London and the remains of the House of Lords were evidently anxious for a speedy arrangement with the king. The House of Commons was itself not very steady, and any reverse to the army might cause a Presbyterian majority to appear in it ready for a compromise by which the sects would be thrown over. In this state of things on May 8, 1648, there was a meeting of the inhabitants of Surrey at Dorking to prepare a petition to the Parliament. Having drawn up, printed and circulated a petition, they met on Putney Heath on May 16, several hundreds strong, gentlemen, yeomen, and of course a disorderly tail of idle followers, preparatory to marching in procession to Westminster.

The petition ran briefly as follows: 'That the King may be restored to his due Honour and just Rights, according to the oaths of Supremacy and Allegiance, and that he may be forthwith established in his Throne according to the Splendour of his Ancestors.

'That he may presently come to Westminster with Honour and Safety, to treat personally for composing of Differences.

'That the free-born Subjects of England may be governed by the known Laws and Statutes.

'That the War beginning may be prevented.

'That the Ordinance for preventing Free Quarter may be duly executed, and speed made in disbanding all Armies, having their Arrears due paid to them.'[1]

The petition was presented to both Houses. The Lords answered that they were considering the settlement of the kingdom and doubted not but to satisfy all. The House of Lords was unduly sanguine of success in an impossible task. The Commons were in no hurry to acknowledge the petition at all. The method of the presentation was not calculated to make matters easier, and a catastrophe ensued when the Surrey men were waiting for the answer of the Commons. The petitioners, several hundreds strong, had come by permission of the corporation across London Bridge in procession through the City. Their hats were dressed with green and white ribands; they had trumpets, pipes and fiddles playing, and shouted 'God and King Charles,' 'Hey for King Charles.' Such an assembly was not likely to lack accessions of idle and mischievous persons as it passed through the City and down the Strand. As they reached Charing Cross a shower began to fall, and many of the company sought shelter in the alehouses. They had probably not done the day's journey from Putney without refreshment already, and Whitelocke describes them delicately as 'being gotten

[1] Whitelocke's *Memorials* give the summary.

almost drunk.' While waiting in Westminster Hall they began to quarrel with the soldiers on guard. Whitelocke proceeds: 'They fell a quarrelling with the guards, and asked them why they stood there to guard a company of rogues. Then, words on both sides increasing the Company fell upon the guards and disarmed them, killed one of them and wounded divers. On this alarm more soldiers were sent for from Whitehall and the Meuse, who fell upon the countrymen and killed five or six of them and wounded very many, chasing them up and down through the Hall and the Lanes and Passages thereabouts.'[1] Rushworth says that they disarmed two or three of the guards and killed one before one of the petitioners was hurt. But this evidence is all on the side of the Parliament. We can well believe that the countrymen were rude and violent, but 'the words on both sides increasing' imply that the soldiers were not passive either, and an unarmed mob is not likely to have actually assaulted and killed one of an armed guard without more provocation than ill words. The accounts of eye-witnesses show that considerable disorder on one side was put down by military force on the other. The petitioners, waiting in vain for an answer from the Commons, became abusive and violent, shouting for 'An old king and a new Parliament,' and wishing to enter the House. A regiment was sent for to clear them out of Westminster Hall, and then resistance being attempted one man was killed on the side of the soldiers, some eight or ten of the countrymen were killed and nearly a hundred wounded. Shots were fired as well as swords and pikes used.[2] Had the violence been done by soldiers of a Stuart sovereign, or of Lord Liverpool's ministry, it would be in all school histories of England. On May 18 the Surrey gentlemen published their version of the riot at Guildford. They said that they were joined by many Royalists and that provocation was used to the soldiers which they disliked, as also they did the violence of the soldiers. They do not admit the beginning of violence on their own side. They declared that they would not further exercise their right of petitioning the Parliament, but would unite the county in an engagement to bring in the king again upon conditions. They desired that it should not be in the power of either king or Parliament or army to oppress and ruin the people at their pleasure by committees or taxes or free quarter. They recommended also that a period should be put to the present Parliament.[3] The self-constituted Executive Government in fact, evolved out of a legislature elected eight years before in different circumstances, which had shed many of its members and supplied their place by illegal elections, but which was indissoluble except by its own act, had outlived its popularity. A period was to be put to it a few years hence, but not by the justly discontented nation. The Surrey gentlemen had on May 22 turned to the real masters of the

[1] *Whitelocke Memorials*; see also *Rushworth Collections*.

[2] See 'A True Relation,' *Museum Pamphlets*, E. 443, 5, and 'A New Narrative,' E. 443, 29. Also Clarendon MSS. 2786, 'A Letter of Intelligence,' May 18, 1648.

[3] A Declaration of the County of Surrey, *Museum Pamphlets*, E. 445, 8.

Parliament and desired the general to give orders that no affront should be offered in the future to the countrymen by the soldiers, lamenting the injury done to their petitioners and the shedding of so much Christian blood of their county. The Commons meanwhile ordered their committee in the county to prevent tumultuous meetings, and desired the Corporation not to allow any large bodies of men henceforth to pass through the City.[1]

Surrey was ripe for a rising when on May 23 Kent was up in arms against the Parliament and army. There were nearly simultaneous risings in North Wales and in the north of England in anticipation of a Scotch invasion. The rest of the south-east was not ready. On the night of May 31 and June 1 Fairfax stormed Maidstone. The Kentish coast was much of it in the hands of the Royalists still, but the main body of their remaining forces marched from Rochester by the road, which Fairfax in his advance had left open, towards London. They crossed the river by boats, picked up some sympathisers near London and marched into Essex, where Fairfax following them hard brought them to a stand at Colchester. Defeated in an attempt to carry Colchester as he had carried Maidstone he had to sit down before the place for a regular siege. While he with the best of the army in the south was so occupied, and while Cromwell and Lambert were engaged in Wales and the North, an opportunity was given for a rising to be prepared in Surrey and Sussex.

By the influence of the queen the Earl of Holland had been appointed to command the Royalist troops in England. He was truly representative of a great deal of English feeling but totally unfitted to command. He represented English feeling in that he was a former supporter of the Parliamentary cause and supposed to be specially acceptable to the Presbyterians. But he was a vacillating and feeble politician and no soldier. He had nominated an incompetent commander, the Earl of Norwich, to the Kentish Royalists, who had mismanaged the cause in Kent and was now practically superseded by Sir Charles Lucas, Lord Capel and Sir George Lisle in Colchester. Holland himself was preparing for a rising in the neighbourhood of London so openly that it scarcely needed the ample information of spies to put the Parliament upon its guard.[2] The Executive Board at the time was the Committee of Derby House, which was a board of members mostly Independents who had superseded the Committee of Both Kingdoms when the latter was broken up by sending away the Scotch members. They were daily informed that Holland was buying horses and raising men. His house in London was frequented by dangerous characters. He had engaged the services of Major Dalbier, a German officer, who had served Count

[1] *Whitelocke Memorials.*

[2] Yet Holland at his trial had the face to pretend that he stumbled into a rising by accident. 'I was brought by a suddaine accident into a partie that as suddainely was disperst.' He tried to argue that he was not the general. He certainly did little of the duties of one. (See Clarke Papers, Worcester Coll. MSS. 70, fol. 256 and seqq.) Had his judges known their Falstaff they might have answered, 'Rebellion lay in his way and he found it.'

Mansfeldt, the former Duke of Buckingham, Charles' favourite, and been quartermaster-general in Essex's army, and was probably ready to serve any one who paid him. The unstable condition of affairs is shown by Holland's not being arrested. But the City was in a doubtful mood. At the very time that Holland was rising they petitioned the Parliament in favour of the return of the king in honour and safety to London to treat with the Parliament, and also requested that their trainbands and those of the neighbourhood might be organized as a separate force with cavalry added, so as in fact to raise an army for the party of peace. The remnant of the Lords answered their petition favourably. The Commons deferred their reply. There was no doubt that if Holland attained an initial success he would be joined by many waverers, and would almost certainly force Fairfax to raise the siege of Colchester to save London. Plans were laid for seizing Windsor, Winchester and Farnham Castle. Surrey was to be the scene of the rising, and a horse race on Banstead Downs was to serve as an excuse for drawing people together. An actual rising began in Sussex about Horsham; it was reported to the House on June 29 and helped perhaps to precipitate the crisis.

Sir Michael Livesey who commanded some Kentish horse and foot for the Parliament, and Major Gibbons who had part of Colonel Rich's cavalry regiment in Kent, who both had been employed in putting down the remains of the Royalists there, had been ordered into Sussex. On July 2 they were ordered to halt at Sevenoaks ready to move into Surrey. On the same day the Derby House Committee ordered up Captain Pretty, with a troop of Ireton's regiment from Windsor to join them. On July 3 the committee wrote to Fairfax asking for a whole regiment of horse from Colchester. On the 4th Parliament desired the committee to put Farnham, Reigate and Sterborough castles, Merton Abbey and other places in Surrey into a condition in which they could not be made use of for endangering the peace of the kingdom.[1] They were actually dismantled after the affair was all over. For on the evening of the same day Holland, only perhaps half prepared, raised his standard at Kingston accompanied by Dalbier, the Duke of Buckingham, the Earl of Peterborough, Lord Francis Villiers and some 500 or 600 men. He published a manifesto declaring that he was in arms against arbitrary government, for the cause of king and Parliament, religion and the known laws of the country. He was fighting, he said, to prevent the simultaneous overthrow of monarchy and of order, not for tyranny, but for constitutional rule. His declaration is dated July 6, when he was in fact marching through Surrey, and the date indicates perhaps the day on which he had intended to meet his supporters on Banstead Downs if his movements had not been hurried on. An appeal to arms addressed to moderate men in the cause of order has always this weakness in it, that

[1] See *Letters of Committee of Derby House*, and *Rushworth Collections*. *Whitelocke's Memorials* correctly, according to the Journals of the House, say that the places were to be dismantled. Rushworth says incorrectly that they were to be secured. Guildford Castle appears not to be thought of as a place of defence.

it calls upon those who dislike fighting to come out and fight and to promote peace and order by violence. Holland plundered partisans of his enemy in the neighbourhood of Kingston, seized some horses, but gained few more adherents. Sir John Evelyn, who was stopped on his way through the town, was released with an apology by Holland's orders. On July 6 he started to march towards Dorking. Captain Pretty seems to have arrived in Kingston after Holland had left it, took seventeen stragglers of his force prisoners and returned with them to Windsor. He probably remained to guard the line of the Thames, where all horse ferries between Lambeth and Windsor were removed.[1] Holland meanwhile passed through Dorking to Reigate. There was some plundering, and from evidence on the earl's trial it appears that one Reigate man was shot by a Royalist for refusing to give up his pistols. But there was neither strength nor purpose in the rising. Perhaps Holland meant to join hands with the Sussex insurgents, perhaps to look for help among the Surrey countrymen still smarting under the treatment of their petitioners. Livesey and Gibbons on the same day were on their march from Sevenoaks towards Reigate. For the brief campaign we have the guidance of an actor, Major Lewis Audeley of Livesey's horse, evidently an efficient officer and intelligent reporter. He was a Surrey man by residence, married to the widow of Mr. Hawtrey of West Purley in Sanderstead. He had been detached from his commander and was at Hounslow with three troops when the rising was made. He was ordered to rejoin Livesey, and on the way to disperse any gathering on Banstead Downs. On the 6th therefore, while Holland was marching from Kingston to Dorking and thence towards Reigate, Audeley, who would also come over Kingston Bridge, was moving in a line north-east of him over Banstead Downs towards the same point. There was no company gathered on the Downs; the 4,000 or 5,000 men whom rumour had assembled there[2] were non-existent. Audeley approaching Reigate found Holland already there with vedettes posted on Red Hill to observe the road from Kent by which Livesey and Gibbons would arrive. Audeley passed north of him and wheeled round to face him on Red Hill, with his retreat secure towards the road by which his friends were coming. He engaged the outposts on Red Hill and drove them in, but found Holland's main body too strongly posted to be attacked in Reigate, where they had possessed themselves of the half dilapidated castle then belonging to Lord Monson the Independent. Audeley drew off apparently northward or southward to guard the roads either to London or to Sussex, but not eastward, for Gibbons coming up the same night from Kent missed him. Gibbons pushed on into Reigate, finding it deserted by the Royalists who had unaccountably retreated to Dorking. Gibbons again left it and bivouacked on Red Hill. Next morning, on the 7th, Livesey's whole force came up, Audeley joining them, and they

[1] See Montagu MSS. *Hist. MSS. Comm. Report,* A letter from Lady Winwood from Ditton, July 25, 1648.

[2] Holland's Trial in Clarke Papers.

reoccupied Reigate. Aimless and uncertain throughout, Holland tried to return to Reigate on the 7th, having heard that Gibbons had not remained there the night before. Learning the truth he turned about to march to Kingston whence he came. What motives directed him it is impossible to say. His last hope really was to get into Sussex and join the Royalists there already stirring and to raise more. He could not now expect to find help from London. Two hours after he had started Livesey was in pursuit. He left a garrison of twenty men in Reigate Castle, showing that it was not wholly indefensible. Livesey had now five troops of his own regiment, two which had come with him out of Kent, three which had joined under Audeley, and three troops of Rich's horse under Gibbons. These pursued in haste, three foot companies of Livesey's men coming up after them. Eight troops of horse nearly equalled Holland's members if he still had 600 men.[1] The Royalists being some horse and some foot retreated slowly, and despite their two hours' start were overtaken near Ewell. Here a few shots were fired. Close by at Nonsuch there was a smarter skirmish. At last the Royalist horse turned about where the road rises over what was Kingston Common, about a mile south-east of where Surbiton station is now. The infantry pushed on towards Kingston and Holland himself with them. The combat that followed is almost Homeric in incidents, and shows that there was good metal in Holland's force wasted by his incompetence. Certain troopers came out of either force and engaged in single combat, 'playing valiantly.' Then Rich's cavalry charged and the Royalists fell back fighting towards Kingston, covering the retreat of their foot. Lord Francis Villiers, younger brother to the Duke of Buckingham, was fighting in their rear. His horse was killed, but he stood against an elm on the east side of the road, says Aubrey, to whom was pointed out the site of the tree felled in 1680. There he kept several troopers at bay, till one came behind and reaching round the tree struck off his steel cap and wounded him in the head, when he was slain. Clarendon laments his youth and beauty, and a general commiseration seems to have been expressed for his fate. The report in London was that he was a wounded prisoner, and orders were sent for his careful treatment. But he was dead, says Audeley, 'and good pillage found in his pocket.' In the outskirts of Kingston the Royalist infantry turned about and checked the pursuing cavalry. These drew off and waited till their infantry should arrive, intending to attack next day. In the night Holland's force dispersed.[2] Many went to London and escaped notice. The leaders with a few horse fled northwards. Scrope's regiment of cavalry, detached by Fairfax from the Colchester leaguer, came across them at St. Neots in Huntingdonshire about July 10,

[1] The numbers in a troop varied at different times. At this time Rich's three troops ought to have been about 300 men. The troops of militia varied more widely than those of the regular army, but the additional five troops would probably bring the total to about 600 men.

[2] For the whole account see 'A True Relation,' etc., by Major Lewes Awdeley, *King's Pamphlets*, 375, 30. Clarendon's account is nonsense.

surprising them at night in the town.[1] Holland was taken and Dalbier killed at St. Neots. The former was executed. Buckingham and Peterborough escaped abroad. So ended the last real fighting which has taken place in Surrey, and the last serious skirmish of the Civil Wars south of the Thames. The Surrey strong places were rendered still more indefensible than they were before, and Livesey's Kentish men were quartered in west Surrey, south-west of Guildford in Compton, Chiddingfold, Witley, Thursley and thereabouts, where perhaps Royalist feeling was suspected. They remained for nine months, and behaved so badly that the inhabitants petitioned the general, Sir Thomas Fairfax, to remove them, and they were accordingly sent to Northamptonshire April 16, 1649, in pursuance of an order signed by Cromwell; while on the same date Fairfax issued an order warning officers to preserve discipline in the county, but adding that some disorders were perpetrated by persons pretending to be soldiers who were to be looked after by the justices.[2] The rising gave the opportunity for forfeiting the property of more delinquents in Surrey, and some troops and companies of soldiers were raised to be paid out of the proceeds.

Rich's regiment, which had helped to suppress the Surrey rising, did its next notable service on December 6 of this year when it was employed with Pride's foot to coerce the House of Commons. Sir Richard Onslow, member for the county, and Sir William Waller, who had been the foremost agent in keeping Surrey for the Parliament, were among the members arrested by the soldiers in this act of violence to prevent the accommodation ardently desired by five-sixths of the country.

The reform of the Parliamentary representation of the county was proposed, as was that of all others, by the Agreement of the People, the manifesto of the genuine Republican party, presented to the remnant of the Long Parliament shortly before the execution of the king, but not accepted by them. The number of representatives was to be cut down to two for Southwark and five for five electoral divisions of the county. This constitution never actually came into existence. In the Nominated or Barebones Parliament of 1653, Samuel Highland and Lawrence Marsh who sat for Surrey were both reckoned among the extreme or fanatical party of that assembly.[3] When the Instrument of Government actually made a reformed constitution under the Cromwellian monarchy in December, 1653, Surrey had ten members assigned to it, two for Southwark, one for Guildford, one for Reigate and six for the rest of the county. The last were elected by the whole county, not for districts, but after the collective fashion which the French call *scrutin de liste*.[4]

[1] Report in Duke of Portland's MSS. 1, 478.

[2] Manning and Bray, iii. 674. The original papers on the matter were communicated to Manning by Mr. William Smyth of Godalming, whose family lived at Peperharow in 1649. Whitelocke gives a petition from Surrey against free quarters in February, 1648–9, but it is apparently not the same petition, and dealt with other matters, such as the appointment of magistrates and the abolition of tithes as well as with free quarters.

[3] See list in Gardiner's *Commonwealth and Protectorate*, vol. xi. ch. xxviii.

[4] This remained the system of election till 1658 when Richard Cromwell altered it. *Ludlow's Memoirs*, Firth ed. ii. 48.

In 1654 the members for the county elected under this scheme were Sir Richard Onslow, General Lambert, Arthur Onslow, Francis Drake, Robert Holman and Robert Wood. To the Parliament of 1656 the first four were again elected, with George Duncombe of Albury, and John Blackwell, jun. Sir Richard Onslow was called to Cromwell's House of Lords.[1] Arthur Onslow and Francis Drake sat in Richard Cromwell's Parliament. But meanwhile Parliamentary rule had really been suspended. The insurrections of 1654 had been attempted in several places, but had been nipped in the bud in Surrey by the arrest of Sir Humphrey Bennett.

In 1655, when, in consequence of the plots and risings of both Republicans and Royalists against the new monarchy, the military power, which really ruled, had to show itself openly, and the country was divided into districts under fourteen major-generals. Surrey was in that controlled by Major-General Barkstead. The high sheriff of Surrey that same year was another soldier, Colonel Thomas Pride, who had 'purged' the Parliament in 1648. He was a member of Cromwell's House of Lords a little later. This control was close and rigorous. Suspected persons were closely watched, and their movements from place to place only allowed on sufficient reason being given. Persons against most of whom certainly no offence was provable were placed in the position of a modern ticket-of-leave man under police supervision. The Earl of Southampton, knights, gentlemen and so on of course appear in the lists preserved ; but how minute was the observation or how wide the discontent is shown by the inclusion of innkeepers, brewers, yeomen, a tailor, a labourer, a bricklayer, a waterman, a bodice maker, a man-milliner, gardeners, cordwainers, an oatmealman, a stone-cutter and so on.[2] Brewers and innkeepers were perhaps natural enemies of the ruling party. The village inn and the country feasts were centres of malignancy, and as such suppressed or controlled. The repression extended to the victims of popular sports, and the surviving bears of the Southwark bear-pits were put to military execution by the major-general or the sheriff, being 'shot to death by a company of soldiers,'[3] and the fighting cocks had their necks wrung. Southwark was no doubt more orderly in consequence. But it is often more dangerous to interfere with popular amusements than with more serious matters. In many ways the military despotism was doing its best to make the royal despotism forgotten.

The vagaries of individual opinion were given scope for development by the Civil Wars, but were by no means allowed to flourish undisturbed. At the very outset of the Commonwealth Surrey had been the scene of a curious exhibition of eccentricity characteristic of the times. The ancient and probably everlasting doctrines of extreme

[1] List given by Manning and Bray, but the writs and returns for 1656 are not extant. The Onslow Papers say that Sir Richard and Arthur Onslow were returned in 1656.

[2] See Letters and Lists in Brit. Mus. Add. MSS. 19,516, 34,013, 34,015, and an article upon them in *Surrey Arch. Coll.* 1899, by A. B. Bax, Esq.

[3] Clarke Papers, iii. 64, *R. Hist. S.*

Socialism emerged in the time of general unrest, associated with extreme forms of religious excitement. There were people known as Levellers or Diggers, who combined the old cry against enclosures with metaphorically 'levelling' political ideas. On April 17, 1649, news came to London that some of them, under two leaders, Everard and Winstanley, were at work on the waste of Cobham Manor, near St. George's Hill in Surrey, digging the ground and planting roots and beans. They were only about thirty in number, but boasted that they would soon be 4,000. Fairfax took them seriously enough to despatch two troops of horse after them. The leaders were brought up before the general, when they anticipated Quaker practices by refusing to uncover to their fellow creature, while Everard delivered himself of a speech declaring his mission. He had been instructed, he said, by a vision to dig and plough the earth and to gather the fruits thereof. These were to be distributed among the poor. At present enclosed property was to be let alone, but not for long, for in the good time shortly coming all land and other property was to be common. He moreover explained that he had a mission to deliver his brother Israelites, who had been in captivity since the coming of William the Conqueror, but who were now, as God's people, to be restored to their rights in the promised land of England. Whitelocke says that it was the first time in his age that attention had been drawn to these doctrines ; it was assuredly not the first time in all ages, nor by any means the last. Martial law was too familiar—and Everard too had been a soldier—for the poor prophet to think of questioning the right of the general and his troops of horse to nip in the bud these schemes of land nationalization and Anglo-Israelitism. Indeed, before Fairfax took further steps, the real commoners, whose land was being invaded, attacked and scattered the Diggers, and pulled up their roots and beans.[1]

We are apt to forget how much of the ordinary peaceful life of the country went on through all troubles, foreign or domestic. Work less noisy than civil war, but nearly as important in its after results, was being done, though under difficulties.

A more practical agriculturist than the Diggers was planting roots in Surrey about the same time as they. This was Sir Richard Weston of Sutton Place, a Catholic recusant, and of course a Royalist in sympathy, though he took no active part in the war. He, harassed by law and lawlessness, and with half his estate sequestrated, was nevertheless working steadily to improve his property, and incidentally the whole country too. In the *Directions for the Improvement of Barren Lands*, published in 1645 and republished with additions by Milton's friend Hartlib in 1651 and 1652, he recommended field crops of turnips, anticipating by more than half a century Lord Townshend's Norfolk improvements. He also introduced clover from Brabant and Flanders. He was the author of another more striking innovation, also brought from abroad, by causing the first real canal locks in England to be made.

[1] Whitelocke's *Memorials*, April, 1649.

In 1650 and 1651 he obtained two Acts from the Long Parliament for canalizing the river Wey between Guildford and the Thames. The work was begun in 1650 and finished in 1653. There were many disputes about the rights of various owners subsequently, and Sir Richard, who died in 1652, like many inventors reaped no gain for himself and little for his family. But his enterprise no doubt benefited the county and Guildford in particular. As we have seen, the town was probably somewhat decayed owing to the failure of the cloth trade, but the canalized Wey made it a centre of agricultural and other produce for the London market. When in Charles the Second's time a quarrel among riparian owners had caused a suspension of traffic for some weeks, it was complained that 500 or 600 quarters of corn and meal, and timber for the king's ships had been stopped. Gunpowder from the Chilworth mills, probably some iron from the Weald, also found its way to London by barge from Guildford.

The Commonwealth and Protectorate did not end without further attempts at disturbance in Surrey. The state of affairs after the fall of Richard Cromwell in 1659 encouraged impatient Royalists to plan a rising for August 1 in that year. Lancashire and Cheshire were the only counties where they really rose in force, but a general insurrection was prepared. Red Hill Common was fixed as a rendezvous for the discontented in Surrey and Kent. On July 30 Whitelocke wrote to Audeley, who had so distinguished himself in 1648, to unite his own troop with other soldiers from Croydon and Epsom at Reigate. On July 31 he was specifically warned to look to Red Hill, which he occupied. The projected insurrection was nipped in the bud. The soldiers intercepted men coming to Red Hill singly or in small parties, a brother to Penruddock, who had headed the rising of 1655, and Captain Elsmere, late of Colonel Ingoldsby's regiment, among them.[1] Elsmere offered to turn informer.[2] On August 1 from thirty to sixty persons appeared in arms in the neighbourhood, but they were immediately overawed by an overwhelming force, and fled to Shelwood, where they dispersed with apparently no fighting.[3] About a dozen prisoners were taken, and one, a deserter, was condemned to death.[4]

When Monk had allowed popular opinion to declare itself for the old constitution of king and Parliament, supporters of different sides in the late troubles assumed a political lead in Surrey as elsewhere. The county members in the Convention Parliament of 1660 were Francis Lord Longford, whose aunt was an Onslow, and Daniel Hervey of Combe.

In 1661 Henry Weston of Ockham was sheriff[5] for Surrey alone

[1] *Mercurius Politicus*, August 3, 1659.

[2] Tanner MSS. 51, f. 107. [3] Ibid. 51, f. 107 and *St. P. Dom.* July 30, 31, August 1, 1659. Shelwood is a few miles south-west of Red Hill.

[4] *Mercurius Politicus*, August 3, 1659.

[5] Loseley MSS. March, 1660–1, ii. 109. His wife was niece to General Ireton, and he had been employed under the Long Parliament as a commissioner for Surrey in 1645. He was not of the recusant family of Sutton.

and not for Sussex also, following the practice since 1638, and the county members were Adam Browne of Betchworth and Sir Edward Bowyer. But for the borough of Guildford old Sir Richard Onslow and his son Arthur were elected, continuing the traditions of the Long and of the Cromwellian Parliaments.

The new lord lieutenant was John Viscount Mordaunt, who had been deeply engaged in the Royalist plots of 1658–9, whose father had commanded a regiment for the Parliament before 1644, and whose elder brother, the Earl of Peterborough, had been in arms with Holland in 1648.

Among political changes must be reckoned the change of the incumbents in certain parishes. According to Calamy's list of the Bartholomew Confessors who resigned their livings in 1662 twenty-seven were from Surrey. They included most of the incumbents of the Surrey suburban parishes, of four churches in Southwark, and of Bermondsey, Lambeth and Clapham, besides Kingston and Mortlake, of one of the Guildford churches, St. Nicholas, of Dorking and of Farnham. Further away in the country ecclesiastical changes seem always to have been more easily accepted. The rector of Ockley was the only one in the Weald who went out. Later on in the reign there were strong conventicles of Nonconformists at several places in Surrey, notably in Southwark, Dorking and Godalming. John Bunyan was among the preachers who sometimes officiated in Southwark, and he is said traditionally to have visited Guildford. Fox the Quaker had many adherents in Surrey, and himself records his visits to them in his Journal.

The struggle between religious and political parties became acute again as time went on. When the Long Parliament of the Restoration was dissolved, Arthur Onslow and George Evelyn of Wotton were returned for the county, and sat in the three Parliaments of the rest of Charles' reign. The former was distinctly of the Country party, the latter not a very extreme Tory. It reads like a return to Elizabethan days when a warrant is signed by a William More of Loseley to the constables for levying fines on persons in Worplesdon who had attended a conventicle at the house of Sir Nicholas Stoughton of Stoke.[1] The wife of Sir Nicholas was informed against in 1680 for attending a conventicle in Artington. In 1683, when civil war was actually feared, and the Government and the Whigs were arming against each other, a warrant was issued to search the house of Arthur Onslow of Clandon for arms.[2] In 1685, when the king was triumphant, the Quarter Sessions sitting at Croydon bound over Sir Nicholas Stoughton, Arthur Onslow, Esq., and Richard Onslow, Esq., to be of good behaviour, in sums of £500 each for themselves and £250 for their sureties.[3]

The Onslows were pronounced Whigs, and it now appears that George Evelyn did not quite satisfy the ultra-Tory party as a county member. The Crown interfered again in the elections which the

[1] Loseley MSS. April 8, 36, Ch. II. [2] Ibid. July 21, 1683.
[3] Ibid. April 8, 1685.

country gentlemen considered their preserve. When the elections were held for the first Parliament of James II. John Evelyn complains that the election was hurried on in an irregular way at Letherhead to secure the return of his cousin, Sir Edward Evelyn, and of Sir Adam Brown to the exclusion of his own brother George and Onslow. The charter of Guildford was among those confiscated at this time, and restored in a form amended to suit Crown influence by James II. It was regranted, and the corporation restored in its original form, when the king was alarmed by the preparations of the Prince of Orange. Monmouth's insurrection was far from the county, but its unfortunate leader was brought a prisoner to Guildford, and was lodged for a night in Abbot's Hospital on his way to London. When the Prince of Orange came over fighting was expected in Surrey. The advance of the prince from the west would, it was apprehended, bring his army into much the same positions as those held by the king's army in 1642. Some of James' troops were sent forward to Farnham. Sir William Temple, among others, withdrew from the scene of possible warfare, abandoning his house at Moor Park, near Farnham, the house where he entertained Swift as his dependant. But James let his crown go without a struggle. It was from Lambeth on the Surrey side that his queen and the Prince of Wales embarked on the river to share his ruinous flight to France.

The history of any English county takes a new and less picturesque form when civil wars have ceased, and when the struggles of contending parties are waged at Westminster, by intrigues at the Court of St. James', by pamphlets and in the press. In Surrey a change, which had begun to be seen before, was becoming more marked in the days after the Restoration. London was invading the country. Besides the growth of the suburbs and of the villages on the Thames, the fashionable world had descended upon Epsom. The discovery of the wells in the seventeenth century, and the growing taste for horse-racing, a taste of which we seem to know nothing before the time of James I., which Charles I. neglected, but which both Cromwell and Charles II. affected, made Epsom one of the most famous country resorts of Londoners. It vied in popularity with Tunbridge Wells, and had the advantage of being nearer to London. The crowd who resorted thither were the true precursors of the London folk who have finally transformed the face of rural Surrey in the last two generations.

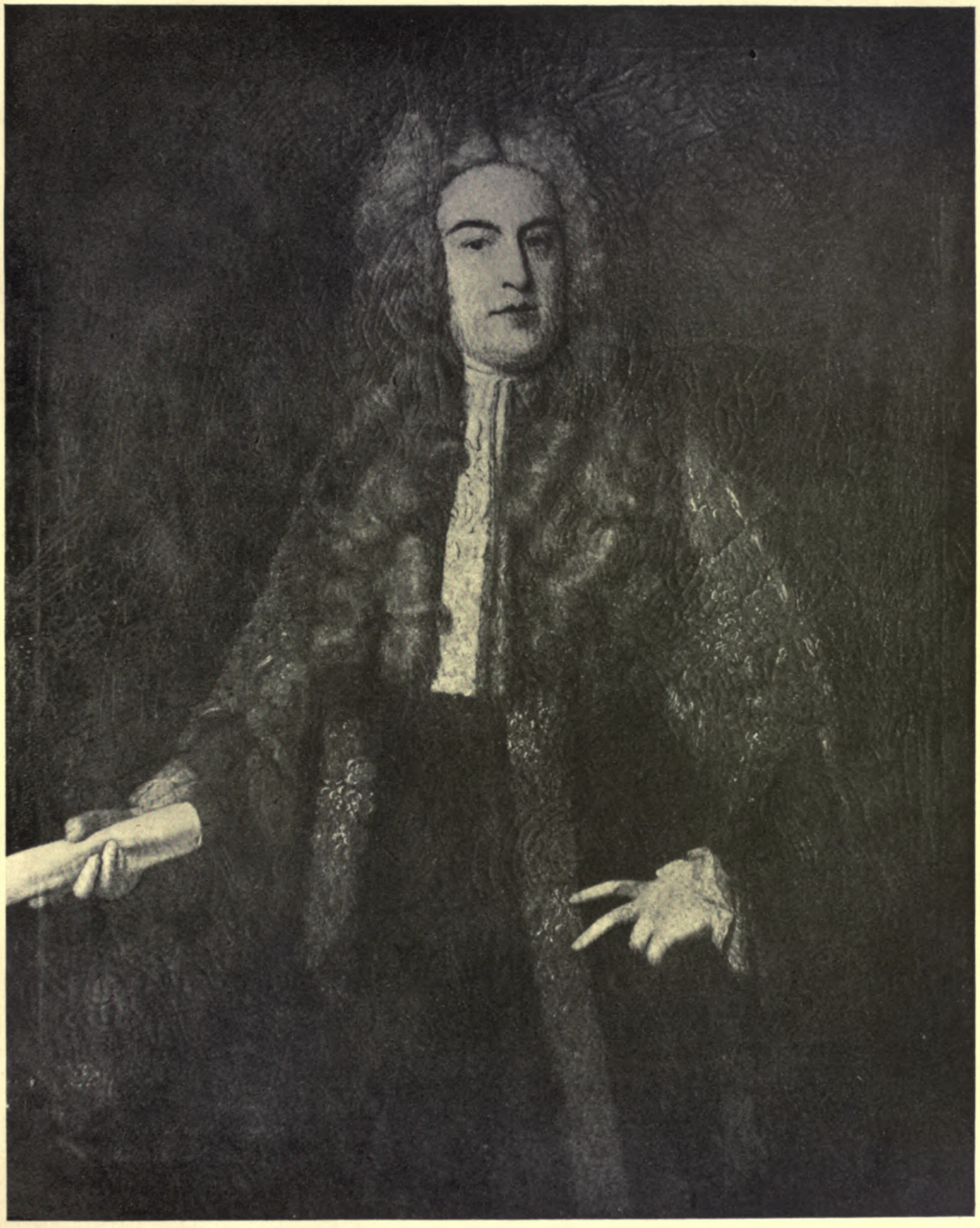
As dynasties succeeded one another upon the throne of England, so did families rule in succession in English counties.

Another house emerges as the typical leading house in Surrey at this time with a supremacy different in kind and method from that of the de Clares or de Warennes or Arundels or even Mores as the times differed. The era of Whig rule had come, and the descendants of the Long Parliament men were in many cases the Parliamentary chiefs under the Revolution monarchy. The Onslows had only become connected with Surrey by marriage in Elizabeth's reign. Sir Richard Onslow, whom we have met before as a staunch member of the Long

Parliament, bought Clandon Lodge about the time of the beginning of the Civil Wars from Sir Richard Weston, the Catholic agriculturist. The Copleys, another recusant family, closely intermarried with the Westons, also parted with their estates at Gatton and Leigh about the same period. The moderate Puritans go up as the old names go down. Arthur Onslow, the Speaker in George the Second's reign, summed up the Parliamentary career and position of his family to his son as follows: 'Sir Richard Onslow . . . laid the foundation of that interest both in the county and in the town of Guildford that our family have ever since kept up to a height that has been scarcely equalled in any county by one family, having been chosen for the county to all Parliaments, except five, from 1627; and to Guildford for every Parliament from 1660, except once for two years upon a vacancy for a friend by our family interest, and sometimes for Haslemere, Gatton and Blechingley, in the same county, once two of our family together for the county, and several times two of them together for Guildford.'[1]

Sir Richard Onslow had given his support to the Restoration like other moderate men, but died in 1663 before constitutional struggles recommenced. His son, Sir Arthur, first married to a Stoughton, another family of the same politics, got into trouble, as we have seen, along with other Whigs at the end of Charles the Second's reign. He died just before the Revolution of 1688. His son, Sir Richard, who had shared his father's troubles, but who had kept his seat in Parliament for Guildford under Charles and James, was a knight of the shire in the Convention Parliament which ratified the transference of the crown to William and Mary. Under these sovereigns and under Anne he was continuously so chosen, until in the wave of Tory and High Church excitement in 1710, after the Sacheverell riots, he was defeated. It was said that he might have kept his seat if he had not insisted on standing or falling with another Whig colleague. The defeat was the more telling against his party, for he had been chosen Speaker by them in 1708. The deposition was not for long. With the advent of the Hanoverians the Whigs triumphed again. Onslow had returned to Parliament in 1710 for a Cornish borough, and in 1713 for Surrey again. He became Chancellor of the Exchequer in October, 1714, lord lieutenant of Surrey in 1715, and Lord Onslow in 1716. He was founder of a dynasty of Lords Lieutenant. His son Thomas, who had sat for the county and at different times for three of the rotten boroughs in it, Gatton, Blechingley and Haslemere, succeeded him as lord lieutenant, and his son Richard also held the same office. But another member of the family was more distinguished than these. Arthur Onslow, grandson of that Sir Arthur who died in 1688, became owner of Ember Court in Surrey. He was knight of the shire, and was elected Speaker to the first Parliament of George II., filling the office throughout the whole of the long reign. His predecessor Compton, Speaker throughout George the First's reign, had done much to raise the conception of the Speaker's position.

[1] Onslow Papers in *Hist. MSS. Comm. Report*, 14, 11, p. 476.



ARTHUR ONSLOW.

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Onslow by the most conspicuous display of knowledge of Parliamentary law and practice, and by a courtesy and impartiality which are now taken for granted as the characteristics of the Speaker, but were not always exhibited before this time, established the Speakership where it now stands. Some reputed eminent statesmen have done less for the country. Himself incorruptible, he was in a position to see much of the prevailing corruption of the age in politics and to lament its results. In 1741, writing to Sir More Molyneux about a pending election in Haslemere, he says, 'God knows there is so much of it' (i.e. electoral corruption) 'almost everywhere that I dread the consequences of it with regard to the religion and morals of the nation. I say this to you as a man of virtue to whom I can disclose my heart without being liable to be laughed at.'[1] It was a danger, and not the less because most people laughed at it. The little Surrey boroughs were steeped in corruption. The choice was between mere bribery and influence. The 'man of virtue' of this letter owned Haslemere. Sir Robert Clayton, who is commemorated in Blechingley church as a patriotic Whig of Charles the Second's reign, bought Blechingley, and he and his family were members generally till it was alienated by sale in 1799.[2] The Somers family owned Reigate. Sir Samuel Owfield, William Owfield, Sir John Thompson, Paul Docminique, William Currie, John Petrie were each M.P. for Gatton and all owners of it. The one of these three boroughs, Reigate, which survived the Reform Bill of 1832, had the misfortune of being found out, and was practically disfranchised for corruption before its final disappearance in 1867.

Extreme corruption is not compatible with real public spirit. When at the beginning of the Seven Years' War the scandalous incapacity of the ministry of the day and the prevailing want of faith in the value or stability of our institutions had thrown the country into a panic fear of French invasion, an attempt was made to reorganize the militia in 1757. The ballot was to be employed and the price of exemption, if drawn, was £10, prohibitive to a poor man. A violent agitation arose against it. It was said that the regiments when raised would be sent on foreign service. Regular troops had actually to be sent into the southern counties to compel Englishmen to defend themselves at a time when we were bringing over Hanoverians and Hessians, and vainly begging the Dutch to lend us 6,000 men to protect a dynasty which had no enemy left worth consideration except itself and its ministers. The riot was great in Surrey. The mob was headed by a farmer named Worsfold armed with a partisan, which was said to have been wielded by his ancestor under Elizabeth, presumably in a better cause. The Speaker, the most eminent man in the county, was assailed by the mob in Guildford. They followed him to his own house, Ember Court, and threatened violence. The 'insurrection,' as Horace Walpole calls it, was only stayed by Onslow undertaking that no more steps should be

[1] Loseley MSS. February 7, 1740–1.

[2] Blechingley made a distinguished exit in 1832 with Lord Palmerston as one of its members.

taken towards forming the militia till the next session of Parliament.[1] By that time the character of the war and the character of the nation had been transformed by the appearance of a man, William Pitt. Two regiments of militia were embodied in Surrey without complaint and performed their service of marching up and down the southern counties. Some twenty years later the one regiment which had been retained in Surrey was on active service in the Gordon Riots in London. In the subsequent French wars there were ultimately five regiments of militia in Surrey with headquarters at Kingston, Guildford, Croydon, Putney and Clapham, besides volunteers.

The period of the great French war passed with no notable political event in the county. One at least notorious if not eminent political person emerged from it. William Cobbett was a native of west Surrey, and it is not impossible that his frequent presence in the neighbourhood of his old home had something to do with the spread of the Radicalism of that age in the southern counties. These counties, including Surrey, were at all events one scene of its violent manifestation, and once more, in the nineteenth century, Surrey saw the beginning of something approaching popular insurrection. It belongs to social history rather than to political to tell of the agricultural distress which accompanied the French Revolutionary War, and which became still more acute after the peace of 1815, and which was intensified by an unwise administration of absurd Poor Laws. The people of Surrey, in common with those of all agricultural districts, were poor, miserable and degraded. Riots and outrages, such as we associate with the worst districts of Ireland in bad times, were common within thirty miles of London.

Matters reached a crisis in the autumn of 1830. The Revolution of July had been successful in France. Revolution had broken out in Belgium. George IV. was just dead and the ministry of the Duke of Wellington was tottering. The summer had been wet and the harvest in the south disastrous. Wages were falling, the 5*s.* a week sometimes paid was being replaced by 4*s.* 6*d.* or even, it was said, by 3*s.*—wages which were of course supplemented by out-door relief. There was a spirit of political unrest and of savage discontent at social evils directed against all employers; against old yeomen farmers because they were ruined men and could not pay good wages, against gentlemen farmers because they bought out the old men and were strangers and innovators, above all against those who used threshing machines, whence the flail, the old mainstay of the poor in winter, was displaced. Letters signed 'Swing,' or 'Captain Swing,' threatened employers, overseers and tithe owners with condign vengeance unless they made reductions of rent and tithes and increase of wages and allowances. Nor were the threats empty. Ricks and farm buildings blazed, machines were smashed, and riotous crowds extorted their terms from isolated farmers under threats of violence. Parliament had met on November 2, and about simultaneously the south-eastern counties

[1] Walpole, *Memoirs of the Reign of George II. III.* p. 40–2.

began to wear the look of a country where revolution was in the air. The terrified employers imagined that revolutionary agents were at work. There were stories of well dressed men traversing the country in post-chaises, scattering mysterious warnings and directions, which were followed by midnight outrages. Probably little incentive of the kind was needed. Sussex and Berkshire were astir more early than Surrey, but the neighbourhood of Egham was quickly alarmed by three incendiary fires in one night. The hose of an engine playing upon one of them was cut through. On Saturday, November 13, corn stacks were burnt near Guildford; on November 14, at Trouts Farm, Capel. Scarcely a night passed without fires or worse outrages. At three o'clock on Sunday morning, November 14, a miller at Albury was roused by knocking at his door; he had been an overseer of the poor. Cautiously opening an upper window he inquired who was there, when a gun charged with small stones and nails was discharged against the lower window, which belonged to the room he usually occupied, smashing every pane. His address, in not speaking from the window of his own room, and the darkness saved his life. Immediately afterwards his outbuildings, containing a large stock of flour and corn, were in a blaze. The mob stood round idly while efforts were made to save the contents. When asked to assist in rescuing the food on which they lived some of them answered, 'Why should we? We cannot be worse off than we are.'[1] Fires and riotous meetings continued throughout the next fortnight. On Monday, November 22, the magistrates met at Dorking to consider the state of the country, and apprehensive of a riot proceeded to swear in special constables at the Red Lion inn. The High Street was thronged by a crowd of labourers armed with bludgeons, who, hearing what was being done, attacked the house, smashed every window, and knocked one of the magistrates senseless with a stone. The forces of order however triumphed; the Yeomanry were under arms, the Riot Act was read, and eleven rioters were secured. They were subsequently removed under military escort to Horsemonger gaol. On November 25 a great crowd assembled at Woking, and apparently under the impression that the prisoners were still at Dorking declared that they would march to their rescue. Some constables and soldiers who were present were too few to interfere. A magistrate, Mr. Drummond, succeeded by personal influence in inducing some of them to disperse, but a body headed by a leader in a smock frock started shouting, 'To Dorking, to Dorking.' They never arrived, but half starved and miserable slunk away in the darkness. The Woking men said that the leaders were from Horsham—where a mob shortly before had tried to burn the church—and that they were afraid to disobey them. This was about the end of the more serious disturbances in Surrey, though on November 28 there were two incendiary fires near Epsom. On November 23 a royal proclamation had been issued against the rioters in the southern counties. Cavalry,

[1] A native of Albury was hanged for the outrage in the following January, *Annual Register*. The evidence against him hardly sounds conclusive as it is there reported.

infantry and marines from Portsmouth had been marched into the disturbed districts. The gunpowder mills at Chilworth were guarded by soldiers. The more threatening signs subsided, though such disturbances did not entirely cease for some years.[1] It is a striking instance of the political sense of the ordinary Englishman in the worst conditions of life that the comparative cessation of violence followed closely in time upon a change of ministers. On November 16 the resignation of Wellington's ministry had been announced, and it had quickly become known that Lord Grey had been called upon to form a new Administration. For a little while it had looked as if the days of 1381 had come again. The year 1830 seems nearer in some respects to 1381 than it is to 1901. Political reform, the new Poor Law, the advent of railways, the presence of the new owners so unpopular in 1830, with their increased employment of labour, the improved conceptions of the duty of man to man, the spread of education, and the revived activity of all religious organizations in the country have between them brought about more changes in the last seventy years than took place in the 500 years before.

Once again a serious political disturbance seemed to have come to a head in Surrey, though it had no particular local origin nor connexions. The Chartists originated among those who had found that the political changes of 1832 had not immediately cured all social suffering, and who illogically concluded that more political changes would be certain to do so. In 1848 they decided to hold the great meeting which should overawe Parliament and the ministry, and induce them to grant their demands for fear of revolution. The Chartist leaders, who fixed upon Kennington Common as the rendezvous whence the petition was to be carried to the House of Commons, had not studied local history. The overwhelming display of the forces of order among all classes sworn in as special constables, and the undisplayed military preparations of the Duke of Wellington, made any success impossible. But the deliberate choice of the Surrey side, whence access to Westminster was only possible across the bridges which could be occupied and defended, gave away the last chance of the agitators. No violence occurred. A small force of police attended on the ground, and Mr. Mayne, as he then was, the commissioner, sent for Mr. O'Connor the reputed Chartist leader, and told him that the procession to Westminster would not be allowed. O'Connor, who was relieved to find that he was not sent for to be arrested, promised to do his best to stop it, and having had his pocket picked in the crowd went to the Home Office and disclaimed any responsibility for the affair.[2] His followers were broken up in straggling lines across the different bridges. A worse repetition of the Surrey petition of 1648 was thus happily averted.

The political rearrangements of the nineteenth century went far to

[1] I am indebted for this account of the Swing Riots to notes made by the late Rev. T. R. O'Fflahertie, vicar of Capel, from contemporary newspapers and from the accounts of eye-witnesses.

[2] *Greville Memoirs*, xxvi. 169–70.

destroy the individuality of Surrey. The Reform Bill of 1832 disfranchised, of necessity, Haslemere, Blechingley and Gatton, and took one member from Reigate. It made the new borough of Lambeth, including Lambeth, Newington and most of Camberwell. The borough of Southwark was extended to include Rotherhithe and Bermondsey. The limits of Guildford and of Reigate were both extended. The county itself was divided into east and west Surrey, each returning two members. In the former were the hundreds of Kingston, Brixton, Wallington, Tandridge and Reigate. The place of election for it was Croydon. In the latter were Godley, Emleybridge, Woking, Effingham, Copthorne, Farnham, Godalming, Blackheath and Wotton. The place of election was Guildford.

The Reform Bill of 1867 finally disfranchised Reigate, and extended the borough of Lambeth over the whole of Camberwell. It also divided east Surrey into the east and mid divisions, an alteration made advisable by the growth of the London suburbs. So much of Brixton hundred as was not in the boroughs of Southwark and Lambeth, half Wallington hundred and Tandridge hundred formed the eastern division. Kingston, half Wallington hundred and Reigate hundred formed the mid division. Each returned two members. The Reform Bill of 1885 superseded all old boroughs and divisions. The county was resolved into the electoral single member divisions of Chertsey, Guildford, Reigate, Epsom, Kingston and Wimbledon. The following boroughs were erected divided into single member districts: Southwark, divided into west Southwark, Rotherhithe and Bermondsey ; Lambeth, divided into north Lambeth, Kennington, Brixton and Norwood ; Clapham and Battersea, so divided ; Camberwell, divided into north Camberwell, Peckham and Dulwich ; Croydon ; Newington, divided into west Newington and Walworth ; Wandsworth ; part of Deptford, the rest of this borough being in Kent.

Finally, by the Local Government Acts of 1888, the new county of London annexed Battersea, Bermondsey, Brixton, Camberwell, Clapham, Deptford, Dulwich, Kennington, Lambeth, Newington, Norwood, Peckham, Rotherhithe, Southwark, Walworth and Wandsworth. The site of the old meeting-place of the Surrey Sessions in Newington was absorbed by London. The county, deprived of its true centre and great town, found a home for its new county council at Kingston. The earliest and the latest history of Surrey meet together there ; for the county reverted to what had once been a capital, but perchance not more recently than the seventh century, when the king's town was perhaps a royal seat of those *subreguli* of whom Frithwald, the founder of Chertsey Abbey, is the sole remaining name.

APPENDICES

KNIGHTS OF THE SHIRE[1] ELECTED FOR SURREY

Anno	Anno Regis	
1290	18 Ed. I.	Rolandus de Acstede
		Willielmus Ambesac
1295	23 Ed. I.	Thomas de Sithesay
		Willielmus Ambesas
1297	25 Ed. I.	Willielmus Ambesas
		Johannes de Aubernun
1298	26 Ed. I.	Johannes de Aubernun
		Johannes de Hamme
1299–1300	28 Ed. I.	Johannes de Burstowe
		Johannes de Hamme
1300	28 Ed. I.	Johannes de Hamme
		Henricus de Guldeford (*mareschal clericus*)
		Walterus de Geddyng'
1300–1	29 Ed. I.	Johannes de Hammes
		Johannes de Burstowe
1302	30 Ed. I.	Johannes de Burstowe
		Robertus de Bekkewelle
1304–5	33 Ed. I.	Johannes de Hamme
		Robertus de Bekswelle
1306–7	35 Ed. I.	Robertus de Stangrave
		Robertus de Bokewell'
1307	1 Ed. II	Thomas de Ludelowe
		Johannes de la Poille
1309	2 Ed. II	Johannes Dabernon
		Johannes de Hamme
1311	5 Ed. II	Johannes Dabernon
		Johannes de Burstowe
		(The same Parliament was re-summoned for the same year after Prorogation)
1312–3	6 Ed. II	Johannes de la Poile
		Johannes de Burstowe
1313	7 Ed. II	Johannes Dabernoun
		Robertus de Bekewell'
1313	7 Ed. II	Johannes de Burstouwe
		Johannes de Poille
1314	7 Ed. II	Georgius de Charneles
		Willielmus de Henle
1314–5	8 Ed. II	Johannes de Hamme
		Johannes de Byrstowe
1315–6	9 Ed. II	Johannes del Anne
1316	10 Ed. II	Georgius de Charneles
		Johannes de la Puille
1319	12 Ed. II	Walterus le Gras
		Johannes le Latimer
1320	14 Ed. II	Walterus le Gras (*miles*)
		Simon de Northwode (*miles*)
1321	15 Ed. II	Johannes de Chetwode
1322	15 Ed. II	Walterus le Gras
		Simon de Northwode
1322	16 Ed. II	Simon de Northwode
		Henricus de Monte Forti

[1] From the original Writs and Returns, so far as preserved, in Parliamentary Returns, 455, 456, etc.; ordered to be printed by the House of Commons in 1878 and 1891.

Anno	Anno Regis	
1323–4	17 Ed. II	Walterus le Gras Henricus de Monte Forti
1324	18 Ed. II	Reginaldus de Purlee Stephanus de Bekewell
1325	19 Ed. II	Robertus de Stanegrave Rogerus de Jarpenvill'
1326–7	20 Ed. II	Henricus de Monte Forti Johannes de Hayton
1327	1 Ed. III	The Sheriff, Nicholaus Gentil, endorses the writ to the effect that no County Court was to be held within the time named, and therefore he made no return
1327–8	2 Ed. III	Henricus de Monteforti Robertus de Stanegrave
1328	2 Ed. III	Walterus le Gras Johannes de Hayton
1328–9	2 & 3 Ed. III	Walterus le Gras Johannes de Hayton
1329–30	4 Ed. III	Thomas de Brewosa (*miles*) Johannes de Hayton (*miles*)
1330	4 Ed. III	Johannes Dabernoun Willielmus de Weston
1331	5 Ed. III	Willielmus de Weston Johannes de Hayton
1331–2	6 Ed. III	Willielmus de Weston Johannes de Hayton
1332	6 Ed. III	Johannes de Hayton Reginaldus de Purlee
1332	6 Ed. III	Thomas Corbet Johannes de Hayton
1333–4	8 Ed. III	Rogerus Hussee (*miles*) Johannes de Hayton (*miles*)
1334	8 Ed. III	Willielmus de Westone Johannes de Haytone
1335	9 Ed. III	Johannes de Latimer Walterus le Gras
1335–6	10 Ed. III	Willielmus de Westone Johannes de Hattone
1336	10 Ed. III	Walterus le Gras Johannes de Hayton
1337	11 Ed. III	Stephanus de Bekewelle Johannes de Lambourn'
1337–8	12 Ed. III	Johannes de Hayton Willielmus Hussee
1338	12 Ed. III	Willielmus de Henle Johannes de Hayton
1338–9	12 & 13 Ed. III	Johannes de Hayton Thomas de Weston
1339	13 Ed. III	Johannes de Hayton Willielmus Roce
1339–40	13 Ed. III	Johannes de Hayton Johannes de Hadresham
1340	14 Ed. III	Johannes de Hayton Johannes de Hadresham
1340		The Sheriffs of certain counties were directed to send a specified number of merchants to a Council of Merchants to be held in London or Westminster August 21, 1340. The following were returned for Surrey—

Anno	Anno Regis	
1340		Petrus Semere de Guldeford
		Willielmus le Chapman de Merewe
		Johannes atte Churchegate de Ebbesham
1341	15 Ed. III	Johannes de Hayton
		Henricus de Loxele
1343	17 Ed. III	Rogerus Hussee
		Robertus de Stangrave
1344	18 Ed. III	Johannes de Hadresham
		Henricus de Loxlee
1346	20 Ed. III	Johannes de Hadresham
		Thomas atte Vyne
1347–8	21 Ed. III	Reginaldus le Forester
		Johannes de Hayton
1348	22 Ed. III	Reginaldus le Forester
		Johannes de Hayton
1348–9	22 Ed. III	Prorogued *sine die* because of the Pestilence
1350–1	25 Ed. III	Willielmus Dabernoun
		Simon de Codynton
1351–2	25 Ed. III	Simon de Codyngton
		Robertus de Stangrave
1352	26 Ed. III	Simon de Codynton (*miles*)
1353	27 Ed. III	Willielmus Dabernoun
1354	28 Ed. III	Willielmus Dabernoun
		Henricus de Bekewell
1355	29 Ed. III	Johannes de Hadresham
		Johannes de Hayton
1357	31 Ed. III	Simon de Conyngton
		Johannes de Hayton
1357–8	32 Ed. III	Simon de Codynton
		Henricus de la Poyle
1360	34 Ed. III	Nicholaus de Carreu
		Willielmus de Neudegate
1360–61	34 Ed. III	Thomas de Uvedale
		Simon de Codyngton
1362	36 Ed. III	Willielmus Croyser
		Simon de Codyngton
1363	37 Ed. III	Willielmus de Neudegate
		Gilbertus Ledred'
1364–5	38 Ed. III	Thomas de Uvedale
		Willielmus Croyser
1366	40 Ed. III	Simon de Codyngton
		Johannes Kyngesfolde
1368	42 Ed. III	Simon de Codyngton
		Johannes de Kyngesfolde
1369	43 Ed. III	Simon de Codyngton
		Radulphus Thurbarn
1370–1	45 Ed. III	Simon de Codyngton
		Willielmus de Cobeham
1371	45 Ed. III	Willielmus de Cobeham
1372	46 Ed. III	Willielmus de Cobeham
		Willielmus Neudegate
1373	47 Ed. III	Simon de Codynton (*miles*)
		Ricardus de Burstowe (*armiger*)
1375–6	50 Ed. III	Willielmus Wyndegate (? Neudegate)
		Robertus Loxle
1376-7	51 Ed. III	Johannes Kyngesfolde (*loco militis*)
		Willielmus Melbourne (*loco militis*)
1377	1 Rd. II	Nicholaus Carreu (*loco militis*)
		Johannes de Kyngesfolde (*loco militis*)

Anno	Anno Regis	
1378	2 Rd. II	Johannes Legg (*loco militis*)
		Johannes Hadresham (*loco militis*)
1379	2 Rd. II	Johannes Olyver
		Johannes Dewedale
1376–80	3 Rd. II	Johannes de Uvedale
		Johannes de Cobeham
1380	4 Rd. II	Willielmus Weston
		Johannes Redynghershh'
1381	5 Rd. II	Robertus Loxle (*loco militis*)
		Johannes Hadresham (*loco militis*)
1382	5 Rd. II	Robertus de Loxle (*loco militis*)
		Johannes Hadresham (*loco militis*)
1382	6 Rd. II	Thomas Salman
		Robertus Loxle
1382–3	6 Rd. II	Robertus Loxle (*loco militis*)
		Nicholaus Slyfelde (*loco militis*)
1383	7 Rd. II	Thomas Salaman (*chivaler*)
		Johannes Hadresham
1384	7 Rd. II	Thomas Salaman (*chivaler*)
		Johannes de Cobeham (*loco militis*)
1384	8 Rd. II	Johannes Cobeham (*loco militis*)
		Robertus Notbourne (*loco militis*)
1385	9 Rd. II	Thomas Saleman
		Robertus Loxle
1386	10 Rd. II	Jacobus Berners (*chivaler*)
		Johannes Newdegate
1387–8	11 Rd. II	Johannes Hardrisham (*senior*)
		Hugo Quuche
1388	12 Rd. II	Johannes Thorp
		Thomas Kynewardesle
1388–90	13 Rd. II	Johannes Hadresham
		Johannes de Thorp
1390	14 Rd. II	Willielmus Weston
		Johannes Benteley
1391	15 Rd. II	Thomas Brewes (*chivaler*)
		Radulphus Codyngton
1392–3	16 Rd. II	Thomas Brewes
		Willielmus Weston
1394–5	17 Rd. II	Nicholaus de Carreu
		Willielmus de Weston
1394–5	18 Rd. II	Nicholaus Carreu (*loco militis*)
		Robertus Loxle (*loco militis*)
1396–7	20 Rd. II	Nicholaus de Carreu (*loco militis*)
		Willielmus Weston (*loco militis*)
1397–8	21 Rd. II	Nicholaus de Carreu (*loco militis*)
		Thomas de Wyntreshulle (*loco militis*)
1399	1 Hen. IV	Johannes Hatheresham
		Radulphus Codyngton
1400–1	2 Hen. IV	Willielmus Weston
		Johannes Wyntereshull
1402	3 Hen. IV	Johannes Watirton
		Radulphus Codyngton
1403–4	5 Hen. IV	Willielmus Brantyngham
		Johannes Wyntirsull
1404	6 Hen. IV	Willielmus Brantyngham (*chivaler*)
		Willielmus Croyser
1405–6	7 Hen. IV	Johannes Wyntereshull
		Johannes Gravesende

Anno	Anno Regis	
1407 . .	9 Hen. IV . . .	Radulphus Codynton Robertus Bussebrugg'
1413 . .	1 Hen. V	Johannes Burgh Willielmus Yerde
1413–4 .	2 Hen. V	Johannes Bowet Johannes Clipsham
1414 . .	2 Hen. V	Johannes Burgh Johannes Wyntershull
1415 . .	3 Hen. V	Johannes Burgh Willielmus Weston (*senior*)
1417 . .	5 Hen. V	Nicholaus Carrewe Johannes Clypsham
1419 . .	7 Hen. V	Willielmus Weston (*senior*) Willielmus Yerde
1420 . .	8 Hen. V	Robertus Skerne Willielmus Otte Worthe
1421 . .	9 Hen. V	Johannes Clipsham Johannes Bowet
1421 . .	9 Hen. V	Johannes Clipsham Willielmus Otteworth
1422 . .	1 Hen. VI . . .	Ricardus Terell Robertus Skerne
1423 . .	2 Hen. VI . . .	Johannes Clypsham Willielmus Zerde
1425 . .	3 Hen. VI . . .	Johannes Feriby Johannes Wyntereshull
1425–6 .	4 Hen. VI . . .	Johannes Clipsham Willielmus Otteworth
1427 . .	6 Hen. VI . . .	Johannes Clipsham Johannes Weston
1429 . .	8 Hen. VI . . .	Johannes Feriby (*armiger*) Ricardus Terell (*armiger*)
1430–1 .	9 Hen. VI . . .	Johannes Gaynesford Johannes Weston
1432 . .	10 Hen. VI . . .	Willielmus Uvedale (*armiger*) Willielmus Otteworth (*armiger*)
1433 . .	11 Hen. VI . . .	Johannes Feriby Johannes Wyntershull
1435 . .	14 Hen. VI . . .	Johannes Weston Thomas Wyntereshull
1436–7 .	15 Hen. VI . . .	Willielmus Otteworth Johannes Founteyns
1441–2 .	20 Hen. VI . . .	Johannes Basket Arnaldus Brokas
1446–7 .	25 Hen. VI . . .	John Stanley (*squyer*) William Weston (*gentylman*)
1448–9 .	27 Hen. VI . . .	Johannes Penycoke (*armiger*) Johannes Basket (*armiger*)
1449 . .	28 Hen. VI . . .	Thomas Basset (*armiger*) Willielmus Gaynesford
1450 . .	29 Hen. VI . . .	Johannes Elyngbregge Thomas Slyfeld
1452–3 .	31 Hen. VI . . .	Johannes Penycoke (*armiger*) Johannes Gaynesford (*armiger*)
	Writs and Returns missing till 1459	
1459 . .	38 Hen. VI . . .	Thomas Basset (*armiger*) Radulphus Legh (*armiger*)
1460 . .	39 Hen. VI . . .	Johannes Wode (*armiger*) Nicholaus Gaynesford (*armiger*)

POLITICAL HISTORY

Anno	Anno Regis	
1467 . .	7 Ed. IV	Thomas Seyntlegier (*armiger*) Johannes Gaynesford (*armiger*)
1469 . .	9 Ed. IV	Prorogued *sine die* on account of an expected invasion of French and Scots
1472 . .	12 Ed. IV	Thomas Bourghchier (*armiger*) Thomas Seyntleger (*armiger*)
1477–8 .	17 Ed. IV	Georgius Browne (*miles*) Johannes Wode (*armiger*)
	Writs and Returns missing till 1529	
1529 . .	21 Hen. VIII . . .	Willielmus Fitzwilliams (*miles*) Nicholaus Carewe (*miles*)
1541–2 .	33 Hen. VIII . . .	Antonius Browne (*miles*) Robertus Southwell (*armiger*)
1544–5 .	37 Hen. VIII . . .	Antonius Browne (*miles*) Edmundus Walsyngham (*miles*)
1547 . .	1 Ed. VI	Syr Antony Browne Syr Christopher Moore
1552–3 .	7 Ed. VI	Thomas Carden (*miles*) Thomas Sanders (*armiger*)
1554 . .	1 Mary	Antonius Browne (*miles*) Edwardus Braye (*miles*)
1554 . .	1 Ph. & Mary . .	Thomas Caurden (*miles*) Willielmus Saunder (*armiger*)
1555 . .	2 & 3 Ph. & Mary .	Willielmus Saunders (*armiger*) Johannus Skynner (*armiger*)
1557–8 .	4 & 5 Ph. & Mary .	Thomas Saunders (*miles*) Johannes Skynner (*armiger*)
1558–9 .	1 Eliz.	Sir Thomas Cawerden Thomas Browne, Esq.
1562–3 .	5 Eliz.	Charles Howarde William More
1572 . .	14 Eliz.	Charles Howard Thomas Lyfield Francis Walsingham, *vice* Charles Howard, called to the Upper House
1584 . .	27 Eliz.	Sir Francis Walsingham Sir William More
1586 . .	28 Eliz.	Sir Francis Walsingham Sir William Moore
1588–9 .	30 & 31 Eliz. . . .	Sir Francis Walsingham William Howard
1592–3 .	35 Eliz.	Sir John Wolley Sir William Moore
1597 . .	39 Eliz.	Sir William Howard, Junior (Charles Howard, *vice* Sir William Howard, called to the Upper House). Loseley MSS. Oct. 1597 George More, Esq.
1601 . .	43 Eliz.	William Lord Howard of Effingham Sir George Moore
1603–4 .	1 James I	Sir Robert Moore Sir Edmund Bowyer
1614 . .	12 James I	Sir George Moore Sir Edmund Bowyer
1620–1 .	18 James I	Sir George More Sir Nicholas Carew *alias* Throckmorton
1623–4 .	21 James I	Sir Robert More Sir Thomas Crymes
1625 . .	1 Ch. I	Sir George More Sir Thomas Leigh

Anno	Anno Regis		
1625–6	1 Ch. I	Sir George More	
		Sir Francis Vincent (*Bart.*)	
1627–8	3 Ch. I	Sir Ambrose Browne (*Bart.*)	
		Sir Richard Onslowe	
1640	16 Ch. I	Sir Richard Onslowe	
		Sir Ambrose Browne (*Bart.*)	
1640	16 Ch. I	Sir Richard Onslowe	
		Sir Ambrose Browne (*Bart.*)	
1654	(Protectorate)	Sir Richard Onslowe	
		Major-General John Lambert	
		Arthur Onslowe	All for the county
		Francis Drake	
		Robert Holman	
		Robert Wood	
1658–9	Richard Cromwell	Francis Drake, Esq.	
1661	13 Ch. II	Adam Browne	
		Sir Edmund Bowyer	
1678–9	31 Ch. II	Arthur Onslowe	
		George Evelyn	
1679	31 Ch. II	Arthur Onslowe	
		George Evelyn	
1680–1	33 Ch. II	Arthur Onslowe	
		George Evelyn	
1685	1 James II	Sir Adam Browne (*Bart.*)	
		Sir Edward Evelyn (*Bart.*)	
1688–9	Convention	Sir Richard Onslow (*Bart.*)	
		George Evelyn	
1689–90	2 Will. & Mary	Sir Richard Onslow (*Bart.*)	
		Sir Francis Vincent (*Bart.*)	
1695	7 Will. III	Sir Richard Onslow (*Bart.*)	
		Denzil Onslow	
1698	10 Will. III	Sir Richard Onslow (*Bart.*)	
		John Weston	
1700–1	12 Will. III	Sir Richard Onslow (*Bart.*)	
		John Weston	
1701	13 Will. III	Sir Richard Onslow (*Bart.*)	
		John Weston	
1702	1 Anne	Sir Richard Onslow (*Bart.*)	
		Leonard Wessell	
1705	4 Anne	Sir Richard Onslow (*Bart.*)	
		Sir William Scawen	
1708	7 Anne	Sir Richard Onslow (*Bart.*)	
		Sir William Scawen	
1710	9 Anne	Sir Francis Vincent (*Bart.*)	
		Heneage Finch	
1713	12 Anne	Heneage Finch	
		Sir Richard Onslow (*Bart.*)	
1714–5	1 Geo. I	Sir Richard Onslow (*Bart.*)	
		Heneage Finch Lord Guernsey	
		Thomas Onslow, *vice* Sir Richard Onslow, appointed Chancellor of the Exchequer; Denzil Onslow, *vice* Thomas Onslow, called to the Upper House; John Walter, *vice* Heneage Finch, called to the Upper House; Sir William Scawen, *vice* Denzil Onslow, deceased	
1722	8 Geo. I	John Walter	
		Sir Nicholas Carew	
		Thomas Scawen, *vice* Sir Nicholas Carew, deceased	

POLITICAL HISTORY

Anno	Anno Regis	
1727	1 Geo. II	Arthur Onslow Thomas Scawen
1734	8 Geo. II	Arthur Onslow Thomas Scawen
1741	15 Geo. II	Arthur Onslow Charles Lord Baltimore
1747	21 Geo. II	Arthur Onslow Charles Lord Baltimore
1754	27 Geo. II	Arthur Onslow Thomas Bugden
1761	1 Geo. III	George Onslow Sir Francis Vincent (*Bart.*)
1768	8 Geo. III	George Onslow Sir Francis Vincent (*Bart.*)
1774	15 Geo. III	Sir Francis Vincent (*Bart.*) James Scawen
1780	21 Geo. III	Sir Joseph Mawbey Augustus Keppel George Spencer Lord Althorp, *vice* Augustus Keppel, appointed First Lord Commissioner of the Admiralty; Sir Robert Clayton, *vice* Lord Althorp, called to the Upper House
1784	24 Geo. III	The Hon. William Norton Sir Joseph Mawbey Lord William Russell, *vice* William Norton, called to the Upper House
1790	30 Geo. III	Lord William Russell William Clement Finch Sir John Frederick (*Bart.*), *vice* William Clement Finch, deceased
1796	36 Geo. III	Lord William Russell Sir John Frederick (*Bart.*)
1802	42 Geo. III	Lord William Russell Sir John Frederick (*Bart.*)
1806	47 Geo. III	Lord William Russell Sir John Frederick (*Bart.*)
1807	48 Geo. III	Samuel Thornton George Holme Sumner
1812	53 Geo. III	George Holme Sumner Sir Thomas Sutton
1818	58 Geo. III	George Holme Sumner William J. Denison
1820	1 Geo. IV	George Holme Sumner William J. Denison
1826	7 Geo. IV	William J. Denison Charles N. Palmer
1830	1 Will. IV	William J. Denison John I. Briscoe
1831	1 Will. IV	William J. Denison John I. Briscoe
1833	3 Will. IV	East Surrey, J. I. Briscoe Aubrey W. Beauclerk West Surrey, William J. Denison John Leech
1835	5 Will. IV	East Surrey, Richard Alsager Aubrey W. Beauclerk
1835	5 Will. IV	West Surrey, William J. Denison Charles Barclay

Anno	Anno Regis		
1837	1 Vict.	East Surrey,	Richard Alsager
			Henry Kemble
			Edmund Antrobus, *vice* Henry Kemble, deceased
		West Surrey,	William J. Denison
			George J. Percival
1841	5 Vict.	East Surrey,	Richard Alsager
			Edmund Antrobus
		West Surrey,	William J. Denison
			John Trotter
1847	11 Vict.	East Surrey,	Peter John Locke King
			Thomas Alcock
		West Surrey,	William J. Denison
			Henry Drummond
			William John Evelyn, *vice* William J. Denison, deceased
1852	16 Vict.	East Surrey,	Peter John Locke King
			Thomas Alcock
		West Surrey,	Henry Drummond
			William John Evelyn
1857	20 Vict.	East Surrey,	Peter John Locke King
			Thomas Alcock
		West Surrey,	J. I. Briscoe
			Henry Drummond
1859	22 Vict.	East Surrey,	Peter John Locke King
			Thomas Alcock
		West Surrey,	J. I. Briscoe
			Henry Drummond
1865	28 Vict.	East Surrey,	Peter John Locke King
			Charles Buxton
		West Surrey,	J. I. Briscoe
			George Cubitt
1868	32 Vict.	East Surrey,	Peter John Locke King
			Charles Buxton
			James Watney, *vice* Charles Buxton, deceased
		Mid Surrey,	H. W. Peek
			William Brodrick
			Sir Richard Baggallay, *vice* William Brodrick, called to the Upper House
		West Surrey,	George Cubitt
			J. I. Briscoe
			Lee Steere, *vice* J. I. Briscoe, deceased
1874	37 Vict.	East Surrey,	James Watney
			William Grantham
		Mid Surrey,	H. W. Peek
			Sir Richard Baggallay
			Sir J. J. Trevor Lawrence (*Bart.*), *vice* Sir R. Baggallay, appointed a Judge
		West Surrey,	George Cubitt
			Lee Steere
1880	43 Vict.	East Surrey,	William Grantham
			James Watney
		Mid Surrey,	Sir H. W. Peek
			Sir J. J. Trevor Lawrence (*Bart.*)
		West Surrey,	The Rt. Hon. G. Cubitt
			The Hon. St. John Brodrick

POLITICAL HISTORY

THE SHIP MONEY ASSESSMENT OF SURREY IN 1636

S. P. Dom. charter i. vol. 348, No. 82.

The total sum demanded by the government was apportioned by the sheriff, Sir Antony Vincent. The various assessments throw light on the relative importance of places at the time. The comparative decay of Guildford is strongly marked by its contribution being so far less than those of Farnham and Godalming. The totals for the Hundreds include clerical assessments, all trifling in themselves, and chiefly of interest as preserving a list of the beneficed clergy of the county.

Side by side with the ship money assessment is printed an abstract of a Subsidy Roll probably of about 300 years earlier, perhaps of 1334; the original in the Record Office is undated and is partly obliterated. It is preserved in an early sixteenth or late fifteenth century copy at Loseley. It is misdescribed in the *Report of the Hist. MSS. Comm. on the Loseley Papers.* The *Taxatores* named were John d'Abernon and William de Weston. A John d'Abernon was knight of the shire in 4 Ed. III., 1330, and sheriff in 1334. William de Weston was knight of the shire in 4th, 5th, 8th and 10th Ed. III., that is 1330, 1331, 1333–4, 1335–6. The subsidy is of a tenth and a fifteenth. Such subsidies were granted in 1334, in 1336 and in 1337. The amounts are not quite the same as those of the Subsidy Roll of 1337, but very near to them. The total for each Hundred includes the *Taxatores* in each. The assessment is usually by parishes, but certain west Surrey parishes are not mentioned. All these are probably included under the manors which extended into them, or in other parishes. In the fourteenth century they were not all recognized parishes.

Hundreds	Place	Sum	Assessment in fourteenth century
		£ s. d.	
	Ewhurst	32 10 0	(in Gomshall)
Blackheath and	Shiere	31 0 0	5*l.* 7*s.* 8*d.*; and Gomshall, 8*l.* 6*s.* 8*d.*
Wotton.	Bramley	18 10 0	19*l.* 16*s.* 10*d.*
Total,	Albury	20 2 6	3*l.* 3*s.* 0*d.*
361*l.* 5*s.* 0*d.*	Alfold	13 12 6	(in Bramley)
The totals include	Shalford	14 0 0	6*l.* 17*s.* 7*d.*
the clerical assess-	St. Martha	4 7 6	2*s.* 10*d.* (Titing)
ments not here	Dunsfold	17 12 6	(in Bramley)
given. They are	Hascombe	8 10 0	(in Bramley and Shalford)
trifling in amount.	Cranley	31 5 0	(in Shiere)
Summa in Subsidy	Wonersh	31 5 0	(in Bramley)
Roll:	Dorking	58 0 0	7*l.* 8*s.* 5½*d.*; and Milton, 1*l.* 3*s.* 9*d.*; and Westcott, 1*l.* 10*s.* 4*d.*
Blackheath,			
44*l.* 5*s.* 5*d.*;	Ockley	22 0 0	3*l.* 16*s.* 9½*d.*
Wotton,	Capel	19 10 0	(in Dorking and Milton)
23*l.* 0*s.* 10½*d.*	Abinger	22 0 0	Abinger and Paddington, 3*l.* 4*s.* 2¾*d.*
	Wotton	18 0 0	1*l.* 2*s.* 3¼*d.*

Hundreds	Place	Sum £	s.	d.	Assessment in fourteenth century
Woking. Total, 297*l.* 2*s.* 8*d.* *Summa* in Subsidy Roll, 45*l.* 16*s.* 6½*d.*	Guildford	53	0	0	15*l.* 2*s.* 9½*d.* (not in *Summa*)
	Stoke	15	0	0	2*l.* 15*s.* 7¼*d.*
	Merrow	9	0	0	2*l.* 11*s.* 11¼*d.*
	Send and Ripley	22	0	0	2*l.* 17*s.* 7¾*d.* [7*s.* 1½*d.*
	East Clandon	9	6	0	4*s.* 10½*d.* Villa Abbatis de Chertsey,
	East Horsley	14	0	0	2*l.* 14*s.* 7½*d.*
	West Horsley	12	0	0	2*l.* 19*s.* 7¼*d.*
	Pirbright	20	0	0	3*l.* 5*s.* 8¾*d.* [(Frimley), 7*s.* 6½*d.*
	Ash	6	0	0	2*l.* 1*s.* 5*d.* Villa Abbatis de Chertsey
	Wanborough	4	10	0	12*s.* 11*d.*
	Worplesdon	37	10	0	4*l.* 1*s.* 7¾*d.*; and Burgham, 1*l.* 11*s.* 5¾*d.*
	Woking and Sutton	56	10	0	10*l.* 13*s.* 7*d.*
	Ockham and Wisley	13	3	4	2*l.* 18*s.* 10*d.*
	Windlesham and Bagshot	18	10	0	3*l.* 6*s.* 3*d.*
	West Clandon	6	13	4	1*l.* 2*s.* 8¾*d.*
Farnham. Total, 154*l.* 13*s.* 4*d.* *Summa* in Subsidy Roll, 28*l.* 17*s.* 3¾*d.*	Farnham	94	0	0	5*l.* 16*s.* 3¼*d.* (Tithings in Farnham) Wrecclesham, 2*l.* 1*s.* 1½*d.*
	Elsted	13	0	0	2*l.* 10*s.* 6*d.* (in Tongham)
	Seale	14	13	4	Runwick, 2*l.* 0*s.* 3¼*d.*
	Frensham	33	0	0	2*l.* 8*s.* 4*d.* Churt, 3*l.* 9*s.* 0¼*d.*; Tilford, 1*l.* 15*s.* 6½*d.*; Runvale, 1*l.* 17*s.* 1*d.*; Tongham, 3*l.* 8*s.* 5¼*d.*; Badshot, 2*l.* 0*s.* 8½*d.*; Compton (land in) 15*s.* 4*d.*
Godalming. Total, 269*l.* 2*s.* 6*d.* *Summa* in Subsidy Roll, 33*l.* 12*s.* 9¼*d.*	Godalming	90	0	0	16*l.* 9*s.* 10¾*d.* (Tithings in Godalming) Catshull, 1*l.* 4½*d.*
	Peperharow	13	2	6	2*l.* 3*s.* 8¾*d.* Farncombe, 2*l.* 0*s.* 7¼*d.*
	Compton	12	10	0	3*l.* 5*s.* 2½*d.*
	Puttenham	13	0	0	2*l.* 10*s.* 1¾*d.* Hurtmere, 10*s.* 0¼*d.*
	Artington and Littleton	18	0	0	3*l.* 10*s.* 4¼*d.*
	Hambledon	3	6	0	1*l.* 3*s.* 5¼*d.* [priory of Wilford, 1*l.*
	Witley	34	13	4	15*l.* 16*s.* 6*d.* (not in *Summa*); and for
	Thursley	31	0	0	Omitted in Subsidy Roll, the first
	Chiddingfold	35	10	0	being probably taxed with Witley,
	Haslemere	18	0	0	the two latter with Godalming
Copthorne and Effingham. Total, 176*l.* 16*s.* 4*d.* *Summa* in Subsidy Roll: Copthorne, 47*l.* 15*s.* 6¼*d.*; Effingham, 11*l.* 8*s.* 8¼*d.*	Bansted	26	5	0	2*l.* 12*s.* 4½*d.* Talworth, Preston and Borough, 3*l.* 19*s.*
	Ewell	12	6	8	6*l.* 12*s.* 8½*d.* Cuddington, 4*l.* 0*s.* 2¼*d.*
	Walton-on-the-Hill	6	10	0	3*l.* 9*s.* 9½*d.* [7¼*d.*
	Epsom	18	10	0	2*l.* 8*s.* 3½*d.* Villa Abbatis de Chertsey,
	Ashstead	12	10	0	3*l.* 10*s.*
	Hedley	3	0	0	1*l.* 12*s.* 8*d.*
	Chessington	5	6	8	(in Malden)
	Letherhead	20	5	0	9*l.* 11*s.* 7*d.*
	Fetcham	10	19	0	3*l.* 5*s.* 8½*d.*
	Mickleham	10	19	0	4*l.* 13*s.* 9*d.*
	Newdigate	10	0	0	2*l.* 3*s.* 4*d.* [17*s.* 7¼*d.*
	Bookham Magna	21	17	6	2*l.* 17*s.* 4*d.* Villa Abbatis de Chertsey,
	Bookham Parva	4	7	6	(included in Bookham Magna)
	Effingham	13	10	0	7*l.* 1*s.* 5*d.*

Hundreds	Place	Sum			Assessment in fourteenth century
		£.	s.	d.	
Kingston and Emleybridge. Total, 346*l.* 0*s.* 0*d.* *Summa* in Subsidy Roll: Kingston, 15*l.* 13*s.* 4¼*d.*; Emleybridge, 24*l.* 0*s.* 6*d.*	Kingston	88	0	0	21*l.* 0*s.* 2*d.* (not in *Summa*) Combe, 2*l.* 11*s.* 11*d.*
	Petersham	14	0	0	1*l.* 18*s.* 4*d.* Villa Abbatis de Chertsey, 1*l.* 1*s.* 6¼*d.*
	Richmond and Kew	53	0	0	4*l.* 15*s.* and 3*l.* 0*s.* 9½*d.* (two entries) (latter not in *Summa*)
	Long Ditton	17	10	0	(with Malden and Talworth)
	Malden	8	15	0	(Malden and Talworth.) 5*l.* 6*s.* 1*d.*
	Cobham	30	10	0	2*l.* 11*s.* 6½*d.* Villa Abbatis de Chertsey, 2*l.* 2*s.* 8*d.*
	Stoke d'Abernon	12	5	0	18*s.* 2*d.*
	Esher	17	10	0	3*l.* 0*s.* 4¾*d.*
	Thames Ditton	18	0	0	4*l.* 15*s.* 6*d.*
	Walton-on-Thames	38	0	0	7*l.*
	Weybridge	24	0	0	2*l.* 7*s.* 8¾*d.*
	West Moulsey	11	0	0	2*l.* 10*s.* 7¾*d.*
	East Moulsey	13	10	0	
Tandridge and Reigate. Total, 469*l.* 15*s.* 10*d.* *Summa* in Subsidy Roll: Tandridge, 60*l.* 4*s.* 8¼*d.*; Reigate, 50*l.* 15*s.* 3¾*d.*	Lingfield	38	0	0	14*l.*
	Crowhurst	13	0	0	2*l.* 8*s.* 4*d.*
	Bletchingley	28	0	0	3*l.* 18*s.* 6¾*d.* and 2*l.* 5*s.* (two entries) (second not in *Summa*)
	Horne	9	0	0	3*l.* 6*s.* 10*d.*
	Godstone	30	0	0	6*l.* 2*s.* 8*d.* (Walkhampstead)
	Limpsfield	13	0	0	6*l.* 18*s.* 3¼*d.* Villa Abbatis de Battle, 2*l.* 0*s.* 3*d.*
	Oxted	21	0	0	4*l.* 15*s.* 1*d.*
	Tandridge	19	0	0	2*l.* 19*s.* 8*d.*
	Caterham	6	0	0	2*l.* 14*s.* 5¾*d.*
	Chelsham	5	10	0	2*l.* 18*s.* 0½*d.*
	Tatsfield	3	0	0	19*s.* 7½*d.*
	Titsey	8	15	0	1*l.* 12*s.* 8½*d.*
	Farley	2	10	0	9*s.* 4*d.*
	Warlingham	3	13	4	2*l.* 14*s.* 4½*d.*
	Woldingham	1	0	0	1*l.* 1*s.* 2*d.*
	Reigate	60	0	0	5*l.* 12*s.* 1½*d.* and 4*l.* 0*s.* 7¾*d.* (two entries) (second not in *Summa*)
	Buckland	18	0	0	3*l.* 14*s.* 6*d.*
	Leigh	18	0	0	3*l.* 8*s.* 2½*d.*
	Betchworth	21	17	6	1*l.* 3*s.* 7¼*d.* (West Betchworth) (East Betchworth and Brockham, 6*l.* 15*s.* 0¼*d.*)
	Horley	31	0	0	7*l.* 1*s.* 3¾*d.*
	Charlwood	31	0	0	5*l.* 12*s.* 7*d.*
	Burstow	11	10	0	5*l.* 4*s.* 11*d.*
	Nutfield	20	0	0	4*l.* 12*s.* 3½*d.*
	Merstham	21	0	0	4*s.* 8*s.* 0½*d.*
	Chipstead	22	10	0	Chipstead and Kingswood, 4*l.* 10*s.* 8*d.*
	Gatton	13	10	0	3*l.* 0*s.* 2*d.*
	Rotherhithe	31	10	0	2*l.* 7*s.* 2*d.*
	Bermondsey	34	0	0	
	Newington	34	10	0	Newington and Walworth, 2*l.*

Hundreds	Place	Sum £	s.	d.	Assessment in fourteenth century
Brixton and Wallington. Total, 786*l.* 3*s.* 4*d.* *Summa* in Subsidy Roll: Brixton, 39*l.* 15*s.* 6½*d.*; Wallington, 54*l.* 15*s.* 10¾*d.*	Lambeth	74	10	0	16*s.* 8*d.* Mansio Episcopi, 4*s.* 7*d.*; Stockwell, 1*l.* 1*s.*; Lambeth and Dean, 2*l.* 12*s.* 2¼*d.*
	Camberwell	52	0	0	5*l.* 1*s.* 1*d.* Dulwich, 15*s.* 8*d.*
	Clapham	13	10	0	1*l.* 2*s.* 1*d.*
	Streatham	33	0	0	2*l.* 10*s.* 8*d.*
	Wandsworth	47	0	0	4*l.* 11*s.* 5*d.* [1*l.* 10*s.*
	Tooting Graveney	14	10	0	Tooting Graveney and Tooting Bec,
	Putney	60	0	0	Putney and Roehampton, 2*l.* 19*s.* 10*d.*
	Merton	18	0	0	15*s.* 8*d.*
	Battersea	35	0	0	2*l.* 17*s.* 8*d.* Villa Abbatis de Westminster, 11*s.* 9½*d.*
	Mortlake	40	0	0	Shene (East), 4*l.* 15*s.* (Mortlake may have been included in Wimbledon)
	Barnes	16	10	0	
	Wimbledon	26	5	0	2*l.* 19*s.* 4*d.*
	Croydon	61	5	0	9*l.* 4*s.* 9½*d.* Tithings in Croydon: Woodcote, 1*l.* 14*s.* 6¾*d.*; Bandon, 2*l.* 17*s.* 8½*d.*; Waddon, 2*l.* 14*s.* 2½*d.*; Addiscomb, 4*l.* 3*s.* 3½*d.*; Bunchesham, 1*l.* 14*s.* 9¾*d.*; Selsdon, 17*s.* 3½*d.*
	Chaldon	7	5	0	See Coulsdon
	Sutton	12	0	0	1*l.* 18*s.* 3¾*d.* Villa Abbatis de Chertsey, 15*s.* 9¼*d.*
	Mitcham	50	0	0	5*l.*
	Cheam	18	0	0	West Cheam, 15*s.* 1¾*d.* East Cheam, 2*l.* 5*s.* 10½*d.*
	Addington	12	0	0	3*l.* 4*s.* 7¾*d.*
	Sanderstead	10	10	0	2*l.* 15*s.* 9½*d.*
	Beddington	22	0	0	1*l.* 15*s.* 3½*d.*; and Wallington, 1*l.* 8*s.*
	Woodmansterne	7	5	0	1*l.* 8*s.* 2¼*d.*
	Carshalton	21	0	0	5*l.*
	Coulsdon	13	0	0	1*l.* 12*s.* 1¾*d.* Coulsdon and Waldon (perhaps a mistake for Chaldon)
	Morden	21	0	0	9*s.* 9*d.* Villa Abbatis de Chertsey, 13*s.* 11¼*d.*
Liberty of the Clink	The Clink	29	10	0	omitted
Liberty of the Upper Ground	The Maze (perhaps)	25	10	0	
	Borough of Southwark	350	0	0	
Godley. Total, 237*l.* 0*s.* 0*d.* *Summa* in Subsidy Roll, 15*l.* 14*s.* 6¼*d.* (but the amount is 4*s.* less)	Chertsey	66	13	4	2*l.* 13*s.* 7½*d.* Villa Abbatis de (in Woking) [Chertsey, 6*s.* 11*d.*
	Horsell	28	10	0	
	Frimley	12	0	0	(in Ash)
	Thorpe	22	6	8	19*s.* 9½*d.*
	Egham	35	0	0	1*l.* 13*s.* 11¾*d.* Villa Abbatis de Chertsey, 14*s.* 10¾*d.*
	Byfleet	11	0	0	3*l.* 11*s.* 1¼*d.* (not in *Summa*)
	Bisley	3	10	0	Villa Abbatis de Chertsey (perhaps Bisley), 17*s.* 1*d.*
	Chobham	44	0	0	1*l.* 0*s.* 0½*d.* Villa Abbatis de Chertsey, 2*l.* 6*s.* 8*d.*
	Pirford	14	0	0	2*l.* 12*s.* 0½*d.* Villa ibidem Abbatis de Westminster, 2*l.* 5*s.* 5¾*d.*

URREY
ED AND DIVIDED
HUNDREDS

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