ISSN 0268-2907

CECIDOLOGY

Vol. 3, No. 2 Autumn 1988.

Journal of the

BRITISH PLANT GALL SOCIETY

CONTENTS

NOTES TO CONTRIBUTORS

Recommended guide-lines, when writers have the facilities:

Type in double spacing on one side of the paper only. Give margin of *2* cm at upper and left -hand margins.

Include a second (e.g. carbon) copy; a third copy is useful, and writers should also keep a copy.

Give sketches on a separate sheet, in black and white. Indication of scale and any other writing at least *5* cm. clear of sketch(es).

Underline scientific names, and nothing else; use a separate sheet to indicate any other special printing instructions.

IMPORTANT!

Please send all contributions for *Cecidology 4.1* on or before 10 January *1989.* Any material may be addressed to either Dr. C.K. Leach or Mr. F.B. Stubbs.

Publication by the end of March is intended.

This pattern of dates will follow each quarter as strictly as possible.

Vol. 3, No. 2 **CECIDOLOGY** Autumn 1988

Journal of the British Plant Gall Society
Editor — F.B. Stubbs

EDITORIAL

Another active year has passed and the British Plant Gall Society can look forward to further consolidation and expansion. Work in the field has forged ahead, often introducing members to new finds and new localities. Again we are indebted to those who made the arrangements and to our hosts on these occasions. The galls themselves did not always come up to expectations, and in several parts of the country many specimens failed to develop normally.

More and more members are making the subject more widely appreciated by giving lectures or attending field expeditions. Some are in regular touch with the general public, presenting natural history through the press or radio, and a few have significant books to their credit. Often they show plant galls to be part of the natural scene alongside more familiar wild life.

An important decision on publications has been made by the Management Committee of the BPGS. From 1989, one quarterly journal will be published, incorporating the features of *Cecidology* and *Newsletter*. There has been overlapping in the past, and it is hoped that the new plan will lead to more regular communication and a clearer sense of continuity.

The title of *Cecidology* will be retained, and each issue will contain a distinct section for *Secretary's Newsletter*. This will deal with administrative matters such as subscriptions, meetings, and guidance for members who participate in projects. The other pages will include papers, reports, questions and comments which refer to actual galls and to biological or ecological aspects. The policy of welcoming observations and ideas at any level will continue and we hope that everyone will find next year's journals attractive and informative. Each number of Cecidology will be a little slimmer than previously, but over the year the total material will represent a modest increase. Further expansion depends on the flow of contributions, and on fmance, with increased membership a key factor.

ANNUAL GENERAL MEETING -

Saturday, 29th July, 1989.

Thorp Perrow Arboretum, near Bedale, North Yorkshire.

Indoor facilities at the Village Institute, Snape (adjacent). An attractive lunch can be supplied, at about £3 per head, if a provisional estimate of numbers justifies making this arrangement. No commitment is implied, but a word to Secretary or Editor by the end of April, if you are at all likely to attend, will be helpful. More exact numbers will not be needed until much nearer to the date.

"THE WORMWOOD AND THE GALL" BIBLICAL CECIDOLOGY? — A Question of Etymology.

C.K. Leach, David Attenborough Laboratories, Leicester Polytechnic.

From time to time, after lectures on plant galls, I have been posed questions along the lines "Do the galls you have been discussing have any connection with the biblical phrase “the wormwood and the gall?” Such questions are intriguing and worthy of some exploration.

Using the Authorised Version, I have detected eleven mentions of `gall' or `galls', including examples in both Old and New Testaments. Finding such references was, however, to discover a problem not a solution. Consider the current use of the word `gall'. It may be used as a noun in three quite distinct ways: denoting pathological growths induced on plants by parasites; as a replacement for the word `bile' particularly in reference to the bile of lower animals; or, in equine circles, as a term for painful blisters on horses. (Fowler and Fowler, 1964). But this is not the end of it: it may be used as a transitive or intransitive verb meaning to vex, annoy or humiliate. This complexity of meanings reflects the etymology of the word in English literature. It has been derived from three sources. The first, from the Anglo-saxon word "ge'lla" which denotes anything extremely bitter but which also implies "implacable enmity and spite" (Connold, 1901). The second derivation is from the Latin "galla" and is used to signify pathological or morbid growths on plants. The third is from the French word "galer", a verb which translates as to annoy, tease or harass, although it also implies the chaffing or wearing away of skin.

There is, however, one further variable. As Sir William Smith and the Reverend J.M. Fuller indicated in their "Dictionary of the Bible" (1893) the word `gall' in the Authorised Version of the English Bible was represented in the original Hebrew by the three words ‘mĕnêrâh’, ‘mĕrorah’ and ‘rôsh’. According to Smith and Fuller, ‘mĕnêrâh’ and ‘mĕrorah’ etymologically denoted "that which is bitter" (a feature of many plant galls). ‘Rôsh’ on the other hand, although generally translated to ‘gall’ in the Authorised Version, appears as ‘hemlock’ in the Book of Hosea (10, v.4).

THE BIBLICAL REFERENCES TO GALLS

Job, in rebuking the unmerciful, declares:

> "His archers compass me round about, he cleaveth my reins asunder and doth not spare: he poureth out my gall upon the ground." (Job, *16,* v.13)

In no way could this be construed as having any cecidological significance since it probably refers to bile or, more generally, to the fluids of the abdomen. A similar interpretation may be given to Zophar's exposition of the state of the wicked in Job, 20 v. 24-25:

> "he shall flee from the iron weapon the bow of steel shall strike him through**.** It is drawn and cometh out of the body; yea, the glittering sword cometh out of his gall: terrors are upon him."

A slightly different interpretation must, however be applied to verse 14 in the same passage which relates:

" .... his meat in his bowels is turned, it is the gall of asps within him."

It may be that gall in this context means `poison'. It appears that the ancients thought that the venom of snakes was, in fact, snake bile or gall. The Roman, Pliny, as late as the First Century AD, assured us that "No one should be astonished that it is the gall which constitutes the poison of serpent" (see Stockheart, 1923). Whatever the exact interpretation, the quotation appears to hold little of promise to the cecidologist.

Turning to Deuteronomy's call to obedience (Deut. 29, v. 18) we find the more promising:

> "Lest there should be among you man, or woman or family, or tribe, whose heart turneth away this day from the Lord our God to go and serve the gods of these nations: lest there should be among you a root that beareth gall (Hebrew = rosh) and wormwood."

This, it appears, has a botanical connotation, although it is conjectural to infer that the `gall' here refers to some pathological plant structure. More probable is that it refers to a distasteful or poisonous plant. In other passages, for example Hosea *10,* v. 4, the translators rendered the same Hebrew word (rosh) as hemlock:

" .....springeth up as hemlock in the furrows of the field "

Likewise, one is left with doubts concerning the lamentation of Jeremiah in the passage:

> ".....mine affliction and my misery, the wormwood and the gall." (Lamentations 3, v. 19)

Here the sense seems merely to denote something bitter.

The prophecy of Psalm 69, v. 21 of the events leading up to the Crucifixion relates:

> "They gave me gall for my meat, and in my throat they gave me vinegar to drink."

Matthew's account of these events says:

> ".....vinegar mingled with gall". (St. Matthew 27, v. 34)

St. Mark *(15,* v. 23), in relating the same circumstances, has it that the drink was wine mixed with myrrh!! This disparity naturally leads to scepticism.

Why was the drink so adulterated? It may have been to deaden pain: it was, for example, customary to lace the drink of shortly-to-be-executed criminals with frankincense to relieve pain. Rosenmuller, however, in his text `Biblical Botany' expressed the opposite view. The myrrh, gall or whatever it was, was added to sustain Christ until punishment had been completed. Both myrrh and frankincense are produced by plants of the order Amyridaceae and both are ranked as hypopoietics by modern physicians. It may be, however, that little of significance can be attached to the reported adulteration of the drink. Roman wines contained little alcohol and were, therefore, susceptible to souring and required seasoning.

Therefore, there are not sufficient grounds to draw any cecidological conclusions from the Psalms or St. Matthew.

Deuteronomy *(32,* v.32) offers the exciting:

> "For their vine is the vine of Sodom and of the fields of Gomorah: their grapes of gall, their clusters are bitter."

Does this `grapes of gall' really refer to pathological growths on plants or is it that the simpler interpretation that they are merely bitter or poisonous berries more acceptable? Perhaps the term `rosh' (and thus gall) was applied to any bitter tasting `berries' be they fruit or galls. Many galls are bitter to taste, a reflection of their high tannin content. To infer more from `grapes of gall' may be conjectural.

Jeremiah's two references to gall use the phrase `water of gall'. In describing the calamity of the Jews, we are offered:

> "Why do we sit still? assemble yourselves and let us enter into the defenced cities, and let us be silent there, for the Lord our God bath put us to silence and given us water of gall to drink, because we have sinned against the Lord". (Jeremiah 9, v.15 - see also 9, v.5)

What was this `water of gall'? Was it an extract of some Palestinian gall or of some bitter plant? Many authors subscribe to the latter view. Smith and Fuller (1893) cite Geserius who thought it may have been produced by soaking capsules of poppies. At least nine species of poppies, including the common red poppy of the British cornfield *(Papaver rhoeus),* are abundant in Palestine and all are bitter to taste and have a narcotic nature. Michaelis, on the other hand, suggested that the gall referred to in this passage was the nightshade or bittersweet *(Solanium dulcamara)* while Oedman was of the opinion that it may have been `bitter apple' or Colocynth *(Citrullus colocynthis).*

CONCLUSION

The search for biblical cecidology has been a frustrating quest and any conclusions made about these biblical references must be tempered with caution. The most probable conjecture, for proof there is none, is that `gall' was generally used to denote that which is bitter. I can say little else with confidence. It may be that other members know more.

REFERENCES

Connold, E.T. (1901) *British Vegetable Galls.* Hutchinson London

Fowler, H. W. and Fowler, F.G. (1964) *The Concise Oxford Dictionary* Clarendon, Oxford

Kilto (1853) Biblical Botany (cited by Smith and Fuller, 1893)

Smith, Sir W. and Fuller, rev, J.M. (1893) *"A Dictionary of the Bible"* Murray, London

Stockert, E (1923) Konowia 2, 247-524

CSO/CKL10

RECORDING PLANT GALLS

John A. Pearson

My article in "Cecidology" Vol 3, No 1, setting out a scheme for recording plant galls on a national basis brought criticism from three experienced naturalists.

Firstly, Roger Key of N.C.C. approached me at a Y.N.U. field meeting and expressed concern about the B.P.G.S. intention of confining its recording scheme to 10km squares. Two weeks later Brian Eversham, Co-ordinator of Invertebrate Recording at the Biological Records Centre, Monks Wood, telephoned me to express similar concern. Finally, the Editor received the article by John Bratton which is printed in this edition of "Cecidology".

I am in complete agreement with all the points raised and fully endorse the detailed suggestions made by John Bratton. However, the B.P.G.S. on its own could not deal with all the records that would be likely to come in.

It was Brian Eversham who made a more detailed recording scheme possible. He came to see me and after an afternoon of concentrated discussion offered the full support of the Biological Records Centre in setting up a national recording scheme for plant galls.

The recording scheme will be devised in such a way as to allow recorders to send in as much or as little information as they may have. For this purpose three recording cards will be prepared. One will carry a list of plant galls plus some blank spaces in which to record any gall not listed on the card; this card would be used for recording different galls at a particular site. A second card will be a single species card for recording a particular gall at a number of different sites. A third card will be an individual record card for rare or notable species.

Ideally most records would have a six figure map reference, a site name and vice county number. Significant records would have the detailed information that John Bratton, in his article, proposes for Lipara similis. However, Brian Eversham insists that while we should aim at the ideal, no one should feel inhibited from submitting records because they are not able to include all information asked for on the recording cards.

It is proposed to run a pilot recording scheme during 1989, with the full national recording scheme starting in 1990. A further article will be published in the Spring 1989 edition of "Cecidology". This will give more details of the trial recording scheme, information on how to use the recording cards and where to obtain them.

Finally, may I express my gratitude to those who have made both helpful criticism and positive suggestions. Most especially to Brian Eversham who, in addition to criticism, offered the full and active support of the Biological Records Centre, without which a national recording scheme that would satisfy naturalists, both amateur and professional, would not have been possible.

The Isolation of Corynebacterium Fascians from Forsythia X Intermedia

Mary Tiller

In 1971 a large bush of Forsythia X intermedia in my garden started to produce nodular galls 1-2.5 cm. diameter on the most pendulous branches. From `Plant Galls in Colour' by Arnold Darlington I identified this gall as being caused by Corynebacterium fascians. As I was employed as a Medical Scientist in Microbiology I decided to attempt to isolate the causitive organism. The technique used was as follows:-

In late autumn 4 of the fleshiest galls were removed from the twigs, and gently washed in sterile water. This was followed by surface sterilization (very briefly) in 90% alcohol. Each gall was now examined separately. Using sterile scalpel blade and forceps, the outer layer of tissue was peeled off into a sterile petri dish. The inner surface of a small piece of this was scraped to remove the cells, which were spread thinly on microscope slides and allowed to dry. These were stained by Gram's reaction and examined under oil immersion, X1000 magnification. Scanty Gram positive rod shaped beaded organisms were found in smears from 3 of the 4 galls. Two pieces of tissue approximately 0.5 cm^2 were each placed in a tube containing 1 ml. 0.85% NaCl, and left for 2 hours for organisms to soak out from the tissue into the fluid. The fluid from each tube to inoculate 3 Nutrient Agar plates (Oxoid) which were then spread to obtain single colonies. The remaining tissue was divided into 3 pieces, and each piece was placed with the under-surface in contact with the media on a moist Nutrient Agar plate, and left for 10 minutes before removal. The plates were then spread for single colonies. (A control was set up, using the surface tissues of a young stem from an ungalled bush, and treated in an identical manner). One plate from each set of three was incubated at 4°C one at 22°C, and one at 37°C for 7 days. After this time they were examined for bacterial growth. Many plates had colonies of contaminants (mainly Bacillus species and Pseudomonas species) and one was completely overgrown with contaminants. From two of the galls, the plates at 22°C inoculated directly from the tissue and with the saline used to soak the tissue, several yellow-orange 1-2 mm. diameter colonies were grown. (Both of these galls had shown organisms in the direct smear.) Films were made and stained by Grain's reaction, showing short Gram positive rod shaped organisms with no spores. Further Nutrient agar plates were inoculated to ensure purity, and biochemical tests performed to identify the organism.

Results were as follows:-
Catalase +
Oxidase negative.
Litmus Milk Acid + clot formation.
Motility non-motile.
Nitrate reduction +
Optimum temperature 22C.
Loeffler's slope Growth Volutin positive (Alberts stain).
Acid production in sugars:-
Glucose, Sucrose, Arabinose, Maltose, Mannitol – all positive.
Lactose negative.
The organism identified as a Corynebacterium species, and using these results, as Corynebacterium fascians.

For several years I continued to isolate this organism from galls collected from the original bush and also from other gardens. On one occasion a typically fasciated flattened stem appeared on my bush, and this was cultured by the same technique. Corynebacterium fascians was **not** isolated. This could have been because C. fascians was not the causer, or possibly because insufficient specimens were available for culture. (20-50% of the galls examined grew C. fascians).

The original bush still produces occasional nodular galls, and in 1986 a further fasciated stem appeared. The `epidemic of galls on Forsythia from 1970-1980 in the Bournemouth and Christchurch area has died down, but a few nodular galls are still in evidence.

I believe that Corynebacterium fascians causes the nodular type of gall on Forsythia X intermedia, and in the future will carry out more work on fasciated growths to determine if they are caused by the same organism.

(Having isolated this Corynebacterium I tried to carry out Koch's 3rd. and 4th. postulates by infecting Sweet pea seedlings and an apparently uninfected hedge of Forsythia X intermedia with this organism. The sweet pea seedlings were infected as suggested in Dowson 1949 Manual of Bacterial Plant Diseases, and the hedge inoculated with the organism from a needle prick in several places. Galls resulted on the hedge, and the sweet peas produced multiple buds and no normal shoots in 3 out of 10 tests. Unfortunately, neither the new galls on the hedge or the multiple shoots on the sweet peas showed any sign of the infecting organism in smears or on culture and so I could not satisfy the 4th. postulate.)

WILDLIFE WALKABOUTS —
Birmingham and the Black Country.
Ten Short Walks described by Peter Shirley.

Publ. Wayside Books. 128pp., £4.95 from booksellsers or by post (please add 60p) from P.R. Shirley.

The walks described are all circular in route, varying in length between one mile and four miles. Public footpaths or areas open to the public are used, and a clear map and directions are given in each case. Many different habitats are described with the flora and fauna to be found in them well illustrated by photographs and beautiful drawings by Julia Morland. Although not a gall book as such, galls are given their place with the other wildlife and many more would be found there.

This is an invaluable book for those living in the area, and most enjoyable for those living further afield. Peter writes so vividly that one imagines oneself walking with him — the best armchair walking I have done for a long time.

H.E.S.

The Exobasidiales in Britain

B.M Spooner

Some interest in gall-causing species of Exobasidiales which occur in Britain has been indicated in recent notes in Cecidology and the Newsletter. These fungi are not often recorded, partly because many of the species are uncommon and partly because many aspects of their taxonomy and nomenclature remain unclear. A note on those known from Britain may, therefore, be of interest.

The order Exobasidiales (Hymenomycetes: Holobasidiomycetidae) includes species which are obligate parasites of higher plants and are further characterised by the possession of unspecialised, non-septate basidia, the absence of well-defined fruitbodies and lack of clamp connections on the hyphae. The mycelium is internal, and basidia are emergent either from between epidermal cells or from stomata, forming an hymenium or not. Spores are smooth, hyaline, often curved and eventually septate in most species. There is a single family, Exobasidiaceae. The order is widely distributed, in both northern and southern hemispheres and, as currently interpreted, includes about sixty species ranged in five genera. Four of these genera, *Arcticomyces* Saville, *Exobasidiellum* Donk, *Kordyana* Racib. and *Muribasidiospora* Kamat & Raj. are small and restricted in distribution, and do not include species which cause hypertrophy of the host. *Exobasidiellum culmigenum* Webster & Reid, described from *Britain on Dactylis glomerata,* has more recently been transferred to *Galzinia* Bourdot (Corticiaceae) and, if this is accepted, none of these four genera occur in Britain.

Exobasidium is by far the largest and most important genus of the order, with an estimated fifty species worldwide. These species are strictly host limited and, though found on a variety of plant families, are particularly important parasites of the Ericaceae. Most of the species of the genus cause hypertrophy of the host, sometimes inducing very large and spectacular galls. Seven species have been reported from the British Isles, five of which are considered to cause some hypertrophy of the host tissue. The two remaining species cause small leaf spots which are slightly thickened due to fungus tissue so that hypertrophy is apparently lacking.

The taxonomy of the European species on Ericaceae was revised by Nannfeldt (1981), who recognised six species as British. In addition to these, *Exobasidium camelliae* Shirai, which causes large galls of the flower buds of *Camellia japonica, is* occasionally reported in this country (as recently from Penzance, see Cecidology 2: 52, 1987).

A synoposis of the British species is given below, based on their host plants. Three of the species are not native, but occur on cultivated plants and are introduced with the hosts. Those which cause conspicuous galls are marked with an asterisk. In addition to those listed, *E. vaccinii-uliginosi* Boud., on *V. uliginosum,* may occur in this country. It is common in the Alps and known to occur in lowland Europe as near as France.

BRITISH SPECIES

Theaceae	
Camellia japonica	
**Exobasidium camelliae* Shirai	Causes large, conspicuous flower bud galls.
Ericaceae	
Rhododendron	
**Exobasidium japonicum Shirai*	On cultivated Azalea *(R. simsidii???).* Causes shapeless, fleshy, whitish leaf galls.
**Exobasidium rhododendri* (Fuckel)	Cram. On *R. ferrugineum.* Causes fleshy, subglobose galls up to 3cm diam., often red in colour, on the leaf underside. Apparently very rare.
Vaccinium	
Exobasidium arescens Nannf.	On *V. myrtilli.* Causes slightly thickened, reddish-yellow leaf spots c. 0.5cm diam., apparently without hypertrophy. Status in Britain uncertain.
Exobasidium myrtilli Siegm.	On *V. myrtilli.* Leaves slightly thickened and e nlarged, pale green to red; branches longer and more upright.
Exobasidium rostrupii Nannf.	On *V. oxycoccos.* Small, slightly thickened leaf spots; no hypertrophy. Apparently recorded only from Ireland.
**Exobasidium vaccinii* (Fuckel). much thickened leaf con-	Woron. On *V. vitis-idaea.* Causes conspicuous, cavities, c.1 cm across, upperside eventually bright red with yellow margins, underside whitish. May also cause hypertrophy and malformation of flower buds and shoot tips.

References

Nannfeldt, J.A. (1981). *Exobasidium,* a taxonomic reassessment applied to the European species. Symbolae Botanicae Upsalienses 23 (2): 1-72.

A TRAGICALLY TRUE TALE

Margaret M. Hutchinson
The Croft House, Inval Haslemere.

There was a little oak tree,
Nothing did it bear
But some lignicolae
And marbles here and there.

Its twigs were thin and twisted,
Inflator made them so,
while on its leaves were spangles;
It was so slow to grow.

There came a parson eager
With missionary zeal:
"You'll be an oak tree yet" quoth he,
"My secateurs you'll feel."

He cut off all the laterals,
He did not see a gall;
Intent he was on making it
Both dignified and tall.

Hidden in the crown above,
Andricus nudis rare
Escaped the slaughter that was done
And safely nestled there.

But alas! Soon after, the whole forest was felled, and an enormous tractor, dragging out logs, drove over my little tree and ground it into the mud.
P.S. It wasn't the parson's tree – or mine for that matter!

THEY'RE ALSO UP A GUM TREE

Numerous corky flanges were observed on the intermediate-sized branches of a mature Sweet Gum, *Liquidambar stryaciflua,* in East London this summer. I am convinced they represent a normal growth stage of the tree.

Brian Wurzell, 47 Rostevor Avenue, Tottenham, London N15 6LA.

THE LUMP AND ITS KIN

Fred B. Stubbs

Half buried in a hedge bank, The Lump was a parody of a lost golf ball, muddy and distorted. Could it be one of those obscure objects known as galls? A book in the library of the Oldham Microscopial Society showed clearly that it was. Thus, from that rough Derbyshire lane on the eight December 1938, there started a trail which proved long and tortuous. Guide posts were sparse, while fellow pilgrims were still less in evidence.

My introduction to natural history was in Epping Forest, when my father was curator of a museum in East London. A move to the ancestral homeland of Oldham came before I started school. After Lancashire it was north east Cheshire, eventually Durham and then retirement in the Yorkshire Dales.

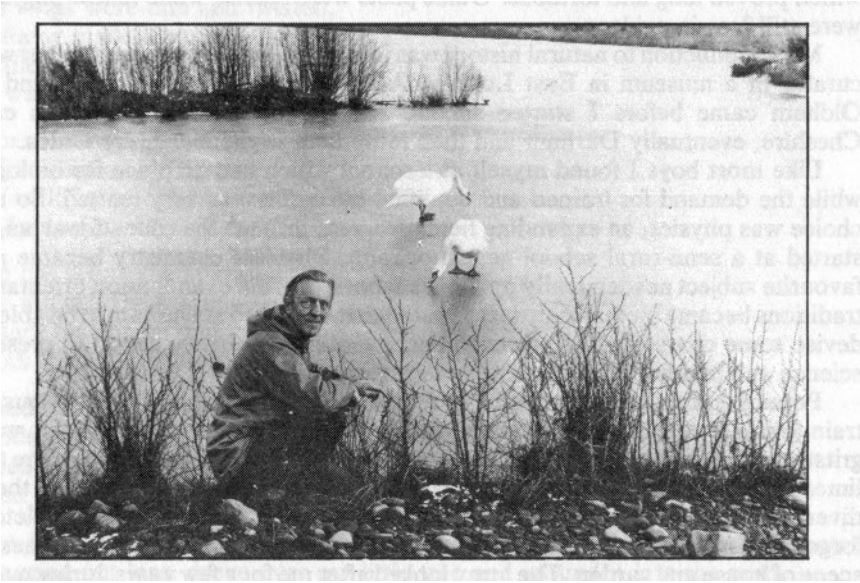
Like most boys I found myself at a school which had no place for biology, while the demand for trained and qualified biologists was very limited. So my choice was physics, an expanding field. Progress through the educational jungle started at a semi-rural school near Stockport. Physical chemistry became my favourite subject academically and in the laboratory, but examination orientated traditions became increasingly less attractive. It was good at Durham to be able to devise some courses which, through unconventional projects, aimed to present science as a method and an attitude to investigations.

Popular sports never appealed and exercise meant walking. A short bus or train journey took us to wild upland country and its peat-covered wastes, with gritstone crags for rock-climbing. The next steps were underground to explore the limestone caves and delight in their bizarre calcite formations. Through all these diversions there were glimpses of the fauna and flora, The Lump never completely forgotten. Interruptions came from work and from the more welcome domestic scene of house and garden. The army looked after me for a few years, luring me to rural spots in Hampshire and Shropshire, then to the eastern jungles and flood plains of India, best of all to a small city perched on a plateau in Assam which looked across two hundred miles of clear air to the Himalayas.

Lepidoptera captured my boyhood enthusiasm, other insects and the flora being added later. The several local societies presented a cross section of the communities of the district, human and non-human, and the North Western Naturalists Union covered a wider region. Through these channels and in extra-mural classes, I met experts in many fields, learning all the time. Living within half a mile of the county boundary for many years, I roamed over hunting grounds in Yorkshire and was in touch with the Y.N.U.

Most of my friends were naturalists or country lovers in some way. There was Reg Wagstaffe, curator of Stockport Museum, keen on both birds and plants, and very knowledgeable, as I found during our many expeditions together and our lengthy chats at home or at the museum. It was Reg who gave me the first book on plant galls which I owned, a paperback dated 1903 and priced at one shilling, providing descriptions and sketches of 95 galls. The author, S.L. Mosley, published other natural history handbooks, as he ran a family printing business in Huddersfield. I have never seen or heard of this book elsewhere – have any other copies survived?

At Manchester Museum, the entomologist was Harry Britten, whose scientific reputation was international, especially for his work with Diptera. He regularly joined in the meetings and excursions of the local groups, always ready with encouragement and advice, spiced with jocular asides. When he retired, his successor was Douglas Hincks. Although busily engaged with Kloet on the Check List of British Insects, Douglas joined Reg Wagstaffe and myself in starting to compile a list of British plant galls. Our weekly sessions at Manchester Museum were soon disrupted by wartime conditions and when the dust settled Reg had moved and Douglas was unwell.



The editor of the journal of the NWNU at that period was A.A. Dallman. Friendly enough but taciturn, he seemed to be concentrating on the lower herbage on field meetings, and it was some time before I realised that galls were his quarry. In 1921 he had published a catalogue of Plant Galls of Cheshire, based mainly on the Chester and Wirral area. Although it was many years later that I used to meet him, he gave no sign of adding a supplement, which could have been extensive.

Most readers will realise the hazards involved when one shows interest in anything beyond football and television. Somebody, lurking behind a benign smile, is seeking a volunteer to help with .....oh, just a little .....Natural history societies and conservation bodies thrive on such pitfall traps. Committee meetings can be tolerable if conducted briskly, leaving time for a buzz of small talk, happier and sometimes more productive of ideas. More specific duties vary widely. A nature reserve needs leaflets and a recording plan and facilities for visitors; less reasonable are the straying cattle or collapsing footpaths. Attractive in themselves, Harlow Car Gardens at Harrogate offer as a bonus an area of ancient woodland, rich in wild life. Then came several police authorities and voluntary teams agreeing to co-ordinate the mountain rescue services of the northern Pennines and Cheviots. Procedures worked out in comfort would be suddenly put to the test when the telephone rang at four in the morning.

It was in 197 3 that I called on Franklyn Perring at Monks Wood to discuss the state of plant gall studies, and we decided that a pilot scheme was worth trying. Arnold Darlington's Plant Galls in Colour had made an impression and there were distinct flickers of interest here and there, so Arnold himself certainly approved. So too did Tom Dunn and Miss Kit Rob, each well acquainted with galls and holding **key** positions in the Northern Naturalists Union and the Yorkshire Naturalists Union respectively. A distribution survey was launched for the year 1974, limited to 25 readily identifiable galls and to the counties of Durham and Yorkshire. Well over thirty naturalists sent in records, referring in total to nearly half of the 10-km squares of the area. Earlier reports had depended on hard work by three or four observers, and few were recent.

To maintain the momentum of the 1974 exercise, each year then saw field meetings and a sketchy letter to exchange news. This news sheet found its way to naturalists in other parts of the country and in 1984 the Bulletin of Plant Galls started its short life. Meetings at Leicester and Rotherham in 1985 saw the establishment of the British Plant Gall Society, a firm step to a higher plane.

I still salute The Lump and my companions of forty and fifty years ago. Memory is not as reliable as it might be, but it is just possible that one or two who are reading this today were with me, enjoying the walk along that Derbyshire lane.

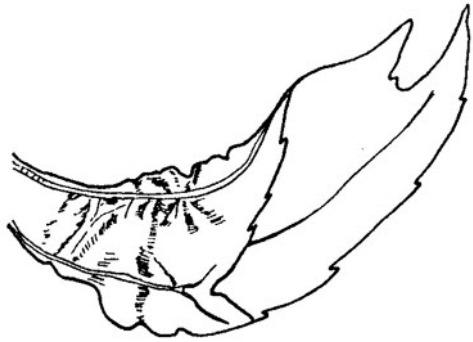
All this is ancient history — the future now rests with the British Plant Gall Society.

(The photograph is reproduced by courtesy of the Editor of the Northern Echo)

QUESTIONS FROM MEMBERS

From Albert Leeser (High Wycombe)

> "Any ideas about the causative agent which causes "watertraps" to be produced on lead shoots in Rudbecka? The leaves on the lead shoots form a complete hollow chamber almost like a small vase. Elsewhere on the plant, some leaves are, misshaped, but do not produce complete chambers."



From John Little (West Bromwich)

Observed on the female catkin of Birch during August 1988 – a conical swelling on the rachis, its height roughly equal to the diameter of the rachis. Possibly replaces the seed and/or scale but it persists and not subject to abscission. The exit hole is near the top of the woody gall and the gall is lined inside with a whitish membrane. Connold mentions a gall of "staminate" catkins of birch but his description does not extend to mention of swellings on the rachis.

Can you help, please?

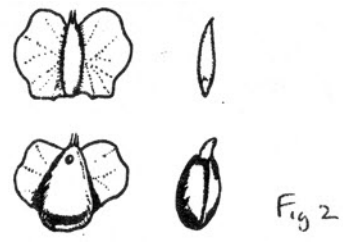


Fig 2

Comment This gall sounds remarkably like the gall attributed by Buhr to *Semudobia betulae* (Winnertz) (Gall Number 113 in Buhr's list). We are convinced that this is the correct identification but perhaps members are familiar with this gall and can tell us more.

From David Biggs (Isle of Wight)

David sent us samples of *Crataegus monogyna* last summer. These samples had "bracts" instead of leaves. Search as we may, we have failed to turn up a satisfactory cause. We made drawings of the samples – have you any ideas?

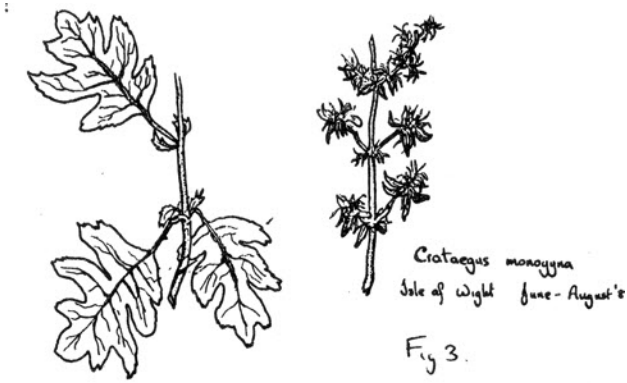


Fig 3.

From John L. Taylor (Manchester): In reference to two rusts, mentioned in Cecidology 3.1, p. 21:-

On petty spurge *(Euphorbia peplus), Melampsora euphorbia*
Common on this host no other rust listed for this host.

On alexanders *(Smyrium olusatrum), Puccinia smyrnii.*
Common, and can be found all year round. No other rust is listed for this host.

Ref: Ellis & Ellis, Microfungi on Land Plants (1985)

PROTOMYCES MACROSPORUS - A FUNGAL GALL ON OENANTHE CROCATA

Pauline Ivimey-Cook, Exmouth

Holidays can be the ideal time for finding new galls and last Summer, in West Penwith, Cornwall, was no exception! The gall in question was a large bulge in the stem of *Oenanthe crocata* (Hemlock Water Dropwort) growing in a wet flush near the roadside at Escalls, Sennen. Further investigation found more and varied specimens at the same site. *Oenanthe crocata* is a common plant of streams and wet flushes in this part of Cornwall and the galls were seen on several occasions on plants growing in running water and also in the boggy area beside the footpath leading to Madron Well and Chapel.

From the Cornish slides John Pearson identified it as *Protomyces macrosporus* (illustrated in Connold), a fungal stem gall which also occurs on *Aegopodium podagarica* (Ground Elder). On the host, Ellis and Ellis refer to small, pale brown, swollen areas on living stems and leaves. According to Connold `occurence seems to be very local'. This doesn't seem to be the case in West Penwith and the gall was also found by the lakeside at the Stover Country Park meeting in Devon last September.

The growths range from a large bulge on the main stem to distorted and swollen, horn-like umbel stalks, totally malformed umbels and even greatly enlarged fruits. Quite small growths with relatively little malformation of the host were also found. Connold describes the gall as pale greenish yellow in youth, changing to pink and reddish brown "which later alters until it harmonises with the other part of the stem". The Cornish specimens were, at the beginning of August, mostly in the smooth, reddish brown, sometimes shining stage. A few had progressed to a dull brown, rough growth where the tissues were softening as the host plant completed its life cycle. No `harmonising' stage was seen and it is difficult to visualise how this can occur after the red stage unless it refers to the brown state which eventually more or less matches the dying host plant stems. Connold continues "it is glabrous, smooth or rough. Dimesions are very variable". This agrees with examples seen in Cornwall. The gall can be found from June to September and growth is said to be rapid.

This is an attractive and spectacular gall to look for wherever there is a stand of the host plant, at least in the South Western counties. It will be interesting to gather further information on the distribution of *Protomyces macrosporus* as the gall recording scheme gets underway.

References:

Connold: Plant Galls
Ellis and Ellis: Microfungi on Land Plants.

An unusual growth of roots of Ash *(Fraxinus excelsior L.)*

J.P. Bowdrey

Following the devastating gale of October 1987, the landscape was littered with fallen trees, offering an opportunity to examine their roots for galls.

One such tree, an Ash *(Fraxinus excelsior* L.) was examined by Mr L. Watts at Stambridge Mills near Rochford, Essex (TQ886906), during the first week of November 1987. The tree was estimated to be about 12m. (40') high, with a root ball some 2.7m. (9') in diameter. On roots of about 1 cm. in diameter, situated towards the centre of the root ball, were found two irregularly fusoid swellings. The smaller of the two, which I have examined, measured 8cm. in length, 3.7cm. in width and a

circumference of 12cm. at its widest point. The larger specimen is shown in Figure 1.

Later in November 1987 Mr Watts kindly revisited the site to collect more material on my behalf. Despite the trunk having been cut through, and the roots replaced in their original hole, he was able to collect several more growths ranging from 11 cm. down to 1.75 cm. in length. The outer surface of the larger growths is comprised of overlapping flattened plates, slightly darker in colour than the normal root epidermis. The smaller growths are similar in appearance except that

they resemble unaffected roots in their colouration. Longitudinal and transverse sections through the growths (Figures 2 a & b) would appear to indicate that the outgrowth originates from a relatively small area of the epidermis and proliferates in such a way as to envelope the root completely.

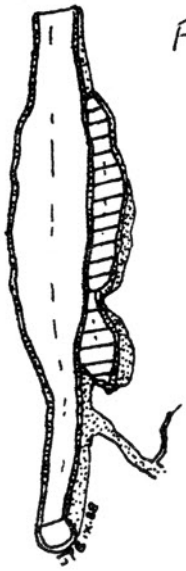


Fig 2a

Fig 2b.

No indications of any macroscopic causal organism were detected.

A survey of the literature revealed an almost identical growth collected in 1899 by E.T. Connold, (Connold 1909). Connold found several such growths on a roadside bank, and being unable to find any trace of a galling agent, attributed them to reparation of damage caused by spades cutting the roots during bank trimming.

At least some of the 1987 specimens were well out of the reach of spades or other human interference, but attack by insects or other herbivores cannot be ruled out as the source of the initial tissue damage. Alternatively, the growths might be due to the presence of one of the several groups of microorganisms now known to instigate galling of plant tissue.

I should like to thank Laurence Watts for collecting the specimens and providing much of the information on which this note is based, and Southend Museum for providing figure 1.

The specimens are now in the collections of Southend Central Museum and the Colchester and Essex Museum.

REFERENCE

Connold E.T. (1909) Plant Galls of Great Britain. A nature study handbook. London, Alard p.247, no.407

Host Range of *Agrobacterium tumefaciens.*

Paula E. Row, Newlyn, Penzance

With refererence to the letter which was answered in Cecidology Vol.2 No.2 about the crown gall, which is caused by the bacterium *Agrobacterium tumefaciens,* there is a point which I should like to add, concerning the host range of *A. tumefaciens.*

Crown galls can develop at the crowns of gymnosperms (for instance the pines) as well as those representatives *of* approximately twenty families of flowering plants, of which the majority are herbaceous (for example the sunflower and tomato) but also included are some woody perennial plants, such as the peach and apple.

All of the flowering plants quoted which are host to *A. tumefaciens* have leaves with reticulate veins and, in the embryo stage, have two cotyledons; that is to say that they belong to the group *Dicotyledonae* (or *Magnoliatae)* and are termed dicotyledons, or simply, dicots. Since there had been no reported cases of *A. tumefaciens* infecting any monocotyledonous plants (or monocots, which have parallel leaf veins and belong to the group Liliatae), it was assumed for many years that the disease of Crown Gall was restricted to dicotyledonous plants.

This apparent inability *of A. tumefaciens* to infect monocots and to transform their cells with the subsequent production *of* a crown gall, presented a problem for the genetic engineer since by far the most important objective of the genetic engineering of plants is to improve crop plants, of which the majority are monocotyledonous (for instance the cereals) and are thus not accessible to genetic engineering techniques which use *A. tumefaciens.*

However in 1984 the situation changed when innoculation of *Asparagus officinalis* led to the formation of a crown gall'. In the same year transformation of monocot cells was reported in *Chloro$_p$hytum capense* (Liliaceae) and *Narcissus cv* Paperwhite (Amaryllidaceae) . More recently transformation of *Gladiolus* has also been reported[3]. Perhaps the most interesting case *of* transformation of monocot cells by *A. tumefaciens* has been that of the cereal species, maize (Z ea mays) 4. It is still not clear, however, why there are some monocots which are susceptible to infection by *A. tumefaciens.* It has been known for several years that one difference between monocots and dicots is that the latter produce wound substances when they are subjected to mechanical injury whereas no wound substances have been detected in the former. When the wound substances are exuded, they come into contact with the soil – resulting in the agrobacteria swimming along the diffusion gradient of the wound substances to the wounded plant.

The wound substances are not only involved in the chemotactic movement of *A. tumefaciens* toward the site of injury in damaged plants, however – they also play a more active part in the induction of the crown gall:

A. tumefaciens can cause crown gall by virtue of the fact that it contains a small piece of DNA whose ends are joined together to form a circle, which is known as the Ti plasmid (for Tumour-inducing plasmid). It is seen that bacteria of the *A. tumefaciens* species which have lost their Ti plasmids (by for instance

being grown at temperatures which are higher than physiological ones) in a process known as "curing", are not able to cause crown gall formation in susceptible plants. The Ti plasmid is directly affected by plant wound substances since these induce the *vir* regulon [5'6], which is a set of sequences in the Ti plasmid whose function is to initiate the excision and subsequent transfer into the plant cell of another region of the Ti plasmid, the so-called T-DNA.

Once inside the plant cell, the T-DNA becomes integrated into the plant cell's DNA and then genes in the integrated T-DNA express enzymes for making the plant hormones, auxin and cytokinin, which cause the plant cell to grow and divide – leading to the formation of a tumour, the crown gall. Some more enzymes are also produced which make the novel amino acids, octopines and nopalamines, which are the bacteria's source of food. There are several strains of A. *tumefaciens* which differ with respect to which of these two types of amino acids they cause the transformed plant cell to make – the different strains having slightly different Ti plasmids.

The absence of sufficient amounts of wound substances in monocots to induce the *vir* regulon (if indeed wound substances are present at all in monocots), would explain the inability of A. *tumefaciens* to transform monocot cells. If this were the case, the treatment of some *A. tumefaciens* with dicot wound substances before injecting the *A. tumefaciens* into a monocot should result in crown gall formation. This experiment was carried out by W. Schafer *et al.* using yam *(Dioscorea bulbifera)* and wound substances from potatoes. The result of the experiment was that crown galls developed 7.

This does not explain why some monocots can be transformed by A. *tumefaciens.* It is possible that these monocots do produce wound substances in sufficient quantities to induce the *vir* regulon, or perhaps they can make other substances that can do so. Experiments have been carried out to try to determine precisely which compounds in the exudate from wounded plant tissue bring about *vir* induction [8]: the active compounds are all phenolic compounds, although not all such compounds are active.

It seems likely that these or similar chemicals would be present in the sap of gymnosperms, and this would account for the observation that gymnosperms are susceptible to infection with *A. tumefaciens.* At any rate, it seems likely that we are going to see a revolution in the genetic engineering of monocotyledonous plants with the use of *A. tumefaciens* and dicot wound substances.

GLOSSARY.

chemotactic – Adjective from chemotaxis, the reaction of cells or freely motile organisms to chemical stimuli.

DNA – Deoxyribonucleic acid. This compound is the genetic material in cells. It encodes information in the order of the notrogenous bases along its length.

Ti plasmid – Tumour-inducing plasmid present in cells of *A. tumefaciens.* A plasmid is a small loop of DNA which is capable of self-replication and which is present in the cytoplasm of (bacterial) cells.

N.B. This is not the only definition of a plasmid but this is the meaning of the word in conjunction with the above.

vir regulon – This is a set of sequences present in the Ti plasmid which has a regulatory function since it brings about the excision and transfer of the T-DNA from the Ti plasmid into the plant cell when it is acted upon by plant wound substances.

T-DNA – This is another region of the Ti plasmid. The T-DNA is excised from the Ti plasmid and is transferred to the plant cell where it becomes integrated into the plant cell's genome (its DNA) and the T-DNA is then transcribed and translated to form enzymes. I have found no explanation of the naming of the T-DNA – perhaps the "T" stands for Tumour, as with the Ti plasmid.

REFERENCES

1. Hernalsteens, J.P., Thia-Toong, L.,Schell, J. & Van Montague, M. EMBO J. 3,3039-3041 (1984).
2. Hooykaas-van Slogteren, G.M.S., Hooykaas, P.J.J. & Schilperoort, R.A. Nature 311, 763-764 (1984).
3. *Agrobacterium tumefaciens* – mediated transformation of the monocot genus *Gladiolus :* detection of TDNA – encoded genes.
   Graves, A.C. *et al.*
   J. Bacteriol. 1987 Apr 169 (4) : 1745-6
4. Graves, A.C.F. & Goldman, S.L.
   Pl. molec. Biol. 7. 43-50 (1986).
5. Stachel. S.E.,Nester, E.W. & Zambryski, P.
   Proc. natn. Acad,Sci. U.S.A. 83, 379-383 (1986).
6. Stachel, S.S., Timmerman, B., & Zambryski, P.
   Nature 322, 706-712 (1986).
7. T-DNA integration and expression in a monocot crop plant after induction of *Agrobacterium.*
   Schafer, W.,Gorz, A., & Kahl,G.
   Nature 327, 529-532 (1987).
8. Plant phenolic compounds induce expression of the *Agrobacterium tumefaciens* loci needed for virulence.
   Bolton, G.W. & Gordon, M.P.
   Science 232, 983-985 (1986).

Requests

Request 1: What have you been reading?

Brian Spooner (address on the back page) would be grateful for any references to any past gall publications you may have come across. Of particular value are publications which might be "hidden" because of limited circulation e.g. publications of local groups. Records of occurrence are especially welcomed. Now that the nights are closing in, why not spend an evening thumbing through those old journals, newsletters etc?

Request 2: What have you been breeding?

Records of successful breeding out would be welcomed. Special interest centres on the newly introduced species such *as Andricus lignicolus* and *A. quercuscalicis.*

Request 3: What have you been recording?

Neil Redgate would be very grateful to receive any records and observations (published or otherwise), early or recent times from the following vice counties:-

VC 105 West Ross-shire VC 107 East Sutherland
VC 106 East Ross-shire VC 108 West Sutherland VC 109 Caithness

The normal data is required – date, locality, grid reference – and should be sent to:-
Neil Redgate, Northern Highlands, Environmental Records Centre, Cnoc & Lochan Wildlife, Burnside, Murkle, Caithness KW14 8YT.

Other records would be welcome by the Secretary.

GALLS ON Q. *ilex L. in* Great Britain

by J.P. Bowdrey

I was interested to read of the record *of Eriophyes ilicis* from the Isle of Wight (Cecidology 2, (1), 22), especially as I recorded what I believe to be this species from the Island in 1984. The locality was Fort Victoria Country Park (SZ 3389) and the date the 28th of September.

I have also found galls within the acorns of *Quercus ilex* in Great Britain. Apart from being undersized, the acorn appears normal from the outside. However, when opened, the inside is seen to be filled with numerous cells about 2mm in diameter. Several galled acorns were collected at Southchurch Park West, near Southend, Essex (TQ 9085) on 11.viii.1985, beneath mature *Q. ilex*. They appear very similar to galls in acorns of *Quercus cerris* L., figured and described by Eady and Quinlan (1963), and caused by species of the genus *Callirhytis*. The same authors state that the galls may lie on the ground for between 3 and 8 years before emergence of the imago. The Essex specimens have passed through three winters and still contain apparently healthy larvae.

Connold (1908) describes what seems to be another gall in *Q. ilex* acorns and which he was unable to determine, curiously a label was attached which stated that they were collected in .....the Isle of Wight!

References

Connold, E.T. (1908) British oak galls. London, Adlard p. 144-5.

Eady R.D. and Quinlan, J. (1963) Handbooks for the identification of British insects 8(1 a) Hymenoptera Cynipoidae. London, Royal Entomological Society p.64-5.

Comments on Meetings

Saturday, 23 July 1988. Willisbridge Mill (ST664706)

A. G. M.

The venue of this year's A.G.M. proved to be a veritable honeypot. Managed by the Avon Wildlife Trust, the site offered a variety of vegetation ranging from woodland, through terraced meadows, to wild gardens. For those who do not know the spot, we recommend a visit. The party of about 20 members found a wide selection of galls. The poor showing of *Dasyneura urticae* despite the availability of plenty of host plants was noted. The paucity of this nettle gall gnat was to be remarked upon at the time and again throughout the season in a wide variety of sites. Is it a reflection of the season or something more fundamental?

The spirit of enthusiasm, friendship and support witnessed at the A. G.M. was also to be reported upon from subsequent field meetings. The A.G.M. attracted members from far and wide — and cecidologists who live over 300 miles apart had the opportunity to meet and share experiences.

The business part of the meeting witnessed the retirement of our founding Chairman, Fred Stubbs. Tributes were paid both to his achievements and contribution to the establishment and progress of the Society. The chairman's mantle has settled well on the shoulders of John Pearson who has already taken up cudgels to sort out the central and important issue of record keeping.

The A.G.M. also witnessed a broadening and strengthening of the Management Committee (see back page) and those who attended learnt that the Society is financially sound (see Financial Report).

Gerry Bowdrey, on behalf of the Check List Working Party, and Brian Spooner, on the production of a Bibliography, reported excellent progress. We can begin to look forward to the production of a Comprehensive Check List. I am sure we are all excited by the prospect of having access to such a resource and the List should do much to resolve debates over nomenclature (see below). The Bibliography will also prove to be of tremendous value.

Members wishing to receive copies of the provisional minutes of the A.G.M. should request them from the Secretary.

N.B.

The importance and difficulties of nomenclature are frequent topics of letters. Recently Dr David Biggs (Isle of Wight) and Neil Redgate (CNOC and Lochan Wildlife) have written on this matter. We quote from Neil Redgate's letter in which he refers to an article in Cecidology: "Is the *Blennocampa pusilla* now the synonym *of B. phyllocolpa* (Uist & Vik 1985) or the true *B. pusilla (Klug 1814)?*

Is the *Potania leucapsis* the species *Phyllocolpa leucapsis* (Tischbein 1848) as there is no such species listed *for Pontania* (synonym or not) in the 1975 Kloet and Hincks check list?" — A comprehensive Check List may not solve all the problems, but will do much to enable us to have a common basis for our naming of gall causers.

GRASS WOOD GALL MEETING.

John Pearson

For many years the entomological section of the Yorkshire Naturalists' Union has designated one of its field meetings a plant gall meeting. This year's meeting was held on Saturday, September 3rd, at Grass Wood, the Yorkshire Wild Life Trust's reserve near Grassington, VC64, in North Yorkshire.

It was both pleasing and encouraging to find that in addition to the usual Y.N.U. members there were a number of B.P.G.S. members, some of whom had travelled long distances in order to be there.

Although there was heavy rain before and after the meeting, the weather during the meeting itself was dry and pleasant. A much appreciated experience in an extremely wet of another very wet British Summer.

At the time of writing, all the gall records have not been received. My own lists twenty one different species, and there are bound to be additions when other members send in their records. Grass Wood being too large an area for one person to cover and record in one day, it will not be until recorders working in other parts of the wood have submitted their lists that a fully detailed record will be compiled. Finally, may I express my gratitude to the Yorkshire Wild Life Trust, to Mrs. Joan Duncan, the reserve chairman, and her management committee, for granting permission for the meeting to take place. A special expression of gratitude must go to Mrs. Duncan for being present to welcome us, for providing us with detailed maps and information about the reserve and for spending the whole day with us.

Saturday 10 September 1988: Malmsmead, Somerset.

The field centre of the Exmoor Natural History Society lies in a valley which is rich in itself, but within easy reach of the more open moors and coastal strip. The Exmoor members were joined by several B.P.G. S. members from other areas who enjoyed a fruitful day in a new locality. John Hollier and his Exmoor companions have certainly made good use of the premises, which show every sign of the value of active school parties. As for the galls, John has compiled a list up to the early part of 1988, and this will be published with comments and additions when the year's records can be entered and any fluctuations can be incorporated. Thank you, John, and the Exmoor N.H.S. for your welcome and for finding such interesting routes.

FBS

B.P.G.S. / Devonshire Association Meeting at Stover Country Park 11th, September 1988.

Pauline A. Ivimey-Cook, Exmouth

The meeting was attended by four members of the Society and five from the Entomological Section of the Devonshire Association. We were very happy to welcome Fred and Hilda Stubbs, intrepid travellers from Yorkshire, who came to share the Devon Galling Week-end. We are indebted to Paul Wright, the Warden of Stover Park, who lent us his large shed where we sat in comfort and brewed tea during our prolonged and chatty lunch and tea breaks.

Situated on the edge of Dartmoor, Stover Park was created by James Templar when he purchased the derelict Stover Estate on his return from India in the

1770s. His son, James Templar II, continued the work and was also responsible for building the Stover Canal. The grandson, George, built the famous Haytor Granite Railway. The large estate was gradually split up and the corner containing the present Country Park was eventually bought by the Forestry Commission who established the conifer plantations which are still worked. The Devon County Council purchased the land in 1979 and set about restoring the silted and overgrown lake, clearing the paths and installing new ones. As a Country Park this historic corner of the old Stover estate can be enjoyed throughout the year by members of the public for walking, picnicing and for natural history.

The Park has SSSI status, mainly because of the rich dragonfly population in and around the lake and the waterways. Alder can has developed on the silted edges of the water and elsewhere there is a wide variety of broadleaved trees and the path edges and clearings provide areas for herbaceous plants. Trees and shrubs absent from the Park include Acers (we found one sapling of A. *pseudoplatanus* but it was uncolonised), Populas, Tilia, Ulmus and Euonymous. *Prunus spinosus* is abundant round the car park but is so dusty that no self -respecting mite would set up home on its leaves! There was insufficient time to explore the conifer plantations for the few galls which they might have yielded.

One of our party found two galls of *Nearoterus quercusbaccarum* on the upper surface of a leaf. This we understand is a very unusual occurrence. Later, the same lady apparently found another — but this one got up and walked away! A lacewing larva was using it as a protective back-pack!

We were a little surprised at the paucity of gall species on the sallows and the 3 species of Cynips were very localised, bearing out the impression that Cynips spp are in very short supply in parts of Devon this year.

References

Connald: Plant Galls
Ellis and Ellis: Microfungi on Land Plants
Stubbs: Provisional Keys to British Plant Galls

Sunday, 18 September 1988. University of East Anglia (TG194083)

Once again, Rex Hancy laid on an excellent venue and facilities. Exploration of the University ground in the morning was followed by the use of the School of Education's science laboratories during the afternoon. The excited hubbub of the afternoon viewing session reflected the enthusiasm of participants. Knopper and Cola nuts were present in profusion and, probably reflecting the damp summer, fungal galls were quite common. In all 48 different galls were identified — a few remain to be assigned a name. The lasting memory will be that the splendid weather for the session matched the warmth of our Norfolk and Norwich Naturalist hosts.

C.K.L.

GALL GATHERING IN SANDWELL VALLEY WEST BROMWICH

(OS 42 0191) 25/09/88.

Peter Shirley

A mild drizzly day in late September saw 9 members of the Sandwell Valley Field Naturalists' Club and the British Plant Gall Society gather at the 17th. century Park Farm, in the Sandwell Valley. Not for them though Highland cattle, Tamworth pigs, ducks, geese, or goats. They had come to search out the Valley's fungi and galls.

With Margaret Redfern present it was not surprising that the party headed straight for the nearest patch of rough grassland to examine the thistles. Margaret quickly found galls of *Urophora,* and introduced us to the predatory larvae of *Lestodiplosis* midges. It was especially interesting to find *U. carduii.* The adult flies of this species had already been recorded in the locality but this year marks the first appearance of the galls. The species is believed to be spreading north.

Moving at the speed of a geriatric snail we were in some danger of never getting to the nearby woodlands at all. In deference to the fungus fans we did force ourselves on however. An area planted with a variety of trees and shrubs a few years ago provided quite a variety of galls. By the lunch break the intrepid explorers must have travelled all of one and a half miles.

Lunch was taken back at the farm, advantage being taken of the large study room and the excellent catering.

The afternoon was spent examining the woods behind the farm buildings, even less ground being covered than in the morning. Newcomers to the Valley were introduced to some of the fine specimen trees. These included a cut-leaved beech and a Lucombe oak (neither of which yielded any galls). The fungal highlights of the day were specimens of *Cortinarius urbicus,* which is extremely scarce, and some very good bird's nest fungus, including *Cyathus stiatus.*

The meeting ended about 4pm. The full list of galls recorded is below. As might be expected the host with the greatest variety of galls was *Quercus,* whilst the genus with the most species present was *Andricus.*

Thanks are due to Sandwell Metropolitan Borough's staff at Park Farm for allowing us to use their facilities.

HOST		**Galls Recorded**
Acer pseudoplatanus	Eriophyes	m. cephalonea
Alnus glutinosa	Eriophyes	axillare
Arctium minus	Tephritis	bardanae
Artemisia vulgaris	Eriophyes	artemisia
Centaureea nigra	Urophora	jaceana
Cirsium sp.	Urophora	carduii
		stylata
Crataegus monogyna	Eriophyes	goniothorax typicus
Fagus sylvatica	Hartigola	annulipes
Fraxinus excelsior	Dasyneura	fraxini
	Psyllopsis	fraxini

Quercus petraea / robur	Andricus	andricinus
		curvator
		lignicola
		kollari
		quercuscalicis
	Neuroterus	numismalis
		quercusbaccarum
Salix sp.	Pontania	proxima
		vesicator
Rabdophaga		rosaria

Some Notes on *Eriophyes ilicis* (Canestrini) (Eriophyidae) in Britain

B.M Spooner

The gall-mite *Eriophyes ilicis* (Canestrini) was the subject of a recent note in Cecidology (vol. 3, p.22), in which problems in identification of a specimen received from the Isle of Wight were discussed. This mite, originally described from Italy, causes an erineum on the underside leaves of *Quercus ilex L.* (and other species). However, it is not included in the classic work of Buhr (1965), nor in the main British textbooks on galls, notably Connold (1909), Swanton (1912) and Darlington (1968). The reason for omission of the species from Buhr is not clear. The host tree, though native to the Mediterranean region, has been introduced further north to parts of Central and Northern Europe within the area covered by that work. Indeed, it has been known in Britain for 70 years, having been first reported by Hall (1918) based on a collection from near Chichester, West Sussex, in August 1917. *Quercus ilex is* not, in fact, included by Buhr. It is host to many gall causers, as is evident from Houard (1908), and it would be interesting to know which of these may also be found in other parts of Europe. No other identified galls are known on this host in Britain, as far as I know. *Eriophyes ilicis* does not appear in the works of Connold and Swanton, as, at that time, it was unknown in this country. It is, however, listed by Bagnall & Harrison (1928), Burkill (1930) and also, as noted previously Cecidology, by Turk (1953). It is not included in Darlington nor the BPGS Provisional Keys to British Plant Galls presumably because these cover only a selection of the British species.

The distribution of E. *ilicis* in Britain probably parallels that of the host, which is hardy throughout Southern England where it is commonly planted and sometimes naturalised. However, further recording is required to confirm the distribution of the mite. It seems to vary in abundance, and may be scarce or absent in some areas. In south-east England, it seems to be fairly frequent, but certainly cannot be found on all trees examined. I have recently had a specimen from Norfolk from Mr & Mrs Evans. It was not listed from the Isle of Wight by Swanton (1937), but was recorded there at Fort Victoria Country Park in 1984 by J.P. Bowdrey (unpublished).

References

Bagnall, R.S. & Harrison, J.W.H. (1928). A catalogue of the British Eriophyidae. Ann. Mag. Nat. Hist ser 10, 2: 427-445.

Buhr, H. (1965). Bestimmungstabellen der Gallen (Zoo- and Phytocecidien) an Pflanzen Mittel- and Nordeuropas. Band II. Gustav Fischer.

Burkill, H.J. (1930). British Gall Mites. London Naturalist 1929: 58-68.

Connold, E.T. (1909). Plant Galls of Great Britain. London: Adlard & Son.

Darlington, A. (1968). The Pocket Encyclopaedia of Plant Galls in Colour. Blandford Press.

Hall, L.B. (1918). Plant Gall Records. Entomologist 51: 152-153.

Houard, C. (1908). Les Zoocecidies des Plantes d'Europe et de la Mediterranee. Vol. 1. Paris.

Swanton, E.W. (1912). British Plant-Galls. A Classified Textbook of Cecidology. London: Methuen & Co.

Swanton, E.W. (1937). A Preliminary Annotated List of Plant Galls observed in the Isle of Wight. Proc. Isle of Wight Nat. Hist. Soc. 2: 645-669.

Turk, F.A. (1953). A Synonymic Catalogue of British Acari: Part II. Ann. Mag. Nat. Hist. ser. 12, 6: 81-99.

THE PLANT GALL RECORDING SCHEME: a plea for more detail

John Bratton,

Nature Conservancy Council, Northminster House, Peterborough, PE1 1 UA.

The Spring issue of Cecidology announced a ten year recording scheme for plant galls (Pearson 1988), a welcome addition to the numerous recording schemes which make the knowledge of invertebrate distributions more comprehensive for Great' Britain than any other European country. John Pearson comments that it is important to ensure that the records gathered will be of use to future generations of naturalists, and this is an admirable aim. However, I doubt whether the locality information requested is sufficiently precise to fulfill this aim.

Most British naturalists are familiar with distribution maps showing 10km squares in which a species has been recorded. These are usually the most widely available results of a biological recording scheme, and are very useful in showing broad trends in distribution as well as highlighting the under-recorded regions. However, biological records are put to many uses apart from the production of maps. In particular, records of the rarer species of invertebrate are increasingly being used by conservation bodies in the defence of wildlife habitat, something I hope the BPGS would wish to support. If plant galls are to play a part, the information gathered by the recording scheme needs to include more data than that requested in Pearson (1988). A two letters plus six figures grid reference is far more useful than just the 10km square. Indeed, Shirley (1987) includes the full

map reference in his list of the components of a biological record. Also, the locality information recorded will sometimes need to include place names not given on the O.S. map, and a short description of the locality (though a place name which does appear on the O.S. map is also vital to allow grid references to be checked for accuracy). To give a hypothetical example:
"Lipara similis, TF70, Oxborough, V.C. 28"
would satisfy the guidelines for locality data suggested by John Pearson but would be insufficient to identify the site of this rare fly.
"Lipara similis, TF717012, roadside ditch along edge of marsh west of Oxborough Wood, V.C. 28"
is what would be needed. This allows other cecidologists to check for the continued survival of the population in future years. It would also allow the site to be brought to the attention of the county council, perhaps preventing the ditch being piped and infilled. (I stress this is a purely hypothetical example).

The computer database may not have room for this extra detail, or the operator may not have time to feed in this level of information for every record. This does not matter. The information needed for mapping can be easily extracted for computer entry. It is better to collect the precise information and extract the portion required for mapping, than limit the information collected to the bare requirements of mapping. Extra detail will always remain on the record card to be used in the future if needed. I hope the BPGS will reconsider the level of information requested by the recording scheme so that the members' efforts can be used to their full potential.

References.

Pearson, J.A. 1988 Recording Plant Galls. Cecidology, 3(1): 4-5.
Shirley, P.R. 1987 A simple database for analyzing oak gall wasp (Hym. Cynipidae) distribution. Cecidology, 2(1): 2-4.

LUMPS AND BUMPS ALL OVER THE PLACE?

"Not to mention all 'em pimples and pustules and pro-TOO-berances....cor blimey, mate, it's like a bloomin' first-aid course, innit?"
"Wossat?"

"Well, like this 'ere goes dahn the 'igh street an' finds plants, right? Yeah, all weeds an' trees and stuff woss got suthink WRONG abaht 'em. On the level 'e does. I dunno woss wrong abaht 'em, do I? Nah, got enough problems o' me own wivaht lookin' for more, know wot I mean?"
"You said it, guv'nor. Takes all sorts, dunnit?" B.W.

RECENT PUBLICATIONS ON GALLS

We draw the attention of members to the following publications:

Price, P.W.; Roinien, H.; Tahvanainen, J. (1987) Why does the bud-galling sawfly, *Euura mucronata,* attack long shoots? Oecologia (Berl). *74* (1) 1-6.

Heliovaara, K.; Vaisanen, R.; Braunschweiler, H.; Lodenius, M. (1987). Heavy metal levels in 2 biennial pine insects with sap sucking and gall-forming life styles. Environmental Pollution 48 (1) 13-24.

Dennill, G.B. (1988) Why a gall former can be a good biocontrol agent the gall wasp *Trichilogaster acaciae longjfoliae* and the weed *Acacia longifola.* Ecological Entomology *13* (1) 1-9.

Nieves, J.L.; Askew, R.R. (1988) A new species of *Cecidostiba* Thomson (Hym. Pteromalidae), a key to species of the genus and rearing records of other Pteromalidae associated with oak gall wasps (Hym. Cynipidae). Entomol. Month. Mag. 124 (1484-87) 1-5.

De Clerck, R.A., Steeves, T.A. (1988) Oviposition of the gall midge *Cystiphora sonchii* (Bremi) (Diptera: Cecidomyiidae) via the stomata of perennial sowthistle *(Sonchus arvensis L.).* Canadian Entomol. *120* (2)189-93.

Price, P.W.; Pschorn-Walcher, H. (1988) Are gall insects better protected against parasitoids than exposed feeders? A test using tenthredinid sawflies. Ecological Entomology. 13 (2) 195-205.

Records Received

Maurice Young of Marlow, Bucks has sent some excellent records from 8 venues surveyed by the Berkshire, Buckingham and Oxford Naturalists Trust. The records are fascinating as they show marked differences between sites. The habitats surveyed include chalk grassland; heath invaded by birch and pine, hedgerows and pasture. He has also organised a meeting at Gomm Valley nature reserve (High Wycombe) for 10th September next year. So we can share and add to our knowledge of the Cecidia of the area. The records he has sent make a valuable contribution to our national survey.

Reminder. If you have spent the summer joining in the Sycamore Gall Game (see Newsletter No.7 page 4), please send your data in. So far records received indicate at least half a million galls have been counted this summer – statistics are soon to be done – report to follow.

BRITISH PLANT GALL SOCIETY

AIMS: To encourage and co-ordinate the study of Cecidology, with particular reference to the British Isles.

MEMBERSHIP SUBSCRIPTION: £5 p.a. (Family Rate £8)
to receive CECIDOLOGY quarterly;
and Notices as issued;
Concessionary rates in circumstances where a charge is necessary.

All members are invited.....
To submit papers, reports or announcements to the Editorial Committee;
To seek advice or information through the Society.
These terms apply equally to Individuals, Societies and Institutions.

MANAGEMENT COMMITTEE

Chairman:
Mr. J.A. Pearson, 68 Challenger Drive, Cusworth View, Sprotbrough, (Tel: 0302 788466) Doncaster, DN5 7RY.

Vice Chairman:
Mr. P.R. Shirley, 72 Dagger Lane, West Bromwich, B71 **4BS.** (021-525-1143).

Hon. Secretary:
Dr. C.K. Leach, David Attenborough Laboratories, Leicester Polytechnic, (Tel: 0533 431001 or 714297) Leicester. LE7 **9SU.**

Hon. Treasurer.
Mrs. P.A. Ivimey-Cook, "Doneraile Cottage", 5 Claremont Lane, Exmouth, (Tel: Exmouth 272381) Devon. EX8 2LE.

Hon. Editor
Mr. F.B. Stubbs, 27 Annasgarth, Harmby, Leyburn, N. Yorks. DL8 5PJ. (Tel: Wensleydale (0969) 22527).

Regional Co-ordinators:
South East Mr. J.P. Bowdrey, 12 Sparrows Corner, Harwich Road, (Tel: 0255 880023) Great Oakley, Essex. CO12 5AA East Anglia: Mr. R. Hancy, 124 Fakenham Road, Taverham, Norwich. NR8 6QH. (0603-860042)
Midlands: Mr. P.R. Shirley.
Somerset Mr. M. Wilson, 9 Ethpark Grove, Taunton.
South West Mrs. P.A. Ivimey-Cook.
Scotland: Mr. A.P.Bennell, Royal Botanic Garden, Edinburgh, EH3 SLR. (031=552-7171 ext. 313).
Wessex: Dr. Lena K. Ward, I.T.E. Furzebrook Research Station, Wareham. Dorset. BH2O 5AS. (09295-51518/9).
N.E. England: Dr. P.J. Gates, 1 Westfield Drive, Crook, Co. Durham. (0388-763005).

Bibliography Group:
Dr. B.M. Spooner, 21 First Avenue, West Molesey, Surrey. KT8 OQJ. (01-979-4182).

Please address correspondence to the Secretary, OR for specific purposes, to the officer concerned.