

THE
NEW INDIAN GARDENER

AND

TO THE SUCCESSFUL CULTURE

OF THE

KITCHEN AND FRUIT GARDEN

IN

INDIA,

WITH APPROPRIATE ILLUSTRATION

ALSO

A TABULARY OF THE MOST USEFUL TERMS, AND A DIGESTED CATALOGUE OF PLANTS
AND TREES, ETC. IN THE ENGLISH AND NATIVE, AND NATIVE AND ENGLISH LANGUAGE.



BY

G. T. F. S. BARLOW SPEEDE, M.A. & H.S.,

*of Chronological Tablets of England, France, &c.—the Hand Book of Gardening—
Criminal Statistics of Bengal, &c. &c.&c.*

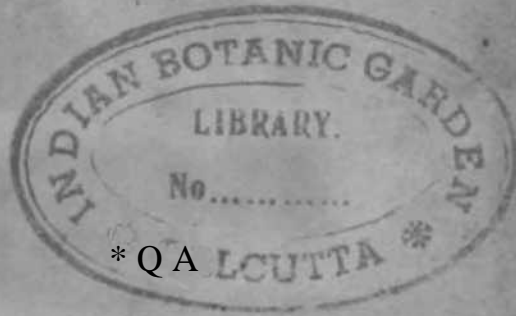
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TO

THE **PRESIDENT,**

VICE PRESIDENTS AND MEMBERS

OF THE

AGRICULTURAL AND HORTICULTURAL SOCIETY

India.

T H I S W O R K I S

DEDICATED

I N T R I B U T E O F R E S P E C T

F O R T H A T Z E A L A N D E N E R G Y

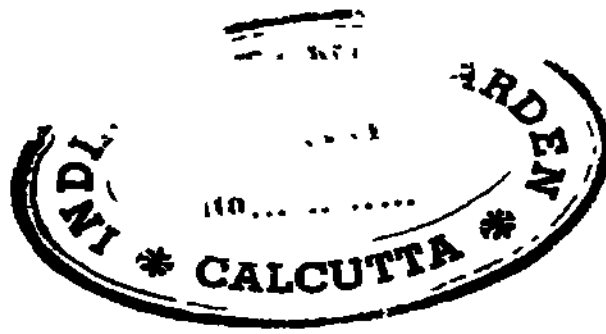
WHICH HAS SO EMINENTLY ADVANCED THE TRUE INTERESTS

OF HORTICULTURE IN THIS COUNTRY,

BY THEIR FELLOW MEMBER

G T. F. SPEEDE.

Calcutta, January 1848.



PREFACE.

THE literary success that has attended a former work under the title of the "INDIAN HAND BOOK OF GARDENING," which has passed through two editions, leads to a continuance of the same line of publication, in the present enlarged and improved work, in which, with the view of suiting it to a more extended field, the author has availed himself of very valuable information, placed at his disposal, by a distinguished practical horticulturist in the Upper Provinces ; at the same time that he has limited it to Horticulture, strictly so speaking, that is to say, the culture of, and all that relates to the kitchen and fruit garden; considering the growth of flowers and shrubs, a distinct art deserving of a separate work, which is now in hand, under the title of the "INDIAN FLORICULTURIST." The Vocabulary, appended to the present work, will be formed greatly improved, by the addition

PREFACE.

of many new names of plants, and by its also forming an index to their Botanical, as well as to their popular designations. But the author regrets that in an endeavor to encourage **native** skill in the noble art of printing, he has so far failed that he feels himself obliged to apologize **for** the typographical defects of the first part of the volume, on which it was, as will be seen by the illustrations, **his*wish** to have secured, at a**" expense, the best ability obtainable in *Q*•
country ; this fault however has been *re*•
mediated in the second part, containing to
vocabulary.

THE
NEW INDIAN GARDENER.

IF we are to look on gardening as a mere mechanical
•t that may be efficiently practised by the most
morant laborer, manuals or books of instruction will
be useless; yet how generally is it only so viewed in
this country, and hence we need not wonder at the
slow progress hitherto made in the cultivation of
such products of the garden as are generally held in
estimation by the European portion of the community;
and left as these commonly are, to the simple Hindoo
mdke (or gardener,) it is not surprising, that our
bazars want what are justly deemed the more delicate
vegetables for the table; and that those we have, are
limited within the space of a few months only in the
year, we must rather *OL*. the contrary wonder then that
^ we have, what we have. This *malice* estimates that,
because he had a good crop of cabbages from a certain
spot of ground this year, he shall have an equally fine

one from the same spot in the next season; and wot not conceive that there could be any causes arising, from the production of this year's culture to depreciate the quality, or injure the growth of the like articles in successive years. Uninstructed as he is, he looks on a cabbage, as a cabbage, without reference to variety of the species, and without imagining that one kind can be more delicately flavored than the other and hence more worthy of his attention; he supposes that perfection is attained when he brings before you an immense drumhead, that would require a boiler to be made especially for its reception, and he looks you, while presenting it with an air of triumph, little heeding that your preference would be given rather to the small close early york, or the delicate savoy. At the same time he cannot be blamed for his mistake—since we have never, perhaps, ourselves looked on gardening otherwise than as a mere art, requiring manual labor alone to its perfect production; and, impressed with this idea, have never thought of informing him; that it was rather to be ranked among the sciences, and that some study of the character, the habits, and the natural localities even, of diverse plants, must be required to bring gardening to perfection. It is this investigation of the natural habits and properties of plants, that demonstrates how wonderfully they have been formed to answer the wants of man in their multiplication and preservation, and how admirably

they answer the purposes assigned them by nature, of ministering to his necessities, or his gratifications, It is the examination and study of these, that forms the science of gardening; and combining with manual labor, constitutes what is necessary to its perfection. It is not, however, the object of a work like this, intended but as a *manual for ready reference*, to go very deeply into the matter, as a sciencei larger works must do this, of which those of Loudon, and the more scientific works of Sir Humphry Davy, the Rev. P. Keith, and Dr. John Lindley are among the best of the present day; the scientific portion, therefore, will be confined to such short remarks as may facilitate the understanding of the subject, sufficiently to mark the principles of vegetable life and growth. In the present work too, much is added with reference to the Upper Provinces, for which the reader has to thank the Reverend J. C. Proby, who before he left India in 1843, most obligingly placed at disposal of the author a packet of papers, containing notes with reference to that part of India; the result of his own experience, as well as of another practical Horticulturist, Captain Corrie, who aided him in his experiments, (but whose career was unfortunately cut short in the passes, on the retreat from Cabool,) the value of which cannot be denied, nor the great obligation which he has, by such a communication, conferred on the cause of Horticulture in India.

Pant*.

THEIR ORGANIC CONSTRUCTION.

The first, and most prominent distinction perceptible in plants, which marks their difference from minerals, and distinguishes all such productions of nature as are endowed with what is commonly understood by the term life, whether active or otherwise, from them, is, that the latter are found with *organs* adapted to fulfil the functions for which they are destined.

Unorganized substances may be increased, or lessened in size, by mechanical, or chemical alterations; that is to say, either by the addition of particles of a similar conformation, or by combination with substances originally dissimilar, but amalgamated by chemical action into one whole; but these possess no power able to convert them absolutely into their own nature. This is the office of the organs, in beings possessing life, however passive; and one of the principal functions these have to perform is nutrition, whereby organized bodies are increased in size by receiving internally particles of matter of a nature differing from their own, assimilating them to their own substance; in other words forming, to use a term more generally confined to active life, the food wherewith they are nourished. Organized beings have also the power of reproducing their own species, varied only by the description of nutrition afforded, or the circumstances under which

this reproduction occurs. Minerals, on the other hand, although they may be separated into smaller fragments by fracture, are incapable of either receiving nutriment, of perceptible growth, or of reproducing their species; these functions being the peculiar properties of organized bodies.

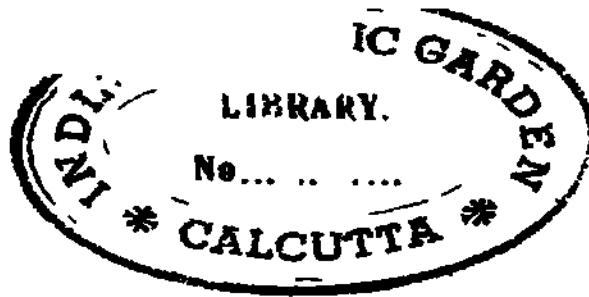
The two classes of organized bodies are, animals and vegetables; of these the former, having the power of locomotion, are formed with an organ to store a supply of food—the stomach,—whence, by the process of digestion, the aliment becomes fitted to pass through the several absorbent vessels, and to be circulated through the system ; to vegetables, not having this locomotive power, but being attached to a particular spot, such a receptacle would be useless, but they too seek their supply of nourishment through numerous mouths, or as they are termed *spongelets*, at the extremities of their roots.

The organs of plants have so little in common with those of animals, that it is not possible to understand their nature by a comparison with animal construction; they must be considered by themselves, without attempting to reason from analogy with what we know of the organs of active beings, or of their powers: they are often too, so minute, that, even with the assistance of a powerful microscope, it is extremely difficult to distinguish the structure of their several parts with the accuracy requisite to ascertain their precise functions;

but a discussion of such minute details would burden too heavily the pages of the present work. Leaving the reader, therefore, who may be curious on such points, to ascertain particularly their nature by a reference to more extensive works, it will be only necessary to the general understanding of this subject to furnish the following concise sketch; dividing the matter under the several heads of—Seeds and Germination; Roots, and the mouths of Plants; Trunks, Stems, or Stalks; Leaves, Flowers, and Fruits.

SEEDS AND GERMINATION.

The seed becoming at maturity separated from the parent plant, is capable of producing a distinct vegetable of the same family ; but it is to be observed that it will not always yield a produce of the same particular species and variety, or carry with it the peculiarities of the original stock; thus, for instance, though the seed of a ribston pippin is certain to produce & plant of the apple kind, it is very doubtful whether that apple will be a ribston pippin—it may be a crab, or it may be a new species of the apple, good or bad. Of the seed itself, little need be said; the formation of the embryo plant, and its connection with the *cotyledons*, or fleshy lobes of the seed, may be observed, with the naked eye_f in the bean, *by* any one who will be at the



trouble of splitting one open, the skeleton of the young plant reposing in the body of the bean, and making a slight indentation in either side; it will be found situated, not, as might be expected, in the centre of the bean, but at that end by which it was connected with the pod by a short *pedicle*, or branch; this part being called the eye, or *hilum* of the seed, through which the pedicle conveys nourishment to the embryo plant until the seed is ripe, when the former withering, the seed becomes detached, bearing a small scar at its base.

When placed in the earth, this embryo swells, bursting its outer coat or skin, and then sends forth its root in a downward direction, followed by an upward dilation of the young shoot, which, unfolding its cotyledons, exposes the first leaves, becoming green an expansion, and forming the matter, or nutriment, whereby all the pre-existent but scarcely visible rudiments of the plants are eventually brought to light.



ROOTS, AND THE MOUTH OF PLANTS.

These organs nourish and preserve the plant, and for this purpose the tip of every root fibre contains a small spongy sucker, or, in more familiar term, a mouth; but although, in most plants, we cannot

discover any direct opening, it is clearly ascertained that fluids are taken up, or absorbed by these mouths, called *spongelets*. The largest, and most distinguishable are to be found in such trees as grow so near to water as to have their roots exposed to a direct communication with it; in the roots of beans also, and the extremity of the tap root of the turnip, &c. They may be sometimes observed with the naked eye. Their power of absorption is always proportionate, in healthy plants, to the quantity of food they require; and hence in the spring, when sap is consumed rapidly by the leaves, the root-fibres more quickly form, and project these spongelets than at other periods; whilst, as the season advances, and the leaves need a less profuse supply of sap, the roots become more torpid, producing fewer absorbent vessels.

These spongelets communicate with the vessels that branch from the larger fibres of the roots, eventually ascending the stem; but at the extremities the openings are so small as not to allow access to any fluid in the least dense, or viscous; hence, although water which has flowed through the manure of a farm yard abounds with particles most nutritive to vegetables, it is often found too thick to enter such minute orifices, unless copiously diluted, clogging and obstructing them until absorption ceases; the consequence being, that the leaves become yellow and fall off, or, as gardeners term it, are burnt by the heat of the manure.

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For the same reason also, lime, pounded bones, or shells, cannot, until dissolved by water, or dissipated by putrefaction, obtain access to the larger vessels; plants are, therefore, very liable to injury from the presence of deleterious matter in the soil; and it is most probable, that, if they ever do reject such matter, it is rather because it does not acquire a sufficient tenuity, than from any power in the absorbing vessels to refuse what is noxious. It is a curious fact, however, that poisonous substances fatal to man are generally speaking equally so to plants; for it has been found that by presenting opium, arsenic, or mercury, or other metallic, or alkaline poison, to the roots, a tree may be destroyed as readily as a human being.

A few partial exceptions to the before mentioned inertness in the selection of food are found; as for instance, it has been discovered, that the pea will not absorb a solution of silex, or flint, which will be eagerly taken up by wheat. The compression, or destruction of the spongelets in transplanting, by depriving the plant of its natural food in that proportion to which it has been accustomed, causes the withering attending that operation, and continuing until these spongelets can be either renewed, or placed in similar freedom in the earth, to what they enjoyed before removal. At the same time this evil^ if not carried to too great an extent, becomes the source of benefit to the plant?, since,

when obstructed or bent in this way, new fibres spring out from other parts of the root, forming themselves out of the same materials that would otherwise have served to enlarge the old ones; especially if the injured parts are carefully, and smoothly cut off with a pruning knife.

In this way plants acquire a greater number of mouths the more frequently they are transplanted ; a circumstance of which the gardener avails himself, for the purpose of strengthening his plants, by increasing their powers of absorbing nutriment, or feeding, by a multiplication of the spongelets, or mouths: a fact worthy of being borne in mind, especially in a country like this, where plants are so liable to be weakened from the over-growth of superterrene vegetation, produced by the excitement of a heated atmosphere. But it must be recollected, that each removal tends to check the growth by obstructing for a time the root tips, or in other words, by starving the plant; as well as throwing its whole strength and energy, for a short period, to the formation of new root fibres, as the sources of future increased supplies of nutriment. When this is not desired, care must be taken, by lifting plants with balls of earth, not to disturb the root fibres; or by carefully avoiding injury to them, spreading them out by hand lightly in their new situations; a knowledge of this construction and growth of the spongelets and fibres, that has led to the

successful practice of removing even full grown trees.

Roots possess the power of constantly adding new matter to their extremities ; whereby they penetrate the earth, and insinuate themselves within the smallest crevices, traversing from place to place in search of the food they most desire ; making up for the want of locomotive power in the plant, by continually shifting their mouths, in search of fresh nutriment, although the bodies remain at rest.

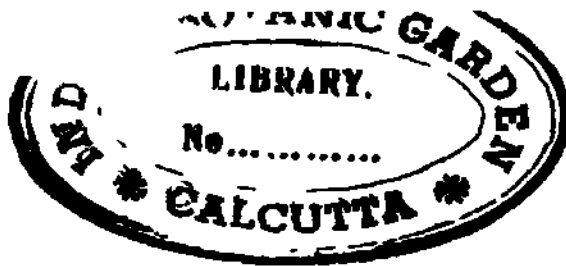
They are most readily formed in darkness, aided by moderate moisture ; and it is evident, that their production is in some way connected with the leaf buds of the plant, since portions of a stem, not having leaves or leaf buds, seldom produce any roots; or if they do, these soon perish.

But, although the cause of the formation of roots is involved in obscurity, it is apparent that it arises from the elaboration of organisable matter by the leaves, and it is clear that their formation is promoted by the descending sap; whence if a ring of bark be removed from a branch, and the wound wrapped round with wet clay, moss, or tow, as in Chinese grafting, roots will invariably be projected from the upper lip of the wound. The proportion borne by the root to the stem varies much in different plants ; in those that perspire freely, these organs are known to be much greater in extension of surface than the

circle formed by the branches; but this disproportion diminishes, as the plants advance in age.

Besides the power of feeding, roots have also organs whereby plants deposit their excrementitious matter, or such, as is either superfluous, or deleterious to them ; and Dr. Lindley informs us that, " If you poison one-half of the roots of any plant, the other half will throw the poison off again from the system. Hence it follows, that, if roots are so circumstanced that they cannot constantly advance into fresh soil, they will, by degrees, be surrounded by their own excrementitious secretions." And from this is to be deduced the system, and necessity of the rotation of crops; for, as it is clear that what a plant has thus deposited, even if its re-absorption do it no actual injury, must have ceased to afford nourishment to that individual, so the plant, or the species must by a continuance, or repetition on the same soil, become weakened and degenerate.

Roots are either *annual** living for one season ; *biennial*, surviving two seasons ; or *perennial*, lasting for an indefinite number of years: they consist of two parts—*caudex*, the stump, is the body of the root whence the trunk or stem ascends, and the fibrous portions spring; *radicula*, the fibres, branching out into the earth. There are several kinds distinguished by botanists from their respective forms—viz. *Radix jibrosa*, the **fibrous** root; *Radix repens*, the creeping



root; *Radix fusiforma*, the spindle-shaped root; *Radix pramosa*, the abrupt root; *Radix bulbosa*, the bulbous root; *Radix tuberosa* the tuberous root; and *Radix granulata*, the granulated root.

Radix fibrosa, the fibrous root, is the most simple and ordinary form, consisting of a bundle of fibres connected into one common head, and not unfrequently springing directly from the base of the stem ;—the roots of most annual herbs and grasses are of this description.

Radix repens, the creeping root, having a long subterranean branch, extending horizontally in the ground, from whence the smaller fibres spring in bunches at various distances; such a root is extremely tenacious of life, as any part of the subterranean stem, where there is a joint or articulation, will, if placed in the earth, give birth to fibres and form a new root;—of this kind is the mint, and most of the extremely troublesome grasses of this part of the world.

Radix fusiforma, the spindle-shaped root, or as it is commonly called, the tap root, from its tapering towards the end in a direct line downwards. This root is but scantily provided with fibres, but to compensate for this disadvantage, it is of so moist and fleshy a nature, as to preserve an ample store of provision, and the depth that it penetrates into the soil enables it to obtain a large supply of the moisture and nourishment best suited to promote its growth, which it absorbs

almost entirely through its taper extremity ;—carrots,, radishes, parsnips, &c. are of this class.

Radix pncemorsa, the abrupt root, is another form of the foregoing, so called from its abruptly terminating as if broken off or bitten ;—of this class are the scabious, the primrose, &c.

Radix bulbosa, the bulbous root, perhaps improperly so called, because the bulb rather forms the base of the stem, whence the leaves directly spring, for the tufts or fibres pendent from the bulb are in reality the roots ;—of this kind are the amaryllis, the onion &c.

Radix tuberosa, the tuberous or knobbed root, consisting of fleshy knobs connected by common fibres, each knob, or even a portion of each, being capable of reproducing one or more plants ;—of this kind are the potatoc, &c.

Radix granulata, the granulated root, is formed of a cluster of little bulbs or scales, connected by a common fibre;—of this kind are the saxifrage, or London pride, &c.

TRUNKS, STEMS, OR STALKS.

Every plant has a stem through which the sap circulates, and from which the leaves and flowers spring. This appears, in an infant state, whilst not yet emerged

from the seed, a mere point, almost imperceptible, and when first developed by germination is termed the *Plumule*; in this form it derives a part of its nourishment from the store maintained by the seed leaves, until, forming those of its own, it ceases to require assistance from that source. When fully formed, the stem of every plant comprises the following parts; 1. *Wood*, the older portion called the heart wood, and the newer, the *alburnum* ; 2. *Bark*, the inner part being called the *liber* ; 3. *Pith*, the centre channel conveying the ascending sap; 4. *Medullary rays*, connecting this last with the bark, or rind, and keeping up a communication between the centre and the circumference of the stem.

The stem is either simple, as in the lily tribe; or branched, as in most other plants; and as the functions of the root are to absorb nourishment from the soil, and transmit it to the superstructure, so those of the stem are to distribute this nutriment to the several parts of the plant,—leaves, flowers, &c. Its various forms are—1. *Caulis*, the stem properly so called, which bears both leaves and flowers; forming the trunks and branches of all trees and shrubs, as well as of many herbaceous plants ; 2. *Culmus*, a stalk or culm, the peculiar stem of grasses, rushes, and similar plants ; 3. *Scapus*, a stalk, springing immediately from the root bearing flowers and fruit, but not leaves, as in the primrose and the strawberry; 4. *Pcdunculus*, a pedicle or foot stalk, the flower stalk

springing from the stem or branch, and bearing flowers and fruit, but not leaves ; 5. *Petiolus*, the leaf stalk, a term applied exclusively to the short stalk, or support of the leaf. There is a point or line separated the stem of the root, called the neck, and which may be considered the seat of vitality; for, if you cut off the root of a young growing plant it again shoots out and if you cut down the stem it will be renewed, but, if this neck be injured the plant must certainly perish. The vitality of this part also, in delicate plants, is injured by being buried below the surface of the soil in transplanting, equally so by being left exposed, in that operation; hence care should be taken to place plants the same depth in their new situation that they held in the spot they previously occupied: a lodgment of water near a plant frequently also destroys it by the effect it has on this part of the stem.

Linnaeus divides plants into two classes, from the mode in which stems spring from their seeds in the process of germination; these he names from the number of cotyledons, or seed leaves, a name given to that sort of leaf into which the fleshy part of the seed forms itself by germinating, constituting at once a defence and source of nourishment to the young plants; the classes are, *Monocotyledon*, or bearing one cotyledon, and *Dicotyledon*, or twofold. Of the first, are the palm, the cocoanut, corn, &c.; in the second, the most distinguishable, and doubtless often observed by the reader, are the bean, the pea, the lupine, &c. Mushrooms

and other fungi, as also lichens, form a third class, having no cotyledons, and hence denominated *Acotyledons*.

The wood, or hard part of the stem, commences its formation from the time that the first leaf expands, appearing as a small fibrous circle within the circumference of the stem, separating it into two parts, and as it advances, is found to be composed of many layers, extending every year of growth ; as does also the bark, though not so perceptibly, because its outer coats, becoming too hard to be distended by the pressure occasioned on the increase of the stem, crack and frequently fall off; these are at the first green, but the last, by increased exposure, become darker and drier. The vital part of the stem appears to be situated between the young layers, or outside of the wood, and the corresponding inner coating of the bark,* since the plant suffers most by injury to that part. When the stem is wounded the cellular formation of the bark proceeds to work, repairing the mischief, by forming granulations that finally unite in one mass. The sap is believed to ascend in the woody matter of the stem, but most actively in the *alburnum*, through which, it mounts in straight lines, a part being afterwards

* Called the *liber*, as the outer is termed the *cortical integument*, or rind | and the young wood next the liber, the *alburnum*.

exhausted through the leaves, and a part descending through the bark; the portion requisite for nourishment and solidity of the plant, being retained in the progress : from this cause the oldest centre, or, as it is called, *heart-wood*, through which the sap has most frequently traversed, becomes hardened, and accumulates the greatest quantity of solid matter. The sap rises with most vigor in the spring, when it is more required for the nourishment of the young buds that are to be then developed ; but this extra portion, instead of rising through the young wood, ascends nearly in the centre of the stem, and is thence transmitted through the several layers of wood to the buds; the rapid absorption of this description of sap is facilitated by heat. This process appears to be yet but imperfectly known, and it is, therefore, needless to canvass the claims of the several theories that have arisen respecting it. Tubers are but so many different forms of stems.

Stems form at irregular intervals along their surface, small points, becoming in time leaf buds, protected and nourished by a leaf springing from the bark, immediately below the bud; and it is those leaf buds, when grown into stalks of their own, and reduced to cuttings, that enable a stem to produce a new individual, in every respect resembling itself; without which no propagation can be effected in this way. Leaf buds are also capable, under certain conditions, of growing

after separation from the parent stem, and may be planted, either in the soil, or by insertion in the bark of a kindred species, sending forth their root fibres in the first instance into the earth, and in the second producing wood that unites itself to that with which it has been brought in contact. These leaf buds seldom appear except at the angle where the leaves unite with the stem, called the *axil*.

A bulb is only a larger form of the leaf bud, its identity with which is easily traced by gradually unfolding and comparing a leaf bud from any large tree with the bulb, carefully opened, of a tiger lily.

LEAVES.

The leaf, considered scientifically, is a flattened expansion of the fibres of the bark from which it shoots, connected by a layer of cellular tissue, called the *pabulum*, or aliment, the whole covered with a delicate cuticle, or skin, called the *epidermis*, and formed so as to present a large surface to the atmosphere: plants growing in the shade, or damp, have the epidermis very thin, whilst those in hot, dry, and exposed situations have this cuticle very hard and thick; in either case it is full of pores, called *stomatcs*, by means of which the plant both breathes,

and perspires ; these are the most abundant, and the largest, in such vegetable productions as are inhabitants of damp and shady situations; whence this property enables us to judge of the habits of unknown plants, with some degree of accuracy, by an examination of the epidermis: in making these, however, the size of the stomates is to be considered, more than their number, for Dr. Lindfey mentions, that " the yucca aloifolia has four times as many stomates as a species of cotyledon in my collection, but those of the latter are about the $\frac{1}{10}$ of an inch in their longer diameter, large and active, while the stomates of the yucca are not more than $\frac{1}{100}$ of an inch in their aperture, and comparatively inert. The yucca, therefore, with its numerous stomates, has weaker powers of perspiration, and respiration than the cotyledon." The hue of leaves is generally green, becoming more intense in proportion to their exposure to strong light, but when not green, they are said, in botanical language, to be colored. It is unnecessary here to enumerate the several classes into which leaves are divided by botanists, according to their various forms; suffice it to observe, that one of their most essential functions is to preserve and nourish the leaf buds forming at their *axils*, or angles of conjunction with the stem, and to the performance of this office there is no exception, whatever may be the form that the leaf assumes.

Proceeding to their general character and parts, the fibres, or, as they are commonly called by the unscientific, the veins, will be found to spread out in various directions, in two divisions, generally communicating with the centre of the stem, and with the liber; the former part keeping up the connection between the leaf and the wood, and the latter that of the leaf with the bark : the upper part being the channel for conveyance of the ascending, and the lower of the descending sap : the under surface of the leaf has the ribs, or fibres, prominent, and is generally, alike from less exposure to light, as from other causes, paler in hue, as well as more hairy than the upper side, finally, this side abounds more in pores than the other. The principal vein generally divides the leaf from the base to the extremity, from which others branch out laterally, and from them again, still smaller ones may be observed to issue. Some suppose that by absorption of moisture from the atmosphere, the leaves become refreshed ; and this would appear to be the case in those of the pine-apple, which after a heavy night dew, or sprinkling with a fine rosed watering pot, become sensibly revived, and it must be confessed, that the stomates of the leaves seem in general well formed for such a purpose ; but on the other hand it is also maintained, and with some appearance of foundation, that this ,, apparent renovation from sprinkling with water, syringing, or the action of a heavy dew, is to

be attributed rather to the diminished perspiration caused by its cooling nature. Both these theories appearing feasible, a combination of the two may very reasonably be supposed to have some share in the effect produced.

The nutritious juices imbibed from the earth and converted into sap, as before noticed, are carried by their appropriate vessels into the substance of the leaves, for the purpose of being acted upon by the air and light, as well as by heat and moisture, to produce that change which is requisite for the evaporation of the necessary secretions, whether odoriferous, resinous, oily, mucilaginous, saccharine, bitter, acid, starchy, or alkaline. No less so for the production of the distinguishing principles of peculiar plants ; whether these be narcotic, aromatic, pungent, acrid, astringent, or other : all are, however influenced, both as regards quantity, and quality, by the strength of light to which the plants producing them, may be exposed. The action of solar light on the leaf is known to have the effect of decomposing carbonic acid gas; of extricating nitrogen ; as well as of producing perspiration. A leaf exposed *to* the sun, gives out oxygen by the decomposition of carbonic acid, leaving carbon behind in a solid state in the leaf, and this process may be easily observed by placing a leaf in a vessel of water, and exposing it to the sun, where the released oxygen will be seen forming bubbles on the surface of the

leaf ; this will not be the case in the absence of solar heat, but what little is then given off, will be carbonic acid, which is, more or less, exhaled at all times; whilst oxygen, which the leaf when exposed to the sun gave out, will, in the shade, be drawn into the pores. In a healthy plant, this process of decomposing carbonic acid gas by day, and of re-forming it at night, with the inhalation of oxygen is going on continually, and hence the healthiness of most plants is proportionate to the quantity of light received in the day.

This rule, however, is subject to exception in favor of those plants that prefer shade, and are, therefore, so organized as to suit such a position only; but in these it is not that a free decomposition of carbonic acid gas will do them injury, but because under the action of the sun's heat, the epidermis yields too readily to the evaporation of moisture by perspiration.

The fact of the perspiration of plants is easily proved, by placing a plant, well covered with leaves, under a glass vessel, and exposing it to the action of solar rays ;—the sides of the glass will in a few minutes be covered with dew, caused by the condensing of the perspiration exuding from the plant; perspiration, however, only occurs with plants in the light, there is none in darkness.

The heat of the sun is the cause of the growth, as its light is, of the maturity of plants. Animals

will live and thrive without much light, but no plants can exist for any time without the presence of this element, at the same time that the external heat of the air is indispensable to a regular and sufficient flow of the sap ; and hence the artificial heat produced in hot-houses in England, serves to forward the growth of plants from tropical climates, and brings them to that maturity they could not otherwise attain ; and in like manner the increased activity given to those of colder climes when brought to India, so over poweringly increases the growth, as to exhaust all their power in formation of new shoots ; leaving no strength for the formation of flowers and fruit. The want of light deprives leaves of their color, and diminishes their powers of action, and above all, of perspiration, so that a plant thereby retaining an excess of liquid, becomes in fact dropsical; on this principle endive, celery, frequently also the hearts of cabbages, lettuces, &c. are what is called blanched, or rendered white, and less strong in flavor, as well as less woody.

After a certain period of existence in the due performance of its functions, the passages or vessels of the leaf, of its *petiolus*, or stalk, of the branch whence it springs, all become choked, its color then changes ; it loses its property of decomposing carbon and, morbid by the consequent excess of oxygen, —it withers;—it dies;—ejected to decay, it is thrown off to make room for the new leaves to which it has given

given life and nourishment,—the common fate of all that is earthly in nature.

The floral leaves, or *bractea*, differ from others only by growing, as their name implies, around the embryo blossom, which they protect and assist—preparing the nutriment necessary for its food.

FLOWERS.

In flowers the *calyx*, or cup, protects the bud before it expands; it consists of several parts, resembling small leaves both in form and color: these are called *sepals*, and are sometimes so united as to form a cup apparently of one piece. Above the calyx rises the *corolla*, or colored part of the flower, consisting of several *petals*, or flower leaves, either distinct or joined together, the point of union being the *nectary*, or receptacle for the sweet fluid, serving to nourish the blossom, whence the bee is said to steal honey; within this, in most plants, is the sexual system, the most important portion being the *pistil*, formed of the seed vessel, or *ovary*, having at its summit a thread-like tube called the *style*, with the *stigma*, or small spongy swelling at its extremity, for the reception, and transmission to the seed vessel, of the dust or* *pollen* containing in the *anther*, or case, loosely attached to the extremities of the *stamens*, or

thread-like filaments generally observed in blossoms clustering near the foot of the petals ; these are often wholly, or in part, wanting; but the sexes are so essential to the formation of a flower, that none can be botanically so considered in which one or other are not to be found although not always found together, or in some rare instances, such as the Mangosteen, not even on the same tree. In cultivated plants there is an evident tendency in all these parts to be converted into each other, as the necessity, or caprice of nature dictates ; and hence the origin of double blossoms, as well as of many of the abortions, and mal-formations so frequently noticeable in flowers; such are, the not uncommon appearance in the rose, of the sepals and even pistil being converted into leaves; the production of smaller fruit from the extremities of larger ones, &c.; and hence we have arisen the inference, that flowers are but modifications of leaves, and that flower buds bear an analogy to leaf buds. This appears the stronger in fruit trees, because those buds that produce blossoms, and those that give birth only to leaves, differ not in the least from each other in their earlier stages ; convertible, by modifications of pruning, by great excitement, or by neglect into each other.


The causes of these changes are still in obscurity, but it will be found, that whatever tends to produce excess of excitement in a plant, is unfavorable to the production of flower buds, creating a rapid development

of leaf buds; hence it may be concluded, that the period when a plant begins to flower depends on the secretion and conservation, of a sufficiency of nutritious matter, in excess of its daily wants, to afford nutriment in such quantity, as may yield support to them.

The *pollen* is essential to the fructification of the seeds contained in the seed vessel, which without it, could never attain perfection; and a knowledge of this fact aids the gardener in securing the object of his culture with such plants, as, like the melon, the vegetable marrow, &c. have the seed vessel in one blossom, and the anthers in another; when bringing the two into contact, by the hand, will often secure the production of fruit: by the same means varieties are also produced of the same plant, or a mixture with another species of the same genus, by bringing together the pollen and stigma of divers kinds ; the results, in the latter case, being termed *hybrid*, and in the former, simply *cross bred*.

After the flower has performed its office of fructifying the seed, the petals and other organs not destined to become part of the fruit, wither and fall off.

FRUITS.

The seed, when fructified, as above shown, begins to enlarge, and requires,  all other parts of the plant,

to be supplied with its peculiar food, for under any relaxation in the flow of its fitting nutriment, it will soon languish and die.

There are two great divisions among fruits, the *superior*, and the *inferior* ; they are said to belong to the former class when the pistil is separate from the floral envelopes, or sepals, and when, on their falling off, the fruit forms by an enlargement of the ovary only, as in the peach ; but they are assigned to the latter class when the pistil, or its ovary, and the floral envelopes all grow together, and when the fruit is consequently, an enlargement of the whole flower growing simultaneously, as occurs in the pomegranite. It has been shewn, when treating of leaves. &c. that the supply of food to a plant, or to any part of it, is regulated by the attractive power of its leaves: it follows then, that the inferior fruit retaining a portion of these during the whole period of its growth or enlargement, is stronger and less liable to fall off before maturation, than the superior fruit.

The following are most common of these two classes, that appear among our ordinary fruits.

Inferior.

Pomegranite,
Guava,
Quince,
Melon,
Apple,
Pear,
Rose apple,
Phalsa,
Loquat,
Fig,

Superior.

Peach,
Plum,
Grape,
Strawberry,
Sweet sop,
Shaddock,
Lemon,
Orange,

Fruit, in common with leaves, has the power of attracting food to itself from the parts of the plant

adjacent to, or surrounding it; and this is more clearly perceptible in the state and action of those individuals, which by accident, or advancement of growth, are more vigorous than their neighbours, from whom they draw a portion of nourishment, to the eminent as evident deterioration, and often to the entire destruction of the weaker. As the principal part of this food has to be supplied by the leaves, deriving their nutriment from the soil, through the roots, any thing that deranges the action of either the roots or the leaves, must have a material effect on the fruit; if the leaves of a plant be placed at too great a distance from the fruit, so that this last cannot with facility derive nourishment from them, it must at least be weakened if not destroyed. This shews why fruit appearing upon naked branches will not grow, and also why the existence of a leaf immediately above the fruit upon a branch, is serviceable to it; it shews, moreover, why the thinning of fruit, from a loaded tree, is beneficial to what is allowed to remain. The food, however, that is thus drawn from the leaved is not, as with them, returned into the bark, for the bark of the fruit stalk has little or no power of carrying off from the fruit what it has conveyed to it besides which the commonest observer may remark a sort of band or ring, separating the one from the other, contributing to the same effect; this, therefore, retains for its own use, nearly all that it has attracted until becoming obstructed altogether,

the fruit, if not gathered, will fall. These juices further undergo an alteration by the natural action of the fruit itself, varying according to the species, and resulting chiefly from the united action of light and heat ; experience having fully established, that a high temperature, combined with a strong light, will produce saccharine matter, or sugar, where, in their absence, acid would have been predominant. The cause of this is thus explained by Dr. Lindley: " As sugar is more rich in carbon than vegetable acids, and has no free oxygen as they have, the sweetness of pulpy fruits ripened under a bright sunshine, may be understood to arise, from the decomposition of carbonic gas, and the expulsion of oxygen, being greater under sunshine than in the shade. Another cause may be, the greater facility with which vegetable acids enter into combination with gum and starch, and so form sugar, at a high, than at a low temperature."

The watery particles that the fruit attracts through the stem, in the course of maturation, undergo an entire decomposition, and become dissipated; an increased supply of water, by requiring longer time for this operation, will retard the ripening of fruit; and on the other hand, a diminished supply will have the contrary effect. Fruit being chiefly intended for the protection and nourishment of the seed, a large portion of its liquid and nutritive secretions are consumed in effecting this object; and whatever circumstances affect

the fruit, will equally influence the seed, as well as the future plant that this seed is to produce, the strength and vigor of which will be in the proportion those qualities prevailed in the parent: the plumpest and most weighty seeds always producing the most luxuriant plants; and these qualities greatly diminish with age, even to the* extent, in most seeds, of the entire loss of vitality and 'power of reproduction. It is a knowledge of this fact that induces the gardener to select old cucumber and melon seed, in which this power is somewhat abated, as the plants of new seed are apt to spread so luxuriantly as to deteriorate the quality, and, by an over-production of leaves and branches, to lessen the quantity of their fruit. Plants, as will be, well understood from the principles above laid down should not be allowed to bear when too young, and should also, occasionally, have a partial or entire rest for a season from the maturation of fruit; for as these are maintained by drawing on the nutriment contained in the leaves, their destruction when young, will allow 'the latter to create a store of that nutriment which is required for the effective production and support of fruit, against a succeeding season.

HEAT, LIGHT, &C.

The exact extent allowed by the laws of vegetation for the capability of plants in endurance either of heat or

cold, is not accurately ascertained; for it is well known that many seeds may be boiled not only without injury, but to the improvement of their vegetative powers; whilst others may be exposed to freezing, and still be capable of reproduction. The number of plants, however, that will bear these extremes is small; and the greatest variety of indigenous vegetable productions are known to exist in a temperature ranging from 32° to 90°. All plants become torpid at a certain degree of temperature, varying according to their constitution; when, however the atmospheric heat rises above this, the cellular tissue, is excited, perspiration commences, arousing the absorbent power of the roots, and vegetation awakes to vigor. But if the temperature required to produce this effect vary in different plants in the same climate, how much greater must be its variation in plants in different climates; and thus we find that our native trees—such as the mango, the guava, the coffee, &c. accustomed to be brought into action only by a high degree of temperature, after but a short period of rest, soon wither, even in the warmest season in England; whilst the apple, the currant, and other English trees, suffer from the too great excitement produced by the high temperature (combined, as it so often is, with humidity) of India, whence they either lose the power of producing flowers, and fruit, or perish altogether; the effect of a high temperature being, if dry, to elaborate the natural secretions of plants more rapidly than the

parts destined to receive them can be formed; and, if moist, to cause a rapid production of leaves and branches, without giving the strength required to form flowers. Too cold a temperature, if not so low as to destroy, but just to continue life, is found to have much the same effect as the over excitement before shewn; but this is a state hardly to be dreaded in this climate, except in some parts of the* hills, and it is, therefore, unnecessary to enter into further detail on the subject.

Variations of temperature are, to a certain extent, necessary to healthy vegetation; for the excitement of increased temperature and light, during the day, producing perspiration, and stimulating the vitality and natural secretions of plants, is as essential to their well being as the repose of night, when perspiration ceases, and the waste of the day is made good by the attraction of the roots, preparing the plant for the renewed exercise of another day.

From a like cause the alternation of seasons is essential to the healthy growth of all plants; for the extremis excitement produced by the hot weather creates a langor that exhausts the strength of the plant, and causes the leaves to become choked and unfitted either to breathe or to perspire ; the vessels get clogged, and worn out, and the whole system, by continued exhalation, is dried up and exhausted. To this succeeds a decrease of temperature, and of the duration of light, until the accession of the cold weather allows

the plant slowly to absorb food, which it is not called on immediately to expend, and produces a repose, generally too short however, in Bengal for full recovery from the langour induced by a long continuation of heat and excessive moisture; to which source may be traced the greater difficulty experienced in bringing the productions of colder climates to perfection here, than is found in some other parts of India; as well as the absolute necessity of artificially extending this period of rest in many plants, by exposing their roots for a time, to the air and dew.

In estimating the temperature, especially in a tropical climate, it is to be borne in mind—that the amount of heat attained by the earth below its surface is generally considerably higher than that of the surrounding atmosphere, the increased heat effecting the soil for some depth; and this, although as yet but little studied, should have its due consideration in transporting plants from one country to another, especially where the contrast is so great as between England and India; the mean temperature of the first being in the coldest month $37^{\circ} 76'$ and in the hottest $64^{\circ} 43'$, whilst that of the coldest month in Calcutta is $68^{\circ} 15'$.

Heat, it should be observed, is radiated by the sun to the earth; and should dense clouds afterwards intervene near the earth, it is thence reflected back; but these on the other hand, if at any elevation, cease to reflect so much of this element as they receive from the

earth. Fogs also, like clouds, will arrest the heat that is reflected upwards by the earth; and if they be dense, and of considerable perpendicular extent, may remit to it as much as they receive. The water, therefore, that is deposited upon the earth during a foggy night, may be derived from either of two sources: one, the precipitation of moisture from a considerable part of the atmosphere, in consequence of its general cold; the other, a real formation of dew, from the condensation, by means of the superficial cold of the ground, and of those parts of the air which come in contact with it.

The fogs during the cold weather, especially towards its close in Bengal, descending from a height, have the same effect as dense clouds at a distance from the earth, in receiving more heat than they reflect back; and hence, at this period, they cause the temperature to be very sensibly reduced towards the morning, when they descend to the earth: hence, too, if they continue late in the season, they have the effect of destroying the early blossoms of the mango, often rendering every blossom, on the side of the trees whence they are brought by the wind, unfruitful. From the foregoing remarks it will be clear that in endeavoring to effect the naturalization, and acclimation of the plants of one country, in the soil of another, and in estimating, for this purpose, the effects of change of climate on them, the ino&t

important consideration is—temperature. The soil, the air, the water, are of comparatively little moment, considered with reference to the increase or decrease of heat. In transplanting from a colder to a warmer climate, an elevated situation is desirable, and a sufficiency of water to provide for the more abundant evaporation to which the plant becomes subjected, and this is generally more easily effected than the acclimation of those of the torrid zone to the colder climates of Europe ; yet there the operation has been carried to such perfection, that many products of Asiatic origin have become completely naturalized: such are the potatoe, the kidney bean, the cucumber, the nasturtium, the dahlia. It must not be expected, however, that this acclimation can be effected at once,—several generations must often transpire ere the object be effected, or perfection of growth obtained in the new station, and people here should be content to cultivate a plant they desire to naturalize, for the first two or three years at least, with a view only to propagation, not for use.

THE FOOD OF PLANTS.

It has been already shown, under the head of " roots, &c." that the mouths of the root fibres are constructed for the admission of liquid only; water, therefore, becomes indispensable as food to all plants, although it will

not, as has often been erroneously asserted, alone serve as nourishment. Another indispensable ingredient in the food of plants is air, especially when held in combination, or mixed with water; whence, the giving water in large quantities, direct to the soil, in cool weather, will generally be less beneficial than if the water were distributed from the fine rose of a watering pot, so that every drop may carry down to the roots a portion of air; in this country, however, fermentation is so rapid, that, except in cold weather, this addition to the benefits derivable from the free bestowal of water is denied to the gardener, or at least its use made dangerous; as, by distributing the fluid from a fine rosed watering pot, the liquid being scattered, is apt to lodge in the joints of the branches, the folds of the leaves, &c. where, fermenting, it rots and destroys the plant. Whilst, however, it is known on the one hand, that plants cannot live in a soil to all appearance dry; it has also been proved, on the other, that few can exist unde* an excessive supply of moisture. It becomes, therefore, a subject of some importance to determine the proportion most agreeable to plants in general, as well as that fitted to every different species; and the particular period of vegetable growth, when a greater, or less supply may be called for.

It need hardly be pointed out here, that in the cold season, when, as has been shewn, plants are

comparatively in a state of repose, but a small quantity of water is needed, because in a torpid state they seek but little food : some moisture, however, will still be beneficial to perennial plants, even in that state of rest, to enable them to prepare for future vegetation, as shewn under the head of " roots." For absorption still going on, and conveying nutriment to the interior of the plant—provides a store for the support of the young shoots of the succeeding year, which are vigorous or otherwise according as this reserve of food has been more or less in quantity. An exception is of course to be made in favor of marsh or aquatic plants, which ought never to be left dry.

Water stagnating on the ground becomes unwholesome food for plants, chiefly on account of its not having the opportunity of mixing with air; and soils of which the stiff clayey nature, prevents this free circulation, are termed cold or sour ; their defect however, is the want of a due supply of air, assisted by a great degree of cold in the soil produced by the lodgment of water.

Although too much wet in a soil is undoubtedly injurious, yet if that be kept in free circulation, and its various particles in contract with the air, (and this in the case of stiff soils may sometimes be effected by the admixture of ashes, sand, and the like, to open their texture) the evil consequences will be lessened; but, without this free combination of water and air, not

merely will the process of vegetation commence slowly, but its progress, when began, will be checked, the leaves drooping and becoming'' flaccid, until, at last, they wither altogether and fall off.

Plants in a state of growth, and especially in the early stages of vegetation, require an abundant supply of moisture, to keep jip the great demand made by the commencing perspiration of the young leaves as they burst forth, at which period the perspiratory action • is most powerful, the whole epidermis feeling the influence of first exposure to light. As they advance, this *epidermis* hardens, and by degrees, even the *stomatcs* become choked, and subject, in consequence, to less excitability; hence may be deduced, as a general rule, that, at the first beginning of growth, plants demand a more abundant supply of moisture, in proportion to their size, than when their organization is perfected. This rule is especially applicable to culinary plants of the spinaceous and acetaceous kinds, wherein a large quantity of tender succulent leaves is desirefl; a free supply of water tending greatly to the increase of that succulency. The size of succulent fruit may also be increased by a continued profuse supply of water during their ripening. But this generally, at the expence of flavor, which will be deteriorated by the accumulation of watery particles; and for this reason the quantity usually given, should always be diminished as the fruit advances to ripeness, otherwise

the fruit swelling from an excess of aqueous matter, that it has not strength to decompose, cannot form the secretions requisite to perfect its flavor, which, consequently, remains in the same immature condition as before the water was thus absorbed. To this source, may we partly attribute the defects in this respect of many fruits in this country, and its influence would be still greater, did not the excessive light and heat, acting to the production of very profuse perspiration, nearly balance the proportion of one to the other.

The moisture, or water, of garden soils is, besides the above ingredients, more or less mixed with what is called *humin* or *humic acid*, being the medium for introducing alkalies and alkaline earths into plants, constituting the chief ingredient in all vegetable manures. When combined with alkalies it forms *humates* that are readily soluble in water, this effect being expedited by an admixture with lime, potass, or ammonia. Each of the ingredients of plant food will, therefore, be found composed of the simple gases;—thus, *water* is composed of hydrogen with oxygen gas;—*air* consists of oxygen with nitrogen;—*humin* contains carbon and hydrogen;—*ammonia* has three parts of hydrogen, and one part of nitrogen;—whilst *lime* and *potass* are composed, the one of the potassium, the other of calcium, in combination with oxygen;—the three last also frequently combined with carbonic acid gas. Of these, it is carbon that constitutes the

larger portion of the solid substance in all plants, whilst water is their chief fluid portion; whence hydrogen contained in water, in humin, and in ammonia becomes so important; but to go minutely into this subject, would exceed the bounds we have placed on our remarks.

The mineral portions of the soil consisting as they do, of clay (*argillous matter*), sand or gravel (*siliceous matter*), chalk or lime (*calcareous matter*), and iron (*or ferruginous matter*), contribute but in a small degree to the food of plants, and appear chiefly useful in dividing and separating the nutritive parts consisting of decayed vegetable and animal substances. These several substances, however, mixed together in various proportions, form the basis of every soil, and none will be fertile that does not contain nearly equal proportions of the three first; any excess of either of these causing the fertilization to be effected, to a degree not to be permanently recovered by the addition of even a large quantity of any of the other three ingredients.

Such then is the description of food, and its media of administration, that is essential to the well being of all vegetable products, and on the nutritious parts of it they feed the most heartily in the day time, in any open place, where they are much influenced by light; whence artificial watering may well be supposed most beneficial in the morning, just as the plants may be

said to thirst for their breakfast; provided, however, that the heat of the season be not such as to cause too profuse a perspiration, and therefore an excess of excitement in the plant, so long as the means of supply continue with consequent relaxation should it fall short.

In this country, where the moisture conveyed by the atmosphere at one season is so excessive, and at another hardly perceptible, little use can be made of its variations in the culture of plants; the following rules laid down by Professor Lindley, as deserving of especial attention, may however assist those who are desirous of trying to effect the acclimation of exotic plant to the plains of India, and may find morje extensive application in the Hills.

" 1. Most moisture in the air is demanded by plants when they first begin to grow, and least, when their periodical growth is completed." Hence the latter end of the rains may be indicated as the most natural time for raising the more hardy plants,

" 2. The quantity of atmospheric moisture required by plants is, *ceteris paribus*, in inverse proportion to the distance from the equator of the countries they naturally inhabit." This is particularly noticeable in the rapid growth of plants during the rainy season.

" 3. Plants with annual stems require more than those with ligneous stems.

" 4. The amount of moisture in the air most suitable

to plants at rest, is in inverse proportion to the quantity of aqueous matter they at that time contain. (Hence the dryness of the air required by succulent plants when at rest)."

In connection with the subject of the food of plants, is to be considered the heat of the soil into which their roots extend; whereby a degree of stimulus is kept up that balances the excitement given by the sun to the leaves of the plant; which, were they raised by its warmth to a higher degree than could be attained by the roots, would cause a consumption of sap more rapidly than could be renewed by these last, and, at the same time, by the absorption of caloric from the upper part of the plant, chill the roots and more vital parts, to their eminent danger. Besides this, the heat so conveyed through the roots to the stem and branches of the plant, is maintained for a greater length of time, whilst the lowered temperature of the night air is prevented from injuriously affecting plants, the power of the internal warmth obtained from the heated soil acting in opposition to the cooler atmosphere without.

WIND, AIR, ETC.

Wind, it is admitted, has the effect of causing greater dryness of the atmosphere, and hence of adding to the

perspiration in vegetables, as well as of increasing the evaporation of the moisture from the soil; and these powers gain strength in a proportion more than adequate to the velocity of its progress: anything, therefore, that checks the rapidity of its progress, has the effect of diminishing its injurious effect, for Professor Daniell has shewn, that " the s^ame surface which, in a calm state of the air, would exhale 100 parts of moisture, would yield 125 in a moderate breeze, and 150 in a high wind."

After this it will be unnecessary to point out the importance of protecting the garden from that quarter whence blow the strongest winds, either by trees, walls, or some description of screen. In this principle too is found a solution of the known utility of a shade to plants, recently placed in the earth, as it not only intercepts the sun's rays, but protects them from those currents of air, that would increase the extent of their perspiration.

It is a mistaken notion to believe that because animals require a constant renewal of air for their support* vegetable productions feel a necessity for the same; the former have occasion for this constant supply, because they consume oxygen by respiration, at the same time that they also increase the impurity of the atmosphere by the quantity of carbonic acid gas they give out, whereas the reverse has been shewn to be the case with plants during the day: thus in fact rendering

the air in their vicinity more fitted to the support of animal life, only assimilating their demand partially to these last in the night time by the inhaling oxygen at that period. Hence, therefore, ventilation is less required for vegetable than animal life: indeed, it has been found that many plants will grow better in a confined atmosphere, than in that which is frequently changed ; ventilation is chiefly requisite for the healthiness of most plants, inasmuch as it dispels dampness, and thus prevents the growth of parasites and fungi, which only flourish in damp air, and at a temperature lower than that found under exposure to the sun's rays.

Another benefit supposed to be derived from ventilation, is but of recent discovery, and that is the motion, communicated to plants by the action of the wind, which has been found to increase the circulation of the sap into healthiness; inducing a ready formation of woody fibre, as well as adding strength to that already formed, and being highly favorable to the development of the secretions that contribute to the formation of flowers and fruit, as well as with production of odor, flavor, &c.

ittanuws, soils, *ttt.*

The system of apportioning manures is founded upon the study of the component parts of the food of plants in their natural state. These are of various kinds, and to be sought for alike in the animal, the vegetable, and the mineral, kingdoms, of which the two former are almost invariably absorbent and retentive of moisture ; and the more the component parts of a soil are intermixed the more each is separated and subdivided into minute portions by culture, the greater thenceforth must be the fertility of the soil. When the soil is well pulverized, it is easier also for the minute fibres, forming the roots of plants, to penetrate, and hence the greater must be the number produced, to the evident benefit of the plant, by the increase of its powers of obtaining nutriment.

FERMENTED MANURE.

When a soil is tenacious, or clayey, it receives heat very slowly, and retains water far too obstinately to be fit, unaided, for vegetable nourishment; on the other hand, sand is so loose, that, although it soaks up water readily, it soon gets heated, and dried up, thus being unfitted for the support of plants. A mixture,

therefore, of loam, sand, and peat, is the best suited to vegetation, the last serving to bind, as well as to afford manure or richness to the other two; whilst the first gives tenacity and retentiveness of moisture, and the second lightness to the mass.

Most kinds of animal and vegetable substances require the process of fomentation to take place before being fitted for manure, thereby forming ammonia, but the best compost is, undoubtedly, that obtained from a fair mixture of animal and vegetable matter, such as is found in an English farm-yard. Hence every garden ought to have a hole, into which should every day be thrown the sweepings of the stable, and especially the urine of horses, itself a most powerful manure by facilitating the formation of humin. It would be well, therefore, to have this hole so placed that all the draining³ of the stable, including the water wherewith the horses' feet, &c, have been washed, might be allowed to run into it, adding to the rapidity of the fermenting process, no less than to the richness of the manure. Another hole should be made for the reception of the like gleanings from the cow, or bullock shed, and the sheep pen; cow dung being very good for all kitchen plants, possessing the advantage of requiring no fermentation to fit it for immediate application to the soil. These holes should not be left exposed to the sun, but must be covered to prevent

too rapid an escape of the gases generated in the process, and the temperature of the manure, when under fermentation, should not exceed 100° of Fahrenheit ; if it ever go beyond that, the dung should be immediately opened, or, if that be not sufficient, spread abroad to cool.

A third hole should contain all the leaves of trees swept from the garden, the refuse of cabbages, and other vegetables, the prunings of trees, weeds, &c. all of which, if left to ferment and rot, become excellent sources for reviving the exhausted soil, and in complete decay, form a rich mould for all purposes ; in India a year is quite sufficient to complete this process, and fit the stock for use as *leaf mpuld* a most useful manure when the soil contains too much sand, chalk, or clay, and very proper for softening, and, in combination with sand, for lightening the soil for tender plants, and for those in pots generally. Manures of all kinds should be applied at that season when plants are in their most rapid state of growth, because the root fibres are then most vigorous in their absorbing powers, and most capable of benefiting by the application; which, to have good effect, must be made at that part of the root that has the strongest absorbent powers,—found distant from the stem,—at the extremities under the earth, generally equal to the extent of the branches above.

BONES.

These, when procurable in sufficient quantities, have been found a most excellent manure, much sought by most plants, especially cauliflowers, the size and quality of which have been known to be much improved by their application.* -They should be beaten down to a moderately fine powder, the expence of so preparing them being amply repaid by their consequent extensive fertilizing powers by dispersion of their parts, as they contain lime and oil in abundance, the latter in the proportion of about fifty one parts out of a hundred; horn,—hair,—feathers,—the refuse of skins and leather, arc all useful for the same purposes.



FISH.

All kinds of fish may be used on any sorts of soil with advantage ; it should be applied whole, and cannot be dug in too fresh, but must be employed only in a limited quantity, or mixed with sand, to prevent its raising too luxuriant—hence unproductive—a crop. The skin, being gelatine, is readily dissolved in water (whilst under that is found fat or oily matter),

* This was most successfully tried at Berhampore by Mr. Francis Witworth Russel, now at Hooglee.

SO

THE' NEW INDIAN GARDENER.

and the fibrous substance contains all the essential elements of vegetables—whence its mode of operation may be easily understood.



LINSEED CAKE.

This is an article too valuable as a food for cattle to be much used as a manure, though of great utility in wet clayey soils. In connection with this, being a product of the same plant, the water in which hemp or flax has been steeped contains considerable fertilizing power, as it holds in suspension much vegetable extract.



SEAWEED,

Is an article which, where readily procurable, from containing gelatine, salt, carbonate of soda, and carbonaceous matter is of service to some soils—if applied fresh; but as a manure, it is transient in its effects, lasting not more than one crop.



WEED.

Tanks yield a good deal of this article which also makes a good top dressing; and garden weeds

may be turned to good account as before mentioned, but they should be cut, and dug in before they run to seed, or they will renew themselves rapidly wherever they are used; they are best turned in before being much withered, so as to prevent the more volatile parts, produced by fermentation, from being lost in the atmosphere. Sir Humphrey Davy considered that such green crops are fittest for manure, and should be ploughed in for that purpose when in flower, because, at that period, they contain the greatest quantity of easily soluble matter.

CHALK, MARL, WOOD ASHES, LIMESTONE, &C.

The first containing carbonic acid, has very short duration in its effect. But the two next may be applied to the soil in their natural state, in which they improve the texture and absorbing power to some extent, whilst the last must be burnt and used as quicklime, this having the faculty of making many substances soluble, especially vegetable matter. Chalk, marl, or old burnt lime, having, by exposure to the atmosphere, become carbonate of lime, only act as part of the earthy ingredients of the soil; they are well suited for stiff lands; but lime should never be applied

iii conjunction with animal manures, unless they be too rich, or it is used merely to prevent noxious effluvia.

CLAY.

This is always a good manure for sandy soils, but if dug from any depth below the surface of the earth, it must be exposed for some time to the action of the air before application to tender plants. In a burnt state it serves to alter the nature of the soil, by rendering it more friable, and is, in England, sometimes used on fallows or turnip land in like manner, and for the same purpose, as the refuse of old buildings, or the dust from brick paade roads here.

ALLUVIAL SOILS,

These are the natural deposits of the river under inundation, they form the upper layer also, of the bottoms of some tanks, containing light surface soil, fine sand, and decayed vegetable matter, whence they are good manure for any sandy, clayey, or chalky soil, as well as for the renewal of flower borders.

LIQUID MANURE,

The article so called is called is little* known practically in India, but it is often of use for the more delicate plants; it is procured by steeping dung in water, and letting it remain until it has acquired a strong deep color; in which state it is applied to the roots.

rotation of (Stops*

There are few points of horticulture less thought of in this country, although no subject is more worthy of consideration, than the regulated rotation of crops. It is well known that plants, like animals, do not appropriate all the food they take but, that having the fit organs for separating what they find necessary, from that which is useless is rejected ; it is further known that, besides the water and gasses thrown off* by the leaves, the roots also eject a sort of excremental slime, differing according to the various plants, but always injurious to those of a similar kind following on any ground; at the same time that the peculiar nutriment required for a particular plant must be weakened by the absorption of this refuse of the plant preceding it. Thus the slime of cabbages, will injure cabbages, though harmless to peas, and in like manner with all others.

Another reason for attention to this succession of different crops is found in the fact, that there are many insects, of the moth and aquatic kind especially, that live on the crown of roots of particular plants, multiplying themselves infinitely when the spot presents a succession of the same, or nearly similar food, but if a crop intervene that is uncongenial to them, the whole race perish for want of food.

This subject having but recently met attention from horticulturists, no positive rules for the succession of garden plants can be laid down: these must be left, therefore, in a great measure for the judgment and experience of each individual to frame for himself, especially as the climate must also have an influence on the succession. The principles of scientific gardening however, require this rule to be observed—that no long stalked crops, such as peas, &c. should be repeated on the same soil without the intervention of some roots or herbage, and *vice versa*. An occasional cessation from crops, or *fallowing*, as it is technically termed, is also desirable, and should always occupy some small portion of each year, with the addition of dunging, for all crops.

The following principles for guidance of the rotation of crops have been laid down by the best French authors, and deserve attention:—

- I. Every plant exhausts the soil;
- II. All plants do not exhaust the soil equally;
- III. Plants of different kinds do not exhaust the soil in the same manner;
- IV. All plants do not restore to the soil the same quantity or quality of manure;
- V. All plants are not equally favorable to the growth of weeds.

From these principles, the following results may be deduced:—

1. No soil, however well cultivated, can long nourish the same crops without being exhausted.
 2. Every crop impoverishes a soil in proportion as it is more or less restored by the plant cultivated.
 3. Perpendicular rooting plants, and such as root horizontally, ought to succeed each other.
 4. The same kind of plants- should not be repeated too frequently.
 5. Two plants favorable to the growth of weeds should not succeed each other.
 6. Such plants as are known to exhaust the soil considerably, should only be planted on new land or that which is strong from manuring.
 7. Plants that are less exhausting, should succeed those that are more so.
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Vropagation of plants.

For the increase of vegetable productions proportionate to the wants of man, means have been provided for the perpetuating and multiplying the species. The most simple and-natural of these methods is by the first of these following. *

— .

SEED.

The process of maturing which has been already described. When it has reached maturity it detaches itself from the parent plant; and, unless removed by the gardener, drops into the soil, where it germinates and takes root, springing up a new individual to replenish its kind. In a state of nature these seeds are distributed by various means, for this purpose she has provided some seeds even, with down, or wings, to facilitate their transport; such are the thistle, the geranium, the maple, &c. To give growth to this embryo, heat, water, air, and darkness have been shewn to be indispensable : the first gives development to the nourishment contained in the lobes: whence in cold climates, and during the cold season here, seeds remain long in the earth without germinating, and in like manner sprout too quickly in the hot weather; the second, by its moisture, softens these lobes, fitting

them for the action of its predecessor, at the same time that it contributes that portion of oxygen, so requisite for growth and promotes the formation of vegetable sap ; the third is indispensable not only from its own value, but for extracting carbonic acid gas, which is prevented if the seeds be placed too deep in the earth ; and the fourth, because, if not duly covered, the excess of light carries off the oxygen so requisite in this stage of life. Air, it will be observed, is one of the most essential of these requisites, and is first taken up with moisture after the seed is committed to the earth; because this, when fully ripe, contains a very large portion of carbon, which, so long as it be retained unaltered, prevents its growth ; the means that nature has provided to get rid of this burden, are its conversion into carbonic acid gas; to effect this oxygen is essential, but this it is prevented obtaining from the air, naturally, by a thick layer of pulp, a hard shell or a stone,—and, artificially, if placed too low in the ground.

It is true that exception might be made to these rules in the fact, that seeds of corn in some season, when there is an excess of wet weather, germinate in the light—even whilst in the ear; but such seeds, if planted, never produce strong plants. Many seeds are benefited by steeping an hour or two in water; and carrot seed is forwarded and made to sprout sooner

by *Ix-ing* tied up in cloth and buried, in a very moist comer of the garden, until the germ appear, before sowing in the spot required for production of the plant. Too much wet, however, will injure all seeds, by rendering them dropsical, and liable to rot in the ground when sown.

The formation of the seed has been before described : it is here only necessary to add, that when the seed has found its way to the surface, and formed the first sprout of its root, the lobes become changed into what are called seed leaves, and assume the office of preparing pulp from the sap now taken up by the young root; and so essential are they to the existence of the plant, that if eaten off by insects, or broken accidentally, the plant will inevitably perish; they should be carefully preserved too, in those that require to be transplanted, and it is not prudent to remove a plant until it have acquired strength sufficient to dispense with the use of the seed leaf, which will then drop off of itself; none, therefore, should ever be removed until this have taken place.

The best mixture of soil for seedlings—or, it might almost be said, for use in every mode of propagation—is of peat, loam, and sand, which absorb and hold the water, in a sufficient quantity for germination, by the mere force of attraction; the peat and the sand, at the same time, *> keeping apart the particles

of loam as to counteract their natural adhesiveness, whilst the loam prevents the moisture passing off too rapidly through the interstices of the sand and peat.

The depth that the seeds are placed, must be regulated by experience; but it will be evident that small seeds must, in proportion to their size, bear but a slight covering of soil, their germs, having less strength to force a way through the opposing weight of earth, than those that are larger: very small seeds are often mixed with sand and thus sown, with the two-fold purpose of lightly covering, and of separating them so as not to be choaked; as if too close, they will either destroy each other, or it will be necessary to remove a part to give space and strength to the rest.

Seeds getting weak-by long keeping, or from other causes, lose their power of decomposing water, but still preserving their capability of absorption, the water thus taken up produces rot. The best mode of preventing this evil, next to carefulness in only using the freshest seed, is to withhold water until the plants have fully germinated, and even then to give it with moderation, leaving it to depend for nourishment rather on the natural moisture of the earth. When a seed is in a hard shell, the shell may be filed, to permit it to burst the more easily; and when seeds are healthy, but for any reason it be desired to accelerate the extrication of the embryo, soaking them

in tepid water, until germination becomes visible, may be resorted to.

Late years have introduced the idea of boiling seeds to make them grow, as was, some time since, brought to the notice of our Horticultural Society by Dr. Wallich. The Gardener's Magazine, of February 1832, contains, what is supposed to be, the first mention of this process, in a letter from Mr. J. Bowie, of the Cape of Good Hope; in which he states, that nearly the whole of the seeds of plants of the order Leguminosae thrive better by having water heated to 200°, or even to the boiling point of Fahrenheit, poured over them, and allowed to cool for twenty-four hours.

A solution of chlorine has, from its tendency to set oxygen at liberty, and to decompose water, been tried as a germinator of seeds with some success; as has also diluted oxalic; the former of these was used by the author, in 1836, to some seeds of the Brussels sprouts, which had failed in the open ground as well as in a hot bed, but germinated pretty freely after being steeped in the solution for a couple of hours.

It may be useful to observe, that some seeds will continue a long time in the earth without germinating; sometimes even, for two or three years, and then, at last unexpectedly spring up, but there are generally those defended by a hard shell

DIVIDING THE ROOTS.

Although plants are generally propagated by seeds, yet many of them are increased by other means; either because they do not always ripen seed, or because the process by that method is slow and uncertain, frequently occupying several years to arrive at perfection; many different modes, therefore, of increasing various kinds of plants have been adopted; of these, perhaps, dividing the roots is the most simple. Every root has what is called the *crown* or neck, whence the body of the root strikes downward; and whenever these increase in number, so as to furnish more than one to each plant, as is the case in the violet, &c.—the root may be divided into as many parts as there are crowns, each being capable of separately supporting itself; this must be carefully done with a sharp knife, or by gently pulling them asunder. Other roots of a bulbous character send forth *small bulbs* from the base of the larger ones, as in the amaryllis, the onion, &c, and these, if carefully separated from the parent root, will soon be capable of sending out new buds of their own; it is, however, advisable to wait until these young bulbs have formed roots before they be detached, as, if that be carefully observed, a failure in the production of the new plant capable of blossoming is next to impossible.

RUNNERS, OFF-SETS, AND SUCKERS.

Many plants, instead of having a number of crowns or eyes, have only one, but send off short stems or offsets, like the aloe, the yucca, &c, or runners issuing from the summit of the root, and creeping along the surface of the soil, producing, at the extremity a fresh root and leaves, thus forming a new individual, on decay or severing of the connecting link, as in the strawberry; the time for taking off these, or other offsets, must be regulated by the season of the year, the best period being the close of the rains, as it is important to have the young plants as full of vigor and moisture as possible at the time of their removal. The young plants, called suckers, which spring up from the deeper roots of some shrubs and trees near to, or at a distance from, the parent trunk, as in the rose, the jasmine, &c, may be taken up with the root fibres attached to them, but they require a long time, if propagated by this means, to reach that degree of perfection necessary for the production of blossoms and fruit.

EYES AND KNURS.

It has been before pointed out, that leaf buds are capable of reproducing their species; these are called

knurs or eyes, and it is from this principle of reproduction that many of the existing modes of propagating plants have ben adopted ; the only plants, however, in producing which it has been directly applied are, the vine, the potatoe, and other tubers, including the large family of yams, sweet potatoes, arrow root, &c. The success of this mode qf propagation depends on some portion of the tuber, or alburnum of the eye, remaining with it, to give nutriment to the shoot; though if the proportion of this be too great, the plant will be weakened by too free a developement of stems and leaves—and the productiveness thereby lessened.



SLIPS AND CUTTINGS.

On the same principle as in the foregoing, the eye produces roots ; a series of leaf-buds on a small twig or branch will form for themselves, at the base of the cutting or slip root fibres, and thus become an independent plant; and as the younger twigs of most plants and shrubs will continue to live, if put into the earth, until the leaf-buds that are below the surface put forth roots; many plants, as the rose, the mulberry, &c. may be thus multiplied as easily as by the sowing of seed, with this additional advantage, that they bear blossoms or fruit much sooner. The success of this process depends on the end of

the slip, or cutting, not being too young or soft, otherwise it will become gorged with moisture, and rot, at the same time, that if it be too old and hard, it will not take up sufficient water to keep it alive. It is to be remembered, also, that the root fibres will always spring from the foot of a leaf-bud, and it is therefore desirable to cut the branch selected as a cutting, with a slope on the side opposite to the bud, whereby the formation of the new fibre is much facilitated, especially in such plants as are woody and close grained.

Neither a very dry, nor a very moist soil will answer for this operation, and a considerable mixture of sand is preferable for delicate plants, even to the extent of two-thirds sand to one-third of rotten dung and vegetable mould, in equal proportions, to which must be added frequent gentle waterings; or what is yet better, placing the pot in a saucer kept constantly filled with water, so as not to gorge or rot them. They should not have too much light, and ought to be closely trimmed from leaves, except at the upper end of the cutting, where they may be left to keep up perspiration, and assist in the active preparation of the required food, above all, flower-buds must be removed, as these serve to exhaust, by making so great a demand on the strength of the cutting as to allow it no time for forming root fibres.

In making cuttings, it is well to observe that

although one single leaf-bud above the earth is sufficient to grow into the future plants, it is well to have several buds below the surface, to secure a free supply of nutriment until roots form.

The best period to propagate plants, by this method, is at that time when the parent plant, from which they are taken, is about to enter its season of rest from growth, as this gives them an opportunity to form a cellular membrane over the wound made in taking them off, that will exclude the grosser particles of its food, before the alburnum shall be roused to its full powers of absorption. Many plants that exhibit difficulty in forming roots, or as it is commonly called, in *striking*, may be made to do so by having the lower end of the cutting parallel to the bottom of the pot in which they are placed, and resting against it so as to prevent the absorption of water from being too profuse, at the same time that a sufficient supply of moisture is secured. Mr. Forsyth, as appears from the *Gardener's Magazine* of 1835, adopted a plan to effect the same purpose: he took a large sized flower pot, and filling up the bottom, with broken bricks or crocks, placed within it a pot of much smaller dimensions, so as to bring the two tops on a level; he then filled up the sides, between the two, with earth—in which he placed the cuttings so as to have their ends resting against the outside of the inner pot, and into this, after stopping the bottom

with clay, water was poured, and slowly oozing through the porous sides, kept up a supply to the cuttings with moderation and regularity; the author has successfully pursued this practice in India for the last twelve years. A stratum of sand in which the cuttings can be inserted, over the earth, from which their roots are to seek nourishment, has the same effect as the plan pursued by Mr. Forsyth, and, is perhaps, better suited to small cuttings.

LAYERS.

Is a mode of propagation used with plants that are delicate, or that cannot be so readily extended by cuttings, it is even sometimes practiced without such reasons, because more certain in its effects. As with the foregoing, the twigs destined for propagation should be headed down, so as to leave only one or two buds above ground, as well as thinned from all superfluous leaves or buds, especially flower-buds. With some plants, as the jasmine, so common here, and the raspberry, the operation of layering is a natural process, effected by the spontaneous bending down of the branch to the surface of the soil. To accomplish this artificially, the branch should be slit in an upward slope half way through, with a sharp knife, directly

It is a leaf-bud or joint, and then the cut part must be fixed, a little under the ground, with a small **hotted** peg, or by a weight placed on it, and carefully covered over, in such position as will best prevent the return of the main **ajream** of *ip **horn** the: lay*-r into the principal **stem**, without entirely stopping the communication; in a few days root fibres will form, and after **some time** the layer may be separate. I first **parent** plant and removed elsewhere. This is the **best mode** of propagating carnations and **choice pinks**, and **succeeds** with almost every kind of **herbaceous green**.

< MIKESE ORAPTIN G.

\V bat wso railed, is **pwtofinedon the same principle**!e, it, the branch being prepared in the manner for making a layer, or, what is better, **by ringing** the bar!, — that is to say, **moving** it to the extent of about a quarter of an inch all round the branch; but instead of placing it in the **ground**, it is **supported** by a large ball of **clay** and **cow dung** well kneaded together, **On** the **whichever** a **pair** of canvas is carefully, but not **too** tightly, tied, **to keep** it in contact with the soil. I'm IIM, the **supply** of moisture to it is **made** in a small pan, or **under** of **water** is suspended over it, [perforated at the bottom, and this,

being kept constantly filled, allows the water to rip on the **gnftj** six weeks, or two months being generally **sufiuaaAt** to **came the** root fibres to sprout into **the** ball of earth, when **ilu: btnefa** may be **oqmritoid** and planted **oilt**.

LEAVES.

Some few **planti** may be propagated by **their** leave*, **which, if in*** **rttd** in the earth **prodacc** root*, and **erfcu-** lually young shoots: many **fonu** «l" **tWi**, a^ "ill also **ille** water crews, **l.nt** **m** most easy of production, in such a manner, are **the** **boya**, the **uruni**, and the **stir** plant, as it is called.

GRAFTING AND BIDPINO.

IN the particular sort of shrubs, or trees, cannot be procured from seed; when seedlings would be on* certill) in their **product**, or be a **nmbeff** of years in **lilowuinin^** and **i'ruiting**; cuttings' **OR** **evD** **bud s,** **kZB** **scions**, of the sorts required, are taken off and fitted to a slit made in another suitable live or shrub, called the **stoc/**, by an operation **dtnoui&ated** **^liiii'ing**.

The **printi j&k** on which the **imiuu** of the grafts and **the**

stock takes place is, that the sap that would in the ground serve to form root fibres, descends from the scion to its junction with the stock, where being excluded from air and light, it forms woody fibres instead of roots, while at the same time the sap from the stock rises into the scion, whose leaves return it to the bark, in regular course, as with a distinct and fully formed plant. In budding, a small portion of wood must be left with the bud, to give it support until a complete junction be formed.

Whip grafting is the most usual mode practised; in performing it the stock is headed down, one side of it is pared for about an inch, and cut down obliquely at the upper part towards the pith; the scion must also be pared, so as to correspond as closely as possible with the stock, and a cut should be made near the upper end of the slice, forming a tongue which is forced into the corresponding nick in the stock, taking care to adjust the junction of the bark of the two as accurately as possible, and to tie them firmly together. (Fig. 1.)



Saddle grafting is when the sides of the scion are pared to the form of a wedge turned on its base, on which the scion is made to sit by means of a slit up the centre, pared down to fit the sides as closely as closely as possible. (Fig. 2.)



INARCHING_k

Is a plan similar to layering, wherein however the branch to be grafted is not separated from its parent stem until the process be completed, this mode is frequently pursued, and is in fact, the usual one resorted to in India.

BUDDING.

Is the introduction in the like manner of the bud, only, with a small portion of bark adhering to it, within the bark of the stock; this is done by making a slit in the bark of the latter, length ways, and crossing it with another cut at the top like a T; the bark is then gently raised and the scion inserted, so that the bud rests on the naked wood, and the upper lips of both stock and scion are brought into close and accurate junction.

All the preceding processes of grafting, &c. are best performed in the spring, when the sap begins to circulate freely from the accession of heat, whereby the operation is greatly facilitated; and in them great care must be taken to cut both the scion, (or graft,) and the stock, (or growing plant,) whereon it is to be placed, very clean and smooth, as well as to unite exactly with the inner bark of the stock, in order not to check the free course of the sap; this being done, it must be carefully and

evenly wound round with *soft pat*, or plantain fibres, if small; or coir ^{sdq^}, if large, to keep the two firmly together, over which should be placed a ball of well kneaded grafting clay, so as completely to exclude the air, and prevent the access of rain to the wound, as well as to check the sudden drying of the wood. This last is made from stiff yellow or blue clay, to which is added about a fourth part of fresh horse-dung (the French use cowdung) free from litter, and a portion of chopped hay, the whole being well mixed together, with the addition of a little water, and well beaten with a stick upon the floor, adding more water as the mass becomes dry. This process must be repeated several days, until the clay be quite ductile, and yet not so tough as to be apt to crack; it may occupy a week before being fit for use; observing to let it lay for not less than six hours after each beating. Some add ashes, drift sand, or even salt, to prevent cracking; but this is secured by the horse-dung, if properly incorporated. This clay it will be safest to leave on the graft for three months, although frequently the progress of the buds of the graft will show the scion has fully united long before that period; the ligatures should then be gradually removed to allow the parts by degrees, to become innured to the air.

Grafting is occasionally resorted to with herbaceous plants, but in its application to them, great care must be taken not to crush, or injure the scion.

Mechanical

It appears desirable before entering on the various processes more immediately affecting the culture and maturing of individual plants in the garden, to make a few remarks on the mechanical operations necessary to all vegetable growth*: these may be divided into three classes,—Those affecting the soil below the surface;—Those acting merely on the surface;—Those on the plants themselves while growing above the surface. To these may be added such as are resorted to for increasing fruitfulness, as well as for accelerating, or retarding vegetation.

OPERATIONS AFFECTING THE SOIL BELOW THE SURFACE.

These are Ploughing, Digging, Excavating, Leveling, and Ridging.

Ploughing,—is generally resorted to in the first formation of a garden, for the purpose of breaking up the soil, and in some measure preparing it for succeeding operations; but it is not always necessary, and need seldom be repeated after the garden is once formed. A single plough, with a pair of bullocks, should give one good ploughing to a beegah of 14,400 square feet, in the course of a day; or say three ploughs to an acre. The common Bengalee plough is a miserably inefficient

contrivance opposed to every principle of usefulness, or it presents a flat surface to the opposing resistance of the earth, and has the form best suited to facilitate its way through the ground at the back, where such is useless; it can, therefore, only tear its way by main force, when it does at last penetrate, no assistance being given to the operation by the form of its share, if, indeed, the lump of iron attached to it can be so termed* Add to this, the yoke used to attach the bullocks for its draft, is clumsy and galling to the unfortunate animals that are condemned to draw this implement; and, no rule being attended to in fixing the angle of the bar by which the plough is attached to the yoke, the plough is rendered even more inefficient than it naturally is ; for this angle is commonly so great, as to bring the part where it is attached to the yoke, considerably above the shoulder of the bullock, and hence, in depressing, to attach it to the yoke, the plough itself is raised on the share, or point, so as to make a mere scratch, that, combining with its primitive form, increases the weight, or labor of draft very considerably, at the same time that it lessens its power of penetration and makes it necessary to repeat the operation some six, nay, even sometimes, twelve or fourteen times before the land is sufficiently broken up to receive seed ; any thing like stirring the subsoil, or making a furrow, is out of the question. The plough used in the Upper Provinces is a little more efficient, from its

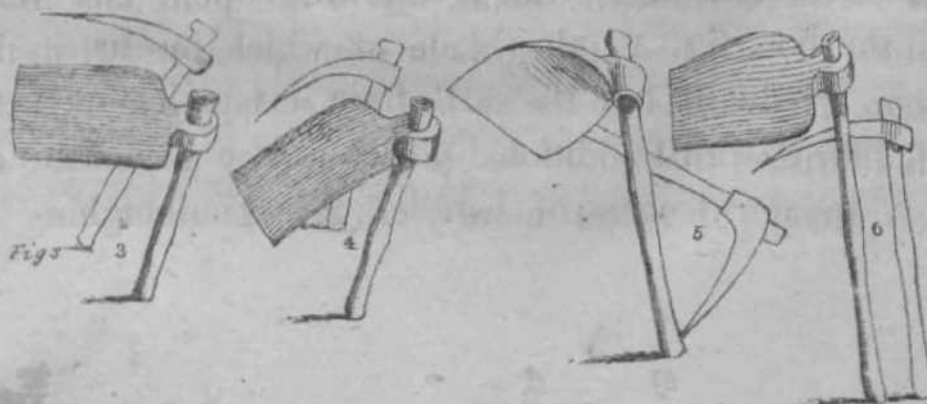
wedge-like shape, but still very unequal to the task assigned to it.

These evident deficiencies led the attention of the brother of the author, and himself to endeavor at constructing some instrument that should obviate these evils, and at the same time be less ponderous than the English plough, which? they were convinced, was far too heavy for the cattle of the country in their present condition. In their efforts at this so essential a reform, they received no small encouragement from a recollection that in Anglo-Saxon times, their own country possessed no better instrument than the Bengalee plough, and they were thence, not less than from experience, persuaded that improvement was more likely to be successful by keeping as nearly as possible to the instrument already in use, and thus with progressive steps, leading the native to a new implement: with these objects in view, they adapted a light ploughshare to the same block of hard wood that forms the basis of the Indian *Nangul*, fashioning it however, to a form somewhat like that of the English plough in miniature; the left side being at a right angle with the base, and constructing the right side in an acute angle from the point, where the share was fitted until it attained the full breadth permitted by the size of the wood at the back. Its success equalled the best wishes that could be formed,—it was found to do as much, or rather more work in one ploughing a&

was formerly effected by several repetitions, throwing in its progress a goodly furrow, that, in comparison with the result produced by the native instrument, would have delighted the European agriculturist: the additional cost of its construction being but a few annas, and the only objection yet made by natives, having been, that, "should the cattle "become unmanageable, and break from the ploughman, the new plough might, in consequence of the greater sharpness of the share, cut their heels:" and a native, ever ready to find fault with what is new, must be hard driven indeed for an objection, when such is the utmost he can find, or

DIGGING.

Is performed in this country with the digging hoe, or *khodal*, which is a thin wedge of iron, having a lever or handle of wood attached to it at an angle, the end where the two parts join forming the fulcrum ; of these the most remarkable forms are annexed (figures 3, 4, 5 and 6,) two of which belong to lower



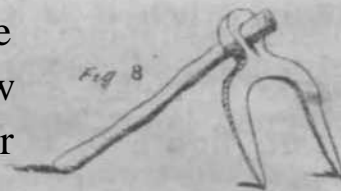
Bengal, and the other two are found, more generally, towards the westward. In figure *3, it is clear that much power is lost by the fulcrum being in the centre, between the hand, or power, and the resistance, or earth to be dug ; whilst in figure 4, from the angle of union being so acute, this evil is increased, the blade being brought so close *tib* the hand as to obstruct the operations of the digger, and preclude the possibility of penetrating to any depth ; to obviate which, as much as the instrument will allow, the hoe is not unfrequently delivered altogether from the hand, this must of course occasion great delay, and but slow progress can be expected from it; it may, however, be useful in shaping and cleaning the almost perpendicular banks of tanks, *jmgars*, or mounds. The next instrument, figure 5, is in use in the province of Behar, and is, as may be observed, a far more powerful hoe, the length of the handle allowing of more force being given to the blow, by the increased impetus created by passing through a larger space, while the fulcrum, being nearer to the resistance, adds strength to the power used; its defect is, however, to be found in the great breadth of the blade, affording a wider field of direct resistance.; this is improved upon, however, in the hoe, fig. 6, the blade of which inserts itself more gradually into the earth from its tapering wedge-like form, whilst additional power is also gained by a yet greater length of handle; this kind of hoe is

originally found in Ghazepore, and the districts above. The handles of all these should be smooth, that the hand may readily slide along them, in raising them from the ground, and the blade should be strengthened by a greater thickness or ridge in the centre.

The *mattock*, fig. 7, called ~~EPSO~~ the hoe-axe, and **the** grubbing axe, is an useful implement in loosening hard surfaces, and for grubbing up **the** roots of small trees or bushes. Another form of the



hoe, having two prongs, fig. 8, known as the *hoe fork*, may be used in loosening the soil below the surface, digging up potatoes, or other roots, *kc.*



In digging a piece of ground, the separation between the dug and the undug portion, forms a trench or furrow, and in beginning, a furrow should first be opened at the end where the work is to commence, the earth taken out being carried to the part where it is to terminate, that it may serve to close the last furrow. Care must be taken to maintain an uniform depth throughout, reversing each spitful, or portion taken up at one cut with the hoe, so that what was on the surface may be buried; each spit should also be well pulverized, for on this depends much of the

fertilizing power of the soil, and where the object is to add manures, they should be spread uniformly on the surface, and then turned in regularly through all parts; weeds ought to be buried, whilst the roots of strong grasses, bricks, and other extraneous matter, should be carefully removed ; the depth of pulverisation of the soil, in this operation, should never fall short of 9 inches, and the best weather for undertaking the work is after one of the showers, usually falling in February or March, or at the close of the annual rains in September or October, when the soil is sufficiently moist to admit the hoe with ease; the ground being at other periods, (except indeed in the rains, when it is over saturated,) generally too hard to admit of being broken up, save at the expense of great labor, and with the mattock, or the pickaxe, which instruments, strongly as they are generally made, are often broken by the flinty hardness of an Indian soil.

For the operation of digging, from ten to fifteen men will be requisite to the beegah, costing, at the usual rates in lower Bengal, from one rupee six annas to two rupees, and in the Upper Provinces from eight to twelve men at a cost of one rupee to one rupee eight annas; but if the soil be hard, as it usually is from the end of November to the end of February, this will be increased to as much as three to five rupees.

EXCAVATING.

Is the operation requisite for formation of ditches for draining land, or for surrounding particular spots with mounds or embankments, as a defence from trespass; or called for in the construction of tanks, to secure a supply of water, *is well as frequently to afford the means of raising ground otherwise too low to be suitable for a garden. The cost of this depends in a great measure, on the distance that it is required to carry the earth dug out, and will vary, accordingly, from four hundred, to as high as a thousand cubic, or solid feet for the rupee; this last being the rate allowed in the construction of public embankments, where the earth is taken from close to the site of their formation.

TRENCHING.

Is a mode of pulverizing and mixing the soil to a considerable depth, and should always be the first operation in making a garden; it is true that the labor and expense of so doing is considerable, but it amply repays the undertaker, both by the stimulus it gives to the soil, and the lightness imparted to the earth for a depth sufficient to suit the deepest penetrating roots, all descriptions of which are aided by having the

means afforded them of extending their fibres in all directions, in search of the nourishment they require. According to the ordinary mode of trenching the surface soil would be turned to the bottom of the trench, and the subsoil brought to the top; but this, in many soils, would be to exchange a good turfy loam, or alluvion, for cky or sand, and, even in the best ground, would bring up earth that had not, perliaps for years, been exposed to the action of the air or sun, hence deficient in many of the properties necessary to fertilization, which it would require a long period of exposure to obtain; care must be taken, therefore, to keep the top soil to the top. The directions for doing this, as laid down by Cobbett, are the plainest and most clear that can be given, and have besides, been long successfully, "pursued in this country : they are as follow—The " piece of ground ought to be marked into *strips* or *lifts*, each a rod wide, in the manner following.

Fig. 9.

<i>a</i>	B	I	F	H	k	v	o	ft	
<i>c</i>									
<i>d</i>									
A	C	E	G	I	L	N	V	R	T

¹ This division into narrow strips takes place because

the earth which comes out of the first trench must go to fill up the last trench; and, therefore, in this case, there would be pretty nearly a hundred cart loads of earth to be carted, or wheeled from one end of the plot to the other; whereas, by proceeding in the way of strips, you will fill up the trench with hardly any wheeling at all. 'The ground being laid out in strips, you begin at *a* and take off all the top earth* of a cross strip, two feet wide; and you wheel that earth to the end of the further strips. The little cross strip *a*, is marked out by straining a line across the great strip, and making a chop with the spade. When you have taken away the top earth of *a*, mark out the cross strip *b*, and wheel away its top earth also to the same place as before, laying this top earth altogether in one round snug heap just without the limits of the ground at *s*. You have now got the top earth away from the two first trenches *a* and *b*. You next take out the bottom earth of the trench *a* down to the dpth of three feet,t and you wheel that away and put it into a round and snug heap, distinct from the other heap, at the end of the further strip at *s*. You have now the trench *a* quite empty down to three feet deep; you then *move* the earth with a spade, or other tool, to the depth of nine inches at the bottom of the trench *a*; then you take the bottom earth of

* To the depth of a foot and a half,

t Another foot and a half.

the trench *b*, and keep putting it into the trench *a*, until you have gone to the depth of three feet; then you dig or move the earth nine inches deep again at the bottom of the trench *b*; then you take the top earth from trench *c*, and lay it on the top of trench *a*. The trench *b* remains empty all this time, and you have to toss the top earth of *c* across the trench *b*, in order to place it on the top of the trench *a*. The trench *a* is now finished: it has got the top earth of *c* on its top, and all its contents have been completely moved to the depth of three feet nine inches. You next take the bottom earth of *c* and turn it into the trench *b*; and when you have moved or dug the bottom of *c* in the same manner as you did that of *a* and *b*, you take the top earth of the trench *d* and put it on the top of the trench *b*; and thus you go on until you arrive at A. When you arrive at A you will find yourself with an empty trench at the end, and with a trench with no top earth upon it next to that at the end. You therefore now begin the second strip at *c*. You take the top earth of the first, two feet wide, and put it upon the top of the trench next to the end one of the last strip; you then take the bottom earth of the first, two feet wide, in this second strip, and put it into the bottom of your last trench at A; you then take the top earth of the second trench at *c*, and put it on the last trench at A. Thus the whole of the first strip is completed, and you have again, as you had at

a and *b*, an empty trench at the end, and the trench next to it with the top earth taken off. You then proceed with the rest of this strip as you did with that of the other, until you come to B, when you turn in at D, and do just the same as you did at c. You then go on to E ; when you get there, you turn in again at G, and thus you proceed till you come to s, when you will find yourself with the last trench completely empty, and with the next to the last wanting the top earth. These are both ready for you. You take the heap of bottom earth, which came out of *a* and put it into your empty trench; then you take the heap of top earth which was wheeled from *a* and *b*, and lay it on upon the two last trenches ; and thus all the ground will have been completely moved to three feet nine inches deep; every part of it will have changed its place, and you will find it to stand a foot, or fifteen inches higher than the ground in the neighbourhood of it." The expense of this process will be about double that of ordinary digging, and it requires personal supervision or the native laborer will not execute it.

In India it will be well to leave a space of about a foot between each of these strips, for the purpose of drainage during the period of the heavy rains, from June to September, when it is desirable to keep the beds of the garden as dry as possible; these spaces also, afford facility of access to the plants on the beds, whether for weeding, gathering, or other purposes.

LEVELLING.

In gardening, this process, consists in so spreading abroad the soil as that it may be nearly level, which may be ascertained by the *Triangular level*, (fig. 10,) or at least form an even surface. In India, however, it is better to construct your beds, when these are necessary, so that the middle may be a little more elevated than the sides, forming a slight curve or slope, which may be made by the *Regulating level*, (fig. 11) which will enable the horticulturist to

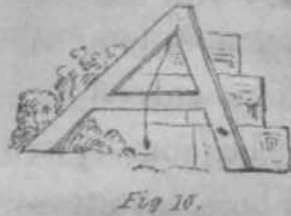


Fig. 10.

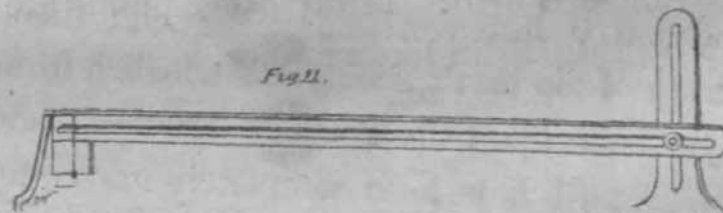


Fig. 11.

fix the the exact ratio of rise desired for each foot of breadth.

RIDGING.

Is required for some plants, and **consists** of forming the surface of the ground into a series of triangles, or close ranges of parallel elevations, (fig. 12).

St.* It.



The best iustrunient for performing his operation is the

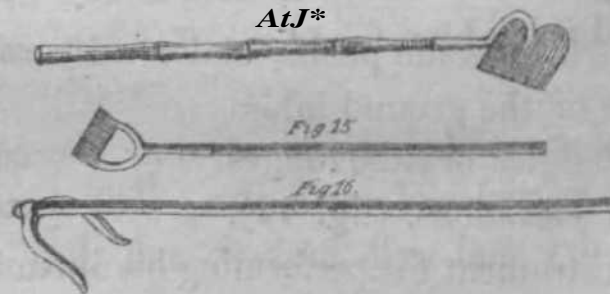
Spade (fig. 13), commonly used for digging in England, and too well known therefore to those of that country, to require description ; it makes a smoother cut into the earth, and offers means of flattening down, not to be* found in the hoe, or *khodal*. Where potatoes are extensively cultivated, they are usually sown in drills, and as the plants spring up and advance in growth, the earth should be drawn up on each side of them so as to form a high ridge along what was originally the seed drill. Many other plants are benefited also by ridging in like manner.



OPERATIONS AFFECTING THE SURFACE OF THE SOIL.

These are surface Hoeing, Pulverising, Sifting, Raking, Scraping, Weeding, Sweeping, Rolling, Beating, and Wheeling.

Hoeing is best effected by the *American hoe*, fig. 14, the *Dutch hoe*, fig. 15, and the *Pronged hoe*, fig. 16.



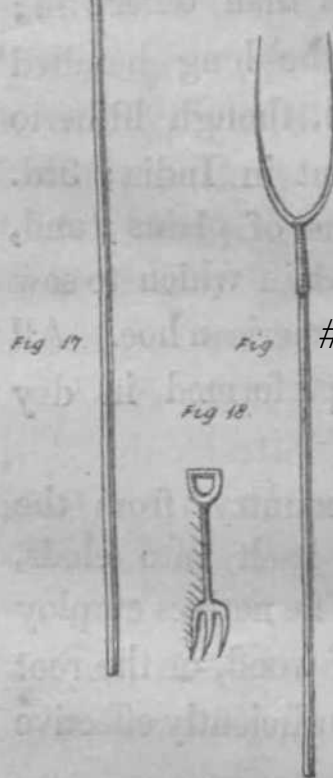
It is performed by dragging or thrusting the hoe along the soil, so as to cut the weeds at, or under the surface, and slightly to pulverise the soil. This is done for four purposes—1st. to loosen weeds so that they may die for want of nourishment, be raked off, and thrown into the hole for forming vegetable mould; which will be most efficiently done with the Dutch hoe an useful implement; it is extraordinary has not obtained more prevalence in India, since it is so very manageable, that wherever it has been used, it is rather liked by natives than otherwise; 2nd. to stir the soil, for which the long handled pronged hoe would be most useful, though hitherto hardly known as a garden implement in India; 3rd. to draw up the soil about the stems of plants; and, 4th. to form a sort of drill or gutter in which to sow seeds,—these two last requiring the American hoe. All of these operations will be best performed in dry weather.

Pulverising is requisite in this country, from the hardness of the soil, which forms itself into clods, requiring to be separately broken. The natives employ for this purpose a *Beater* or *mallet* of wood, or the root of bamboo, and it has been found a sufficiently effective instrument.

Sifting, and Screening are to separate the coarser from the finer particles of earth, &c. The materials require to be dry and well broken, and then to be

thrown on the screen, or *ch'hutna* made of thinly split bamboo, in a square frame, about five feet by three, if required in large quantities, as for ground intended for bulbous, or other tender and succulent rooted plants; or of circular form, known as a sieve or *chulnee* having a rim about three inches in depth, the interstices between the split bamboo not exceeding a fourth of an inch; this is used where a fine mould is required for pots, or to sift lightly over small seeds.

TTvtTRTTT



Raking, is performed by drawing through the surface soil the instrument called Rake, fig. 17, either to pulverise the soil, or to collect weeds, or such other extraneous matter as will not pass through the teeth of the instrument; this last may, however, be done in larger quantities by the Potato fork, fig. 18, or the Pitch fork, fig. 19. The teeth of the rake being nearly at right angles with the handle the lower the handle is held in performing the operation, the deeper will be the pulverisation; but the angle at which the handle of the rake is held depends on the object intended; if only to remove small weeds, it should be held higher, but the medium is forty-five degrees. All raking should be done in dry weather, and it

will be found often necessary .a day or two after sowing seeds, as the soil is apt to harden on **the** surface, or become what is called *chuppurec*, or caked, after watering, and too hard for the young seed to penetrate; the best time for this last operation, being whilst the soil is somewhat moist, but by no means wet.

Scraping is drawing a broad blunt hoe, or a *scraper* formed of a flat piece of wood, or iron, placed at right angles across a long handle, on hard surfaces, as grass plots, or the walks made of broken brick, or *khoa*, to remove the subsoil thrown up by worms, *Sec.*

Weeding is best, and most expeditiously performed with the hoe, **especially** for the longer weeds, as thistles, &c. when the Dutch hoe is a most useful instrument : for the deep rooted short grass, however, the native weeder, either the *Neeranee* (fig. 20,) or the *Khurpce*, (fig. 21,) are tolerable instruments slow in operation, but suited to the habit natives have of **squatting** down to every **employment**.

ft* 20:



Fig 21.

Sweeping is resorted to for collecting grass that has been cut, or leaves; for both which purposes the dewy mornings are best fitted, as the leaves or grass then adhere together ; a good broom for this purpose may be made **with** the side branches lopped from bamboos.

EolUvy—is little resorted to in India; such a thing

as a roller (fig. 22), being seldom found in a garden,



although in England it would be difficult to meet with one of any extent, wanting this useful implement. It is difficult to keep walks or roads in

order without it, whence it is not to be wondered at, that smooth and level paths are seldom to be found in our Indian gardens. It should be drawn over the surface of all walks at least once a week, and produces the best effect when the ground is dry on the surface, but well saturated with moisture below.

'SBeating—this is made, in this country, to supersede the last mentioned operation. It is performed sometimes, with a small block of wood used by the hand, but more effectually by a beetle or *Durmus*, (fig. 23) ; being a block of wood, of some weight, into the centre of which a bamboo handle is inserted. A rammer, however, formed like one of the moogdars natives of the Upper Provinces use as an article for exercise, but on a larger scale, has lately been employed in repairing roads, and is a far more useful instrument, of easier management, and, from being

Fig 23.



in one piece, less liable to derangement by work; the handle of the durmus being, however, taken out quite as frequently by the labourer as an excuse for sitting down idle, when the master's eye is off, as by accident.

Beating is useful for turf, or brick walks, as also to make the soil under fruit, or around rose trees, compact and hard, so as to keep in the moisture, and check the growth of weeds in such situations; likewise in claying the bottoms and sides of tanks, to give them solidity, and prevent the escape of water.

Wheeling—for the carrying materials from one **place** to another, is little resorted to in this part of the world, where labor is so cheap that few entertain the idea of making a saving in that branch of expenditure; the vehicle most used for removal of weeds, conveyance of manure, &c. is a small basket carried on the head; it is, however, a recorded fact, that two men with a wheelbarrow (fig. 24,)

will get through more work in a day, than three with baskets; in removing large quantities of earth, or manure, a

small Truck, on two wheels, has been found of great service; it may be made with a moveable back, so that the contents may be easily shot out where required.



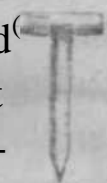
OPERATIONS OF PLANTS WHEN ABOVE THE SURFACE
OF THE EARTH.

These comprise the items of Thinning, Planting, Transplanting, Watering, Draining, Pruning, Clipping, Training, Blanching, Potting, and Shifting.

Thinning. This is necessary with all plants sown broad cast, where they are intended to remain, but especially with carrots, beet, &c. that form long tap roots; in doing it, care should be taken to pick out the smaller, or less healthy plants; and in no place to leave any so near as to incommode, or draw from each other's strength; it is a part of gardening generally neglected, and in which all native gardeners require instruction.

Planting, is of two description; first—as applied to seeds, or seed-like roots, such as potatoes, bulbs, &c.; it is most frequently done in drills, or **separate** holes made with the *Dibber*, (fig. 25,) into which the seed or bulb is dropped, and then trodden, or pressed down, so that every part shall be brought in close contact with the soil, and no interstice allowed for the accumulation of moisture, which is sure to occasion rot; this subject deserves the strictest attention, for to its neglect is attributable the great proportion of failures of seed, &c. that is found, when native gardeners alone have the management of a garden.

Fig 25



The second kind of planting applies to plants already

originated, and consists in inserting them in the earth to the same depth, and in the same position as they previously occupied ; care being taken to preserve the fibrous roots as much as possible from abrasion, distributing them evenly around the stem in contact with fine mould, and keeping the plant upright, or, if injured cutting them off altogether; as well as that the plant be not placed deeper in the soil than it was before removal; without this precaution—it will be apt to rot at the part where the soil formerly surrounded the stem, as has been explained, in a former part of this work when treating of the organic construction of plants. The soil that is to be placed in immediate contact with the root fibres should be well pulverized, and made completely to fill the interstices between each; shallow planting is also recommended, as it tends to drive the fibres downwards in their search for food; but care must be taken, by shading, that the sun does not dry the upper soil near the plants, as that would injure the roots, and destroy their powers of absorption. Abundant watering is generally desirable in planting, to meet the extra demand made by the mouths of the root fibres, as before described: and the best time for the operation is either during, or immediately after, the rainy season, on account of the greater degree of moisture in the ground.

Transplanting; about the most important branch of horticulture, is the operation of removing plants from

one situation to another; this is often done, with woody plant?, to add to the number of fibrous roots, and thus to accommodate young subjects the better to a removal from the places where they have been propagated, to those they are destined permanently to fill; but, with vegetables, it is resorted to for the purpose of increasing the fibrous roots in relation to the larger and more woody ones, so as to add to the size and succulency of the leaves, fruit, or flowers. There are, in this operation, three things necessary to be attended to—1st. the preparation of the soil to which the plant is to be removed ;—2nd. the removal of the plant;—and, 3rd. its insertion in the prepared soil.

1st. The preparation of the soil comprises the stirring, loosening, and mixing of the earth with such compost, or manure, as may be required, according to the character of the plant, and the nature of the soil to which it is to be removed.

2nd. The removal of the plant is to be effected by digging the earth around it, either with the digging hoe or garden trowel, (fig. 26,) or, if the soil be very hard, with a spud, (fig. 27,) and then drawing it out of the soil by hand, taking as much care as possible not to tear or severely injure the root fibres; the consequence of such injury to these is, that for a time they are rendered less able to support the stem than before; this evil, however, decreases in proportion to the season,



being far less important in cold weather, when the plant is in a torpid state, than at any other period: and during the rains the excessive moisture in the soil partially obviates this evil, by the profuse supply of nutriment it affords to keep up the perspiration of the leaves. Under the most careful removal of a plant however, some portion of the root will receive injury, and, when this occurs, all the larger wounds should be pruned by a clean smooth cut, for these, if left in a bruised, state, would lose their vitality, and decaying, become the seat of disease, eventually affecting the whole plant. But whilst care is directed to the roots, it is to be borne in mind that a consideration to the future welfare of the plant may require the abstraction, of large portions of the stronger branches, to compel the root to throw out, in the place of these old and inactive members, a series of young and active fibres; this process is not confined to the period of transplanting, but may be performed with advantage to many trees when the roots are laid open after the rains; an increase of spongelets occurring from the principle, before laid down of the elaboration of root fibres by the downward descent of organisable matter, the strength of which would have otherwise been exhausted in increasing the size of the old branch, the amputation of which directs its whole force to effect the granulatory process necessary to heal the wounds, and, immediately after" that is completed, to the production of new

spongelets—each eventually forming itself into fibres, and seeking food for the nutriment of its parent, which thus exchanges many mouths for the one taken away; in some cases the plant may be lifted with a ball of earth, containing all its roots, by means of the trowel, or of a transplanter (fig. 28,) formed of two semicircular pieces of iron, or more simply of a couple of tiles, or *kupruh*, thrust into



Fig 28.

the ground on each side of **the root**, and drawn up **with** it, so as to preserve the earth unbroken, around the root, until well fixed in the place to which the plant is removed. For some large plants or trees it may, sometimes, be necessary to cut the roots at a certain distance from the plant some time before its removal.

Many writers have urged the top pruning of all plants when removed, but if we consider the laws which regulate the organization of plants in general, it will be self-evident that this practice is likely to be far more generally the source of injury than of benefit, for **the** renovatoin of the roots, depending so much on the healty action of the leaves and buds, the amputation of the branches, by checking this process, must seriously affect the tree. The chief thing to be guarded against, is exhaustion by too great perspiration, and this seldom occurs with careful planting.

3rd. Insertion of the plant in the place prepared for it, is performed by making an excavation, the size of

the root, either with the dibber, trowel, or digging hoe, placing the plant in the hole to the same depth as it was previously to its removal, and then covering its roots with fine earth firmly pressed to it; the interstices being carefully filled by pressing the fingers well between the fibres, so as to leave no room for lodgments of water, or to give access to insects; if small plants be put in with the dibber, this may be done by inserting the instrument, at a couple of inches distant, in a slanting position, so as to pass partially under the roots, and pressing it by an upward movement of the hand towards the plant:—lastly a moderate supply of water should be added.

By many able gardeners the process of puddling, as it is termed, or deluging the roots with water so as to reduce the soil about them to the state of liquid mud, is advocated as the treatment to be adopted towards all plants: it may certainly be useful in securing a plentiful supply of moisture immediately to the roots of large plants, as well as in causing the earth to settle closely round their fibres; but with small plants, and with such as are not evergreens, it is never required, and may do injury, especially if they be sickly or have been kept for some time previously rather dry; as the weakened powers of the plant are not then able to dispose of the excess of moisture that puddling would introduce through the

wounds, which must, even with the greatest care, have been made in the roots. Mr. Knight, in such cases, has had recourse to moistening the bark, whereby water is taken up by the cortical integument, and conveyed through the liber into the circulatory system, where it accompanies, and adds bulk to the sap in its usual progress, and thus gives vigor to the plant.

If the root be removed in a ball, it is well gently to break away the old earth on inserting it into the hole, so as not to leave it caked about the root, and this is the more necessary in diseased plants, especially if the disease appear to be in the root, in which case it would be safer not to leave a particle of the old earth about it. After filling in the hole, and smoothing the surface, a space of the full extent occupied by the roots should be covered with dung or litter, or as it called mulched, to prevent evaporation, and preserve the moisture around the roots.

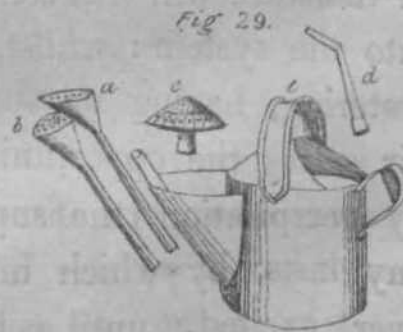
Pricking out—is the transplanting seedlings at a short distance from each other, for the purpose of strengthening the young plants, and increasing the root fibres: and it is with vegetables, especially of the cabbage kind, a preliminary operation to transplanting.

Watering—is requisite in all stages of vegetation, alike for the purposes of furnishing nutriment, of keeping down insects, and of cleansing the leaves; care must be taken, however, not to wet these during the

sunshine, whence the evening is best suited to this operation, whenever requisite, and every precaution is necessary, in this country, to prevent the lodgment of any water in the axils or joints of the leaves, or branches, or even on the leaves themselves with the more delicate plants; it may, indeed, be found best to order your native gardeners, as a general rule, not to wet the leaves at all, as you are sure not to be obeyed to the letter, and you would thus secure some degree of carefulness regarding it.

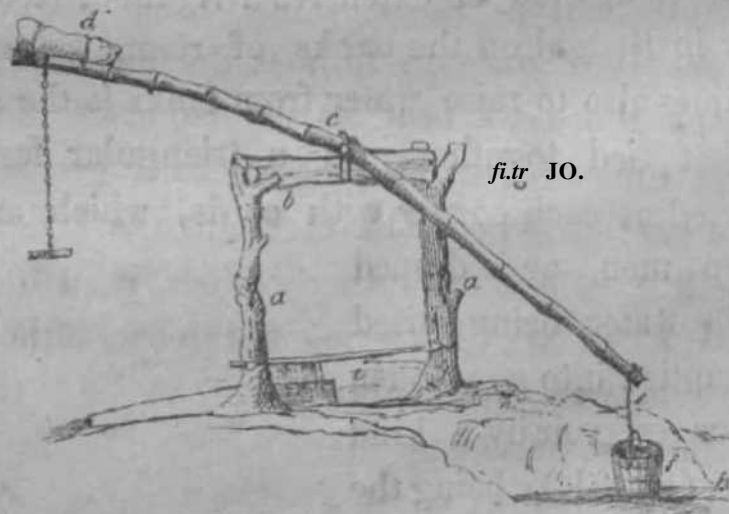
This operation is chiefly required in the dry and hot weather; but in the latter its effect must be very limited, and it must not be expected to be, by any means, so beneficial as the irrigation nature supplies, for the moisture forming in the atmosphere, by this last, reduces the temperature, whence also, by lessening the perspiration of the plants, it prepares them for benefiting, to the greatest extent, by the supply of moisture which is consequently, gradually absorbed into the system: whilst, on the other hand, artificial watering, having no such atmospheric influence, the air seizes the opportunity to snatch from the leaves, by perspiration, the supply afforded them so long as any lasts, by which means the roots are for a time over excited, until, by absorption, evaporation, filtration through the earth, &c. the water given is exhausted, and a re-action occurs that is very likely

to prove injurious. This is another reason for preferring evening watering in the hot weather, as the absence of light and heat, during the ensuing night, enables the roots to absorb the moisture given gradually, and to better advantage. During weather that is dry but cold, a watering in the morning, or before noon, may be preferred, as the temperature is often less than is wholesome for the plant, under the natural cold of the night, especially when accompanied by heavy dews, as is commonly the case. The fittest time, therefore, at that period for the administering water to plants, will be the morning, because it affords a good supply of moisture to meet the increased demand made by the day's heat, as the influence of the sun, at that time of year, is proportionally greater than at any other: the variation of temperature being often above 30° , whilst at other periods it will scarcely exceed 7° or 8° . Watering the roots, although the preferable time is undoubtedly the evening, may be done at all hours; for this—a flat fanshaped spout is, good (fig. 29), if the plants be in rows, as it can be carried below the leaves to convey the water to the root only; a fine rose (*b*) may be used in watering seed beds, or the larger one (*c*)



for the leaves of pineapples, trees, &c. and the spout (*d*) alone of the watering pot for giving water to the Toots of trees, cauliflowers, &c.

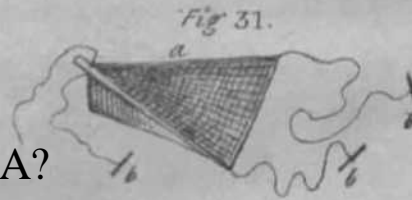
For extensive irrigation, always to be preferred, so as to flood the large beds of cabbages, turnips, &c. the most effectual method is to have the garden divided into compartments, and intersected by drains diverging from one common centre (either a well, or a reservoir near the tank), to which water may be raised in a very simple manner, customary in Behar, and the Upper Provinces, as shewn in (fig. 30); *aa* being two



posts, or supports affixed in the earth, on which rests a cross bar &, to this is fixed a bamboo, *c*, having a weight, *d*, at one end, and the cord, *e*, for support of the bucket, *f*, at the other extremity; with a rope under the weight that the laborer, at *g*, pulls down until

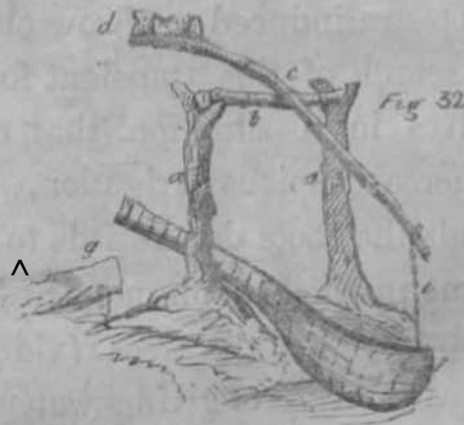
the bucket is plunged into the water in the well, tank, or river, *h*, more frequently, however, the only rope is the one suspending the bucket itself, and the koolees pull this down, and allow the weight, which is made heavier for that purpose, on slackening their hold, to draw up the bucket by itself at *d*, the water being emptied into the reservoir, *i*, whence it is distributed, by drains, through the garden. Where the ground is extensive, a row of three or more of these machines may be employed to raise a proportionate supply of water.

Another method of extensive irrigation, resorted to chiefly in Bengal on the banks of rivers or streams, sometimes also to raise water from tanks is the *seoonee*, a basket tied together into a triangular form and supported at each corner with cords, which are held by two men, and dipped into the water, being raised and emptied into a wooden drain or reservoir by a kind of jerk, (fig. 31,) *a* being the mat basket, and *b* the cords.



There is a method, somewhat similar in principle, however, to (fig. 30,) resorted to where cocoanut timber is plentiful, and the dip of water not very great as in (fig. 32,) **wherein**

a, a are the posts supporting a moveable cross piece of bamboo, & on which another rests cross ways **c**, having a weight **d**, at one end and a rope **e**, supporting the broad end of a hollowed cocoanut tree on which the kool-



stands until it is filled with water, and then relieving it of his burden, the weight at the end draws it up and empties the water into the trough or drain at **g**.

The great benefit derivable from such extensive watering is indisputable, and is thus adverted to, by Mr. T. A. Knight, in a paper published in the transactions of the Horticultural Society of London (vol. i. of the second series)—"The quantity of water which may be given with advantage to plants of almost every kind, during warm and bright weather, is, I believe, very much greater, than any gardener, who has not seen the result, will be inclined to suppose possible; and it is greater than I myself could have believed, upon any other evidence than that of

experience/' He further explains that water, distributed by the watering pot, only wets the surface, and that, although, by so doing, it may afford a temporary relief; it ultimately, in most instances, does injury, since the roots are induced to throw out fibres, near the surface, in search of this transient food, and thus place themselves in a situation that exposes them to danger; whereas copious irrigation, sinking into the subsoil, leads the roots downwards to seek nourishment. The same method recommended by Mr. Knight in transplanting weakly trees (vide p. 97), may be resorted to as a means of giving water to such as are in a sickly state, and may frequently recover them when all other methods have failed of success.

Tilley's metallic garden engine is an useful implement, where the expense of obtaining it from England is not an object.* Some of its forms are ornamental, and may be used, even by a lady, for syringing the plants in a verandah, or in plant sheds.

Drainiug—is a not less necessary operation of gardening than watering, and demands at least equal attention, on account of the great danger that follows the allowing too great a quantity of water to collect about the roots of plants, in the subsoil. This operation is most called for in situations that are low, or where the soil is of a very tenacious nature: for by a due

* Vide " Mechanics¹ Magazine," vol. 2r, p. 225.

attention to- its usefulness, borders and orchards, that have been long unproductive and useless, may be rendered fruitful, and valuable. The garden, therefore, should always have a sufficiency of si^all drains, communicating with main drains leading into the tank, to secure the soil from a lodgment of water in any parts; thus rendering the operation for benefiting the garden in this respect, subservient also to the securing a good supply of water for irrigation, at the seasons when it is Tequired. For any part of a garden or orchard that is very much lower than the rest, the only permanent remedy is to raise it by additional earth; thie may be obtained by the excavation of tanks, and it will be found cheaper in the end to adopt this method at first than to waste time, patience, and money upon any speculative plans for draining **land** so situated.

Pruning, is the cutting off parts of a plant to benefit the remainder, either by promoting growth and bulk; by lessening bulk; by modifying forms; by promoting the formation of blossom buds ; by enlarging the fruit; by adjusting the stem or branches; by the renewal of decayed portions of plants or trees; or by the removal of diseases. The instruments requisite are a sharp knife, (fig. 33,) a bill (fig. 34,)



Fig 33.



Fig 34.

for lopping hard trees, a saw for the larger branches of fruit trees, and a sickle, or *Husseea* (fig. 35,) for the lesser ones.



The principle that should guide the pruner in this operations on a healthy^ plant, is, that the sap which would have been expended in support of the part removed, will be diverted into the parts remaining; and hence, if the leading bud of a branch be removed, the side ones, that would be otherwise dormant, are made to shoot out with more vigour; and if a growing branch be shortened, the lower buds, seldom otherwise productive, will push forth vigorous shoots ; a branch, therefore, that crowds the tree must be cut off very close, for if any part, having a bud, or a knur, remain, it will only serve to produce many shoots in place of the one removed. If also, there be two unequally growing branches from the same stem, the stronger being shortened to check its growth, the other will gain an accession of strength. Bleeding, as it is called, is a flow of sap from a wound made in pruning; it is very injurious to trees, and can only be prevented by carefully avoiding to prune whilst the sap is flowing with vigor, reserving the operation for the cold season, when the tree is in a dormant state.

Ist PRUNING, to promote growth and bulk, is seldom requisite in this country, where the rapidity

of vegetation is already rendered too great by the heat: it can only be called for to infuse strength into the stronger branches by removal of the weaker side shoots. In pruning to increase growth, besides cutting off the weak shoots, the strong ones should be shortened, in order to produce three or four, instead of one; and, in general, bulk being the object, upright shoots are encouraged rather than lateral ones, except in trees that are trained, where shoots should be encouraged at various angles as required. In old trees, this object is promoted by the removal of the dead, or already scaling off, outer bark.

2d. PRUNING, *merely to lessen bulk, or create dwarfs,* is an unnatural process, which, if persisted in, renders a tree knotty and unsightly, and in stone fruit trees is apt to produce canker and gum; it is only necessary where trees are crooked, or too close to the walks, and then even the better plan is to remove them.

3rd. PRUNING *to modify the form of a tree.*—• Where trees are planted for shade or shelter, as also in avenues, and sometimes in hedgerows, it is desirable that the lowest branches should be at some distance from the ground; in the first instance that room may be given to pass under them, and in the last that they may not harbour snakes, or other vermin. The shoots are to be cut off cleanly, near a bud, if it be intended only to shorten them; but if to be altogether removed, this

should be done as near to the stem as possible, to assist the healing, and growing of the bark over the wound. In purning fruit trees, the chief object must also be to assist, or increase their bearing; where this is done on standards, or on such as are allowed to assume a natural form in an open space, no shoot of the young plant should be permitted to take the lead, but a number must be encouraged to radiate upwards from the graft, at as regular distances as possible; but, at the same time, scope should be given to the natural form of the tree, which has generally a tendency to a cone ; the operations of the pruner being chiefly directed to thinning out the weak and crowded shoots, and preserving the balance of the tree, by taking care that an equal portion of branches be allowed on every side, and, while allowing the light to penetrate into the tree carefully preventing any interstices through it.

4th. PRUNING, to promote the formation of blossom buds, depends, in a great measure, on the description of the tree to be operated upon. The mango and the leechee, for instance, produce their blossoms from the extremities of the last year's shoots, and hence a sufficient proportion of these should be preserved when these trees are submitted to the pruning knife; whilst the peach requires a regular distribution of young sprays to be preserved, as it produces its fruit on the preceding year's wood; in the plum, the blossoms proceed from short leafy protuberances called spurs;

whence, in these last, the production of blossom buds is promoted by cutting out weak wood to strengthen what is left. The rose, and many other shrubs, have their blossoms on the wood of the current year, and pruning should, therefore, remove both new and old wood, if it have once yielded flowers.

5th. PRUNING *the blossoms, to enlarge the fruit,* is performed by diminishing or shortening the blossom, bearing branches, so as to add to their strength. And if all the blossoms be removed before full formation of fruits in any one year, the produce of the next will be both finer, and more abundant.

6th. PRUNING *for adjustment of the stem or branches,* is analogous to that intended to modify its form, applying chiefly to trees just transplanted, or to those that are very young; and in the former it may be properly done in the process of removal, whilst the plant is yet out of the earth.

1th. PRUNING, *to renew parts of old or decayed trees,* is chiefly of use when it is desired to preserve a fruit of superior flavor, the tree bearing which has become exhausted by age; and this is done by cutting down the stem to within a foot or two of the surface of the ground, or sometimes only to the summit of the stem.

8M. PRUNING, *for removal of disease,* may be done by cutting off whole branches, the entire head, single shoots, or merely the diseased portion of the wood or bark; but in doing this, care must be taken

to cut away the whole of the part affected, and even a portion of the surrounding wood or bark that is sound, so as to be certain that all contamination is effectually taken away.

The best time for all pruning operations is the commencement of the cold weather, when the circulation of the sap is less rapid, and the leaves have (began to fall off. Attention should be paid in all such operations, whether with the saw or bill hook, as required to remove large branches, or with the knife for smaller ones, that the instrument be sharp, so as to produce a clean, smooth section, and to leave the bark uninjured; and also that the section of the living plant should be so inclined as not to afford lodgment for water or overflowing sap, as well as so far turned downwards, or to the north, as to be inaccessible to the direct rays of the sun.

I *Clipping*.—In connection **with** this subject is clipping, used for the excision of the small shoots, and for preserving the form of hedges, as also for pruning turf, border edgings, &c.; this is best done with Hedgeshears (fig. 36), in using **which** lines ought always to be fixed, to guide the course of the native gardener, as this is a new instrument, and he is generally little acquainted with **its** use.

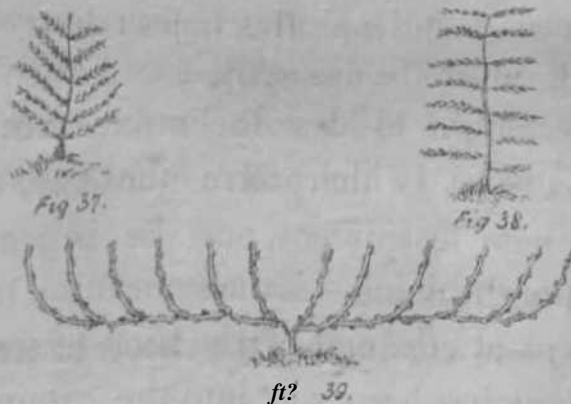


Fig 36.

Training—is conducting the shoots of trees or plants

over walls, espalier rails, trellises (or *meropes* as they are here called), &c. its objects are to mature and improve the quality of fruits, to afford facility to their growth, and maturity, to increase the quantity or size of the fruit, or to render them more ornamental and productive of flower buds. Their increased productiveness is also occasioned by placing the branches under some restraint, in training, so that the sap may be prevented from returning downwards, so rapidly as it flows upwards, and its nutriment, therefore, retained for the supply of the flowers or fruit; for it will be clear to the reader of the preceding pages, that a stem trained in an erect form will be more luxuriant in its growth, than in any other, and that it will, therefore, possess a greater disposition to produce leaves than flowers, so long as it continues in that position.

The most general modes of training woody stemmed trees are the fan, (fig. 37,) the horizontal, (fig. 38) ; and the vertical, (fig. 39.) Of these, fan training is



the most common, and particularly applicable to stone fruit trees; the summit of the stem not being allowed to exceed one or two feet from the ground, and the side shoots laid out in radii from the centre. Trees of a flexible nature, such as the vine, and other climbing plants allow of various kinds of training' (fig- 40, 41, 42, and 43,) peculiarly suitable to



Fig. 10.



Fig. 47.



Fig. 42.

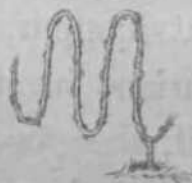


Fig. 43.

themselves ; particularly as vines bear the sweetest fruit at the greatest distance from the root.

Many plants, especially the hoya, &c. look best when trained round spiral frames; but as all kinds of training must be regulated by individual taste, it is unnecessary to describe more than the above principal modes, which form the basis of all the others.

Preparatory training—is the same in all modes, and is as follows:—at the end of the first season, after the graft or plant has been put into the ground, the side

branches are fixed at an elevated angle, to encourage the throwing out lateral shoots, the stem being maintained in an erect position; the second season in this country will complete the growth necessary for training, when the side shoots must be shortened, and all superfluous branches removed, the required shoots being fixed in their proper positions by shreds, or rope; but if the latter, pieces of old leather should be placed over the branches, before they are tied, to preserve them from friction, and *Khoa* rope is the best, as being most durable.

Herbaceous training—is performed in various ways. Plants that twine of themselves, such as the convolvulus, &c, should be furnished with poles proportionate to their height, whilst those that are supplied with tendrils, as the pea, the passion flower, &c. require sticks with sprays (the small lateral branches of the bamboo answer well for these,) that the plant springing up through them may attach itself by its tendrils. Props or supports are necessary for upright, tall, slender growing plants, such as the dahlia; whilst creeping and trailing plants, as the melon, cucumber, &c. are trained on the ground, or on a low platform, in a star-shaped form, by means of pegs.

Blanching—is the art of whitening certain plants by the exclusion of light, and is performed in various ways, as the kind of plant directs; such are the following.

By earthing, as performed on asparagus, celery, &c.; the latter being an annual, by drawing up the earth in ridges, so as to press on, and lay close to the leaves as they grow ; and in the former, being a perennial plant, by covering it over with manure, and loose earth and sand, through which the young stalks shoot up.

By tying the leaves together, as performed on lettuce; the plant being in its most leafy state, the heads of the leaves are gathered together, and tied round with plantain or other fibre, whereby the centre, or heart, becomes more solid and tender, and the inner leaves, being excluded from the light, are blanched.

By overlaying with tiles, or pieces of board, when nearly full grown, as sometimes performed on endive, and other salad; but the next mode is to be preferred:

By covering with blanching pots of a bell shape, or flower pots reversed: this operates most successfully on endive, &c.

Potting,—is resorted to chiefly on account of the facility it affords to the removal of plants from one spot to another; it may also be made subservient to securing a perfect drainage to plants, and defending their roots from any excess of moisture; besides this, it is convenient for the purpose of raising, and giving attention to delicate seedlings. But it must be borne in mind, that a plant so situated, is reduced to a very different condition from that which it naturally holds

when in the ground, for the roots, unable to spread laterally, and being thrown back on themselves, their supply of food is necessarily very limited, they are also subjected to the influence of temperature, more than in their natural position, through the sides of the pot allowing its variations to be felt by the whole mass of the roots.

Shifting,—is resorted to, to obviate the disadvantages just detailed ; plants in pots should be frequently removed to larger sized pots as the roots spread, but in doing this, it is not sufficient to take up the root in the ball of earth entire, with the fibres matted and hard pressed, and then put it into a larger pot, with a little loose earth, as will be done by the native mallee if left to himself; the ball must be broken, and the fibres carefully spread out with the hand, in their new position all decayed, or broken portions being removed with the knife.

One great advantage to be sought in all potted and shifted plants, is to secure perfect drainage; this is best obtained by filling a part of the bottom of the pot, before putting in the earth, with broken brick, crocks, pieces of stone, &c, and by keeping the earth in the centre, around the stem of the plant, raised above the edges of the pot, in form of a small hillock, covering it with broken brick, in small pieces, or, when procurable, pebbles.

When kept too long in pots, the main branches of

the root are apt to assume a spiral form, which they are likely to retain even when planted out in the garden, and from want of good spreading side shoots, having little hold on the soil, such plants are easily blown down; great care, therefore, is necessary in spreading the root wide abroad when taking the plant from one pot to another, or from a pot to the ground; and plants so grown, should be regularly shifted from the smallest sized pot that it will occupy when quite young, to the larger ones, in regular gradation, and not at once, from very small to large; the reason of this seems to be, that in large pots the roots are apt to be chilled and rotted by the retention of more water than is requisite for their well doing. It is to be observed also, that plants generally thrive best in small pots, most probably because the air passes more readily to the roots, through their porous sides, -which are from their size, nearer to the point of requisition than in larger ones.

OPERATIONS FOR INCREASING FRUITFULNESS.

These are sometimes called for in India, as the rapid vegetation, induced by the heat, often prevents trees from blossoming, or makes them barren of fruit.

Laying open the roots.—Various means have been adopted to remedy the evils just noticed, and among

the most successful is, after the annual pruning of the branches, to lay bare the roots, and keep them exposed to the action of the air and the dew until the buds begin to burst; a process that is suitable to almost every description of tree; some gardeners also prune the roots before filling in the earth around them, with the view of checking the growth of useless wood.

Hinging.—For the like purpose ringing is resorted to. This is the removal of a portion of bark from around the base of a tree or branch, whereby the quantity of blossom, or the size of the fruit, is greatly increased; because the downward course of the sap being thus intercepted, it returns again to the upper part of the branch, and increases the quantity of nutriment maintained in that particular part, causing the whole to be reserved for the support of the fruit.

This operation is best performed in the spring, when the sap begins to rise with vigor, and the bark separates freely from the wood; the easiest method of doing it, being with a double bladed penknife, both blades being open at the same time; the space between the two is generally sufficient to remove, as the extent of bark cut out should never exceed what a stone fruited tree can fill in one year, or a kernel fruited tree in two. But ringing should not be too often, or too thoughtlessly resorted to, for such a violation of nature, as may be expected, materially

affects the health of the tree, and if too often repeated will eventually kill it.

The simplest method of increasing production is, as has been before related, by seeking the same effect as ringing, in the more natural method of allowing occasional seasons of rest in production of fruit, by removing the blossoms or embryo fruit, and thus accumulating an increased store of nutriment, for the ensuing season, uniformly throughout the tree.

Ringing may, however, be had recourse to, either to cause increased production, or to increase the size, and accelerate the ripening of the fruit. If for the latter purpose, it should not be done until the plants are in blossom, and its effects will be seen the same season; but if to increase production, the operation must be performed in the spring, and its effects will be made evident in the following year.

Renewal of soil, about the roots especially, of peaches or figs, will restore or increase fruitfulness, if conducted with reference to the state of the plants; thus, if the trees be weakly and unthriving, changing the soil about them for a rich, loamy, well manured earth; or, if too great luxuriance indicate that the existing soil be over rich, a poor limey soil, mixed with sand, must be applied.

Bending down the branches[^] by stagnating and checking the too free circulation of the sap, will conduce also to fruitfulness.

OPERATIONS FOR ACCELERATING OR RETARDING
VEGETATION.

Acceleration is little called for in India; but the easiest mode of affecting it is by manures of a hot or stimulating nature, such as pigeon dung for cucumbers, blood for vines, &c. or by adding lime, rubbish, or sand, to stiff soils, to make them more porous, and give free access to moisture, which must be liberally given. Attention also to select, for such sowings as you wish to produce an early crop, seeds that have been the first to ripen in the previous year, will accelerate vegetation considerably, as will also the sowing them on a hot bed, which last has, moreover, a good effect on scarce seeds that may have been long kept.

Retarding, a less easy process, may be effected in the early part, or spring of the year, by forming beds in an east and west direction, with a considerable slope towards the north, and some shelter towards the south, on which salading, spinach, or turnips, may be sown with less fear of their shooting up into flower stems than if sown in beds of the ordinary description. Placing a shade either over, or on the south side of growing plants, allowing at the same time a free circulation of air, will have the effect of checking or keeping back their vegetative powers.

HOT BEDS.

At first view the very idea of a hot bed in India, appears startling, and as hardly to be imagined, save by the wildest of theorists; but in a tropical climate even, many seeds come to hand that either from the long, close confinement of a sea voyage, or from the natural causes of a hard shell, an oleaginous quality, or a variety of other causes demand the highest obtainable stimulus to make them germinate, or to acclimate them to the future excessive stimulus that the naturally heated atmosphere, and general high temperature of an Indian climate imposes on them in their subsequent career. This had long been the opinion of the author, but he would have hesitated, ere he put it forth to the public, had he not found support in that of one of the ablest and most distinguished botanists and horticulturists in India, Dr. Robert Wight of Madras; who thus accounts for the usefulness of hot beds, in an article published in the third volume of the *Transactions of the Agricultural and Horticultural Society of India*, remarking on an experiment on this point—"Plants raised from European seeds all retain, it would appear, a high degree of excitability. He (Mr. Speede) while sprouting them, applies a powerful stimulus (heat) by which part of this excitability is exhausted, and their constitutions changed from those of hardy northern, *excitable*, to tender tropical,

unexcitable plants, thereby assimilating them to the climate, by not only fitting them to resist a high temperature, but absolutely rendering it necessary to their after existence,"—and I am satisfied that were hot beds more extensively used, not only should we not hear of so many failures of seed, but we might, even in the plains of Bengal, Coromandel, &c, succeed in raising seed from plants, thus acclimated, of most European vegetables and flowers.

The following is the mode of preparing a hot bed, which has been found most successful :—Collect the stable dung and litter in a conical heap on the spot selected for the site of the hot bed, until a sufficient quantity has been gathered. It should then be well and carefully shaken together into a long flattish heap, putting the short stuff on the top, watering at every six inches of height, and leaving it for two or three days. It must then be thoroughly turned, putting the outside litter to the centre, and the inside out, watering as before, and again leaving it for two or three days, and then this operation must be repeated, so that in the course of nine days it shall have fermented three several times. The site of the intended hot bed should then be marked out, and the earth taken out for a depth of about six inches, the bottom being carefully levelled and beaten down with a rammer; in this the bed may be proceeded with, by shaking in the stuff so sufficiently that each particular straw may be

separated from its fellow, watering and beating, however, at every four or five inches of height until it reaches from three to four feet; on this must be immediately placed the frame, or, if you have not such a thing, mat walls may be substituted, with moveable mat coverings, or *jamps*; the bed must, however, be kept closely covered for about twelve hours, when the heat will be found to rise, and air may then be given. In about three days the bed will be in full heat, which may be ascertained by thrusting the finger down in the centre ; when this begins to abate, six inches of fine, moderately moist mould may be put on, and as soon as it is ascertained that the heat has risen into this the seeds may be sown. The after treatment requires only that the bed have air regularly in the middle of the day, and that it be occasionally watered with water from a watering pot that has stood some time within the influence of the sun's rays, being only administered in the hottest part of the day.

Mr. Forsyth recommends the annual collection of leaves to form hot beds, which by occasional addition of fresh leaves may be made to keep up a succession of gentle heat for nearly two years, and then afford a good manure for borders, especially where fruit trees stand; better indeed, than dung, which he disapproves for trees generally.

Useful as this class of men is, they are hardly ever considered worthy attention or instruction in India, where although most gentlemen, who have gardens, are ready enough to complain of that ignorance and stupidity, as they call it, which will not even enable them to recognize in the young plant the distinction between a turnip, and a cauliflower; yet all unite in an indifference to their improvement, if it costs ever so small a modicum of personal trouble. It is true we have not here those most useful schools for gardeners that are found at home, in the numerous nurseries and market gardens, but if every gentleman who possesses a garden were to spare a few minutes daily to instruct his gardener, and explain to him the reason of the operations he directs, much might yet be done for the advancement of horticulture, to especially if backed by increase of pay proportionate to, but not in excess of the man's advance in knowledge ; for, after all, it is really too much to demand intelligence and information where it is not encouraged, or familiarity with a science from a man paid and treated as a common *koolee*, although there is often quite as much injury done to the science of horticulture by over-paying a blundering booby who is proud of murdering botanical names, and making himself unintelligible, as by this under remuneration.

The head gardener ought always to be able to read and write some one of the native languages, that he may be able to keep and exhibit to his master, from time to time, registers of the plants in the garden, the period when sown, or transplanted, the adjuncts used, and so forth; but a man can hardly be expected to acquire this knowledge for the paltry pittance generally now allowed of from three to five rupees ; let that sum be trebled, nay, quintupled, to deserving, active men, and there may be a chance of securing a class of people, as gardeners, who will conduct the culture of their charge on correct principles, and take pains in obtaining, and a pride in securing success. But before all, let no proprietor of a garden be above expressing, or of practically shewing, the knowledge he himself possesses, and there will then be little or nothing to prevent our having as good gardeners in most parts of India as may be had any where else.

It is, indeed, a subject for gratulation to the real gardener to find, that the Horticultural Society have at last taken this matter up, by establishing a school for gardeners at their garden, under charge of their superintendent whose active diligence, and earnest endeavors to improve himself are the best security the Society can have for the success of the project, and if to this establishment they would obtain the assistance of some educated, and well-known horticulturist in giving occasional lectures after a time when the scholars

have made themselves masters of the rudimental branches, together with the assignment of annual prizes to the most deserving, which might, perhaps, be done without much cost, beyond what is at present incurred, out of the residue of unclaimed premiums, at the several quarterly shows, there is no doubt of the institution becoming in this way, as it has in so many others, eminently useful, and affording that so much called for desideratum, a good supply of usefully practical, and intelligent of gardeners; proprietors of gardens however, bearing in mind that these must be well paid, and no longer treated as mere *koolees*.

LIST OF TOOLS REQUIRED IN THE GARDEN, ETC.

Plough,	Regulating level,
Digging hoe,	Pins (iron) and line,
Mattock,	Pump,
Pickaxe, Watering	pots of sizes, with
Forked hoe,	spouts, and roses of various
Spade,	forms,
Potatoe fork,	Axe,
Spud,	*Bill hook,
American weeding hoe,	Saw,
Dutch, ditto,	Sickle,
Pronged, ditto,	Pruning knife,
Rake,	Grafting ditto,
Native weeder, <i>nuranee</i> ,	Ringing ditto,
Ditto———, <i>koorpah</i> ,	Chissel,
Pitch fork,	Mallet,
Scraper,	Gathering scissors,
Garden trowel,	Scythe,
Transplanter,	Hedge shears,
Dibber,	Training rods,
Wheelbarrow,	Wire,
Truck,	Screen,
Roller of stone or iron,	Seive,
Beetle,	Broom,
.Rammer,	Blanching pots,
Beater, or mallet,	Flower pots of sizes.
Triangular level,	

Besttuctibe animate, Insects, etr,

ANIMA LS—*Janoour*.

It need hardly be said that the garden must be protected from the incursion of the larger of these by strong fences, but still there are some that such defences are no protection against.

The HARE, *Lepus*, *Khurgoosh* or *Susa*, does extensive injury to fruit plantations, where this creature abounds, by gnawing the bark of young trees: the part of the stem, therefore, that is within their reach should be smeared with cow-dung or tar, occasionally renewed ; or protected with thorns.

The Fox, *Canis Bengalensis*, *Loomree*, *Looktee* or *salub*, will often obtain access to the garden if the fence be imperfect, or not sufficiently high, and if it be extensive will burrow before he is discovered, and thus cut up the garden seriously; beside, the fox of this country is believed to feed principally on roots.

The JACKAL, *Canis aureus*, *Geed'hur*, or *Seea?* finds entrance chiefly by drains, or ditches, if left without gratings, as well as over, and through fences if too low or damaged : he will do serious injury to pine apples or other fruits within reach, and must, therefore, be destroyed. The most common trap is an old chest with a drop door, similar in construction to the common rat trap.

The COMMON RAT, *MUS decumanus*, *Choocha*; the MUSK Rat, *Mus zibethicus*, *Chuchoondur*; and, the FIELD MOUSE, *MUS sylvaticus*, *Moosa*, by burrowing under shrubs, and destroying the roots, or eating the fleshy part of tuberous plants, as well as by grubbing up peas, beans, and other large seeds, do an infinity of mischief. Mr. Forsyth in his valuable "Treatise on Fruit Trees" cautions gardeners against the use of arsenic or corrosive sublimate in getting rid of these vermin * because "nux vomica will generally answer the end as well, without the danger;" —he recommends, as a bait for rat traps, a mixture of good flour, treacle, crumbs of bread, and few drops of oil of carraways ; the traps are to be baited with this mixture, and set near the holes; "but, for two or three days, so as not to fall or strike on the rats going in, and let them have free liberty to go in and out at pleasure; this will make them fearless." The traps should not be cleaned after rats have been caught in them, for rats will generally enter boldly where they find others have gone before them. For mice the same authority recommends traps "made by stringing garden beans on a piece of fine packthread, as you would string beads, then driving in two sniall stakes at the breadth of a brick from each other, and setting up a brick, or stone, or a board with a weight on it, inclining to an angle of about forty-five degrees; then tie the string with the beans on it, round the brick and

stakes, to support the brick in its inclining position, taking care to place all the beans on the underside of the brick. The mice in eating the beans will also cut the packthread, and so disengage the brick, or stone, which, falling on them, kills them." But, perhaps, the easiest mode of destroying them is to smoke them in their holes; this may be done by filling a native water jar, or kulsee, with dry straw or leaves, and turning the mouth down on the hole, closing every orifice perfectly; then perforating the upper or bottom side, and setting fire to the straw within, blowing occasionally through a hollow bamboo, at the perforation, to drive the smoke as much as possible into the hole.

To stop the holes in brick-work, or terracing, Mr. Forsyth recommends the following composition:—"Take a pint of common tar, half an ounce of pea ashes, an ounce of oil of vitriol, and a good handful of common salt, mix them all well together in an old pan or pot. Take some pieces of paper and lay some of the above mixture very thick on them, then stop the holes well up with them, and build up the mouth of the holes with brick or stone, and mortar: if this be properly done, rats will no more approach these, while either smell or taste remains in the composition."

The WILD CAT, *Felis catus*, *Kutas*, is a troublesome animal, though more destructive to the poultry yard than the garden, it should therefore be destroyed whenever it appears.

The WILD HOG, *SUS crofa*, *8oo_{ur}* it need hardly be said, must be kept out of the garden, for an hour's visit from this destructive animal will destroy the hopes and labor of years.

The SQUIHREL, *Sciurus*, *Chukhoree*, or *Cheek_{hur}*, is very destructive to fruit, and also to young plants, but these animals are only to be overcome by killing them individually, although perhaps a tiresome task.

BIRDS—*Chureea*.

Many species of birds are troublesome to the horticulturist, and among these the most annoying are the PARROT, *Psittacus*, *Tota* or *Tootee*, of which the long-tailed green kind is found in all parts of the country; and the PEA FOWL, *Pavo*, *Moour*; the former being a great enemy to ripening fruit, maize, &c. and the latter more particularly, to growing plants.

The FLYING FOX, a species of *Vespertilio*, *Badoor*, is to be dreaded in the fruit garden, especially as he generally destroys more than he eats; lines are frequently cast from tree to tree, which entangle and make him an easy prey.

Many of the smaller birds of the SPARROW KIND, *Fringella domestica*, *Chura* or *Churee*; and of the beautiful class of Seed-eaters, as well as the CROW, *Corvus carone*, *Kag*, *Kuooa*, attack fruit as it is ripening, and do an infinity of mischief if not guarded against:

the best protection is to cover the trees with nets, or coarse bunting, which admit the free circulation of air, at the same time that they prevent access to the destroyers.

REPTILES—*Keera mukoorā.*

The SNAKE, *Serpens*, *Samp*, *Chutee*; although most persons destroy all for the sake of protection from a few of the venomous kind, there are many descriptions that are useful, by keeping down frogs and large insects, and for the sake of the good they do in this way they may be forgiven an occasional trespass on a pine-apple, or a cucumber.

The FROG, *Rana*, *Bíng*, *Dadur*, if not allowed to multiply too extensively, is serviceable by destroying many insects; but if too numerous, their anxiety to obtain these becomes so great, that they will even ascend trees, and in their eagerness eat the leaves along with their prey.

The LIZARD, *Lacerta*, *Ck,hupkulee*, *Ch,hupkee*, or *JBustooee*, is a harmless reptile, useful to the gardener by the enmity it bears to all flies, and moving insects: it is very curious to observe the varieties of this species apparently changing their hue, in accordance with the color of the plant to which they attach themselves, and one may often be found amongst the leaves of the pine apple, of that peculiar reddish tinge, that you would pass it as one of the young floral shoots.

INSECTS—*Keera*.

These are the worst enemies we have, and their species are so numerous that it is difficult to obtain a correct knowledge of their habits and economy, so as to oppose their devastations with any prospect of success. All insects in their larvic, or caterpillar state, feed most voraciously, and the gardener's eyes must be ever open to discover where they are at work; or in a short time every particle of vegetation within their reach will have disappeared. Of these a few of the most destructive may be worth noticing.

BUTTERFLY,—*Teetree*. *The Swallow-tailed Butterfly*. The Caterpillar (*Jhanfka*) is green, having a black band at each division, relieved by small round, reddish colored spots ; it does little injury, confining its feeding to the carrot, or fennel leaves.

The Cabbage Butterfly, *Pontia* or *Papilio brassicae*, *Buree sof&d tectrce*, of a greenish white. The caterpillar is of a greenish yellow, irregularly marked with black spots in the larger kind, and of a delicate green, with small yellow rings'on each side of its body, in the *Small white Butterfly*, *Pontia* or *Papilio rapae*, *Chdtee sof&d teetree* ; these two cause great destruction among the beds, frequently getting into, and hiding themselves in the hearts of cabbages and cauliflowers.

Guinea fowls feed freely on the caterpillars of these two species, and they find another enemy in a species of fly (*Ichneumon globatus*, *Basoo*), which depositing

its eggfl in the body of the caterpillar leaves its larva to feed on its inside.

The white Butterfly, Pontia napi, Soféd teetrec, with green veins, is also a great pest; the caterpillar is green, with orange stripes, and infests the turnip and the radish.

The caterpillar of the, *Papilio deiphobus*, also infests many trees. Washing with a mixture of soap suds and urine is recommended as a good preservative from these insects.

MOTHS, *Putunga*, or *Purooana*. *The hawk Moth, Sphinx ocellata, Burree purooana*, of which some species are found here, has a green caterpillar with pale colored, or white stripes: it feeds chiefly on the young and tender shoots of trees and shrubs, but some varieties are believed to live on the nectar of flowers, which they extract with their long tongues. A variety of the *Sphinx exitiosa* is also found here attacking the mango, and peach trees.

The genus *Phelcena*, the caterpillars of which are hairy, *Vhooen*, are extremely destructive to lettuces, marjoram, parsley, geraniums, &c.

In some varieties the hairs have an effect on the skin, like cow-itch, if touched; among these are *P. flaviolala*, *P. lepida*, &c.

Phalsena paphia, is called *Jarroy* when it appears on the *Baeur* or wild plum tree, and *Bughee* when found on other trees; in both positions, however, it produces

the tussur silk; it is a most voracious destroyer of the foliage of any tree it approaches—of the same family is the *Phaleena cynthia*, *Arundeh*, which feeds on the Castor oil plant (*palma christi*) and produces the *Areaa* silk, as it is called.

PLANT LOUSE, *Aphis*. *Ashbus*, (cor). Plant lice, or green flies, are most destructive insects; almost every plant is subject to their attacks, and they vary according to the description of vegetable they feed on; generally maintaining, however, the color of the plant, from which they are hardly distinguishable, and hence to be observed only, on minute examination; their fecundity is so enormous, that it has been calculated by Reaumur that 5,904,900,000 may be produced in five generations; and it is supposed that in one year there may be twenty generations. They fortunately find many enemies, all classes of birds feeding on them as well as many insects of the beetle kind and ants. Mr. Forsyth recommends lime water as a destroyer of this pest, which should be carefully syringed on the under part of the leaves, &c. One of the most formidable enemies of the *Aphis* is the larva of the lady-bird (*Coccinella*).

PLANT-BUG, COCCUS. Plant bugs are almost as destructive as the preceding, and are concealed by their resemblance in form and colour to the leaf buds that form in the axils of the leaves; other again, as the *Coccus persicorum*, (frequently found on fruit trees,)

Resume the appearance of the scales that occur on the bark of the trees on which they feed. Another kind appear like little spots of white cotton, and attack many trees, but especially the vine, and those of the plum kind.

These insects should be scraped off wherever found, and the trees washed, a? for the destruction of butterflies. One very destructive species of coccus, known commonly under the name of *Aphis lanigera*, may be destroyed by brushing the tree with brown impure pyroligneous acid, if it can be procured. The white bug, also of this species, is easily destroyed by syringing, under the leaves of the plant attacked, with lime water. The cochineal' insect belongs to this class.

The WEEVIL, *Curculio*, *Putaree*, *soonda*, or *kun*. Weevils, most of them very small, live upon seeds and vegetables, and commit vast devastation, especially in the former, by destroying the germ

Curculio contractus, a species of which may be sometimes met with here, causes the club in cabbages, and another species, *Culandra oryzeae*, may be found in rice. Smoking with wet straw, or tobacco, stupifies these insects, but no means of actually destroying them appears to have been yet discovered, except by handpicking when they fall off, in their stupefaction.

THE ASPARAGUS BEETLE, *Crioceris punctata*, *Lai Goobrta*, is in its larva condition very destructive;

is then of a slately green color; the best mode of getting rid of them is to destroy the beetle, which is of an orange and black color, but is extremely cunning, turning under the stalk of the plant as soon as approached, and when pursued dropping on the ground as if dead.

Dr. J. T. Pearson (vide Proceedings of the Horticultural Society, vol. vii.) has lately given a description of a turnip-fly inhabiting Doorjeelung, in the Hünalya mountains and their vicinity, where it makes great ravages among the young plants of the cabbage, cauliflower, turnip, radish, and other similiar vegetables. He classes it as the *Ilaltia nigro-fusca* ; and describes the failure of various expedients for its destruction, amongst the rest dressing the land with lime, but as he does not mention in what form this was applied, it is possible that quicklime may not have been tried, and from its general success in destruction of insects it might be worth the experiment.

The LOCUST tride, *Gryllus*, *Tudee*, *Teeree*, or *Muluhk*. Grasshoppers and locusts of various sizes abound, and commit extensive depredations in the garden.

The *Locust*, *Gryllus migratorius*, *Tudee*, often visits parts of India, especially to the westward, in such flocks as to destroy every green thing, and to produce serious famine. There seems no remedy against them, and they continue their ravages until a storm destroys them.

The *Grasshopper*, *Gryllus tettigonia*, *P,hunga* or *tuda* is not so destructive as the last, though still a great enemy to vegetation.

The *Cricket*, *Gryllus acheta*, *JJiccngur*, or *j,hulec* is the most innocent of this class.

The *Mole cricket*, *Gryllus gryllotalpa*, called *MM p6k* in *Dacca* and that neighbourhood, where a species of it abounds, is a most curious insect, bearing the common name of the "carpenter;" it lives entirely on vegetables, and commits its ravages mostly by night, when it issues from its hole, and cuts off the young plants at the crown dragging them to its burrow, which is often betrayed by the young leaves left sticking out;—frequent moving of the soil is the best check to the increase of this pest to the garden, and it should be dug up whenever it can be traced.

The *Frog-Hopper*, or *flea-locust*, *Cicadia*, does not appear to have any specific name among natives, although met with wherever there is vegetation; some, however, call it the *Bhang-kb-thAh* from the larva of the ordinarily found species, covering itself with a quantity of frothy matter, which is at once unsightly and hurtful to the trees to which it attaches itself; this should be sought for every morning, and removed with the hand.

The FLY, *Musca*, *Mukhee* or *mugus*. Of flies, the small maggot, *Mukhee-ka-peelooa*, that is the larvae of various species, are nearly all destructive to vegetable

life and growth ; one kind attacking radishes, another the cauliflower, another the onion; this last is called the *Onion fly*, *Anthomyia ceparum*, and the larva finds its way between the layers of the bulb causing great destruction ; no certain mode of getting rid of this insect is known, as most of the methods hitherto suggested will also destroy the onion itself. ,

The SPIDER, *Aranea*, *Mukree*, or *muchra*. Spiders of various kinds, abound in our gardens, especially those of the green and yellow descriptions; there are several kinds of the former, seeking their food on the pine-apple, the vine, the rose, &c.

The *Bed Spider*, as it is called, is properly a *Mite*, *Acarus*, *Lai mukree*; it is one of the most destructive insects that attack vegetables: there are an immense number of species infesting different plants, but especially the melon, on which their effects are observed long before they themselves are visible, by the leaves curling and cracking in the middle; and when that is perceived, the leaves should be lightly watered from a fine rose.

The CENTIPEDE, *Scolopendra*, *Goojun*. Of this insect there are several varieties; some of them venomous, all injurious by eating into the roots; some kind of ringworms, as they are called, do the same, and curling themselves up in the holes they have made, remain concealed, extremely difficult to be discovered.

The ANT, Formica, *Choontee*. Ants of numerous kinds meet the view at every turn; of these the most destructive is the red ant that attacks almost every thing that come in its way, fruit, the roots of turnips, radishes, and so forth. The destruction of all these insects is only to be accomplished by patiently watching the progress, and, habits of each, so as to learn, the fittest time to destroy them. Lime is of effect with many species, and pounded turmeric is offensive to ants of most descriptions; but boiling water is their only real destroyer, and that should be poured into their holes until they are all killed, or quit the spot; with the small red ant this is most easily ascertained, as they bring out the dead insects, and place them in a heap near the holes, so long as any remain alive to perform that operation; whence it is easy to conclude that when no more dead are brought out, the nest is destroyed or the remnant of the colony have deserted it.

The White Ant, Termes, Deemuk, deeook. These are the most destructive and insidious enemies of the garden, and commit more devastation than can be well imagined; they abound in all parts of the plains of India; and most frequently the only intimation the gardener has of their presence, is the sudden death of a tree; when, on taking up the dry trunk, it will be found that these laborious insects have completely divided the crown. Frequent moving of the soil, attention to under drainage, and destroying their nests with

boiling water, wherever discovered, are the only known remedies. It has, however, been lately discovered, that manuring the roots of trees with blood, will keep them away ; and as this effect is supposed to arise from the ferruginous matter it contains, burying old iron, or giving a supply of oxide of iron to the roots, might be worth trying as a preventive; instances being known of its good effects, so far as good judgment may lead one to suppose.

The WORM, *Vermes intestina*, *Kurum*, *keer*, or *puloo* often destroys the roots of plants, and raises unsightly mounds of earth on walks, grass plots, &c. The leaves of the walnut tree strewed on the ground will, it is said, annoy them; and watering the earth with a decoction of the leaves will drive away or kill the worms.

The RED BEETLE, *Scarabaeus*, *Gobreela*, of a small red, or rather orange kind, known as "the soldier," is a great enemy to all plants of the cucumber or melon family, eating the young shoots, and destroying all the fleshy part of the leaves ; it must be removed by handpicking whenever it appears.

THE COMBINATION.

A garden will consist of a combination of that part appropriated to culinary vegetables, or the kitchen garden; of the fruit garden; of the shrubbery, or garden for ornamental trees; and of the flower garden; united together in one spot of ground, but so divided into compartments that each portion may be kept distinct. Of the two last however we have nothing to do here, these being proper subjects for a separate work.* The garden should always be well drained, on which account a slight slope would be preferred if procurable, and the neighborhood of low swamps should be avoided, as they attract frogs, besides generally causing the subsoil to be too damp for the roots of plants; it should be well open to the east, that every spot may receive the benefit of the morning sun, and equally sheltered towards the north and west sides, to break the force of the winds from that quarter: the trees employed for this purpose being such as have bulk, with close and compact foliage, relieved, for the sake of ornament, by firs, or such like trees of light foliage.

But, above all things, a good supply of water is essential to be secured in the formation of a garden; this may be varied in form, so as to be made very

* The author has in progress, and shortly to be published a work on these subjects called, "The Indian Floriculturist."

ornamental, and to avoid the dull formality of the four-sided tanks generally used in India; and facility should be given, when opening a garden, for conducting the water to every corner of it. It is to be remembered, that besides the supply of water obtained by digging tanks, the further advantage, from that operation, is secured in this country (so generally too flat by nature), of placing at disposal a supply of earth to form ornamental knolls, or at all events so to fill up any low parts as to secure a good and sufficient drainage to the whole.

The best fence is undoubtedly a wall, but if your ground be extensive, the cost of walling the whole, might be too much for your means. Next, therefore, to this a mound *or pugur* surmounted with the prickly pear, or woodey aloe; what is called the Nepal thorn, a species of prickly mimosa, if planted thick, and kept in form by frequent clipping, forms a compact and good hedge; and a light, but tolerably close hedge of rapid growth, may be found in the plant commonly known as the *Rungcheetreh*, but it requires support;—of course all hedges and mounds should, for security against trespass of cattle, &c, be accompanied by a tolerably deep ditch.

Interior fences should always be made to divide one part of the garden from another: as the flower garden from the kitchen, and that again from the fruit garden. For this purpose hedges of dwarf shrubs, such as *Lawsonia inermis*, *Malpighia nitida*, or *Myrtus*

communis, kept closely clipped; or sweet-briar for a higher division may be usefully, as well as elegantly assorted to. A good rustic fence may be made from the branches of trees, or a pretty light division fence by split bamboos, placed in various forms, fixed together with nails and then painted green; in using either of these last, the parts that serve as posts, should be embedded in brick wort, to protect them from white ants ; or what is yet better, the portion that is buried may be treated after the manner recommended by Mr. Kyan, and brought to the notice of our Horticultural Society by Dr. Drummond. "The proportion of oxymuriate of mercury used by Dr. Drummond, as well as he recollects, was a pound to fifteen gallons of water, and the wood steeped in the solution for ten or twelve days," *Vide, Proceedings of the Horticultural Society, for June 1840.*

The best fence as a boundary one, is, perhaps, the Nagpore thorn, a variety of the *Gum Acacia*, *Acacia Arabica*, *Bubool* which may be sown at any time, except in the Upper Provinces, during the prevalence of the hot winds, when nothing can be expected to germinate, it will run up into a thick defensive hedge in six or eight months, but requires to be constantly looked after, or it becomes straggling. It is said that the *Prickly parkinsonia*, *Parkinsonia aculeata*, for which there appears no native name, if shortened two or three times during its growth, and not planted too close it answers well for

this purpose. The *Barbadoes pride*, or *Flower-fence*, *Poinciana pulcherrima*, *Gul tureh*, or *kurush churun*, if kept down and trained so as to prevent its straggling, will form a good and rather showy fence well suited to all parts of the country.

The garden should contain houses for the gardener, and his assistants, and it cannot be doubted that it may be found good policy to make these as comfortable as possible. There should also be a house furnished with means of fastening, for tools, &c.; and a commodious shed for potting, where a good supply of pots of various sizes, as well as composts of different kinds, should always be kept in readiness for use, secured from wet or sun; remembering, that a great advantage is secured by attention to this provision, by enabling the gardeners to perform the operations of shifting, and potting, when the weather puts a stop to outdoor work. A tree of the *Ficus macrophylla*, or even *Ficus religiosa*, near the shed, will be very useful to shelter young and tender plants, or such as have been just potted.

It may not be out of place to introduce here the plan of grounds suitable to this country, so as to exhibit an idea of the relative positions of part of the several gardens, or plantations to form a suitable whole of course it is not intended to lay down a fixed rule as the nature of the ground, or differences of individual taste must be allowed their full sway.

For the plan of a Kitchen Garden and Orchard, see Frontispiece.

a Gate of entrance from shrubbery or flower garden.

h Warm beds for late sowings.

c Cool ditto sheltered for early sowings.

d Pinery.

e Border for Jerusalem artichoke, and such straggling vegetables.

/ Tank.

g Pump, or other means of raising water.

h Beds for vegetables to be changed every year.

i Hedge of Caranda, or other fruiting shrubs separating the kitchen garden from the ornamental parts.

k Gate to orchard.

I Banana plantation.

m Warm pee, or other thick growing trees, as a shelter, the fruit of which is comparatively of little value.

n Paths of broken bricks, or *konkur*.

o Mango trees also forming a good shelter from the west.

p The Strawberry, Guava, Peach, and other delicate trees, and fruits.

r Ornamental paling separating the orchard from the kitchen garden

The Hitcijm ©tortren.

In laying out ground for this purpose, care should be taken not to place it adjoining to the house as such an arrangement would be unsightly; at the same time, it should not be at such distance as shall put it beyond the reach of constant supervision, or easy access; above all, it must have the command of a plentiful supply of water, and be well fenced in, for it is always better to secure your garden from temptation, by preventing general access of servants, or strangers, than to rely on the punishment of individuals after you have been robbed, as a prevention from further loss. It need not be added, that its extent must entirely depend on the wants, or wishes of the owner, for which no rule can be given, at the same time bearing in recollection that the preferable evil is, to have a little too much ground, rather than allow yourself to be cramped for room, to over-work any part of it by the too frequent cropping of the same spot, or to run the chance of not having space sufficient to afford a due observation of the rotation of crops.

SEED, &c.

The component parts of all culinary vegetables are

starch, gluten, sugar, and fibre, and of these the most nutritive is the first; contained, in the largest proportion, in esculent roots of various kinds.

It is not easy to separate our vegetable productions into their several distinct classes, since so many of them approach each other nearly, and gradually,—each appearing to claim more than one variety. Most kinds are raised only from seed, of which the best undoubtedly comes from New South Wales; the next to this is procurable from France, after which the Cape of Good Hope offers well, but is seldom true to its professed kind, the voyage from England being too long to expect the seed to preserve its full vigor in the manner in which it is generally packed; unless, as is now often practised, it is sent by what is called the overland route, when it is known to have arrived in good order, American seed, especially of turnip and beet, as well as of the cucumber and gourd kind, and of the tomato, is commonly found very good; great attention is necessary to these particulars, as nothing is more disappointing, after you have taken every pains to secure a good supply of vegetables, than to find all your hopes frustrated by the seed made use of having been bad, either in quality, in kind, or variety of species.

THE CABBAGE TRIBE.

Brassica,—*KOBEE KE KISM.*

The leaves of some, and the unexpanded flowers of others of this class of vegetables, are eaten boiled, or made into a pickle, and it is too generally known to need a particular description. ^

WHITE CABBAGE, *Brassica oleracea*, *Sofid kobee*. In this, the object of culture is to produce close, firm, and compact heads, green externally, but within white, and mild in flavor; the young plants being also sometimes eaten as greens, before the head forms.

Early York, and *Early Battersea Cabbage*, *Brassica capitata*, *Chótee bundee kóbee*, are the most delicate in flavor, and well worthy of more attention than has hitherto been paid to them in India, until lately, when prizes given by the Horticultural Society of Calcutta, having been properly limited to quality, not quantity, the cultivation of these has there increased accordingly. They may be sown during the rains, in pots, under shelter, say at the beginning of August, but little time is gained to the crop by commencing so early, as plants sown at this period will not anticipate those put in at the end of the month, or the beginning of September, by more than a few days. The sowings may be repeated till the end of October, at intervals of fourteen days, by which means a supply will be continued until the end of February ; they will take

about four or five days to come up, should be pricked out about a fortnight after, provided the rains have ceased, and finally transplanted, at six foot and a half distance, in the place where they are to become perfect, in about another month ; being fit to cut in three months from the time of sowing.

Sugar-loaf cabbage, *Brassica capitata*, *Bundee kô-bee*, is a larger and less delicate kind, forming a very white heart, and may be sown at the same time as the last description; although it takes a longer period to come to perfection, being seldom fit to cut under four, or four months and a half; half of which time this cabbage should be in the spot for perfecting, planted at not less than two feet apart; a continuous supply may be kept up by sowing at intervals until as late as the middle of November, which will yield a late crop in the middle of March. When Europe or other good seed cannot be procured in the Upper Provinces, it is not unusual to propagate by slips planted during the rains in highly raised beds, or in pits, subsequently treating the plants in the same manner as seedlings.

Drumhead Cabbage, *Brassica castata*, *Buree bundee kô-bee*. This, though the most usual cabbage of our bazars, is of a very coarse and strong flavor, and used in England chiefly as a field cabbage for feeding cattle. It may be found sometimes as much as eighteen inches in diameter within the outside leaves. The sowing of drumhead cabbage should take

place at the same time as the before mentioned, but it requires between four and five months before it is fit to cut, and when transplanted must be put at fully three feet apart.

Savoy, *Brassica bullata*, *Sikoree kAbee*, *kurum kula*, is distinguished from the other close hearted cabbages by its wrinkled leaves. The globe, and the dwarf green savoy, are the best varieties for this country, as they soonest come to perfection, and do not so much feel the want of the degree of cold they are accustomed to in Europe, where it is a common belief that a Jiard frost is indispensable to the perfecting of their flavor. If sown at the same time as the other cabbages, and planted out at about two feet apart, they will be fit for the table in December and January; but they are apt to form a long stem, and become in consequence, reduced, in the size of the head, sometimes dwindling, to only three or four inches in diameter, if not taken care of, and plentifully supplied with moisture.

Bed Cabbage, *Brassica capitata*, *Lai kobee*, though used chiefly for pickling, is nevertheless a very nice vegetable stewed, the best sort being the red Dutch. If sown towards the end of September, and transplanted into good soil about a month afterwards, with two previous removals to strengthen and fill out the stem, it will give a good firm head about the middle of February.

Propagation—of all the above descriptions of cabbage, is the same, by seed sown annually, well scattered and not put in too thickly, and covered with a thin layer of fine earth, not above a quarter of an inch in depth. The quantity of seed for a bed of sixteen feet long by five broad, should be about 2 J ounces of the smaller kinds, and of the larger sorts 1£ ounces.

Soil, &c. The soil for seed should be light, and, except, for the early sowings in August, not rich. They require an open situation ; and when transplanted should have a rich, highly manured mould, rather clayey than sandy, being a very exhausting 'crop. In this operation, which may be finally done when the plants have several leaves of from two to four inches in breadth, care must be taken to keep each kind distinct, as also to press the earth well up to the root fibres by a sloping insertion of the dibber, as before described. The best way, of planting out is to put them in small trenches, branching from the water drain at right angles, so that a large supply of moisture may be readily given at the roots as soon as they begin to form heart, when too much water can hardly be bestowed. At this time too, the earth should be drawn up about the stems to give support to the superior weight above, and preserve their erect position ; when also all that fail, or shew a tendency to run up to flower, should be immediately extirpated. If some of the stems of the larger sorts be left on the ground,

after the cabbage has been cut, and carefully trimmed from all side leaves, they will afford a supply of good sprouts from the leaf axils for several months, when other vegetables are hardly procurable.

BORECOLE, *Brassica acephala*, *PJiueltee kóbee*, *fturum kulla*; or Kale, as it is more commonly called, comprehends many varieties ; all, however, distinguished by having a somewhat large open head of leaves more or less curled, as well as being exceedingly hardy, giving sprouts during the greater part of the year, and lasting several seasons. The object of the cultivator will be to keep up a large succession of fresh sprouts.

The *Germany* or *Scotch kale* as it is called, and the *Purple kale*, are the best sorts ; they may be sown at almost any period of the year ; perhaps, the end of June is the best time ; the young seed leaves appearing in seven or eight days, and in a fortnight after they may be pricked out, and then transplanted to the place they should occupy, in about a month; thus treated they will give the first crop about the end of September.

Propagation, Soil, &c.—The same mode of proceeding should be pursued as with the larger sorts of cabbage ; the quantity of seed, however, being fully what is requisite in sowing the smaller description, but they may be also propagated by cuttings.

BRUSSELS SPROUTS, *Brassica buliata*, *Goonogoon kdbee*, are little known in India; they produce a long stem, often three feet, or more in height, the top

resembling a savoy planted late in the season, and from the joints of the leaves, shoots sprout out, forming small close miniature cabbages, which constitute a delicious vegetable, at a time when others are going out; they are extremely prolific, renewing the supply of small shoots almost as fast as they are removed, and may, by judicious sowing and care in cutting, be made to continue their supply nearly to the commencement of the periodical rains, or even partly through them, if sufficiently well drained to prevent the accumulation of water about the stems.

Propagation, Soil, &c.—This plant is raised from seed, which should not be sown too thickly, but in the same quantity as for the smaller sorts of cabbage; after a shower of rain is the best time for so doing, and in the beginning of November they will shew their seed leaves in three or four days, be fit to prick out in about twenty or five and twenty, and ready for final transplanting in the beginning of January, in beds at about eighteen inches apart, as they do not spread much in width, and the side leaves soon drop off. They require the same description of culture as all others of the cabbage tribe, and a plentiful supply of moisture. The plants should be kept well earthed up, and the first crop will be fit for the table in the beginning of March.

CAULIFLOWER, *Brassica botrytis*, *P'hool kóbee*, is the most delicate of the cabbage tribe, the eatable part being

the young flower buds, forming when well grown, and from good seed, a close, firm, and white cluster. There are only two varieties, the early, having a head of only about four inches diameter, and the late, growing to a much large size.

Propagation.—Some people consider that an early crop may be secured in dry situations by sowing in February or March, and shifting' the plants during the rains; the success, however, of such a proceeding is doubtful ; and as the seed is genreally scarce, from the great demand for it by all classes, it would be best not to run the risk of such an experiment, but be content with sowing the early seed in the beginning of August, in pots, or in the open ground under shelter, an ounce, and a quarter being sufficient for a bed of sixteen feet by five ; some in the Upper Provinces during the end of June or July, or as the rains come in, setting out the plants at that period, but this is dangerous ; however, generally speaking the whole of these operations are there a month earlier than in Bengal, where they will show their seed leaves generally in three or four days; may be pricked out in the early part of September, and transplanted about the middle of October, giving an early crop in November, or the beginning of December. To secure a succession, it has been recommended by one experienced in the Upper Provinces, to split the stems of a portion of the plants put out, to retard their forming heads.

The* larger kind may be sown any time from the beginning of September to the end of October, and will show themselves in three or four days ; they should be pricked out to a light soil when three inches Jjigh, and in about a month after, say from the beginning of November to the middle of December, they should be finally transplanted at three feet apart, into holes of six inches in depth ; this is advisable, that the supply of water may be sufficiently and retentively given, and the roots never allowed to get dry.

As soon as the flower begins to form, these holes should be filled with water morning and evening ; if instead of water, liquid manure be procurable for these . waterings occasionally, so much the better, and at this time the larger leaves should be turned down over the heads to defend them from the sun and dew, and to preserve them white and close ; about a month or six weeks from the time of their being transplanted will suffice to make them fit to cut.

Sail.—The soil for the seed bed should be light, but when transplanted the mould cannot well be too rich ; strong stable manure should, therefore, be liberally supplied to the roots, and the situation chosen must be warm. Mr.*Russel, however, found pounded bones to be the best manure, with which assistance he grew, at Berhampore, some of the best ever seen in India.

BROCCOLI, *Brassica botrytis*, *Ckótee p'hoool kdbee*, has seldom succeeded India until lately, and the seed

rarely reaches here sufficiently fresh for culture, except from New South Wales. The whole treatment and culture is the same as for the cauliflower, but some are of opinion that they need not be transplanted, and that it will suffice to let them remain where pricked out, only thinning away the weak plants, to afford more room for the rest.

THE INSECTS affecting the Cabbage Tribe, are chiefly of the caterpillar kind, particularly those of the cabbage, and the white butterflies; guinea fowls, and turkeys are great destroyers of these, which must otherwise be picked off by hand. Mr. J. Busch, in the Transactions of the Horticultural Society of London, vol. iv. says—"If in the patch of ground where cabbages are to be planted some hemp seed be sown all round the edge, in the spring, the strong smell which that plant gives in vapour will prevent the butterfly from infesting the cabbages;" the experiment has not yet been tried in this country, but it is simple, and well worth testing.

The worm, the centipede, and the weevil sometimes attack their roots; and a small black species of plant-bug eats the leaves of weak cabbages; the best means of destroying these last are wood ashes, but if discovered before many plants are attacked, it would be better to pull up all those infected.

DISEASES. The principal is called the club, in the root; this is a large tubercle or swelling, caused by the

larvae of a kind of weevil," commonly called the grub; deep trenching, or the addition of new soil of a loamy kind, by burying the grub, checks this disease, and frequent transplanting palliates it, by promoting the growth of fibrous roots ; the only actual cure, however, is carefully cutting out the diseased part.

LEGUMINOUS PLANTS.

Leguminosae, *MASEENADAR*.

The fruit of which is eaten boiled, either enclosed in the pod, when tender; or, the seeds alone taken out, or shelled.

THE PEA, *Pisum sativum*, *Mutur*, is too well known, and esteemed to require description. The object of culture is to produce a full pod, and at the same time to preserve the skin of the seed tender, and the flavor sweet. When dry they contain about forty-six parts of fibre, the remainder of the half, or four parts, being nearly equally divided between sugar and gluten, whilst fifty parts are pure starch ; but when green, the sugar exceeds the starch in quantity. There are two principal ^visions or kinds; the dwarf, generally also the early, the tall, and the late pea.

Early Dwarf Pea. *Pisum viridum*, *Ugeetee chdta mutur*; of these the earliest is the early Warwick, which takes somewhat less than a month from the time

of sowing to its being fit for the table ; it may be put in the ground at the distance of half an inch. If sown in a sheltered and elevated spot in the garden, a very early crop may be planted as early as the middle of August, giving a supply for the middle of September ; but this will only be worth trying when you have an abundant supply of seed. A sure early frame crop, growing 2½ feet high, may, however, be sown about the middle of October, which will come in about the middle of November, whence it will be easy, by sowing every tenth day, after the middle of October, to keep up a regular supply.

The Early Frame, and the Early Washington pea, Pisum viridum, Ugeetee mutur, the latter from America, are very superior flavored peas, and take about six weeks to fit them for the table. These two sorts should be put in the ground in the proportion of three in an inch, and if they be sown at the same time as the last mentioned kind, they will form a good succession to it; they attain about three feet in height.

The Dwarf Prussian pea, Pisum viridum, Chota mutur, might, if sown also at the same time, at the rate of three in two inches, form a further succession, as it requires two months ; it grows from *ibfee* to four feet in height.*

Knight's Dwarf pea, Pisum viridum, Ooulaeeta mutur, is a very superior pea for a late crop in India, growing some three feet high, and if put in the ground

towards the middle of December, at a distance of two in an inch, will begin giving its crop in February, and continue throughout the greater part of March and even to the end of April, as it stands the heat of that period better than any other kind of pea yet tried here. It has a small, but full pod of sweet flavored peas, in appearance very like the indigenous variety, and is a most prolific bearer, one plant yielding as much as half a dozen of most other kinds.

Tall Marrow-fat pea, Pisum majus, Bura mutur, is a very fine growing plant, giving full pods, and a tender seed; it should be put in the ground an inch and a half apart, and often grows nine or ten feet in height; this requires from nine to ten weeks to yield a crop; and if required for the end of December, or as a Christmas Pea, for which it is generally sought, must therefore, be put in the ground about the middle of October; the best time, however, if quality be studied, is the end of that month, which will give a fine January crop. The sowing may be continued every fortnight till the middle of December, whereby a supply may be secured to as late a period as the middle of April, provided care be taken in watering.

Imperial blue pea, Pisum sativum, Neel mutur, takes a somewhat longer time in coming to perfection, but yields a very large sized and good flavored pea; if sown in the middle of November, at an inch and a half distance, it will give a good crop by **the**

end of January ; it grows some eight feet high in good ground.

Green marrow pea, *Pisum sativum*, *Gool mutur* ; and *Green scymetre pea*, *Pisum sativum*, *Lumbar mutur*, the latter a delicious pea, may be sown, at an inch distant from each other, in the end of November, and will give a crop in the beginning of January; they are sweet and tender, not growing so high, however, as the other tall kinds.

The Native pae, *Pisum arvense* *Desee* or *kuraoo mutur* may be sown if desired, which is questionable for they are tough skinned, and deficient in flavor about the same time as the dwarf sorts.

Propagation—of peas is only practised by seed ; and, as a general rule, there may be taken a pint of the smaller sorts as the proper quantity for a row of fifteen yards, whilst of the tall kinds the same quantity may be extended through twenty-six yards. For the early sorts, make the drills an inch and a half deep, and about three to four feet asunder; but in sowing the tall description of pea, the drills must be two inches deep, and from four to six feet apart if it be desired to obtain a full and rich crop. In the Upper Provinces the early varieties are but little known, and the time of sowing appears to be from September to November, or, if the early sorts are attempted to be cultivated, not beginning before the end of August, and not sowing later than February.

Soil, &c. The soil for peas ought to be moderately rich, manured with fresh, sandy loam, mixed with decayed vegetable matter, if for the larger sorts to some depth; but fresh unfermented dung is liable to hurt them. As the plants reach two to three inches in height, the earth should be drawn up to the stems, gradually earthing higher as they grow; there need be little fear of bringing the earth too high on the stems, as the more the ridge is raised the greater are the number of root fibres produced from the axils submersed, and the greater, in consequence, the amount of nutriment the plant will receive; if the sun be hot, it will be advisable to shade the peas, until they are from ten to twelve inches high. As they throw out tendrils, the peas should be sticked with well branched twigs; the loppings, or side branches of bamboos are very good for the purpose, selecting them of a height proportioned to the description of pea, and putting them in on the sunny side, that the action of the sun may incline the plants towards them. Topping the leading shoot, when the second or third set of blossoms appear, will accelerate the setting, and promote the filling of the pod.

The GARDEN BEAN, *Vicia faba*, *Bakla*, *been* (cor), contains similar proportions of starch, &c. to the pea, but a rather less quantity of sugar. It is an annual plant, rising from two, to four feet in height; the seeds being either boiled separately, or put into

soup. There are two principal varieties,—the early, and the late; of these the Mazagon among the former, and the Windsor among the latter, are the best sorts.

Mazagon Bean, *Vicia faba*, *Chóta been*, is small, good flavored, and hardy ; it should be sown in the middle of October, taking advantage, if possible, of a shower, and this bean will then yield a good crop towards the end of January; it is an abundant bearer.

Windsor Bean, *Vicia faba*, *Burra been*, is large, and when gathered young, sweet, and agreeable in flavor; but does not in India bear plentifully. *The Long pod*, is a large bean of very good mild flavor, and possesses the advantage of being a prolific bearer. The middle of November is the best time for sowing these, and they will then begin to blossom about the middle of January, and about the twentieth of February yield a good crop.

Propagation—is carried on by seed, of which a pint, of the smaller sorts, will be sufficient for a row of sixty feet, the like quantity of the larger kinds serving for eighty feet; the smaller being put in drills, two and a half feet apart, at a depth of two inches, and about three inches apart in the row. For the larger sorts, the rows may be three feet distant from each other, put in three inches deep, and four inches apart in the row, each root throwing up several stems; they should have the earth well trodden down before covering in. Some prefer soaking the seeds for about three hours

before sowing them, but the use of this is very doubtful, excepting so far as it facilitates the rejection of bad seed.

Soil, &c. A stiff heavy clay is the best soil for beans, and as the plants spring up from two to four inches in height, the earth should be hoed up to the stems, taking care, however, that none fall into the centre of the plants to bury them, as that would occasion rot; the hoeing must be frequently repeated to some depth, for which the forked hoe is the best instrument, both for the purpose of removing weeds, and for well stirring the soil between the rows to promote the production of root fibres. As the plants come into full blossom, or just as the first flowers fade, the tops should be pinched off, to promote production of well filled pods.

KIDNEY, OR FRENCH BEAN, *Phaseolus*, *Fras been* (cor), *Bakla*; the unripe pods form a well known vegetable, and need little description, as few tables are without them ; they also make a good pickle. The pods, as eaten, contain more sugar than starch in the young beans, and some sugar with a larger quantity of fibre in the pod ; they are considered wholesome and nutritive. Of these there are two kinds, the dwarf, and the climbing, or tall.

Dwarf kidney bean, *Phaseolus vulgaris*, *Chóta Bakla* or *zun*, is esteemed generally the most delicate in flavor, the early white kind being the best; it takes about two months from the time of sowing

before it yields fruit fit for the table, and in about three months more will ripen its seed. This bean may be sown any time from the beginning of August to the end of December, and although it is not usual in England to stick this kind of kidney bean, but it will be found better to do so in this country.

The Scarlet runner, *Phaseolus multiflorus*, *Lai bakla*, is a tall climber, the pod being of coarser flavor than the preceding ; the seed always leaves its cotyledons below the surface of the earth, and it takes three and a half months from the time of sowing before it is fit to gather, requiring then another month to ripen the seed ; it may be sown any time from the beginning of October to December : with careful draining this plant may be made a perennial, in which character its roots form tubers like the dahlia, and in this state may be taken up, and preserved from year to year.

The Yellow Canada bean. This is one of the dwarf varieties, the seed of which is brought from the Cape, and is of recent introduction, having no particular native name; it may be treated as the foregoing; the seed also forms a delicate article for the table, dried like the haricot in France.

The Lima bean, rarely met with, but the seed forms an extremely delicate article for the table, and is highly esteemed in the West Indies, as well as by all who have had the good fortune to meet with it; it is a tall climber, and if sown in October, gives a crop in February.

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Propagation—of these beans is entirely by seed, of which a pint is sufficient for a row of sixty feet, putting them in at two and a half inches asunder, letting the rows be full four feet apart, and the seed buried to a depth of three inches.

Soil, &c. The soil for all kinds should be light, and but moderately moist; they must be earthed up and sticked in the same manner as peas.

The LONG BEAN, *Dolichos*, *Seem*, or *loobee*, for many years supposed to belong to the same class as the kidney bean, is peculiar to warm climates, and many species of it are to be found growing wild in India; there are also several varieties cultivated, of which the best are,

1. *Small White Bean*, *Dolichos gladiatus*, *Mukhun seem*, sown in May or June, and giving produce in February.

2. *Red Bean*, also a variety of *Dolichos gladiatus*, *Rungeh mukhun seem*, sown, and yielding produce at about the same periods.

3. *Large White Bean*, another variety of *Dolichos gladiatus*, *Burra mukhun seem*, is also to be cultivated at the same time.

4. *Pertab Sing's Bean*, *Dolichos purpureus*, *Purtab Sing ke seem*, is of very large size, and when cut up forms a tolerable representative of the kidney bean. Sown in the latter end of May, it gives produce towards the close of July.

5. *Small Fruited Bean*, *Dolichos catjang*, *Burbutee*, or *boora*, sown in June, it gives a crop in August.

6. *Black Seeded Bean*, *Dolichos lablab*, *Bunseem*, *jeea seem*, or *goordal seem*, may be sown in April or May, in sandy loam, and will produce in June or July.

7. *Hill*, or *Asparagus Bean*, *Dolichos sinensis*, *Lo-beea*, or *puharee boora*. This kind produces a long, thin, roundish pod, which forms a tolerable vegetable when boiled; it may be found in many parts of the hills, and higher lands, and has lately been brought to more particular notice by Mr. Piddington; *vide Proceedings of the Horticultural Society of Calcutta, for August, 1840.*

8. *Assam Bean*, a kind of cowage, *Stizolobium altissimum*, as is supposed, *Kalee seem*, *Assam keh keeoach*, is but recently introduced as an article of food, though it grows wild in great abundance in the Hills, especially on the eastern range, and their neighbourhood; it possesses the advantage of coming in season when other vegetables are scarce; the seeds only are eaten, boiled like garden beans, which they much resemble in the taste, they ought to be gathered young, or if left to attain a large size, the skins must be taken off before they are brought to table. This should be sown in the beginning of June, and will come up in a few days, becoming fit for gathering in the middle of September.

9. *Black Bean, or Pois Noir* of the Mauritius, appearing to belong to the genus *Stizolobium*, *Kalee seem*, is of yet more recent introduction chiefly by Dr. Wallich, who took much pains in procuring it from Bourbon, where it is a common article of food, and may be used in the same manner as the last kind, over which it possesses the advantage of the pod not being covered with the light prickles that coat the Assam bean; it is also valuable as a food for cattle.

10. *The Winged Pea*, *Tetragonolobus edulis*, *Pank kee mutur*, though belonging to a different tribe, may be included under the present head, from being used in the same manner; it may be sown in the month of May, and will yield its produce about August.

Propagation, Soil, Sfc.—These of the long bean tribe are all grown from seed, and require a tolerably rich soil, in which the plants grow to a very large size.

INSECTS. All the leguminous plants are liable to attacks from the plant louse, those on the pea being green, and such as attack the bean most commonly black; these can only be successfully opposed by taking off the adopts on which they are found, and destroying the insects by fire, or otherwise, at a distance from the place of growth. A beetle, or weevil frequently gets into the pods and deposits its egg in the seed when near ripening, and caterpillars will destroy the leaves being only overcome by close and frequent inspection, and removal whenever discovered.

ESCULENT ROOTS,

Esculentiae—*ALOO RE KISM.*

The esculent rooted plants generally delight in a deeply dug, light, sandy, and well cultivated soil, the better kinds requiring tolerably dry subsoil, and moderate temperature.

POTATOE, *Solanum tuberosum*, *Ooulaeete aloo*, this is the most useful, and the most generally known of this class of vegetables; when mealy one-thousand parts are found to contain two hundred of starch, forty of gluten, and twenty of sugar, the remaining seven hundred and forty being fibre. There are upwards of thirty varieties, few of which are known, or even thought of in India. They are generally procurable of sufficiently good quality in the bazar, at all times of the year, and hence in a small garden it is not generally thought worth while to attempt rearing them; unless, indeed, you desire small crops of very early new potatoes ; or for the purpose of propagating any particular description. Very fine potatoes for seed may be procured from Hobart Town, and if loosely packed in barrels, shortly after they have been dug, without washing, will arrive in Calcutta in good order. A specimen of excellent white potatoes was some few years since sent to the Calcutta Horticultural Society, by Dr. J. T. Pearson, from Dôrjeelung (*vide Horticultural Society's Proceedings for August, 1840*) and

there is little doubt that Calcutta, and other parts of ^
India, may soon be supplied with seed from that
source.

Much more attention should be bestowed on the selection of seed, than would be readily credited by the casual observer, for on this depends much of the future success of the crop ; the *late Mr. Knight, in an article of great interest, printed in the *London Horticultural Society's Transactions*, vol. vii., says, " the fact that every variety of potatoe when it has been long propagated from parts of its tuberous roots, becomes less productive, is I believe unquestionable. # * * * The propagation of expended varieties, therefore, appears to me to be one of the causes why the crops of potatoes generally, have been found so much less than those which I have stated to have been produced here." The Futtehghur potatoe is considered the best of the Upper Provinces ; but they treat it exactly as at home, generally preferring the eyes, to every other mode of planting, although elsewhere the half, or the whole potatoe is found preferable.

Dr. Patrick Neill, in a recent work published in Edinburgh, brings to notice another circumstance with regard to the selection of seed that deserves to be generally made known, " an important fact in the cultivation of the potatoe, was observed about the year 1806 by the late Mr. Thomas Dickson of Edinburgh, viz. that the most healthy and productive plants were

to be obtained, by employing as seed stock, unripe tubers, or even by planting only the wet, or least ripened ends of long shaped potatoes ; and he proposed this as a preventive of the well known disease called the *curl*." This view has been confirmed by Mr. Knight. Such considerations have hitherto been unthought of in this country, but they are of too great importance not to demand the attention of every cultivator, for without a regard to them productive crops cannot be expected, and the cry will still be, that such vegetables cannot be made to reach that perfection in India which they attain in Europe.

Propagation.—This may be done by seed, but it is a mode never resorted to, except with the view of obtaining new varieties; planting out sections of the tubers, containing each two or three eyes, is the most general method pursued, and was long considered the best, or only means of planting this root.

But with reference to the adoption of this system in India, Mr. J. W. Masters, in an article read at a meeting of the Horticultural Society in Calcutta, says, "So far as my experience goes, a potatoe of a moderate size, having three or four good eyes, is far better than a part of a large one, and generally produces a better crop." This is fully borne out, as a general rule, by experiments in England, where the late Mr. Knight suggested (*London Horticultural Transactions*, vol. vii.), that planting whole tubers at greater

distances than had usually been adopted, would afford a larger proportionate produce. On this subject, too, another authority gives the following results of experiment—" we planted out sets of apparent excellence in some drills ; and being hard run for seed, we used for some contiguous drills (of precisely sifflilar soil, and with dung from the same heap) the refuse of our potatoes, not larger than walnuts. These have grown *luxuriantly* and without a single failure; while the cut seed failed altogether in numerous instances, and in no case pushed forth such vigorous stems as those which proceeded from the whole potatoes.'*—*Practical Husbandry by Mr. Martin Doyle.*

- It is worthy of observation that the eyes near the top end have been found to produce a crop that comes to maturity much earlier than those from the root end of the potatoe, and this is deserving particular attention by those having small gardens, and hence planting this esculent for early production, rather than for quality; the proper time for planting is September and October. They should be put in drills about three feet distant, and from eight to twelve inches apart, being covered with earth from three to five inches in depth.

Soil, &c. The best is a light, fresh, unmixed loam, in which they will thrive without any manure, and in such land unimproved though it be, they will always possess the finest flavor. In a wet soil the potatoe gets sickly and watery, as well as infested with insects and

worms, fresh unrotted manure gives a disagreeable flavor to the root, and those cultivated in soil tempered with old mellow dung, rotten leaves, or *vegetable* mould, are, on this account, most esteemed, although what is called littery soil will produce the earliest, and largest crop. •After the plants have appeared, a deep hoeing with the pronged hoe, should be given, and when they reach about four inches in height, the earth around them should be brought up to strengthen their growth, and promote increase below, repeating the operation until the original set is sit least fifteen inches below the top of the ridge, at the same time carefully eradicating all weeds; until the plants spread sufficiently to be able themselves to keep them down, and lastly, when they appear, pinching off the blossoms to increase the crop ; an operation which, trifling as it may appear, Mr. Knight estimated would—" add an ounce in weight to the tubers of each plant, or above a ton of produce per acre." *Vide London Horticultural Society's Transactions*, vol. i.—The drying up of the stalks, or holm, a& it is called, is a sign that the crop is fit to take up, and it should not be touched, save to dig a few new potatoes, before this sign appears; the digging is best done with the pronged digging hoe, which is less liable to injure the tubers than the flat kind. The holm makes a good manure.

Before quitting this subject, although perhaps not, strictly speaking, a part of horticulture, a few remark*

may not be considered, misplaced on this root as an article of agricultural produce.

It is but a few years since this most useful esculent was only grown by a few, for the supply of European residents alone; its good qualities have, however, now become known to most natives, and there are, consequently, but few bazars in the country where the potatoe is not to be found; this is especially the case in Buhar and the Western provinces, where they may be met with as large, and as good flavoured as the ordinary run in Great Britain; and where they also form a common article of diet among the natives of all classes and castes. Nevertheless much remains to be done with respect to the culture of this article ; no attention appears to have been yet paid to the character, or sort of what is cultivated, whether as regards quality or productiveness, nor do we find even that any inquiry has been made as to the most fitting soil to be found in India for its culture; we are told, it is true, and personal experience leads to the same conclusion, that Tirhoot, Arrah, and the neighbourhood of Hooglee yield, as is supposed, the largest proportion of potatoes, but as yet there does not appear to have been any attempt made at accounting for this greater production, nor do we find it any where accurately recorded, what the amount of produce has been from any given portion of land, and we are consequently ignorant of its value as a crop; the **only account published**

that attempts such an estimate, appears in Mr. L. DaCosta's translation of the "*Deewan Pusund*;" by this, the ground requires seven or eight ploughings in its preparation, besides four or five harrowings; the seed required is three seers to the beegah; the subsequent culture being four hoeings, and twelve to fourteen times irrigating. It¹ is to be remembered that this calculation applies only to the Upper Provinces, where the soil being more clayey requires more ploughing, and watering than in Bengal; a fair average account, therefore, will stand thus for one beegah:—

Bent one half, as other crops will occupy the lands during the remainder of the year,	2	0
5 Ploughings, . . . . .	.1	4
Harrowing, . . . . .	.0	6
3 Men planting, . . . . .	.0	6
Cost of 3 seers of seed, . . . . .	.0	9
Hoeing twice, . . . . .	.1	8
Watering 4 times, . . . . .	.1	8
		—
Expense,	Rs.	7 9

The produce of this, on the authority of the before mentioned work, would be from seven to ten maunds; in the latter case giving, at one rupee twelve annas per maund, about Rs. 17:8:0, the number of pounds being about eight hundred and twenty. But this is

on such very doubtful authority, that it can hardly be taken as a datum for calculation—which has yet therefore, to be found. In the absence of such information we can only refer to results in England. Some fifty years ago 400 bushels were considered as an extraordinarily good return from an acre,—equalling about 21,400 pounds—this would, however, be 87 maunds per beegah. But the Encyclopaedia of Agriculture, published in 1831, by Loudon, calculates the produce per acre at from five to eight tons, and adds that " the greatest produce is from the yam, which has been known to produce twelve tons, or 480 bushels, per acre"—the average of the former return being equal to 14,560 lbs., and the amount of the latter 26,880 lbs.

Mr. Robertson, of Kilkenny, in an article that appeared in the Gardener's Magazine of October 1838, states his improved culture to have raised the produce to 200 barrels of 20 stone each, or about 32,000 lbs. per acre, about 130 mauns from a beegah. Speaking of various experiments on the varieties of the potatoe, another writer, in the same periodical, (March 1836) states, that in the previous year he had obtained from the agricultural sort 572 bushels (38,324 lbs.); from the bread fruit potatoe 689 bushels (46,163 lbs.); and from the poor man's profit 636 bushels (42,612 lbs.), each per acre, or, on an average of sorts, about 172 mauns per beegah. This last kind is described as " **a round** purple and white potatoe, very

good for the table," hardy and easy of culture, very similar, apparently, to the description ordinarily met with in India. Another author pronounces that "the produce of the potatoe varies so greatly, that it is difficult to say what may be regarded as a medium return. Generally speaking, the crops produced in England and Ireland are greater than those produced in Scotland. In Lancashire the produce is reckoned to be from 8 to 12 tons per acre; in Scotland a fair produce is held to be 8 tons per Scotch acre, which is equal to 62.5 tons per English acre," (14,336 pounds—Ms. 174 33-4 about Ms. 58-4 per beegah)—*David Low's Elements of Practical Agriculture*.

But the most extraordinary improvement on record appears in the experiments made by the late lamented Mr. T. A. Knight, published in the Transactions of the Horticultural Society of London; and these are the more deserving of attention, because they exhibit a regular progressive improvement: it is not, however, necessary here, to trace the early steps of improvements, the object being only to shew what may be done with this valuable root; and this notice is therefore confined to his paper, appearing in the *5th part of the 1st vol. second series, of the Transactions*; in this Mr. Knight says, that he "*found some difficulty in obtaining credit for the accuracy of his statement,*" that one acre had yielded 670 bushels of 80 lb. each, or 53,600 lbs. and he, therefore, invited several farmers

and gardeners to witness the digging of his crop in 1832, when the internal plantation, after removing the outside rows, and end plants, yielded 964 bushels and 43 lbs. or 77,163 lbs. per acre; this appears, it must be confessed, scarcely credible, except on such undoubted authority, but being so proved, it may serve as a text for improvement wherever it is mentioned; forming a series of facts well deserving: of being: considered wherever the root itself may take its way, since they shew a progressive rise, the consequence of careful and assiduous attention to results ; this, in all their various branches, amounting in the example last shewn to a rate of produce equal to 314 mans from the small space of one beegah. The average of the above quoted rates of produce would equal one hundred and forty-nine mans from the beegah, which at even eight annas per man would give a return of somewhat above Rs. 74 : a sum that would certainly bear the expense of a much higher cultivation than has ever yet been bestowed, still securing to the grower a superior rate of profit to almost any article of Indian produce. It is much to be regretted, however, that there is no accurate detail of produce in the north western provinces.

INSECTS AND DISEASES. The red worm, and the grub are the most injurious insects, but these may be remedied by mixing a small portion of lime with the soil; but as an excess of this would injure the potatoe, a frequent change of soil, not cultivating the same spot with this

vegetable two years in succession, is the only sure preventive. The *curl* is a disease common to potatoes, and is by some supposed to arise from the tubers, whenca the sets have been taken, having been exhausted by over ripening ; although others assert it to arise from a grub in the roots.

JERUSALEM ARTICHOKE, *Hejianthus tuberosus*, *Khoor purslj khana Ictek*^ is a species of sunflower, growing often to ten, or twelve feet in height; it bears on its roots large clusters of roundisli tubers, something like potatoes, or perhaps in appearance more assimilating to ginger, which are sweet and pulpy, containing a large portion of sugar, whence they form a nourishing and wholesome food, and were formerly, before the introduction of the potatoe, which it surpasses in nutritive qualities, in very high esteem. If planted in rows from east to west, they will afford an useful shade to such plants as require it in the hot weather.

Propagatiön—is best performed by planting the tubers whole, but some prefer sets, or cuttings of the roots, in rows two feet apart, running north and south inserting them from four or five inches deep in the soil.

Soil, fyc. They will thrive in almost any soil, preferring however a light, friable loam, but like most other vegetables are apt to degenerate if continued too long in the same ground; the best way, therefore, to secure continuance of good roots is, to take them up

every cold season, replanting them in fresh soil; this is the more advisable, as they multiply so fast, that it is not easy to clear the ground of them when they have once established themselves in any spot; on this account also, it is necessary, in taking them up, to be very careful to clear out every particle of root, its off-sets, and out runners. The earth, if a large sized tuber be desired, should be kept clear of weeds, and occasionally brought up round the stems.

The TURNIP, *Brassica rapa*, *Shulgum*, needs no description, as the use of the root is familiar every where. It is a nourishing, and wholesome article of food, containing seven parts of starch, and one of gluten, with a large portion of nitrogen and water, out of the thousand. The tops, or young leaves, form a pleasant vegetable if boiled as greens. In estimation of sorts, the first place, both as respects tenderness and flavor, must be given to the *American flat winter turnip*^ of which Cobbett observes most justly, it is "the finest turnip I ever tasted." This grows to above four inches in diameter, but is never more than from an inch and a half to two inches in thickness, with a fine tap root springing exactly from the centre. This kind should not be sown till the beginning of November, when it will be fit to pull early in January. It will be best if transplanted, rejecting all the weak or sickly plants; as, indeed, is the case with turnips generally, in this country.

The early Dutch, the early stone, and the globe, Brassica rapa, Sofid shulgum, are the next best sorts, and, if English seed be used, will be found to give the finest flavor if sown from the middle to the end of November; they require about two months and a half to be fit to pull.

The Botán is a good flavored turnip, of a yellow color, and if left to come to perfection in the spot where sown, it will be ready in five, or six weeks.

The Swedish Turnip, Brassica rutabaga, or campestris, lal shulgum, is coarse and strong flavored, often growing to a very large size, and should not have a place at the table, though affording fine wholesome food for cattle; and, in this respect, deserving more attention than it has hitherto received in India; whence, although not strictly a part of horticulture, a few remarks may be excused on a root that has become of such importance, to the farmer and the grazier; the more as it does not appear that any work has yet referred to it, as an article of fodder in India. It appears to delight in the description of soil most easily procurable in Bengal, and that is, a sandy loam; this, in field culture, should be liberally treated with manure, well rotted, to which bone dust may be added with good effect, and might be supplied in every village,—the whole being inserted in drills, on which the seed should be sown, so as to place it in direct contact with the manure; the young plants being

subsequently thinned out to some eight or ten inches apart.

It appears that with careful culture, in Norfolk, this crop will yield fifteen tons per acre, according to the calculation in Mr. Loudon's "Encyclopaedia of Agriculture;" but Mr. Martin Doyle, in a late work on Husbandry, shews forty-six tons, and frequently even sixty tons weight of fodder for cattle, to be the produce of an acre; the average of which estimates would be equal to some three hundred and sixty mâns from a beegah, and would, even at four annas the mân, yield a return of ninety rupees.

Propagation—is wholly by seed. If to be left where sown, a bed of four feet broad, by twenty-eight in length, will require half an ounce of seed, but, of course, it should be sown much closer should the intention be to transplant. If the ground be dry, the seed must be well trodden down, before covering with earth, and this may be lightly sifted over to a depth of about an inch and a half, or the seed may be raked in to a moderate depth. For an early crop the sowing may be made towards the end of August, or beginning of September, at which time the turnip will often begin to put forth the seed leaves within twenty-four hours; then so sown, this will yield a crop by the end of October; the sowings for late crops may be continued until January.

Soil, &c. The turnip requires a light, rich soil,

well broken by cultivation; if a large portion of sand predominate it is to be preferred; and should dung be requisite, it must not be fresh, or it will afford shelter and encouragement to the fly; a plentiful supply of moisture, however, must be afforded during the whole period of growth. As soon as the young leaves are about an inch broad, the turnips should be transplanted, and if such be intended, or if left to grow, they should be thinned out to about six, or eight inches distant from each other. As the roots increase in size, a few should be pulled, so as to thin the remainder out to some ten, or twelve inches apart, which should be the space allotted them in transplanting, whenever that course is pursued. A good supply of water must be daily given.

INSECTS, &C. The most injurious of these is a kind of beetle, commonly called the fly, which commences its attacks as soon as the seed leaves appear above ground : the best cure is to be found in scattering quick lime over the plants, renewing it should a shower of rain fall, before the rough leaves appear, after which it is out of all danger from this insect. At that period, however, it may be attacked by a weevil, the grub of which often makes all the leaves complete skeletons; as well as by a species of mole-cricket that burrows in the earth, and, cutting off these from the stalks, drags the leaves, to its hole. As soon as the leaves get large enough they are attacked by the

green caterpillar; and when the root has formed, the turnip becomes the prey of the red ant, if kept too dry, which eating off the outer skin, gives admission to the water, causing the inside to rot, affording room to a new species of weevil to obtain admission, and deposit its grub.

The TURNIP-ROOTER CABBAGE, KOHL BABI, or KNOLE-KOLE, *Brassica caulorapa*, *Ole Kole* (cor) or *Gooljur ha kula*, is perhaps not fitly named, as the bulb, or excrescence, whence the name is derived, is not on the root, but forms a sort of head to the stem. It is a good, well flavored vegetable when young, but becoming strong and disagreeable as it gets old. There is a yellow kind seldom met within India, that forms its bulb partly in the earth, and is of superior flavor.

Propagation—is by seed, sown about the middle of September to November, or in the Upper Provinces from July, to the end of that month. Recent experiments have also shewn that slips from the previous year's plants will succeed well: especially if of a year or two standing, planted out in October, or in the Upper Provinces about September.

Soil, &c. The soil and treatment are in all respects the same as for the Cabbage.

The CARROT, *Daucus hortensis*, or *carota*, *Gajur*, is a wholesome and nourishing root, containing in a thousand parts, ninety-five parts sugar, three parts

starch, and the remainder water and fibre; there are properly speaking, only two varieties; the early, and the late, these are however divided as follows :—

The white, *Daucus hortensis*, *sóf6d gcyur*, is the earliest kind, and may be sown in the latter end of August, to yield a crop in the beginning of November; of this kind Patna seed, which answers well, is always procurable: it seldom exceeds six inches in extreme length, but will grow to a circumference of nine inches or more, and is of very good flavor.

The early horn, *Daucus hortensis*, *Chótee gajur*, is the next in succession, and should be sown about the beginning of October, whence it takes three months to be fit to pull: Cape seed is generally preferred.

The long orange, *Daucus hortensis*, *Lumbee gajur*, is best if sown from the latter end of October, to the end of November, giving its crop in February, of full size. American seed yields the finest produce, often from twelve to fifteen inches in length, and above eight in circumference, found too, even in April, at Calcutta, of a weight, without the tops, of a pound and upwards each root; of this kind the *Altmingham carrot* is in high repute, and is remarkable for a portion of the root always remaining above the ground.

Propagation—is by seed only, sown where they are to remain, as no long esculent roots should be transplanted, that operation occasioning the production of side shoots, that destroy the main root for the table.

This seed is difficult to sow, as the short hairs on the sides cause them to adhere together in lumps, whilst their lightness renders a calm day necessary for the operation; before scattering, therefore, it will be well to rub the seed between the hands with a portion of sand, or wood ashes. Some people in this country, and especially in the north western provinces prefer germinating the seed before sowing in the spot selected, by tying it up in a piece of cloth, and burying it a few days in a warm, but moist corner of the garden, but this is unnecessary. The seed ought to be very equally distributed, and trodden in before raking; about an ounce will be required for a bed of twenty-six feet long and five broad.

Soil, fyc. The soil for carrots must be light and mellow, mixed with sand, and should be well dug and broken fine, to a depth of at least a foot and a half, so that no obstruction should intervene to divert the downward striking of the root from its straight course. When the young plants reach two or three inches in height, they should be carefully weeded, and thinned, to a distance of from three to five inches; and then again thinned out to six or eight inches apart, as soon as of sufficient size to draw as young carrots for soup, &c. Some of the longest and best roots of the early kinds may be planted out in December or January, in rows, at a distance of two feet, and the plants six inches apart, for seed; sticking the flower stalks as they

appear to require it, to prevent their being blown down by the wind,—they will ripen in May or June.

INSECTS. The greatest enemies to the carrot are the harmless centipede, and a kind of many legged, red ring-worm.

The carrot, besides its good qualities as an article of garden produce, possesses considerable value as an article of agriculture, furnishing good and nutritious food for cattle; on which account large quantities of it are grown in Poorneah, and in other parts of the province *\$f* Buhar; where the rate of produce, according to the statements in the "Deewan Pusund," varies from twenty, to thirty, and sometimes fifty mans, from a beegah, but this falls very far short of what it ought to be, since the average produce in England, according to the best authors, is 476 bushels from the acre, which would equal some 129f mans from a beegah; the chief cause of this high state of productiveness being in a careful attention to the selection of seed, that commonly found in India, being of the short horn variety, whilst the most useful and productive are the long descriptions, among which the Altringham is the favorite. In considering this root in its agricultural character, one of the chief points to be observed is, that it is, perhaps, the best preparer of lands for other crops that can be found.

Among one of the causes of productiveness in esculent roots of all kinds in England, is the great attention to the quantity and quality of manures made use of; a

subject, which has met with little or no attention in India; but, when we observe the vast increase in crops, attained by this means, it is surely worth the care of every agriculturist, and every land-holder, to give some consideration to this method of increasing the value of his property, since no real improvement can be expected, until it is made worth the while of the ryot to regard more the care and preservation of his cattle, by improvement in their condition, than by frequent renewal of his stock; an improvement only attainable by placing at his command a greater supply of cheap and nutritious diet, which can only be looked for in the more extensive growth of the esculent roots.

The PARSNIP, *Pastinaca sativa*, *Juzur*, *Istufeen*, is but seldom found to grow here, and it never has been seen to reach the size it attains in Europe; its peculiar sweetish flavor makes it less a favorite than its wholesome and nutritive quality deserves in a thousand parts, there are nine of starch, and ninety of sugar, the rest being water and fibre. The Guernsey is the best variety, and in Europe often grows to the length of two or three feet.

Propagation, Soil, fyc.—The seed to succeed, must be fresh and well packed, as it easily spoils; that which has been put up in bottles, carefully corked and sealed, arrives in the best order; in its culture the same process is to be followed as just described for carrots, thinning out, however, to about double the distance prescribed for that vegetable; a calcareous is its native soil.

The BEET, *Beta*, *Chuchunda*, or *Chukunda*, the red kind is used in pickle, especially to improve the color of cabbage, also boiled and sliced cold, either by itself, or with salad; it contains more sugar than the parsnip, and is divided into two principal varieties—the long rooted, and the turnip rooted; of these the kinds best fitted for growth here, are,

1. *The Dwarf, or Early Red*, *Beta vulgaris*, *Chdta chvkunda*; this may be sown early in October, and will be ready by the middle of December, successive sowings being kept up until the middle of November. It is small, and not so highly colored as the later sorts, but will be found tender, and of good flavor. Patna seed will answer.

2. *The Turnip-rooted*, *Beta vulgaris*, *Gól chukunda*; of this kind the American is generally the best seed; it should not be sown earlier than the latter end of October, and will then give a good crop early in January; the root is large and round, as well as highly colored; it is well suited for shallow soils, but if left too dry will get hollow, pale, and woody.

3. *The Long Blood*, *Beta vulgaris*, *Lumbur ckvkunda*, is the best kind both in flavor, and color, and, like the last named, should not be put in the ground before the latter end of October, becoming fit to pull towards the close of January; sowings may be continued to the middle of December, and will furnish a supply for the table up to the close of March; or if attention be given to the furnishing a copious supply of water, as the

warmth of the weather increases, they may, with care, be kept on as late as the middle of April. The Gape seed of this sort is good, but decidedly the finest roots are obtained from that which comes from America.

Propagation.—Beet is always raised from seed, two ounces being necessary for a bed of twenty-two feet long, by five in breadth: this must be sown where it is to remain, either broad cast, on a rough surface, and well raked in; or, what is better, in drills two inches deep, about a foot asunder, and firmly trodden in.

Soil, &c. It delights in a deep, rich, sandy soil, dry, and light, rather than moist; previously enriched with a mellow old compost; for rank dung is apt to produce canker, and the ground should be trenched for the long kinds, to a depth of at least eighteen inches to allow the tap root to strike straight down. When the plants are about two inches high, they must be thinned to a distance of twelve inches each way, and well cleared from weeds. If the soil be stiff, they are apt to get woody and stringy; the same follows if left too dry, when warm weather has commenced.

- The SKIRRET, or WHITE POTATOE, *Sium sisarum*,* *Cheeneh aloo*, is a species of water parsnip, cultivated for its small roundish roots or tubers, which are joined together at the head in clusters; they were formerly esteemed in England, but have now nearly gone out of notice there; it originally came from China.

Propagation.—Although this plant is often raised by

offsets, the best way to obtain the root in perfection, is by seed sown in April or May, in drills about eight inches apart, which will give tubers fit for use in November when vegetables are scarce.

Sail, Şfc. A rich, but lightish soil is best suited for this plant, which when two inches high, should be thinned to about six inches asunder in the drills.

The SALSIFY, or GOAT'S BEARD, *Tragopogon porrifolius*, and GARDEN VIPER'S GRASS, *Scorzonera hispanica*, having no native names, being little known, save among a few who may rather be considered the enthusiasts than the regular horticulturists, and when introduced in the Upper Provinces it is well known, that a native gardener asked if the seeds were of "a new English flower"? They are cultivated for their long tapering roots, of a fleshly white substance, which are boiled, or stewed like carrots, and have a mild sweet flavor, something similar to parsnips, though less strong in taste ; but as the latter of these is apt to be rather bitter, it is advisable to soak the root for some time, before boiling, to abstract this flavor ; they are little known here, but deserve encouragement, as they are agreeable vegetables, and capable of being retained till late in the warm weather, or even through the greater part of the rains.

Propagation.—Seed is the only mode adopted in cultivating this article, and of this the American appears to be the best, so far as the little experience yet

obtained may lead to a conclusion ; one ounce is enough for a drill of twenty feet in length, or it may be sown in beds, and transplanted, though it is then apt to become forked. In the only instances known of the cultivation of this vegetable in India; the seed has been sown about the middle of November, when the first sowing has been fit to pull in February and March, keeping up a succession to a late period.

Soil, &c. The soil for this useful plant, should be light and mellow, dug full eighteen inches in depth, so as to allow the long root to go straight down ; when three inches high the plants must be thinned to six or eight inches apart, and in dry weather, water should be occasionally given until the ground be well saturated.

The RADISH, *Raphanus sativus*, *Moolee*, is composed of nearly the same proportions of fibre, &c. as the turnip, the root being eaten raw in a young state, by those who have any pretensions to taste, although often allowed to go to a size that makes them at once devoid of good flavor, and at the same time coarse alike in appearance, and taste; the seed pods are also, when green, used in pickles. There are two principal varieties—the long, and the turnip rooted ; the latter are the most rare here, and are every where generally preferred.

The Country Radish, *Raphanus sativus*, *Désee moolee*, grows to a large size, but is coarse and

disagreeable in flavor, chiefly eaten by those who are either natives, or born in this country; it may be sown at almost any time of the year, and if in May, it will give roots fit to pull in June.

The Long Scarlet Radish, *Raphanus radicus*, *Lumbee moolee*, is best obtained from English seed, that from the Cape seldom being true to its kind, and giving a mixed produce. It should not be sown earlier than the beginning of September, noj later than November, and it takes a full month from the time of sowing to be fit to pull.

The Red, and White Turnip Radish, *Raphanus oblongus*, *G61 moolee*, is best if not sown sooner than the middle of October, and should not be cultivated later than the end of December ; the best seed is procurable from France, and from Hobart Town, that from the former place being generally the most true, and smooth skinned. The turnip radish is generally fit to pull in twenty days.

The Spanish Radish, *Raphanus niger*, *Kalee moolee*, is a species of the turnip kind, the outside being a roughish brown skin, easily peeled off, when the inner part will be found firm, solid, white, and rather pungent; it must be sown thinner than the other kinds, as it grows larger. A little instruction to native table servants, where this kind is a novelty, will be advisable, since it has been known to do duty for boiled turnips as a side dish!

Propagation—can be only by seed ; one ounce of the turnip-rooted kinds, and one ounce and a quarter of the long, being sufficient for a bed seven feet in length by five feet in breadth; to be sown broad cast, and raked in to a depth of not less than half an inch.

Soil, &c. The soil should be light, and finely broken, and, as they advance in growth, they must be thinned out to* two inches apart for the long, three inches, for the turnip; at the same time five for the Spanish, and native sorts. Watering freely swells the roots, and makes them mild and crisp.

The YAM, *Dioscorca, Rutaloo Sootjmee*. There are a vast variety of this vegetable, the roots of ail being more or less mealy and palatable, easy of digestion, and nutritive. The most esteemed sorts are the *Round yam*, *Dioscorea globosa*, *Chdpree aloo*, white fleshed, and of middling size ; the *Oblong yam*, *Dioscorea alata*, *Kam aloo*, of a long shape, rather larger than the last, and white; the *Purple yam*, *Dioscorea purpurea*, *Lai guraneea aloo*, the tuber large, and the flesh tinged with* purple throughout, but apt to be rather stringy; and the *Spined yam*, *Dioscorea aculeata*, *M6 aloo*, seldom cultivated, being a native of the woods in Bengal, where it is dug up in the cold weather in oval tubers of several pounds in weight, the flesh being white, but insipid.

All kinds are most palatable when dressed by

being roasted in the hot embers, after a partial boiling. The plant has tender stalks, climbing a great height, and the roots often grow to so large a size, as to weigh from ten, to twenty pounds each. The best kind, found in the plains, is the round yam, but this must yield to the superiority of those found in the hills, the best of which is small in size, and of yellow flesh. The most common is the spined yam, but it is hard, dry, and tasteless.

Propagation—is effected by planting out the smaller tubers, or part of the large ones, at a distance of two feet apart in April and May, coming to maturity in November and December.

Soily frc. The earth for this root should be light and open, with a good mixture of vegetable mould, or decayed leaves, &c. It requires little, or no subsequent culture.

The SWEET POTATOE, *Convolvulus batatas*, *Pund aloo*, or *Shukur kund aloo*, is a plant of the convolvulus species; the root long, and from an inch to three inches in diameter, with a red outside skin, and the flesh, a transparent white; sweet, and tender when young, but getting stringy as it grows old. It is, however, a wholesome root, possessing much nourishment, containing a larger portion of water, and considerably more sugar in its composition than the yam; the leaves are used by natives as sag, or greens. The usual time for planting is April; which will then be fit to dig from

September to December. A second crop may be put in the ground in August or September.

Propagation—is by dividing the roots, or by planting out the smaller tubers, about three feet apart.

Soil, &c. The soil and cultivation is the same as for the potatoe.

The EGYPTIAN ARISM, *Arum colocasia*, *Kuchoo*, *Kuchooa*, or *Arooe*; this plant has a large thick oblong or round root, which, when raw, is hot and acrid, but becomes more palatable by cooking, though after all but a coarse article of food ; several species of *Arum* are used in the same manner by natives, some of them having a slightly acid flavor.

Propagation—is performed by dividing the roots, which should be planted out from July to November.

Soil, &c. Most soils agree with it, but it chiefly delights in a sandy loam; producing from September to January.

Before closing the subject of esculent roots, it may be as well to mention that there are two plants of this class that have of late years come into use in Europe, which, from their character, and the soil they require, as well as the circumstances of others of the same genera being known to thrive in this country, are well deserving attention by such as are curious in horticulture. These are the Tuberous rooted *Oxalis* (*O. crenata*), producing tubers about the size of a walnut, of quality excellent, somewhat resembling a new

potatoe, with the additional flavor of a nut; the young leaves, and shoots are a good addition to a salad, being a pleasant acid, and the stalks peeled, may be used in tarts like rhubarb. Another is, a new species of Indian cress (*Tropaeolum tuberosum*), considered equal in quality to the *Oxalis*, and, when boiled, of very delicate flavor.

SPINACEOUS PLANTS—*SAG KB EISM.*

The excellence of this class of vegetables consists in the succulency of their leaves.

The SPINACH, *Spinacia*, *Isfanaj*, or *Isfanakh* of the true kind, according to horticulturists, is composed of very little sugar, with a great deal of water and pulpy fibre; the leaves being used either boiled, alone or with gravies, &c. The several varieties differ little in their actual quality, or flavor as partaking of a bitter principal, but the Spanish is to be preferred for India, as more easily cultivated, and affording a larger crop of leaves, as well as not being so subject as the other sorts to the attack of insects.

The Prickley Spinach, *Spinacia spinosa*, *Isfanakh*, should be the latest sown, say, for instance, the middle of October, and requires a month to yield a good crop, the leaves being then very juicy, and of a lighter, and brighter green than the other sorts, as well as of better flavor.

The Round Spinach, *Spinacia glabra*, *Isfanakh*, is

also very good ; it may be sown from the beginning of September to the end of November, and takes about a month to be fit to gather; very good seed is obtainable from Patna.

The Spanish Spinach, *Spinacia olearacea*, *Pulung*, as it is called here, and by the seedsmen at the Cape; appears to be the same as what is termed in England the Flanders spinach, and of which the editor of the *Gardener's Magazine*, January, 1836, says, " The plant is as economical as it is superior in quality;" the seeds are round and smooth, and the leaves large, dark colored, and extremely succulent. It may be sown from the end of September, to the end of November, and takes somewhat less than a month to perfect its crop; it should have a good supply of water while growing, and will then rapidly renew its leaves as they are taken off for use.

The Green Nepal Spinach, appears to be the same as is known in England as *New Zealand Spinach*, *Tetragonia expansa*, *Nepal ki s&g*, where it is esteemed as an excellent substitute for the true spinach; and if well watered will continue giving large quantities of succulent leaves during even the driest-weather ; it may be sown early in April, when it will yield a good supply of leaves for the end of May; the sowings should be continued from time to time, until the end of August, which last will give its crop as late as the middle of October.

Propagation.—Seed is the usual method adopted:—sown broad cast, in the proportion of one ounce to a bed of fourteen feet long, by five broad, treading the seed well down, and covering it with earth about an inch deep.

Soil, &c. Almost any soil will do for this plant, but for the late growing crops as dry a spot as possible should be selected; when the young leaves are an inch broad, they should be cleared from weeds, and thinned, wherever crowded, to about three inches apart, giving them a subsequent thinning, to double that distance, as the leaves spread.

The WHITE BEET, *Beta cicla*, or *B. Bengalensis* of *Box*, *Paluk saḡ*, has its leaves much larger than the red, very thick and succulent; these, boiled as spinach, form a good vegetable; in England it is also esteemed for the mid-ribs and stalks which are separated from the lamina of the leaves, being sometimes stewed and eaten as asparagus under the name of chard. *The Great White*, or *Swiss* variety is the best, and may be sown at any time between the beginning of August and the end of November; if the chard be desired for use, the watering should be profuse, to promote the succulency of the stalks.

The Green, or Sea Beet, *Beta Maritima*, *Paluk sâḡ*, is but a variety of the last, and bears the same character in every respect.

Propagation, Soil, &c.—These are the same as for

spinach, save that the plants must be kept at a distance of from ten to fourteen inches from each other.

The ORACLE, or, MOUNTAIN SPINACH, *Atriplex hortensis*, and *rubra*, *Buhtooa*, and the OVAL SPIKED AMARANTH, *Amarantus gangeticus*, *Subsee-sctg* and *Lal-ság*, are commonly known here as red, and green *ság*, the leaves possessing a slightly acid flavor; the green kinds are boiled as spinach, but the red, which are the most esteemed, are best dressed with butter and spicy seasoning; they may be sown at any time of the year, and will afford leaves fit to gather in a few days.

Propagation, Soil, fyc.—No peculiarity of soil is required for these plants: they should, however, be kept moist, and a succession of sowings must be maintained to ensure a constant supply, except during the cold weather, when it may be allowable to give way to other vegetables of European origin.

The BLADDER SORREL, *Rumex vesicarius*, *Ooulaeeta chookeh*, is much used by the French and Dutch, but little by the English, who in this instance, as in many others where cooking is concerned, shew a want of taste, and deficiency of wisdom; it forms a very good sauce, or garnish, either dressed with butter, oil, &c. like the red orach, or *Ml ság*, as it is here called. There is a species of this plant called *the Bladder dock*, *Rumex vesicarius*, and known among natives as *Chooa paluk*, or *chookeh*, that very much

resembles the common sorrel in taste as well as in other qualities; it is believed to be indigenous, and is found in most gardens throughout India: although not always recognized, Europeans being generally better acquainted with *R. Acetosa*, the common field sorrel than with this variety.

Propagation—is effected either by seed or separating the roots in the beginning of November.

Soil, &c. The sorrel though growing wild in many parts of Europe in all its varieties, requires some care in India, and is best raised in a compost of sand, old dung, and garden mould in equal parts; it should be planted out at a distance of a foot asunder, and as the stalk runs up it must be cut down and the stool encouraged, by the addition of fresh mould, to throw out new shoots with large broad leaves, the common sorrel has never been known to succeed, although often tried. Other kinds of *Rumex* are cultivated as spinach generally by natives, but form a very inferior article for the table. The Bladder sorrel, grows well up the country, if kept constantly watered, and is worthy of more attention than is given to it if only as an *addendum* to curries.

The RED, WHITE, and SHINING MALABAR NIGHT-SHADE, *Basella rubra*, *Pdce sâg*; *B. alba*, *S6ftdpdee* ; and *B. lucida*, *Pdce*, are three varieties of an indigenous native vegetable of the climbing kind, growing to a very large size, and well known in most parts of

the country; propagated either by slips, or by seed sown in September or October. It needs no peculiarity of soil, and affords an abundant supply of succulent leaves, and young shoots, which are the parts eaten, and much esteemed by natives.

The leaves of various plants of Urticaceae, Tetragonia, and other tribes growing wild in this country, are gathered by the natives, and eaten under the general term of *s&g*, but they are little known to Europeans. Of the most common of these are the following :—

The Three stamened achyranthes, *Achyranthes triandra*,
Sanchee, or *Sanchee s&g*.

The Bristly-leaved corchorus, *Corchorus olitorius*,
Meeta and *khutapät*.

The Creeping bind-weed, *Convolvulus reptans*, *Kulmees&g*.

The Fenugreek, *Trigonella foenum-grsecum*, *Meet,hee juljulan*.

The Horse-radish tree leaf, *HwgpBito^ moringa*,
formerly *Guilendina moringa*, *Suhyäna*, or *munjee*.

The Common ditt, *Anethum graveolens*, *Sooe chooka*
or *soou*.

The Knotgrass, *Polygonum aviculare*, *Machoota s&g*.

The Ladies bed straw, *Pharaoceum molluga*, *Goorna s&g*.

The Meyera, *Enhydra repens*, *Hungtsha s&g*.

The Pumpkin leaf *Cucurbita pepo*, *Shan-chee kumruhee s&g*

The Radish leaf, Raphanus sativus, Moolee stiff.

*The Round nettle, Trtica globulifera, Lai looteea, or
Lai loota kudum.*

*The -Snake gourd leaf, Trichosanthes anguina, Chce-
ckeengasdg.*

The Sow thistle, Ponchos orixensis, Bun pulung.

Besides many others; in fact, almost every green thing that is not absolutely poisonous, and comes in the way of a poor native, is termed a *sag*, and turned to use, as an addition to his curry, or to his insipid mess of plain rice.

ALLIACEOUS PLANTS—PEEAJ REE KISM.

The Onion tribe* are universally known and esteemed for the stimulus and flavor they give to our food; but, though wholesome, they contain no nutriment, consisting chiefly of fibre, and possessing a very small amount of starch.

The ONION, *Allium*, *Peeaj*, is familiar to all; and it is not easy to give an estimate of sorts for cultivation in this country, as the European varieties are extremely difficult to raise.

The Portugal onion, Allium cepa, Burra peeaj, is the largest sized, and the most mild in flavor; but the seed seldom reaches here in good order, and even when it germinates, it is hardly possible to secure a plant to reach its full size.

The Dutch blood-red onion, Allium cepa, Gool peeaj, is, of all the European kinds, the best suited to India; it may be sown in October or November.

The Bombay onion, Allium cepa, Bumbuee peeaj, is a white description, much esteemed, it should be sown towards the close of September, thinned out about six weeks after, to afford young onions for salad, and will be fit to transplant by the beginning of December..

The Patna onion, Allium cepa, Putvieh pecaj is a red kind, of good flavor; and may be sown at the same time with the preceding, but not planted out till January.

The Small red onion, Allium cepa, Chdtee peeaj, of native growth, may be sown at any time from the close of the rains to the end of February, the last named month being the period for putting in the most extensive crops, which may be planted out in March, and will be fit to gather in May or June.

Propagation—may be performed, either by seed, or by planting out the offsets; one ounce of seed being sufficient for a bed five feet broad by twenty in length, unless it be desired to draw a crop of young onions for salad from the ground, when two ounces of seed should be scattered on the same space.

Soil, &c- The best is a rich mellow ground, manured with very old dung, on a dry subsoil, unless required for pickling only, and then they should have a poor soil to keep them small; powdered bones, or

blood, are good manures for increasing the size of onions.

The following has been found in the North Western Provinces to be a good compost for the larger varieties of onion; four mauns of mustard oil-cake pounded with one maun of wood ashes, and half that quantity of quicklime, all sifted tolerably finely, and worked up with eight mauns of cow or horse manure, the former preferable; the mixture must be well wetted, and brought to a high state of fermentation, in fact induced to generate the greatest possible quantity of ammonia, in which is contained the great secret of value in most manures;—this compost may also be applied to many other plants, and its value would be greatly increased by turning the drainings of the cowhouse and stables into the hole wherein it is deposited for fermentation.

If the crop be to remain where sown, the plant should be thinned out when four or five inches in height, to a distance of from three to seven inches apart, according to the size of the kind. Many, however, prefer transplanting them; and in so doing, care must be taken to keep the incipient bulb above ground; placing the plants of the Bombay and Patna kinds at about five inches apart, and those of the Portugal onion at least seven inches distant. As soon as the leaves begin to get yellow and dry at the points, the stalks should be laid down, the stems being bent

at about an inch, or an inch and a half up; during the the whole period of their growth the ground must be kept well hoed and free from weeds. The time for pulling them is known by the necks shrinking, and the leaves beginning to decay, and they must then be drawn and laid in the sun for a few days to dry and harden, care being taken to turn them very frequently.

INSECTS AND DISEASES. The grub, or larva of the onionfly, is the most destructive enemy the onion has; but it may be partially got rid of, by a plentiful application of lime on the surface of the soil. Of diseases, the rot is most fatal, and this will most commonly be found to have its origin in the admission of water inside the roots of the bulb, by pouring it on the leaves, and its there becoming fermented by the sun.

The LEEK, *Allium porrum*, *Kundan'eh*, *gunduna*, or *zalook*, is a much more hardy plant than the European sorts of the onion, and will thrive very well in India ; it possesses the same qualities, but is better suited for soups, or stews. The best variety is the London flag-leek, but the most hardy is the Scotch kind.

Propagation.—By seed; an ounce being required for a bed five feet broad, by six in length, sown in the middle or end of August, at the close of the rains.

Soil, &c. The soil should be light and rich, with a dry subsoil J a highly raised bed is therefore desirable; manure should be very sparingly resorted to as a rank soil destroys the plants. When these reach about

eight inches in height they should be transplanted into drills, some twelve inches distant, and the plains eight inches apart in the row; first trimming the long weak tops of the leaves and the ends of the root fibres, pressing the earth well round the fibres with the dibber, but leaving the stems free; they will require a good supply of water, and frequent hoeing, and as the bulbs increase they should be earthed up, to blanch them; they last a long time, indeed, with care, may be carried throughout the year.

The SHALLOT, *Allium ascalonicum*, *Gundhuna*, or *pcaaz*, is not generally known to Europeans as an Indian production, but is well known to natives, in the western provinces, and Madras especially.

Propagation—is performed by dividing the clustered root into offsets, putting them into the ground in June, which will give a crop shortly after the close of the rains. These should be planted six inches apart, at a depth of two inches, in rows nine inches distant.

Soil, &c. The ground must be light and rich, though not from new dung, as that gives birth to worms and grubs that are destructive to the bulb.

The GARLIC, *Allium sativum*, *Zuhsun*, *hisón* or *bulboos*, is, like the others of this tribe, an useful ingredient in most dishes fitted to the palate of *le vrai gourmand*, and few really well flavored productions

of the *cuisine* can be prepared without a portion of this bulb.

Propagation—is by planting out the cloves, or small subordinate bulbs, the proper time for this process being the beginning of October ; they will be fit to collect in May.

Soil, &c. A light, rich, and dry soil is best suited for garlic, in which the cloves should be set six or eight inches apart, and not put in too deep.

The CHIVE, *Allium schsenoprasum* ; it is somewhat doubtful whether this variety really exists, but the *Allium tuberosum* of Roxburgh, *Bkang-u-gunduna*, is so similar in character as to be hardly distinguishable from it, and is used in the same manner as the chive in Europe: it is a hardy plant, very desirable of encouragement from its easy culture, and of great use in various preparations for the table especially soups.

Propagation—must be either by slips, or by dividing the roots; and this may be done at any time, though the period to be preferred is the close of the rains; they should not be placed less than twelve inches apart, as they soon increase to large bunches.

Soil, &c. Any soil or situation will answer, but a hed should not be allowed to remain above three or four years without changing the roots, which otherwise degenerates.

ASPARAGACEOUS PLANTS—*MARCHOObd KEE KJSM.*

Of this class, which comprehends nearly all the more delicate flavored vegetables, the young shoots or incipient blossoms are the eatable portions.

The ASPARAGUS, *Asparagus officinalis*, *Marchooba*, *nokdoon*, or *isfurqj*, is the chief of this class, and gives name to the whole, the 'young shoots being well known as a delicate article for the table; it is considered a wholesome article of food. The few varieties in Europe are the result of cultivation, but are little known in this country; the Battersea kind has been sent out here occasionally, and has proved pretty good. The American has however, turned out the best.

Propagation—is best performed from seed, but it is more tedious than the common mode of dividing: the roots, generally resorted to in forming a bed, on account of the plants so put in becoming productive one, or more properly two seasons before seedlings, these last however, generally yielding the finest shoots for the table. The seed should be trodden down gently before raking in ; it may be sown *ut* any time that it is procurable fresh and healthy, though the end of September is, perhaps, the fittest period; the quantity requisite being a pint to a bed of 5 feet broad by 30 in length. The young plants must be kept cleanly weeded until pricked out, and again as they grow fit for transplanting.

Soil, frc. The soil for asparagus can hardly be too rich or too strongly manured with dung and litter; at the same time it should have so much of sand, as will make it sufficiently light to allow the young shoots to force their way easily through it, or they will be stunted and deformed,

The best plan, in forcing a bed, is to trench the ground to a depth of two and a half feet, with a width of some five feet, placing a layer of brick or *konkur* below all, and then putting sand mixed with plenty of good dung upon this formation at the bottom of the trench, for a depth of a foot and a half; over that should be deposited about six inches of dung alone, and above that again the like depth of rich light mould; bearing in mind that above all things a wet subsoil is to be avoided, as it would rot the shoots. When you have filled up the trench over these layers of dung, &c. with a strong, rich, loamy, or sandy soil, make small trenches at a foot apart, and six inches deep, and put in the young plants from the growing bed, or the divided roots, as it may be, at about nine inches apart in the row, covering well in and lightly with the earth taken out of the trench. For the first one or two years the plants must be allowed to run up to stalk, only clearing the bed from weeds, and occasionally stirring the surface; but in the second year if from divided roots, and the third if seedlings, when the plants have

runs to seed and begin to dry, cut them down close, and loosen the earth all over the bed with the pronged hoe, dressing the whole with a fresh layer of sand, vegetable mould, and well rotted dung. The bed should then be well watered every day, making a ridge of earth all round to prevent the water from running off, and when the young shoots appear, cut only the largest, leaving the others to run up to seed, as too large a crop must not be exacted, or the crowns* will be weakened for future supply. From this period, with care, a bed will continue to furnish a good supply for ten or twelve years. The supply of water during the time that the stools are giving their crop can hardly be too plentiful, it is, therefore, well to have the asparagus bed near the tank, or at all events on the side of the mafri stream from the pumps, so that it may be flooded once a day during the hot, and dry weather. If an early crop be desired, one of the beds, after the plants have been cut down and dressed, should be guarded with a ridge all round, and flooded, allowing the water to remain on for two or three days. Every year, about the month of June, the stalks that have run to seed, beginning to decay, should be cut down close, the weeds must then be cleared

* The clusters or heads of the roots whence the young shoots are grown up, sometimes called also stools.

off, a good dressing of strong manure should then be given, and the whole well dug with the pronged hoe.

The SEA KALE, *Crambe maritima*, having no native name, is a hardy, but highly esteemed vegetable; the young shoots, and stalks of the unfolded leaves being the parts used. It is mentioned here more as an article deserving of attention, than as one of actual cultivation, as it is believed few if any instances have occurred of its having been yet successfully cultivated. Within the personal knowledge of the author of this little work, several experiments have been made in sowing the seed, most of which failed altogether, none even germinating; four attempts, however, so far succeeded as to prove the practicability of adding this delicious vegetable to our Indian stock of garden productions; the plants in these instances having, after thriving well to from four, to twelve leaves, been destroyed partly by insects, and partly by having the dressing of allies, or sand put on to the bed too soon.

Propagatiön—must at first be from seed, and gardeners agree that it is generally best so to raise this vegetable. The fittest time for sowing is believed to be about the middle of November; the quantity of seed being, if sown to transplant, in the proportion of two ounces to a bed of seven feet long by five in breadth, but if sown to remain, the same quantity will serve for a plot five feet broad and thirty in length, sown in drills two feet apart; the seeds must be put in

at a depth of two inches, and require about a month before the plant shews itself above ground. It may also be propagated by offsets, but seed is preferable.

Soil, &c. For the seed bed, a good compost of well rotted dung, sand, and vegetable mould in equal parts; perhaps, even a larger portion of sand would be preferable for beds where the plants are to remain. For which a spot must be selected, having a dry bottom, and it must be trenched in the same way as for asparagus, mixing a rather larger portion of sand with the compost with which the trenches are filled, and in this the plants are to be inserted at a distance of two feet each way. No crop ought to be taken for the first two years; but in the third, when the plants are beginning to shoot, the beds should have a covering thrown over them of about an inch of pure sand, or sand and ashp, and a blanching pot should be put over each plant, pressed down closely to exclude all light and air ; stable litter must then be put closely all round the pots, and even raised a little above them, taking care, however, that the temperature within the pot shall not exceed 90° of Fahrenheit, in a short time the shoots may be well blanched, and ready for cutting. The proper pot for sea kale is made with a moveable lid to facilitate the examination of the plants and gathering the shoots without disturbing the litter.

The ARTICHOKE, *Cynara Scolyma*, *Kungvr*, or *artuchuk* (cor.) is cultivated for its flower heads, which in

an immature state, freed from the leaves, bristles, and seed-down, are a favourite vegetable; the conical is the best flavored variety here.

Propagation—by seed is the best mode of extending this plant, sown in the beginning of August, or in the upper provinces in June and July, under shelter, either in a small bed, or what is preferable, in pots; but it may be done by slipping off the young shoots or suckers, and planting them out after the close of the rains, say in September, into sheltered beds of rich earth.

Soil, &c. The soil best suited to the artichoke is a rich mould, with a small admixture of sand, and the best way to form your bed for these plants is to select a spot, in the month of June or July, and cover it, to the depth of from four to six inches, with a mixture of decayed vegetable matter, and well rotted cow dung, in the proportion of three parts of the former to one of the latter, letting this be well dug in, and the ground allowed to remain untouched, except to keep it clear of weeds. As soon as the seed leaves fall off, the young plants should be pricked out into a sheltered bed, at a distance of four inches apart; and at six inches distance when they reach the height of about three or four inches. About the end of November or beginning of December, mark out the spot you have retained for your bed into squares of about two feet on each side, and two feet apart; take out the earth to a depth of about one foot, and fill the hole with a

mixture of sand, vegetable mould, and rotted cow dung, in equal portions; then transplant the artichokes into these squares ; putting four" in each, at a distance of one foot from the centre, fixing the root firmly, and giving water every day until it begins to shew new leaves, and then continuing a more moderate supply of moisture until the blossom shoots appear, when the earth must be brought up, leaving a sort of channel round each group, and the watering increased to the roots, to enlarge the size of the main heads; all the lateral ones should be taken off' in a very young state, to increase the strength of the principal stems ; some cut off the ends of the large leaves for the same purpose. Mr. Gordon, a well known grower of this vegetable in England, found that running a bit of lath, or rather splinter, through the stem, at right angles, about four inches from the head, and keeping the wound open, greatly increased the size of the head, operating in the same manner as ringing on trees.—*Vide " Gardener's Magazine, January, 1835."* As soon as they have done giving fruit, the plants should be taken up, and the shoots and slips put out in a sheltered bed to form the next year's supply of plants.

ACETACIOUS PLANTS—*KAIHOE KES KISM*

are generally eaten raw, and are rather articles of condiment and luxury, than of food.

The LETTUCE, *Lactuca*, *Kahoo* or *kuma*, is a cool and wholesome salad, containing a little sugar, and a large portion of water and fibre, together with a bitter milky juice of a slightly soporific nature. The varieties are numerous, but these are little sought for, or attended to in India.

The Cos Lettuce, *Lactuca sativa*, *Bura kahoo* or *k'hus* from which latter, the Arabic name, it would appear that the English one was derived, proving the variety to be of Eastern origin; it is upright, of an oblong shape, and when full grown tender, and of delicate flavor. It should not be sown before the middle of November, and may then be continued at intervals to the middle of December; if sown later it is apt to run to seed, without forming heart. The plants from Patna seed will require only six weeks to be fit to cut, but cannot be depended on as true to their kind, whilst those raised from English seed, will require from eight to ten weeks.

The Cabbage Lettuce, *Lactuca palmata*, and *crispa*, *Bunda kahoo*, are the proper descriptions for early and late sowings, and these may be commenced in the middle of August, or even earlier; but in this case they must be cut when small, and not full grown, or they will run to leaf, and to seed in a straggling, unhealthy manner. Sown in July, very good lettuces may be had in September, and continued every ten days until the end of December; they take from six weeks to

two months to be fit to cut. An up country correspondent says,—“You may have salad (lettuce) almost the whole year, in the month of January mark half a dozen of the finest lettuces for seed, when the seed begins to ripen, gather it every day, and collect the different kinds separately in phials, after drying in the sun.” It would be better, however, only to seek in each season one variety, as that will be the only means of keeping true to each kind, since when several varieties are within any short distance of each other the bees and other insects will transfer the pollen, so as to hybridize to the degeneration of the produce, and hence it is that what is known as Patna seed can now be so little relied upon for the truth of its crop.”

“ Sow once a fortnight in the following manner; prepare some rich mould in a small bed, and make a trench all round six inches deep, water the bed and sprinkle the seeds upon it thinly, and sift some dryish mould over them, and cover the bed with a mat laid on sticks till the plants come up: if the bed wants water, fill the trench but do not pour water over the bed as the earth will cake (*ch'kupree*), and prevent the seeds from growing. When the plants come up remove the mats, except in very hot weather, at which time they must be put on in the middle of the day, plant them at 6 to 8 inches apart in a fine soil, and shelter **them** from **rain or heat.**”

The Brown Lettuce, *Lactuca sativa*, *Kala Kahoo*, is vapid, coarse, and indifferent both in flavor and appearance.

Propagation—is performed only by seed, the early crops being sown in sheltered beds, or pots under cover; a quarter of an ounce being sufficient for a bed of eight feet long and five broad; the seed must be lightly raked in, and then the earth gently pressed down to make it more difficult for the ants to abstract; for if not carefully watched, they will take the whole away in a few hours after the seed is sown; on which account it is advisable to strew the ground thickly with pounded turmeric, at the time of sowing.

Soil, &c. A rich mellow soil is requisite for lettuces, and they are better if transplanted when about three inches in height, into rows ten inches apart, and from ten to fifteen inches distant in the rows'. Such as it is desired to forward quickly for the table should be tied up to whiten the hearts, but for the main crop this is not necessary, except with the *Cos* lettuce.

The ENDIVE, *Cichorium endivium*, *Kasnice*, or *karoo* is a pleasant salad, but requiring to be blanched to remove the bitter taste; it has the same properties as the lettuce. The white curled, is the best kind in this country, and as its seed ripens well, a portion should always be preserved for early sowings, which may commence in the middle of August, and be continued till January. Endive requires about ten

weeks before it is cut. It is one of those vegetables which the encouragement given by the exhibitions of the Horticultural Society have best succeeded in improving, and from the period of its being in season may be considered an acquisition.

Propagation—is by seed, an ounce being a fit quantity for a bed fifteen feet in length by five broad. The seed should be thinly scattered, and well raked in.

Soil, &c. A rich mellow earth gives the finest heads, the plants being early thinned in the seed bed, and transplanted when they attain a height of about four inches, into rows about eighteen inches asunder, and about twelve inches apart. In planting, the tap root must be shortened, and the long leaves trimmed; the plants must have a good supply of water while growing, and when the heart becomes full, they should be blanched, by covering with a blanching pot, a flower pot reversed, or by tying up the leaves by the tops, during which but little water should be given, and that close on the roots without touching the leaves : and it is to be borne in mind that this operation must not be performed on too many plants at once, but in regular succession, with so many only as are required for daily consumption, as when once blanched the endive soon rots, from the confinement, and want of air.

The CELERY, *Apium graveolens*, *Ujooa'en khorasane*, or *kurufus*, is used as a salad when blanched, the

tops, and unblanched plants adding a fine flavor to soups, stews*, &c. When blanched it contains a little starch and sugar, and much fibre. There are four varieties, all deserving of cultivation.

1. *The Red solid*, *Apium graveolens*, *Lai ujooden*, is a fine hardy description, but rather apt to be strong. It should not be sown before the middle of November, when, if the seed be English, it will take about ten days to germinate, and will be fit for the table at the end of March, or the beginning of April.

2. *The White solid*, *Apium graveolens*, *Sfid ujooa'en*, is an early sort, and may be sown in August, in a sheltered spot; by so doing it may be made to give a crop in December.

3. *The Italian*, *Apium graveolens*, *Chota ujooa'en*, is a tender, well flavored variety, but does not reach* so large a size as the two former kinds. The middle of October is a good time to sow, and you will by so doing have the plants fit for the table in January : but in the upper provinces the latter end of March, or the beginning of April is considered the best time for sowing; even then, however, some have found January or February suited for this operation, and English seed put in, in November, will generally give a crop from February to April.

4. *The Turnip-rooted*, or *Celeriac*, is little known in India.

Propagation.—All sorts are raised from seed, a

quarter of an ounce being sufficient for a bed five feet broad by ten in length. Offsets are sometimes used in the upper provinces, but always have a disposition to flower instead of filling out for the table.

Soil, &c. The soil must be rich from vegetable mould, but not rank; it is well to prick out the young plants when about two inches high (removing the tap root to encourage, the multiplication of lateral fibres), into a bed at four inches apart, allowing them to remain there until they attain a growth of from six to ten inches : from October to February these plants should be transplanted into trenches about a foot wide and four feet asunder, running from east to west, dug out about eight inches* to a foot in depth; the bottom should be well manured, and trodden down close before planting, and the excavated earth must be packed smoothly and firmly at the sides of the trench ; the plants must be trimmed from any straggling leaves, and all side shoots slipped off, then put in at the bottom of the trench, about six inches apart, (some say sixteen inches, but that is a great waste of space as well as of labor in watering,) giving a good watering immediately, and repeating it every day by opening one of the water courses of your garden into the end of each trench, so as to give a good supply to the roots without allowing the moisture to touch the leaves, which must be carefully attended, to during the whole process of blanching,

or the plants will assuredly rot. As soon as the plants begin to take hold in their new position, they should be carefully earthed up, by drawing the mould from the sides of the trenches, attention being shewn to the removal of any side shoots that may sprout out, as well as to the plant being held firmly and evenly together with the hand, whilst the earth, (which must be made fine,) is drawn up so that no particle may get into the heart, or between the leaf stalks. The earth should also be firmly pressed and brought to the height of about half an inch below the lowest leaves. This operation must be repeated at least every week, each time removing any side shoots that may be formed, and plenty of water must be daily supplied, in the manner before mentioned. The turnip-rooted kind, or celcriac, must not be much earthed up, or it is apt to revert to its primitive long form.

INSECTS. The celery is chiefly liable to attack from the red earth-worm, and the small centipede, which must, therefore, be searched for at each earthing up, and destroyed.

The CRESS, *Lepidium sativum*, *Halum*, or *Chunsür*, has a peculiarly warm and grateful flavor, arising from the nitrogen contained in it, and is known to most people. There is a sort called CHINESE CRESS, *Arabis chinensis*, *Hulcem*, or *huruf*, - very good, but not to be imprudently eaten in excess.

Propagation—is performed by seed only, which may be put in at any time of the year, taking care, however, that it is sheltered during the heavy rains; it germinates rapidly, requiring only a few hours in the hot weather. One ounce should be sown on a bed of three feet by five, in small drills, and rather thinly scattered on a light well pulverized mould, covered very thinly by sifting the earth over it from a small sieve.

The WATER-CRESS, *Nasturtium officinale*, *Dceo-kandur*, *suzal*, or *panee -ka halum*, is a favorite salad, especially as eaten with bread and butter at breakfast.

Propagation—is performed either by seed or dividing the roots or offsets, put out in large pots or gumblas, and kept nearly covered with water in a sheltered situation. The water must be frequently changed, and the plants renewed every }^Tear, or they will acquire a disagreeable earthy flavor. Where the water-cress is desired to be grown more extensively, a bed may be formed in a shady situation, of a moderate slope, so that the water may run off gradually—and at the most elevated part one or more jars should be placed with small#holes at the bottom so as to allow the water to escape slowly; care must be taken that the jars are regularly filled once a day, and that weeds are not suffered to intrude among the plants.

The PURSLANE, *Portulaca Quadrifida*, and oleracea, *Choolee nooneea*, or *kurfeh*, have round full stems and fleshy leaves, very slightly acid in flavor; esteemed

cooling, by some. It is used as an ingredient in salads, but is a poor tasteless thing. There are two varieties differing only in the mode of growth, the one producing an upright stem, and the other having its branches prostrate.

Propagation, Soil, &c.—The Purslane is raised by seed sown in almost any kind of soil, and at almost any period; though it thrives best if sown in July, when its crop will be fit to take from September to January.

CUCURBITACEOUS PLANTS.—*KHEERA KEE KISM.*

This class of vegetables are all of a cooling nature and generally much esteemed by all classes.

The CUCUMBER, *Cucumis*, *K'heera*, is used green, sliced as a salad, or pickle when young. There are very many varieties; those best known and esteemed in India, are the following:—

1. *The Long green, Cucumis sativus, Lumba k'heera* growing about ten inches in length. American seed is preferred; it is best if sown at the end of April, when it will fruit freely in July.

2. *The Nepal, Cucumis sativus, Natpala Kheera*, is a fine delicate flavored cucumber, of a white color, and large size. It may be sown at any time between the beginning of June and the beginning of August, yielding its fruit from August to November.

3. *The Cape Dwarf*, *Cucumis sativus*, *Chdta Kheem*, is a good little cucumber that may be advantageously sown from March to October.

Propagation—is by seed, sown at a sufficient distance to give the plants room to run, putting several seeds in each hole however, and afterwards thinning out such as are weakly.

Soil, &c. The soil should be rich and light, well manured with stable dung;—when the plants acquire the fourth leaf, they should be thinned to two plants in each hole, and these stopped by pinching off the leading shoots;—as the runners spread, they should be so trained as to be kept pretty clear from each other, and if the soil be low or wet, or the rains heavy, it is well also to raise them on a trellise, or *muckan*.

The GOURD, *Cucurbita lagenaria*, *Toomra*, and *tudoo*; of these there are very numerous varieties in India, the fruit being used in many native dishes as well as in European cookery, and the tender shoots boiled by natives as a kind of greens. The fruit is considered cooling, but has not much flavor. The most approved and generally grown kinds are the *Pumpkin*, *cucurbita pepo*, *kumruha*, ftither sweetish in flavor; and the *Bottle gourd*, *cucurbita lagenaria*, *hudoo*, watery and almost tasteless.

The Most useful cucumber, *Cucumis utilissimus* (Roxburgh), *Kukree*, will, from its appearance as brought to market, be more generally classed as a

gourd than a cucumber* especially as it has more the flavor and use of the former: the fruit is oval, smooth, and variegated with shades of yellow and green, keeping a long time if hung up in the shade, and by the natives is held in high esteem. The seed is sown from April to the end of the year, and grows to the extent of about four feet as a trailer; yielding fruit from June, or July to January.

Propagation.—They are all propagated by seed, and some of them run to a very large size, covering a small native Jmt in a very short time. The soil and cultivation is the same as for the cucumber.

The SQUASH, or VEGETABLE MARROW, *Cucurbita melopepo*, or rather it is believed *ovifera*, *Sufura koomra* is a very delicate vegetable of the gourd kind; and has several varieties not, however as yet, distinguished by natives; the chief of which are—

1. *The Crook-necked*^ when about six inches long is well flavored, but it soon gets hard and stringy. Seed sown in January will give fruit in April.

2. *The Early long-warted*, is more delicate than the foregoing, and if sown in October will give its fruit in December. The sowings may be repeated every fortnight until the end of January, and again in April until June.

3. *The early Scollop*, is the best flavored of any of the squash kind. It may be sown advantageously from the middle of October to the end of January, and

will give fruit in perfection and abundance from the middle of December to the middle of April.

Propagation—is only by seed, and it is best not to transplant them, but let them remain where sown, in little cricles about six feet apart, drawing out the weakly plants. The best seed is from America.

Soil, Sfc. The soil should be a rich loam, and they must be trained on upright sticks, or a small trellis, to insure the setting of the fruit. It will be well to fertilize the female blossoms by approaching the anthers of the male flower, when well charged with pollen, to the stigma of the female blossom.

INSECTS. The greatest enemies to the above named cucurbitaceous plants, are the ants, which pierce and destroy the young fruit, and the red beetle, called the soldier, attacking the leaves, and blossoms.

The DIOECOUS SNAKE GOURD, *Trichosanthes dioica*, *Pulooul*, is a small creeping plant of the gourd kind, yielding a fruit about the size of an egg, much used in curries.

The COMMON SNAKE GOURD, *Trichosanthes anguina*, *Chuchoonga*, *%r jeenga* produces a fruit about a foot long, used by natives in curries, and pleasant flavored enough, but apt to be woody.

Propagation—of these two last is by seed sown from January to March, to yield fruit from March to September, or they may be increased by parting the roots.

Soil, frc. The plants require a great deal of room, but almost any soil is equally productive.

The LUFFA, many angled, *Luffa acutangula*, or *fctida*, *Turaee*, *jeenga* is another indigenous plant, that affords a nice vegetable from May to the end of September, or even sometimes, later.

There are varieties <* of this vegetable besides the one just mentioned but none of them so much esteemed in that capacity though useful in medicine. They come in season from July to October; the chief is the *Clubbed*, *Luffa clavata*, *Bunturaee*, this is eaten in an unripe state in curries.

Propagation, Soil, frc.—is by seed only, sown from April to the end of June, and giving produce from May to October; any soil suits them, but they should have a trellis, or sticks for support, and to prevent the fruit from being injured by laying on the ground during the rains.

The BITTER GOURD, *Momordica*, *Kurttat*, has several varieties, distinguished among natives by distinct names, most of them are only found in a wild state, but the three following are cultivated, and[#] are used in curries, to which they give a bitter flavor, that is very agreeable, though not generally liked at first:—

1. *The Hairy bitter gourd*, *Momordica charantia*, *Kurkla*, yielding a small sized fruit used in an unripe state.

2. *The Egyptian bitter gourd*, *Momordica luffa*, or *Luffa petandra*, *G'heea tooree*, *puroola keendee*, having a middling sized fruit but unless very young inclined to be stringy.

3. *The Spiked bitter gourde* *Momordica muricata*, *JBura kurkla*, or *aoocheea*, has a somewhat smaller fruit than the last, and is more cultivated, from being held in higher esteem.

Propagation, Sfc.—is by seed sown from April to the end of the year, in almost any soil.* They grow to the extent of about four feet as climbers, although naturally belonging* to the class of trailing plants, and yield fruit from June, or July, to January.

PLANTS, THE FRUIT OF WHICH IS USED AS A VEGETABLE.

These are most of them of a delicate nature, and chiefly of use in pickles.

The TOMATO, or LOVE APPLE, *Solanum lycopersicum* or *stramonifolium*, *Goot bégun*, or *ooulaeeté btgun*, has a slight sub acid flavor, esteemed in soups and sauces, as well as in a green state as pickle.

The Large Red, is the best flavored, but is long in coming to perfection; the best time for sowing is the middle of October, when its fruit will be ripe about the end of January.

The Small round or cherry, is inferior in taste as well as size to the foregoing; its color either pale red or yellow, but it is very prolific. It may be sown either in September or October, and will give its fruit early in December.

Propagation—is performed by sowing the seed in pots, or in a small bed, where they should remain only until they reach about two inches in height. The best seed is* from America. With a little care and attention in keeping the roots well earthed up, and the plants carefully sticked, they may be made to last, and give fruit all the year round.

Soil, frc. A moderately rich soil is desirable, into which they should be pricked out when from two to three inches high, at a distance of four inches, and removed when from six to eight inches in growth, to the bed where they are to fruit, standing in rows two feet asunder; the plants being eighteen inches distant from each other in the rows. They must have sticks to support them, especially if planted out late so as to be exposed to the rains.

The GARDEN EGG, or BRINJAL, *Solanum Melongena*, *BSgun*, *Vhangun*. There are an immense variety of this plant, most of which are held in esteem, but they all require the same treatment. The chief sorts are the *Ordinary purple*, the *Large purple*, the *Tapering purple*, the *Bombay white*, (attaining a very large size,) the *Ordinary white*, and the *Small white*.

Propagation—is by seed, which may be sown at any period, though the best time for the large sorts, is in April or May.

Soil, &c. No particular soil is required, provided it be not too heavy, or too hard. The plants should be put in at two feet apart, and kept well weeded.

The MAIZE, or INDIAN ODRN, *Zca mays*, *Bhuta* or *boota*, is chiefly cultivated for its ears, or cobs ; which are eaten green, after being roasted over the fire, and form thus an agreeable vegetable. There are several varieties, of which the white kind, grown in the hills, is the largest, and superior to the American, which has been by many supposed the finest, but not quite equal to some recently brought from Sydney ; the white sort from Juanpore is also very fine, giving from 6 to 700 grains; but the small yellow kind, yielding from 4 to 500 grains, common in Bengal, is perhaps as delicate flavored as any, and the seed always procurable.

The produce of this article in England is considered good if yielding from 2 to 300 grains on each cob, and in the Gardener's Magazine for 1834, mention is made of one that gave 360 grains, as of an extraordinarily large amount.

It is an useful and wholesome grain, that deserves far more attention than has been bestowed on it in India, and coming in as a crop, when the garden is unoccupied, is well worth sowing, as it serves to keep down weeds, and its stalks yield, by burning, a large

portion of ashes to manure the soil against the return of the sowing season for vegetables. In the West Indies its good qualities are duly appreciated, and this grain is almost the only food given to every kind of stock; horses fed on it thrive well; cattle and pigs are easily fattened with no other food, and all sorts of poultry become white, firm, and fat in a short time on Indian corn, whilst here its virtues are little known, and it is seldom used or turned to any good account, or even thought of by Europeans, save in its green state, roasted as an occasional vegetable. In the year 1840, and for several subsequent years near Calcutta, it has been known to yield fifteen mauns of grain, separated from the ear, from a beegah of ground*.

Propagation, Soil, &c.—It is produced from seed sown in the latter end of May, which takes about two months to be fit to gather; many people, however, sow an early crop, but this generally turns out poor and indifferent, unless taken great care of; for of late years maize has been exhibited in the May vegetable show of the Horticultural Society, as firm as could be grown at any other season.

The NASTURTIUM, or INDIAN CRESS, *Tropaeolum majus*, and *minus*, having no native name, the seeds are used pickled, like capers, possessing an agreeable pungency: or the leaves and flowers may be used in salads, or as garnish. There are a double, and a dark colored variety, but these belong more properly to the

flower garden, and the plant is difficult to bring into any sufficient extent of seed growing.

Propagation, Soil, fyc.—It is cultivated by seeds only, which, if sown in the middle of October, will give seeds fit to gather in March; unless the weather become too hot by that time. To secure a fine crop, however, the best way is to sow in pots, under shelter, during the rains, and put out the plants into the open ground as soon as these cease.

The CHILT, GUINEA, or INDIAN PEPPER; *Capsicum, Murucha*, or *murcha*, needs no description to any one in this country, where it is so universally used as a condiment. The varieties are far too numerous to mention here, a few only, therefore, are noted of those most deserving the attention of Europeans.

The Large pepper, Capsicum grossum, Bura gach murucha, is the best for pickling, and grows to a great size; it must be gathered before it becomes red, for this purpose. The seed should be sown in August, in pots under shelter, and the fruit will be fit to pull in November.

2. *The Nepal pepper, Capsicum sinense, Nupala murucha*, is a good sort for use green, as a condiment, or when ripe for putting in pickles.. It should be sown about the same time as the preceding.

3. *The Black round pepper, Capsicum bicolor, Kala murucha*, gives a good flavor to pickles, and is therefore worthy of cultivation.

4. *The Long red pepper*•, *Capsicum frutescens*, *Lunka murucha*, is the best for drying when ripe, as a condiment ; it should be sown in September.

5. *The bird pepper*, *Capsicum baccatum*, *IXhan murucha*, is small, but very hot, and best suited for making cayenne pepper, for hot vinegar, &c. It may be sown in pots in July. 9

6. *The cherry pepper*, *Capsicum cerasiformum*, *Gool murucpa*, is as biting even as the last mentioned, and is described by some authors as the species from which the Cayenne pepper of merchandize is made. This pepper serves all the other uses of this condiment, and may* be sown at the same time as the last mentioned.

Propagation—is effected by seed, sown in pots, a quarter of an inch deep, and afterwards transplanted.

Soil, &c. A light, well manured soil is the best for all kinds, in which the plants should be pricked out at about four inches apart, when they attain a growth of three inches ; and afterwards put out into a bed of rich light earth, when they attain six inches in height; giving them a good supply of water, and keeping them clear from weeds.

The OKRO, *Hibiscus esculentus*, *D'hunroos*, *ramturuée*, or *Vheendee* > the fruit of which, in a green state, affords a very mucilaginous vegetable, much liked by some people: it is indigenous.

Propagation.—The seeds may be sown at any time

between the middle of April, and the middle of October. The natives generally prefer sowing in June.

Soil, &c. A rich soil is the best suited for this plant, into which it should be transplanted, at not less than two feet asunder each way. It requires but little attention, when once it has taken root, beyond keeping the ground moist; and being a struggling, unsightly plant, should be confined to an obscure corner of the garden.

The WATER CALTROPS, of two kinds, the Chinese *Trapa bicornis*, and the two spurred *Trapa*, or *bispinosa*, *Sung'hara*, *panee penult* *Sung'hara*, the former little known in India, but the seed of the latter is a farinaceous, sweet, and irregular shaped nut, used in various ways as a vegetable, or roasted like a chesnut, but it has not much flavor.

Propagation—is by seed sown in any common soil, provided it be kept sufficiently moist. The plant requires little attention after it is in the ground.

HERBS, ECT.—*NUBAT*, *MUSALU*.

The PARSLEY, *Apium petroselinum*, *Ajmood*, or *ajooan khdrasanee*, is a well known plant, used alike as a pot-herb, or as garnish, for which latter purpose the curled is the best variety.

Propagation^ *Soil, &c.*—Sow the seed in small drills about nine inches apart, in the beginning of October, and cover with earth half an inch in depth. It will take from ten days to a fortnight before it comes up. In

gathering, care should be had to cut smooth and even, so as not to injure the young shoots. It will require watering in the hot weather, and may be continued throughout the year.

The AROMATIC FENNEL, *Feniculuni panmorium*, *Sunf*, or *s6,oodh*, serves as garnish to many dishes, or to flavor salads; it is indigenous to India.

Propagation, Soil, &c.—The roots will divide into offsets, but the most general mode of propagating is by seed, sown in drills, nine inches apart, on light earth, in the month of October.

The DILL, *Anethum graveolens*, *Sooee*, or *sooe-chooka*; the leaves are used in soups, and other dishes, as well as to give a flavor to pickles; the seeds also are used in medicine as a carminative.

Propagation, Soil, &c.—Is the same as in cultivating fennel.

The HORSE RADISH, *Gochlearia armoracia*, having no native name, the root scraped is pungent, and used as a condiment to roasted beef.

Propagation, Soil, &c.—It prefers a deep, soft, sandy loam, moderately moist, in which the tops, or leading buds of old plants should be set.

The real horse-radish was seldom met with in India, until lately, and even now the native gardeners do not know how to grow it to prevent its root from dividing into a number of thin shoots, about the size of * quill each, a substitute being found in the root of the

Horse-radish tree, *Hyperanthera moringa*, *Suhujna*, or *munjee*, in Bengal, which grows to a large size, but is very woody; it prefers a sandy loam, and the leaves, flowers, and tender seed vessels, have their places among the numerous sâgs or greens eaten by natives; they are chiefly used in curries, under the name of *snhvjna sdg.* <

The GARDEN THYME, *Thymus vulgaris*, *Ipar*; the young aromatic leaves, and tops are used in staffing, in soups, &c. but it is a very delicate plant to rear, and preserve, as being kept too dry, or having too much moisture are equally obnoxious to it.

Propagation—is best performed by seed, but it may also be increased by slips, and dividing the roots.

Soil, &c. Rich light earth is requisite for this plant, and it should not be nearer than six inches apart from one to another.

INSECTS, &c. A little black fly is the worst enemy this plant has, stripping it of the leaves and young shoots as fast as they appear;—smoking, with dry grass, or tobacco, is the best destroyer of this insect.

The BENGAL SAGE, *Salvia Bengalensis*, *Seestur*, or *sqlbeeh*, is used also in stuffing for strong meats. The common variety is indigenous to India, and grows to a large size. The best variety, however, is the *Small leaved green kind*, *Salvia officinalis*, the best seed of which is procured from America.

Propagation.—The common kind is multiplied by

slips, cuttings, or layers, at almost any time of the year. The small leaved green sage is raised from seed sown in October in a pot, whence it may be put out in the open ground in January.

Soil, &c. Any moderately good soil will suit this plant; in culture, all it requires is to be kept clean from weeds, and the long straggling branches to be cut down occasionally, so as to present a regular bushy head; it should also be taken up and fresh planted every three years at least,—every season being preferable.

The COMMON MINT, *Mentha dativa*, is highly aromatic; there are two varieties cultivated here, the *Common*, or *spear-mint*, *Mentha viridis*, *Pddeen'eh*, for culinary purposes; and the *Peppermint*, *Mentha piperita*, *Nana*, useful medicinally.

Propagation—is performed by planting out the offsets, which are very numerous; the best time for this operation being in September, after the close of the rains.

Soil, &c. Both kinds prefer a moist, cool soil, and only require to be watered and kept clean; the beds should be renewed every year, or the plants get straggling, and weak.

The SWEET MARJORAM, *Origanum Marjorana*, *Murooa*, *murzunjoosh*, or *datur*, is a sweet flavored aromatic herb, much used in soups, stuffings, &c.; a stock for the whole year may be secured by cutting down the full grown branches, and drying them.

Propagation.—It may be increased by cuttings, but the best method, in this country, is by sowing the seed in October in pots, in a rich loamy soil; the finest seed being from America.

Soil, frc. A rather dry soil, and a shady situation are requisite for this herb, in which the plant should be put out when about three, or four inches in height.

The BASIL, *Ocimum*, *Toolsee*, or *tulsee*, is an useful aromatic plant of easy propagation, esteemed on account of its strong flavor, for seasoned dishes, and soups. There are two varieties, *the Sweet*, *Ocimum basilicum*, *JBoomuk Italee toolsee*, and *the white*, *Ocimum album*, *Su/Sd tulsee*; the former is the largest, and the fastest grown. Both kinds are naturalized in India, although originally brought from Persia.

Propagation—is by seed sown thin, to obtain which one or two plants should be annually reserved; the sowing should take place towards the end of September.

Soil, fyc. It grows best in a rich soil, a little sheltered, and in transplanting, which should take place when the plants are from three to four inches high, it is considered the roots must be taken up with a ball of earth.

The ANISE, *Pimpinella anisa*, *Neesoon*, is cultivated for distillation, and expression of the juice to be used medicinally; the seeds also are carminative.

Propagation, Soil, frc.—By seeds, sown in a light dry soil, in October, and allowed to remain where sown,

thinning out the weaker plants, as they do not bear transplanting.

The CORIANDER, *Coriandrum sativum*, *Kushneer*, is cultivated chiefly for its aromatic seed,* used in confections, as well as medicinally.

Propagation, Soil, Sfc.—It should be sown in October, on a light, low, ricfy soil, deposited by the inundation. It will ripen in December.

The COMMON CUMIN, *Cuminum cyminum*, *Zeera*, or *kumoon*, is grown for the same purposes, and in the e*me manner as coriander, but it does not ripen until April.

The COMMON RUE, *Ruta graveolens*, *Saturee*, or *sudab*, is a strong smelling shrub, possessing some medicinal qualities, and has a place in most gardens.

Propagation, Soil, Sfc>—It is easily multiplied by slips or cuttings, put in a poor calcareous soil, in a shady situation.

The CHAMOMILE, *Anthemis nobilis*, *Baboon'eh*, is a bitter aromatic plant, the flowers of which afford a good tonic stomachic when infused in moderate quantities, but a strong infusion taken in a tepid state proves a ready emetic, and like the last named is found generally in gardens. It is a hardy plant, the single variety only being found in this country.

Propagation—is effected by sowing the seeds, in a

* These seeds are ordinarily called *D,huneea*.

sheltered bed, from the early part of September to the end of October, by dividing the roots.

Soil, Sfc. When of sufficient size, the plants should be put out at eight or ten inches apart, in a poor sandy soil; they require a good share of moisture to make them flower freely.

The INDIAN WORMWOOD, *Artemisia Indica*, *Afsunteen*, *doona*, or *mustaroo*, grown chiefly for its seeds; its leaves are also useful to poultry.

*Propagation Soil, frc**—Any soil suits this plant, and it may be grown either from seed, cuttings, or by division of the roots.

The COMMON BALM, *Melissa officinalis*, *Badrunj-booeek*, or *budrunk*, affords, by infusion, a grateful drink in fevers, and every garden should therefore have a few plants of it.

Propagation, Soil, frc.—It grows freely in any good garden soil, and is readily increased by dividing the roots, or by slips planted out at the close of the rains.

The LEMON GRASS, *Andropogon schaenanthus*, *Gund bél*, *ug'hun gas*, like the foregoing, yields, on infusion, a refreshing drink in fevers, and should therefore be cultivated.

Propagation, Soil, fyc.—It requires no particular soil, and is easily multiplied by dividing the roots.

The COMMON ROSEMARY, *Rosmarinus officinalis*, *Buhureèh*, is used in infusion, and the flowers in distillation of perfumed water.

Propagation.—The finest plants are raised from seeds, but it is more generally propagated by slips.

Soil, &c. The plants should be twelve inches apart, and they like an open, free, limey soil, especially the rubbish of old buildings.

The LAVENDAR, *Lavendula spica*, *Nurd*, or *nardeen*, is an aromatic plant well known to Europeans, but cultivated in India only with great difficulty.

Propagation.—The most usual mode in Europe is by slips and cuttings, but it is extremely difficult to make these strike in India. The seed should be sown in the middle of November, and will find assistance either by being sown on a hot bed under glass; or, if in pots, from having a wet blanket placed over the pot, and exposed to the evaporation of the sun, as otherwise much of the seed usually fails, and even with this aid it will require a fortnight, or more, to germinate; on account of the hard shell of the seed.

Soil, &c. When the seed-leaves fall off, the plants should be put out separately into small sized pots, freely watered, and kept under shelter until they reach the height of about six inches, when they are fit to be put into the open ground; but this should only be done between the end of September and the beginning of February, as they must have sufficient time to become well rooted before the hot weather sets in; or, they will be unable to bear it.

The COMMON GINGER, *Zingiber officinale*, *Adrua*, is a pleasant pungent root, well known to every one.

Propagation.—It is extended by parting the roots, or by planting out portions of the previous year's tubers in April and May.

Soil, &c. A dry, light soil, with a good portion of manure in the trenches, is the best for ginger, the sets being planted in rows about eighteen inches distant, from eight or ten inches apart, and covered lightly; they will be fit to take up in the February following.

The TURMERIC, *Curcuma longa*, *Huldee*, is much used in curries, as well as to give a yellow dye to cloths and silks.

Propagation.—This is done by dividing the roots, or planting the fresh tubers, from the beginning of March to the end of May.

Soil, &c. A rich mould is the best soil for turmeric, and the sets should not be put nearer than six inches, in a bed about two feet or two feet and a half wide ; it may be taken up in February.

The MANGO GINGER, *Curcuma amada*, *Amb huldee*, *amada*, is a great addition to pickles, &c.

Propagation, Soil, &c.—is in every respect the same as for the foregoing, to which it is closely allied.

EDIBLE FUNGI.

These have received little attention in India as yet, though they afford a most grateful addition *to* our

vegetable produce, whether freshly broiled, or stewed, preserved as a pickle, dried, or converted into catchup.

The MUSHROOM, or CHAMPIGNON, *Psalliota campestris*, *Berth ha ch, hata, samp ki topee*, or *deeroon*, the only one of this class commonly known here has not yet received the attention, and cultivation it deserves, being only occasionally made use of when found growing spontaneously on an old dung heap, or other spot favorable for its production. The wholesome sorts are readily distinguished, from being of middle size, of a fine pink, or flesh color in the gills, changing as they advance to a chocolate, and of a pleasant earthy odour.

Propagation—is performed by spawn, a white fibrous substance, running like broken threads among the dung, &c. where the mushroom is found growing, and producing, when planted, small tubercles, which placed in a moderate hot bed produce the mushroom ; it is found most abundantly as the rains subside, which is a good time, therefore, to collect it, as it is then in its most active state of vegetation.

Culture, &c. Provide good horse dung, and build with it a square bed of the size required, taking care to shake and mix up the dung and litter well together, and to form the bed with a narrow shaped ridge, above three feet in height, in the centre; leave it to settle and expend its first heat in vapor { this will take about a fortnight, then choose the spot where the bed is to

remain, selecting as dry a foundation as possible; reconstruct the bed thereon, keeping it still with a sloping ridge in the centre, treading down the dung as you proceed, and mixing the litter well with it. When this has remained a sufficient time for the heat to become moderate, cover the sloping bank about two inches thick with fine sifted mould, leaving the ridge in the middle open for the steam to evaporate as it rises; but when this ceases the top also may be covered with mould. Then divide the spawn into small lumps, planting them six or eight inches asunder in rows at about the like distance, inserting them close down to the surface of the dung. The bed should be afterwards very lightly watered from a fine rose, with water about the temperature of new milk; cold water at all times inevitably destroying not only the growing crop, but the whole of the spawn likewise, and thus renders the bed of no further use.

In gathering the mushrooms, care must be taken gently to twist the head removed, so as not to disturb the young plants that will be found clustering at its foot, and at the same time not to leave any portion of the stem of the one gathered, as that would rot, and seriously injure all around it. It will be necessary to make new beds every eight or ten months.

The TRUFFLE, *Tuber cibarium*, *Kum*, or *kuma*, is too celebrated in the annals of gastronomy to need description; it may be used to greatest perfection stewed

in various ways alone, or with other succedance. This fungus is found under the ground in parts where the soil is light, and dry, but it is difficult to discover, and is but little known in India. In Europe dogs are trained to hunt for the truffle, and it is curious to observe the perfection they attain in pursuing their search.

The Fruit Garden.

It has been but too often subject of remark in India that so little attention is paid to the preparation of the ground, and a full enquiry into the nature and qualities of its subsoil, in the first formation of a garden, so as to have a soil either natural or artificial, sufficiently well fitted for the plants it is to receive and nourish, and to remedy the defects of the latter whenever these are of a nature likely to affect their health or produce. But if this previous preparation be called for in other parts of a well ordered garden, how much more is it needed in the FRUIT GARDEN which forms the next subject of consideration. This, like the Kitchen Garden, should be well trenched, and attention must be paid that the subsoil, be not of a corroding quality, and that it be free from white ants, rats or other destructive vermin: a thorough drainage must also be carefully attended to, that the water may not lodge on any part, either above, or below the superstructure of soil; this may be easily secured to the former by so constructing the fruit borders, that they may have a gradual slope towards the tank, or the principal drains leading to it, and the depth of good mould should be fully three feet; a rich mellow loamy soil being preferred. The worst scite for a fruit garden is where the upper soil exhibits a stiff heavy clay, and in preparing such

a soil for an orchard, a good admixture of lime rubbish from old buildings, together with a good portion of pure sand should be added ; but, if the soil be weak and cold, sand, and decayed vegetable matter, plentifully bestowed, will be found of service, or a layer of old, well rotted dung laid in at the bottom of the trencher

Drainage of the subsoil is a subject of most serious consideration, especially as it is one but little knowij, or thought of in India, where however, the variety of its structure, the inundation and heavy falls of rain, and the prevalence of matter calculated seriously to affect the roots, especially of plants disposed to penetrate deeply for nourishment, renders such enquiries of more importance than elsewhere. In Great Britain this subject has received much attention, especially in agriculture, for there it is generally admitted, that upon it depends much of the trouble and hazard of planting-the surface; but in a work of this kind it is hardly possible to enter much on the details attending this most important part of forming an orchard, and we must be satisfied with noticing the three principal conditions of the subsoil in ^a cursory, and concise manner; these are a clayey foundation with retention of all moisture falling from above whereby the surface becomes constantly soaked, chilling and retarding the vegetative powers of the plants inserted in it, until the roots eventually rot and the trees are destroyed. Strong subsoil if not horizontal, but bearing a slope towards

any point where a drain may be run, is only injurious where the surface soil is thin, but may by care be made very productive, although always attended with the objection of harboring worms which collect in, and injure the roots. A light subsoil possesses the advantage of readily disposing of any superfluous moisture, and much assists the benefits derivable from manures, of preventing their becoming speedily exhausted ; it may generally be considered the best adapted therefore, for a fruit garden requiring little attention to draining, any evil that may attend their being so absorbent being easily overcome by forming an artificial substratum of konkur, or broken brick, closely beaten down to prevent too rapid a departure of the moisture necessary for healthy growth; whereas the first, clayey substratum requires deep and expensive drainage and if for that reason alone should, if possible be avoided, although it is unfortunately a very prevalent condition of land in India particularly in Bengal.

In commencing, therefore, the formation of a Fruit Garden, after these points have met our consideration it will be well to trench the entire ground to the whole depth, or nearly so of the surface soil, manuring it well, but moderately ; for it is to be remembered that as the trees extend in growth there does not exist that facility of frequently renewing, or improving the soil that is found in the constant succession, and change of crops,

with alternations of fallowing that is afforded in the Kitchen Garden, and that a tree once planted is not so easily altered in its condition, and assisted, by improvement of soil, &c. in its growth, or power of production as a cabbage or a lettuce.

A good supply of water is indispensable, for distribution of which, drains should pass from the tank to all parts, and branches must be brought to each tree, so that in the blossoming, and fruit setting season, trenches may be carried round every tree at a distance of from three to six feet from the stem, according to the stretch, or expansion of the branches that the spongllets of the roots may have a plentiful supply of moisture daily, especially when in blossom, or when fruiting has commenced.

It will be found a good plan in burning weeds, &c. to select the period when the trees are in blossom for that operation, and to do it to the windward of the fruit garden, so that all the smoke may be sent among the trees, as it will be found a good destroyer of insects, a protection against blight, and an occasional potatoe, or other crop between the rows of trees is generally useful to their growth if only by the careful digging they afford, and the suppression of weeds.

Trees should not be too much crowded ; as is so universally the case in native orchards, whose owners still adhere to the long exploded, and mistaken notion of the greater the number of trees, the greater the crop,

whereas their very closeness prevents fruiting, and fine large fruit can only be grown **where** there is plenty of space and a sufficient chdilation of air; we never see a native orchard without a **longing** to cut down half of it. To prevent this, **great** attention must be paid to the probable size to which each will grow, before fixing on a scite Cor it. The fruit garden should be well sheltered to the north and north-west by high trees; and plantains, or other straight growing trees, wU be advisable to the south to break the force of the **wind** from that **quarter**, as well as to lessen its heat during the hot weather.

GRAFTING, &c. Among* the subjects most essential to be attended to in the fruit garden, are the propagation by grafting, &c. and the **diseases incidental** to trees. On the first of these, **that** «mine at gardener **Mr. W. Forsyth** gives the following rules **for** the selection of scions, which are well **deserving** careful recollection—" 1st. That they are shoots of the former year; for when they are older they never succeed well, 2ndly. Always to take them from healthy fruitful trees; for if the trees from which they are taken be sickly, the grafts very often partake so much of the distemper as rarely to get the better of it, at least for some years; and when they are taken **from** young luxuriant trees, whose vessels are generally large, they will continue to produce luxuriant shoots, but are seldom so productive as those which are taken

from fruitful trees whose shoots are more compact, and the joints closer together; at least it will be a great number of years before the luxuriant grafts begin to produce fruit, even if managed with the greatest skill. 3rdly. You should prefer those grafts which are taken from the lateral, or horizontal branches, to those from the strong perpendicular shoots;" these are good rules, and will be found as practically applicable to trees in this country as in Europe.

DISEASES. The same may be said of his observations on canker, " The canker proceeds from bruises in the bark, from limbs cut off, &c. When these limbs begin to rot and grow hollow, they convey the canker to the root; for it always proceeds from the branches and stem to the roots, and never from the roots to the tree. When by accident, or improper treatment, trees receive large wound?, and the cure is left to nature, they are frequently over-run with gum and canker, which if not checked, *will* in a short time totally ruin them." Ginker assumes various appearances ; sometimes as a black speck, in the epidermis, which gradually enlarging the shoot affected is so weakened as to be broken by the slightest touch; sometimes as a ring of scurvy, or diseased matter, slowly increasing in depth until it reaches the pith; and sometimes , again, as a small black dot, or line in the pith itself. The outer range of the canker has the appearance, when cr⁴ / W n Illimi of n TM*fcTM dotted with the

pen, and every portion of wood or bark should be cut away as long as this is perceptible, for if any be left, it will infect the new wood or bark as soon as it forms. Mr. Forsyth adds, " Wherever you see gum oozing out, you may rest assured that the canker is not quite eradicated." Sir Humphrey Davy recommended the application of a weak acid, as a cure for this disease; but the general mode is to cut out the part affected, and fill up the wound with a plaster; of which the best suited to all climates it has been tried in, is that discovered by Mr. Forsyth, and thus described by him: " Take one bushel of fresh cow-dung, half a bushel of lime rubbish of old buildings (that from the ceilings of rooms is preferable), half a bushel of wood ashes, and a sixteenth part of a bushel of pit, or river sand; the three last articles are to be sifted fine, before they are mixed, then work them well together with a spade, and afterwards with a wooden beater, until the stuff is very smooth, like fine plaster used for the ceilings of rooms. Lay on the plaster, about one-eighth of an inch thick, all over the part where the wood or bark has been cut away, finishing off the edges as thin as possible; then take a quantity of dry powder of wood-ashes, mixed with a sixth part of the same quantity of the ashes of burnt bones ; put it into a tin-box, with holes in the top, and shake the powder on the surface of the plaster, till the whole is covered over with it, letting it remain for half

an hour, to absorb the moisture'; then apply more powder, rubbing it on gently with the hand, and repeating the application of the powder, till the white plaster becomes a dry smooth surface."

GUM is a disease chiefly incidental to stone-fruit trees; arising from injudicious pruning, as well as from bruise*, other injuries¹ to the bark or wood; and it also takes place frequently when large brandies have been taken off¹. Its presence is first perceptible in a brown appearance of the bark, growing gradually darker until the gum oozes. The infected part must be cut out, until clean wood is reached, and the above mentioned composition applied; the French gardeners use instead, a mixture of cow-dung, and loam.

HEADING DOWN. The same author affords some very valuable information on this operation, which has been tried in this country with very great success, often having within the author's experience restored, and preserved the character of fruits of known good quality in former years, which had degenerated and would, without, recourse to this measure, have been lost entirely, or the trees cut down and burned as useless.* Its object is to produce new wood in old and exhausted trees, and to secure the continuance

* A particular instance of this occurred under the author's own hands in his brother's garden at Alepore, where two very old Shaddock trees were said to have produced in prior years, some 25 years or more previously, a superior kind of fruit; but it which when he saw them bore only a diminutive tasteless produce of no character or flavor; he, however, determined to try the above method, and in a few days the trees began to produce a new wood in old and exhausted trees, and to secure the continuance

of a good kind of fruit, the tree producing which has ceased to bear, or to equal its former production; this operation should be performed towards the close of the cold weather, when the sap begins to resume its active circulation, but as it is in direct violation of the course of nature, it must be effected **gradually**, removing a part only of *ike* main branches in the first year, leaving the rest to preserve the circulation of the sap, until new shoots are produced, and become capable of keeping up this function, **when** the remainder of the old wood may be cut away; observing, that in doing this, as well as in all cases where wounds are made, the composition recommended by Mr. Forsyth* should be **applied**.

INSECTS. AS a preservative against insects on trees generally, having **already** referred to these destroyers more particularly as affecting all vegetable nature, that is well worthy of trial in this country, the following wash is recommended by Mr. Forsyth to be **applied** every year in the spring, especially to the bark, being at once well calculated to afford nourishment to the tree, and to keep the bark fine, clean, and healthy:—
"Mix fresh cow-dung with urine, and soap-suds, and with **this mixture wash** over the stems and branches;" if the **washing be repeated at the beginning, and close**

*save one leading shoot, removed the year after, when the new wood produced some of the finest flavoured fruit ever tasted, and fully equal to its original character.

of the rains, it will destroy the eggs of insects that may at the former period remain on them, and at the latter give vigor to the bark after the exhaustion produced by the excess of moisture; at the same time that it will generally be of great service to the future health and productiveness of the trees.

SINKING OF THE SOIL. One more observation is necessary before closing these general remarks on the Fruit Garden. It is a well known fact, that in the progress of even one year, and certainly after a few years, the subsoil of the fruit garden, unless repeatedly trenched and added to, will sink, thus bringing a tree, planted, in the usual mode, with the surface around it levelled, to have the collar or neck buried some 5 or 6 inches deep in the soil, thereby deranging the healthiness of the tree, and bringing on premature decay. To obviate such a serious evil the best course in planting is to take care that the earth, well mixed with manure, should be raised in the form of a flattened cone, having a hollow basin at the top, whereon the young tree should be planted, and, after covering in, well mulched with small pebbles, or broken bricks.

IN a country where the fruits of Europe are but little known, and not every-where attainable, they should, perhaps, form a separate class; but as such an arrangement can be but seldom called in requisition by the horticulturist, who cultivates either for his amusement, or for profitable return in India, when they so seldom come under his care, and when they are as yet only considered as rare exotics, whereof the true culture to suit the climate is yet unknown, or at the least in its infancy, it would lead to enlarging on so fruitful a topic, of separate interest only as yet to the enthusiast, and far beyond what is intended in the present work, it has been considered a preferable form to introduce the most prominent of them in their proper class under the general description.

STONE FRUIT—*DANEH*, OR, *GUṬ IILEE KÉ PIUL*.

The PEACH, *Amygdalus persica*, *Aroo > shuftaloo*, *peechphul* (*cor.*) is the most generally esteemed of this class, and has become naturalized to all parts of India. The criterion of a good peach is, that the flesh be firm, the skin thin, of a bright red color on the side next to the sun, the stone small, the pulp plentiful, of a yellowish color, and the juice abundant. The best variety is the round poach *B, kumee*, having a small stone, seldom met with in Bengal, but common in the West, and North-west of India. The China flat peach is a good sort; but the most common kind is the China long

peach, of a hardy habit, and an abundant bearer. The few varieties yet found in India, shew the little attention hitherto paid to horticulture; for Mr. Forsyth in his work on fruit trees, enumerates not less than eighty-six kinds; whilst the catalogue of Mr. George Lindley contains sixty; and those of the London Horticultural Society, two hundred and twenty-four; though Dr. Patrick Neill mentions only one hundred and eighty-three varieties of this fruit.

Propagation.—New varieties may always be raised from the stone, although only with much labor and perseverance, for, until the tree produce fruit, it is impossible even to conjecture, whether the produce will be a new kind, a repetition of an old sort, or a degenerate failure; but to perpetuate those that are already approved, budding or grafting is resorted to, for which the plum is recommended as a good stock, and in England the almond has been found valuable, particularly, for the finer sorts; in this country, however, the seedlings peach is commonly used for this purpose; and these, people in the Upper Provinces generally sow in February, or March about an inch deep, and a cubit apart; but they have a fancy there for looking to such seedlings, if from good varieties, as their stock, which is, to say the least, a great risk and likely to introduce a spurious and degenerate fruit, in supercession of the good kinds they have hitherto had to boast of in that part of the country. So far as regards stocks, however,

seedlings are useful, and it has been generally found advisable to select such as have been raised from the stones of the best flavored peaches, those being preferred which are a full year old with a portion of firm wood. It does not appear that the same objection is to be taken to seedling peach-trees as applies to most other fruits raised from seed, viz. that they are much longer in **attaining** maturity **than grafts** or layers, as Mr. Knight found that seedlings would produce fruit in three, or four years.

Soil, Sfc. A light, mellow, loamy soil is the best, of a depth of a foot and a half, to two feet, with a tolerably dry bottom, too much manure causing the tree to run to wood, and therefore to be avoided. If the soil be clayey, it will be advisable to take out a part, and mix **With** it sand, or old lime rubbish, with a portion of leaf mould. One of the great **evils that** cultivation has to **contend** with, in **the** growth of the peach in Bengal, is the wet subsoil that pervades the whole province; this may, however, be obviated by digging down to the wet stratum, and then throwing in broken brick, and lime rubbish on the bottom, beating it down with a rummer, and watering it until it forms a solid and tolerably smooth surface, into which the roots cannot penetrate, thus preserving them from contact with the wet soil; over this **the** mound should be raised, as described in a **former page** to** receive the young plant. In choosing

young plants for the garden, preference should be given to such as have clean, and strong single stems, or, if only double stemmed plants are procurable, one should be cut off so as to leave a good healthy leader.

Culture. After a graft has been planted out for a season, the buds that are within a foot, or eighteen inches of the ground should be all rubbed off, and in January the leading shoot should be cut down in a sloping direction to six buds; as the new shoots extend themselves, they should be trained laterally, so as to form an espalier in the fan, or horizontal manner; for though usually allowed to become standard trees in this country, experiments have shown, that training benefits the fruit inequality, affords it greater protection against storms, and opens it to the sun, to say nothing of the greater facility of access afforded by that mode to all parts of the tree; the espalier may be about eight or ten feet high, by eighteen or twenty in extent when full grown. In the two following seasons the leading shoots should be again shortened, leaving one central, and a succession, or a regular course of side shoots, according to the form of training adopted; after this the tree may be considered formed, and the endeavor must afterwards be to preserve the form unaltered as much as possible. None of the leading shoots should be shortened, nor any that are well situated, or full of blossom buds, unless they grow so long as to become weakened, greatly exceed

the bounds of the training, or appear unhealthy ; and the trees should be frequently looked over to remove superfluous wood buds by rubbing off, or cutting out such shoots and buds as are crowded; but care should be taken not to shorten any branches that are intended to bear fruit in the season next ensuing, though if they grow too long they may be bept back to check their progress. The punch-bowl fashion, as it is called, is a good plan of pruning; taking out the centre wood and thereby forming a space for the air to circulate, and the sun to penetrate, but it is not so good as the espalier, though less trouble. When the rains set in it will be well to cover the mound around the stem with tiles, to prevent the water penetrating to the the roots; and at the close of the rains the earth should be opened to expose the roots, at not less than two or three feet around the stem; at the same time all the root fibres that shew mildew, or are otherwise injured, must be carefully pruned off with a sharp knife, washing the trunk, &c. with the mixture recommended by Mr. Forsyth; as the sap ceases to circulate rapidly, and the leaves fall off, a thorough pruning should be made, removing all wood that has borne fruit, or otherwise become useless, or crowded, and shortening all shoots not intended to bear in the next year to four eyes each, preserving an equal distribution of the bearing shoots As soon as a few blossoms appear, the roots may be covered in with good stron[^]
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loam, avoiding all fresh dung or rich manure, as calculated to promote too great a production of wood, repeating also the wash on the trunk, &c. If there be any disposition to frost in the cold weather, mats should be put over the trees to protect the blossoms at night. Some are, however, content with digging to the depth, of two or three feet round the roots at the fruiting time, and after all is gathered[“] filling in with loam mixed with well rotted manure or vegetable mould; giving a top dressing of a stronger kind in January. The Revd. Mr. Proby states the following as a good compost for this tree:—Two parts Cowdung, two parts oil-cake, one part wood-ashes, and one part lime, the two last being reduced when the soil is light.

As the fruit sets, they should be thinned regularly, care being taken not to leave two peaches any where on the same spur; and as the blossoms are passing to fruit, water must be plentifully supplied to the roots, and continued until the fruit changes color; this is best supplied by a trench round the tree, at a distance of three to six feet, to be filled with water every day. Some people ring the trees to increase the production of fruit, but, with a tree bearing so readily as the peach, this process is hardly necessary. The fruit ripens in April and May.

INSECTS, DISEASES, &c. The red spider, and a species of plant louse, that attacks the leaves and raises tubercles on them, are among the enemies of the peach ;

soap or tobacco smoke, or syringing under the leaves with lime water are considered the best destroyers of these insects. The red ant, and a large species of lizard attack the fruit when set; but the greatest enemy to this tree is the white ant, which insidiously destroys the root, as already mentioned under the subject of insects. The mildew, caused, as is supposed by minute fungi, is among the diseases of the peach; this may be destroyed by dusting with sulphur, but the only sure remedy is renewal of the soil, and abundance of air. Gum is another disease very weakening to the tree; and must be treated as shewn in the opening of the subject of the Fruit Garden.*

The APRICOT, *Prunus Armeniaca*, *Zurd aloo*, is very rare in India, and even when produced has been generally found inferior to the fruit obtained in Europe, although a white kind is occasionally found in Upper India of good size, and tolerable flavor; the general management and culture are the same as required for the peach.

The ALMOND, *Amygdalus communis*, *Badam-ufarsee*, *looz*, is unknown in lower India, though obtainable in the Upper Provinces.

The TERMINALIA, *Terminalia catappa*, *Badam-kundce*, is used very frequently as a substitute for the almond. The germ is beautifully rolled, and eaten as

a fruit has much the flavor of a green almond, or filbert; the tree is common to all parts of the country affording a fine shade, and when young-, grows in a series of vertical branches, having at a distance the appearance of a dumb-waiter, and, when grown to full size, is an abundant bearer. It may be raised from seed, requiring no particular cultivation, although an ornamental tree in all stages of its growth.

The PLUM, *Prunus domestica*, *AloocKeh aloo*, and the DAMASCENE, or DAMSON, *Prunus insititia*, *Alooe Bukhara*, are both rare, but may be met with occasionally, the latter being indigenous in the hills; it is, therefore evident, that they only require to receive attention to be as common as the peach; like which they should be cultivated, except that they do not require so much train; some good varieties are to be found in the Western provinces.

The NATIVE PLUM, JUGUBE, *Ziziphus jujuba*, *Baeer*; a small species grows wild, but a larger sort, *Narkoollee Baeer*, is esteemed by some people, as having somewhat the flavor of an apple.

Propagation—of the large kind is performed by grafting on the stock of the wild tree. Both yield fruit in January, and February.

The CHERRY, *Prunus cerasus*, *Shah aloo*, *shahdanch*, or *keeras*, is found only very far to the north-west, and in Afghanistan, but it is to be hoped that it will soon spread over all parts of India; the black cherry,

and a variety similar to the May-duke, are common in those parts, whence the seeds have been sent to various quarters, the success of which has yet to be proved, their not appearing any good reason why it should not be grown successfully in all parts of the country.

The JAVA PLUM, *Eugenia jambolana* (or *Calyptranthes jambolana* of Linnaeus), *Jamoon*, *kalajam*; the berry is of a sub-acid, astringent taste, black, about the size of a large cherry, and containing a single stone.

Propagation—is generally by seeds or suckers, but it is found wild as well as cultivated, flowering in the beginning of the hot season, and ripening its fruit in July and August.

The INDIAN OLIVE, *Olea dioica*, of Roxburgh, *Atajam*, is a fruit in little estimation, of a dark color, growing on a tolerably large tree, indigenous to the eastern part of Bengal, the fruit ripening in July. No particular cultivation is requisite, or indeed is ever bestowed on it, though it thrives best in a peaty loam.

The NATIVE, OR SAW-LEAVED OLIVE, *Elaeocarpus serratus*, *Julpae*, grows on a small tree, never exceeding twenty feet in height, the fruit having the size and appearance of a large Olive, which is eaten fresh or preserved dried, also by natives pickled, and in curries.

Propagation, frc.—Any garden soil will suit this tree, which is easily produced from cuttings.

The MANGO, *Mangifera indica*, *Am*, or *amb*, is a highly esteemed and well known fruit, growing on a large spreading tree. The varieties are very numerous, the best being the Bombay, the Small scarlet, and the Maid a; latterly also, attention has been paid to the introduction of a double bearing species of good flavor, giving an early and a late crop every year.

Propagation—may be effected by seed, but this is a slow process, and necessarily uncertain, as no dependence can be placed on the quality of the fruit. The best way, therefore, is to graft from an approved tree, on a stock raised from seed, of which every garden should always possess a good supply, ready to receive grafts. It is, perhaps, deserving of notice, that Dr. Macfadyen in his "Flora of Jamaica" points out that, in that island, "in order to obtain a good variety the only plan is to employ the seed of the desired sort;" a method so fraught with doubt, that its continuance is much to be wondered at. The reason, however, that this author gives against grafting is, that the bark abounds with so much resinous gum, that all scions fail: either some mismanagement has occasioned such repeated loss, or the species that we have here must differ greatly, since failures very seldom occur in grafting mangoes; the subject deserves inquiry.

Soil, &c. A fair garden soil of any kind will suit this tree.

Culture. After the graft U planted out, it requires little attention beyond keeping the ground clear from weeds, and rubbing off the leaf buds that appear within two feet from the ground, unless it be determined to train the tree in espalier form, which although seldom attempted, is well worthy of trial, as possessing many advantages over other modes of culture, and having been found successful in the few instances where it has been tried; in this latter case, the young shoots must be laid in the form required, and all superfluous ones taken off; as a standard, it is only requisite to preserve a straight even stem, and a regular well formed head. In the third year the first blossoms will appear on the extremity of the shoots, but they should be carefully taken off until the fifth year, when the fruit may be allowed to form, but thinned out so as not to overwork the young tree, and in no place should two be allowed at any time to remain on one stalk, or spur. The trees must be dug round every year in the month of December or January, and a good supply of manure bestowed on the roots, especially at their extremities, for which purpose the earth from the bed of a river, or the bottom of a tank is the best; and as soon as the blossoms appear a trench should be opened round the tree, at a distance of four or five feet or more from the trunk, which must be filled with water every morning until the fruit begins to ripen.

The Hoc; PLUM, *Spondias mangifera*, *Ambura*,

amra, or *junglee am*, is a tree of about **twenty** feet in height, of rather pretty **appearance**, yielding an acid **fruit** used in curries, but of little other **worth**, **baying** only a small portion of pulp, and a **large, hard** stone; it ripens in the cold weather, but is chiefly used in its unripe state.

Propagation, Sfc.—is effected by cuttings or suckers, which root freely, and any soil is good for this tree, though it thrives best in a sandy peat, requiring no special culture when once planted.

KERNEL FRUIT—MUGZ SEE PFFUL-

The APPLE, *Pyrus mains*, *Seeb, ovseeoo*, is not seldom found in India, **although** it has been known with care to produce very **fine fruit in** many parts of the country; and even in **Bengal** solitary instances are known of the tree having yielded good fruit, **notwithstanding** that the moisture of the soil causes it generally to **exhaust its** strength in the formation of useless wood. The Nonpareil and the Ribston pippin, are sorts known to **have** been successfully cultivated, and to have fruited well. The **West** Province* have **the fruit commonly**, but it is inferior to the European sorts, and requires cultivation. The tree is indigenous to the hills, and **might**, therefore, there is little doubt, be **successfully** cultivated in many parts of the country, where it has **hitherto** been untried. Of the immense **varieties** of this **fruit**, few are known in India even by **name**;

Mr. Forsyth enumerates no less than 324 sorts, **two** hundred and fifteen of which he describes; and the second edition of the London Horticultural Society's Catalogue contains 1400 varieties.

Propagation,—to secure a good kind, the only method is by grafting on stocks, either of the wild apple, or, which are much to be preferred, seedlings from the cultivated sorts. In the North-western Provinces they have been raised by cuttings put in either in January and February, or during the rains, planting them out when they have shot forth to sufficient strength, and formed woody branches, pruning them down, at the same time, to two or three eyes; eventually selecting the strongest shoot from these, and rubbing off the other two. This should be trained r.p straight for about three feet in height stopping it when it has reached that height, or appears to grow too f.ist, and selecting such buds as are approved to form the future side shoots, rubbing off all others. Mr. Knight, who devoted much consideration to the subject of producing improved and hardy varieties, highly approved the raising hybrid species, as more easily adapting themselves to variations of climate; and he remarked a strong disposition in these to assimilate themselves to the female parent. He had recourse, with great success, to the delicate operation of dusting the pollen from one kind, oh the pistil of another, opening the unexpanded blossom of the variety desired as the

female parent, and removing, with a fine pair of scissors, all the stamens, while the anthers were yet unripe, and when the female blossom, thus prepared, opened, the full blossoms of the other variety were applied, selecting afterwards the most plump and round seeds to grow from. It is to be recollected, that after a seedling, thus raised, has began bearing, its fruit will improve each year as the tree acquires vigor; the chief objection to this mode of propagation is the slow progress seedlings make to attain the bearing period, Mr. Knight calculating this at from live to twelve years. They are, however, well worthy attention from horticulturists in India, on account of the more transmission of seeds than of plants. The Reverend Mr. Proby remarks, it is believed on the authority of Mr. Cracroft, JIS appears by the notes he so kindly furnished, acknowledged in the early part of this work. " I never heard of any apple tree raised from seed in this country, but one, which I reared at Benares in 1820, from the seed of a Persian apple; I took it to Bareilly, and left it in the garden of my bungalow ; which was thriving in 1826." The author has tried the experiment frequently with seed from Hobart Town, France, England, and America; the first and last have given good plants to the age of two and even three years, but some untoward accident, most frequently from the ignorance, of *mallees* has always then occurred to destroy them.

In selecting trees for planting, such should be chosen as have strong, straight, and clean stems. Shallow planting is the best with a solid subsoil either natural, or artificial, to encourage lateral rooting, and the young trees must be carefully staked, to prevent their being shaken by the wind.

Solly fyc. A clayey, soft soil, with some admixture of chalk, on a dry subsoil, is necessary for the good culture of the apple, and this should be well drained, or the lodgment of wet will produce canker.

Culture. The period for bearing may be forwarded in seedlings, by attention to their culture, making them grow vigorously when young. Fresh manure is, however, to be avoided, but a liberal supply of vegetable mould and well-rotted turf should be given to the bed on which they are raised, as well as to the spot where they are put out; this must be well worked, and sheltered from the sun and wind, and in the early prunings care should be taken to remove the interior shoots, and prevent the tree from becoming crowded. When the trees, whether seedlings or others, are planted out to remain, the ground must be kept clear from weeds, and the roots should be moderately watered from time to time. The trees might be successfully trained on espaliers, as facilitating the frequent examination of the trees to destroy insects, and to cut out canker wherever it may appear; dwarf trees are however, generally considered the most abundant bearers. Too

much priming is injurious, and only dead wood, weak, sickly, or worn out shoots, as well as such as in cumber or cross each other should be removed; but in this operation, (which should be a little later than for stone fruit trees,) it must be borne in mind that the mode of bearing is on small lateral spurs, on strong short shoots, from an inch to two inches in length, springing from healthy branches of two, or more years' growth, the same spurs producing fruit for several successive seasons. All blossoms appearing at improper periods should be removed, as they do not yield fruit, and only tend to weaken the tree; the true blossoms generally appear in October or November, the fruit ripening in April. The tree to prove a good bearer, and to yield fine flavored fruit requires to be about ten years of age before it is allowed to produce.

The PEAR, *Pyrus communis*, *Amrood*, or *nashprtee*, has, it is believed, only once* been known to bear fruit in lower Bengal, but, that one experiment having been successful, augurs well for future attempts, and holds out sufficient encouragement, to those who are interested, to pursue the cultivation of this delicious fruit; to this may be added, that the pear has been successfully grown in the North-western Provinces, in Cashmere, &c. The cultivation is the same as for the

* In Mr. C. Steer's garden at Kishnugur.

apple, but it does not require to be so old before allowing it yield to a crop, seedlings as usual take longer to reach the period of bearing; Mr. Knight says from 12 to 18 years, in England; how long it would require in India having never been tried, is doubtful.

This fruit is generally considered a native of England, where the list of those varieties cultivated, as published in the London Horticultural Society's Catalogue, amounts to 622. Mr. Forsyth describes ninety-three sorts, besides enumerating sixty kinds without any particular description, and Professor Van Mons, at Brussels, is said to have "upwards of 800 approved sorts of new pears raised from seed by himself and Mr. Duquesne, of Mons, in the course of fifteen, or sixteen years, had selected from probably 8000 new seedling plants. " *See Loudon's Encyclopedia of Gardening*."

The QUINCE, *Cydonia vulgaris*, or rather it is supposed: *Chinensis*, *Béh*, is only found in Upper India, where there are three varieties. But little is known of its culture as adapted to this climate; a moist soil is preferred by it, which would indicate its suitability to Bengal, and although in other respects resembling the apple and pear, it is easily raised by layers, or cuttings, the young plants being shaded until they acquire strength. Dr. Roxburgh says that the wild pear, *Pyrus tomentosa* " is the Quince tree of Hindoostan, and, most likely that which furnishes the

Quince seed brought from Muscat to Bengal for sale, when they are much used for medical purposes, under the name of "*lichee fa beef*"

The ROSE APPLE, *Eugenia jambos*, *Jam*, or *gulab jam*, bears a whitish yellow fruit, of but little flavor, sweetish, and rose-scented, whence its name.

Propagation—may be performed either by seeds, slips, cuttings, or suckers.

Soil, &c. It will thrive in any moist soil, and requires but little pruning, only the lower shoots, and occasionally dig in around the roots. It produces fruit in March and April.

The LOQUAT, *Eriobotrya japonica*, *Auka*, is a highly esteemed juicy fruit, with a tough, woolly outside skin, of yellow color when ripe; the flowers rise in spires from the extremities of the branches, on which the fruit afterwards forms in bunches.

Propagation—It may be raised from seeds, but the best (referable mode is by slips, or suckers.

Soil, &c. A rich, but rather moist soil is preferable for this tree.

Culture. When the layer has been planted out for a season, the lower branches should be pruned off to promote the formation of an expanded head, to which it has naturally a disposition, and the tree should not be allowed to bear fruit until it be fully five years old; on attaining this age, when the blossoms open, a shallow trench should be dug round the stem, at

the distance of about three feet, or more, according to the lateral spread of the branches, to be daily filled with water until the fruit begins to ripen, in February and March little further is required. It is well, however, at the beginning of the cold weather to apply fresh manure to the roots, decayed vegetable matter and cow-dung being the best suited to the loquat.

It is well worthy of remark by the horticulturist, that the chief cause of this excellent fruit being too often undervalued here, is, that the native gardeners commonly gather it before fully ripe ; an observation that holding good also with a great number of the fruits of this country, should be carefully attended to, by those who take an interest in their gardens. This fruit has, however, a tendency to ripen too fast if left unremoved but this may be obviated, and the size of the produce improved by tyeing the bunches in bags of cloth, or in well-drilled tin boxes.

The MALAY APPLE, *Eugenia alba*, or *Malaccensis*, *Jumrool*, is an indigenous fruit of white color, pear-shaped, having a highly polished surface, but possessing little or no flavor; the tree grows almost wild, and needs no particular cultivation. There is a pink fruited variety, looking pretty enough in the desert at a large table, as an ornament, amongst other fruits.

The LEECHEE, *Nephelium litchi*, *Dimocarpus Litchi* *Scytalia Litchi* of Roxburgh, called also *Euphoria Litchi* by Jussieu, (*vide London Horticultural Society's*

Transactions, vol. II, 28, Is series*), *Leechee*, a highly esteemed fruit, originally brought from China, but long since fully naturalized in India ; where it grows, and ripens to great perfection, bearing the next place to the mango in general estimation ; the outside is a stiff¹, rough, reddish in skin, and the pulp is rich, sweet, and firm.

Propagation.—is best performed by layers, or Chinese grafting, the plant readily throwing out root fibres, under either system.

Soil, &c. A rich mould, not too dry, is the best suited to the leechiee.

Culture. After the young plant is put into the fruit garden, it must be carefully watched for the purpose of training the stem, and removing the lower shoots and suckers, as this tree when young grows very rapidly being also much disposed to become crooked, straggling, and ill-shaped. In the sixth year it may be allowed to bear a moderate, but only a moderate portion of fruit, but till it attain that age, the blossoms should be entirely removed as soon as they appear, and even then at least three fourths should be taken off and not permitted to set. When bearing, the roots should be occasionally moderately watered; the fruit ripening in March and April.

The LONGAN, *Nephelium longan*, *Dimocarpus longan*, *Scytalia longan* of Roxburgh, called *Euphoria longan*, by Jussieu, *Ashphul*, is in form

somewhat similar to **the** Iriehoe, but smaller and **not** round, being **at** the same time very inferior in flavor; **some people however** like it. It **requires** little culture, and fruits in June, **and** July.

Tin: **CHIWBSE WAI** **IPBE**, *Cookia punctata*, *Ouampee*, or *ooampfek*, is **a** rough, **brown-skinned** fruit, having, a strong flavor of turpentine, **tempered** with **a** slight degree of acid, very grateful to the palate, especially of the insulid; it fruits **plentifully**, without requiring any attention to cultivation, and **in** almost any soil, ripening in May, Jinn*, and July.

The **MON** «**OSTEEN**, **Garoinia** *Mongostana*, *Kt/nutdra*, is **a** rich flavored, most highly esteemed fruit, the pulp being **juicy**, **and** of a red color; it is very rare in India, **though** indigenous in Singapore, Penang, &c.

Propagation—is sometimes performed by seed which, however, **requires** to be **put** in the earth almost immediately after it is abstracted from the **fruit**, and has **but** seldom even **germinated** here; but cuttings or layers are to be preferred, as some trees produce only male **blossom**.*

SWZ, §<*. A rich vegetable mould, on a dry rocky bottom, is the natural soil of this tree, which deserves **introduction**, into this part of our Indian territory.

The **CUSTARD** APPLE, *Annona*, *U* a general name for a class of soft pulped fruit of agreeable flavor, the **chief varieties** of which are—

1. *The Sweet top*, called here the *Custard apple*,

Annona squamosa, *Ata* or *shureefeh*, the outside skin is thick, and divided into many reticulated compartments, the pulp sweet, luscious, and filled with small black, long-shaped seeds.

2. *T/ic Custard apple*, called here the *Bullock's Hearty* or *netted custard apple*, *Annona reticulata*, *Nona ata*, is coarse flavored, and grows almost wild in a soil impregnated with salt, but requires a wet subsoil; it is seldom found out of Bengal

3. *The Sour sop*, *Annona muricata*, having as yet no native name, is very rare in India, but is mentioned here as well deserving of culture, and has lately been exhibited frequently at the Fruit shows of the Horticultural Society,

Propagation—of all may be effected either from seeds, cuttings, or layers.

Soil, &c. Any ordinary garden soil suits these trees, but they should be kept moist, especially the custard apple.

Culture. Little is required beyond attention to the shape of the tree, to form a well balanced head, and to keep the roots clean from weeds. The fruit of the Sweet sop ripens from June to October, whilst that of the Custard apple is procurable at almost nil seasons.

The SAPOTA, *Achras sapota*, a native of China, having no native name, beyond a corruption of its own, is a fruit of rich smell and taste, the pulp being of a deep yellow color, but **not much known** in India,

where it deserves greater attention; any rich garden mould suits this tree, which is propagated by cuttings or seeds.

This ALLIGATOR, or AVOCADO PEAR, *Persea gratissima*, or *Laurus Penea*, *Alligdt* (cor.), is highly esteemed by some **people**; the pulp is of linn texture and rich flavor, though few persons like it on first tasting, yet it soon gains on the **palate**, and becomes a favorite fruit; cultivated with must.

Propagation—is performed by sowing the seeds, and afterwards removing the plant to the spot it is permanently destined to occupy.

Soil, fr. Any garden soil suits this tree.

Culture. None is required beyond trimming **off the** lower shoots; it takes seven or eight years before it **will** yield fruit, and is even then but a moderate **bearer**, producing only at the extremities of the **branches**.

The JACK, *Artocarpus integrifolia*, *KuVhul*, grows on a large tree, the fruit issuing by short stalks direct from the stem, but the strong disagreeable smell is **sufficient** to make it little sought after by Europeans. The seeds, when roasted, have something **the** flavor of a chesnut, and are eaten in the same manner, with a little salt.

It is a curious circumstance, in the growth of **this** tree, that the finest and most **esteemed** fruit are produced from the roots, below the surface of the ground,

and are betrayed by the cracking of the earth above them, and the effluvia issuing from the fissure; a high price is given by the rich natives for fruit so produced.

Propagation.—Suckers produce the best plants, but they may be raised from seed or layers.

Soil, &c. A rich soil is most sought for by this tree, but no culture is given.

The GUAVA, *Psidium*, *Sufree, am_f jam*, or *amroot*, is an esteemed fruit, both for the dessert and for jelly, but most of those grown in India have a strong odour, disagreeable to Europeans. There are several varieties, of which the *Pile yellow* kind, and *Irregular pear shape* are the handsomest, *Psidium pyriferum*, *Sufree, am*; and the *Red* sort, *Psidium pomiferum*, *Lai sufree, am*; but the small West India, or strawberry guava, *Psidium cattleyianum*, *Chôta sufree, am*, is tin* best, being extremely delicate in flavor, at the same time that it is an abundant bearer.

Propagation.—It is increased by sowing the seeds of approved fruit, and transplanting the young plants when about six inches in height.

Soil, &c. A good garden mould is all the guava requires, manured, occasionally, in the cold season, by putting the soil from the bottom of tanks around the root.

Culture. These trees require frequent pruning, as they are apt to grow very straggling, and thick in the

centre. They are abundant bearers and begin to give fruit in the third year after they are sown.

The POMEGRANITE, *Punica granatum*, *Anar*, is by some much admired, particularly the large red-seeded kind, grown in upper India. The fruit has on the outside a hard woody rind, very astringent, and covering a mass of seeds surrounded by a juicy sub-acid pulp, the root being useful for medicinal purposes, as is also the rind of the fruit.

Propagation—is effected by cuttings, suckers, or layers, the last being the best mode.

Soil, Sj-c. It requires a rich, but at the same time a rather sandy soil.

Culture. The pomegranite needs much pruning, the centre shoots being kept thinned out, or it will soon get crowded, with a quantity of useless wood.

The CARAMBOLA, *Averrhoa carumbok*, *liriifirtm*^{W*}, is a small five-celled, angular fruit; of which there are two kinds, one producing a sweet, and the other an acid fruit of rather pleasant flavor, something like an insipid apple.

Propogation, Spc.—is performed by cuttings in sandy loam, and it may be easily grown in any common garden mould. The tree grows to the height of about twenty or thirty feet, and possesses the peculiarity of producing its pretty pink blossoms from the trunk and main branches. The fruit ripens from December to

February, and again a smaller crop is obtained at the close of the rains. Another variety of this fruit is produced by a small shrub called *Averrhoa bilimbi*, *Bulumboo*, but its fruit is smaller, and more tasteless.

The PIERARDIA, *Pierardia sapida*, *Lutkoo*, indigenous to Tipperah, and other parts to the Estward, is claimed by the Chinese as a native fruit in their country, under the name of *Lutqua*; this is a shrub not more than ten feet high, and the fruit is a round berry, about the size of a gooseberry, smooth and yellow skinned, and the pulp of an agreeable sub-acid flavor. It was named and described by Roxburgh, and may be worth cultivating, for improvement in its character, when the garden is of sufficient size to afford spare room

The CUR AND A, JASMINE FLOWERED CARISSA, *Carissa carandas*, *Kuroondee* or *kurumcka*, is a large thorny shrub, yielding in July and August, and from thence to the end of September, as it approaches to the North-west, a long-shaped, dark-colored berry, of a pleasant sub-acid flavor, when ripe. When not quite mature, the fruit makes a very delicious jelly, and is pleasant for tarts.

Propagation, &c.—is effected by cuttings planted in sandy loam, requiring but little after-culture. The shrub forms a good fence, almost impenetrable on account of its long spines.

The PANEOLA PLUM, MANY SPINED FLACOURTIA,

Flacourtia cataphracta, *Pan* eala*, is well known to most residents in India; the fruit is juicy, but too **astringeni** to suit most palates, much resembling the damson in taste; it ripens from June to **Beptember**, and may be propagated either by layers or cuttings.

The INDIAN STAR-APPLK, *Chrysophyllum cerninum** of **Roxburg**], *Pétuhaw*, is indigenous in Sylhet, although the truly **delicioui Star-apple of J&Jnaica**, or (*Chrysc'phyllum cainito*, is yet unknown in India. This **firuxlipes** in **October**, and is said to be much eaten by natives; it is then of a yellow color, but **RoxImrgh** does not **speak well** of its fruit, the pulp of **which** he found to be very clammy, this however is the case **with** the true **star-apple**, until it becomes fully ripe, this **quality** lessening to an agreeable richness, **when** it is commonly eaten with orange juice. It is **chiefly mentioned** **ben** as an **object** for improvement by the **horticulturist**, and to encourage the **introduction** of the **true star-apple**, by shewing a **natural** variety to be indigenous.

Propagation, &c.—may be performed by cuttings, but the tree requires a rich garden mould.

The **1'APAW**, *Oarica papaya*, *Pupeea*, or *poopae'eh*, a **cooling fruit** of but little taste, in the melon Ibnn, the flesh of a dull orange color, the centre **lillinglot** with dark seeds; the fruit **rows** in **clusters** near

* This is not the *Chrysophyllum icutmnatum* of **Laoawlt**, **Iir**. **W** **allch** cut **U** **our** **species** **fi**, **Roxburghianu** in.

the head of an ill looking tree, generally without branches, and having large palmated leaves.

Propagation, Sec.—is effected by seeds, and every garden should have one, or two trees in an obscure corner, their ugliness rendering them unfit for any conspicuous position. They require rich mould, or the fruit will become even more tasteless than it naturally is. Merit hung under the shade of its leaves, is said to become tender in a few hours.

THE OH A KGB TBIBE—CITRUS—NARUWJ KEF. KJSM

contains several leading species, subdivided into many varieties.

The ORANGE, *Citrus aurantia*, *Narungee* or *narunj*, is a well known and favorite fruit, in all parts of the world, the pulp sweet, juicy, and grateful, and the rind highly aromatic; whilst its blossoms distilled, produce what is called 'orange-flower water,* so useful in cookery, medicine, and as a perfume. The varieties known here are the green Sylhet, the China, the Lisbon, and the Bencoolen; the last but one has a thick woolly skin, and is later, and at the same time less juicy, but more luscious than the others, of which the best flavored, as well as the earliest, is the green Sylhet, coming into season in November. The orange grows chiefly in the eastern, and northern parts of India, and is seldom found in other parts.

Propagation—is best performed by grafting on stocks raised from seed.

The CITRON, *Citrus medica*, *Leemoon*, or *turunj* forms an excellent, well flavored preserve, and of the juice lemonade is made. The fruit grows here to a very large size, the outer rind rough and full of excrescences, when ripe of ft bright yellow color, and highly fragrant. This plant is found in all parts of India, and is supposed to be a native of Media and Persia; several varieties are found in India.

Propagation—is performed by seed or layers; the latter, as the most expeditious, being generally preferred.

The LEMON, *Citrus limonum*, *Leemoo*, or *neeboo*, and *China góra leemoo*, need hardly be described; there are many sorts, of which the long Portugal lemon, *Shurbutee leemoo* is the best, it growing to a large size, with abundance of juice of a mild acid flavor.

The LIME, *Citrus limetta*, *Kaguzee*, and *patee leemoo*, stands second only to the preceding in estimation; the acid of the juice is sharper, and its form round, the dark green kind being the most esteemed, the branches grow crooked and diverging. There is also a sweet variety; but held in as little estimation as it deserves.

Propagation—should always be effected by layers, which very quickly throw out root fibres. But the lime is rather slow in fruiting, frequently going to the fourth, or fifth year without showing blossom, whilst the lemon will yield fruit in the second year.

The SHADDOCK, *Citrus decumana*, *Butaouee lecmoo*, called commonly Pamplense, (from the French ship captain, who introduced it into this country from Batavia,) is the largest fruited of the orange tribe, and the fruit is held in high esteem for its mild flavor, excellent for quenching thirst. There are many varieties, of which those having a reddish pulp are to be preferred they are originally from China.

Propagation—may be performed by seed, but that method is chiefly used to obtain new varieties, or stocks to graft on ; the best method of increasing the tree is undoubtedly by grafting, but the most expeditious is by layers, which yield fruit at the end of the third year, and it is consequently the mode generally resorted to. A very delicious variety of this fruit is obtained in Madeira by grafting on the orange.

Soil, &c. A stony yellow clay, richly manured with vegetable mould, and well, rotted cow-dung, is the best soil for all the orange tribe.

Culture. The whole tribe require active pruning, as they are rapid growers, and soon become crowded if not thinned out carefully to admit the sun and air; they generally begin producing fruit in the third or fourth year.

INSECTS. The plant louse, the red spider, the caterpillar, and the large black ant are great enemies to this class of fruit trees; smoking with dried grass or tobacco is the best mode of destroying these.

DISEASES, &C. The orange tribe are very subject to blight, which often destroys more than half the branches, for this, heading down is the best, or rather the only cure ; and the same operation, as before remarked, has been known to have good success in restoring old trees of the shaddock, that had ceased to bear. On this subject the following extract from Mr. Forsyth's valuable work on fruit trees, affords useful information.

" Just as the manuscript was going to the press, Mr. Rademaker, the Portuguese agent in London, called and told me, that he had received a letter from the Chevalier d'Almeida, the late ambassador from Portugal at this court, informing him, that on his return home, he had found the orange trees on the Prince of Brazil's Plantations in a very unhealthy and decayed state; and requesting him to apply to me for some of the composition, * and a copy of the pamphlet • On the Diseases, &c. in Fruit and Forest Trees,' as he wished to make a trial of it on the trees of that country.

" Accordingly, I have sent a cask of the composition, with directions for preparing the trees, and laying it on.

" When it is found necessary to head down orange trees, I would advise not to cut them quite down to the stem; but to' leave two or three inches of the branches ; some more, some less; always remembering to cut near to a joint, and in such a manner as to form a

• Vide " Fruit Garden" page 246.

handsome head, and to apply the composition immediately. In doing this, however, it will be necessary to leave a few young shoots to draw up the sap. If the trees are infested with insects, the stems must be washed with soap suds and urine, and well scrubbed with a hard **brush**.

" About twelve year? ago the orange trees in the green house in Kensington Gardens were so much infested with a species of **Coccus**, that I was obliged to head them all down, and clean off the insects as above **directed, applying** the composition immediately after. These trees throve amazingly; and in three years, without any bottom heat, the heads were as large as before they **were** cut; and they still continue in a flourishing and fruitful state. I should advise to rub off the side shoots, as directed for other fruit trees, and to keep the heads thin of wood. " I thought it proper to insert the above, for the information of those who have orange trees in this **court**ry, as well as for those who have them **abroad**."

PULPY FRUITS—*GOODGOODA*» *OK GOODGUR* V *HUL*.

The FIG, *Ficus carica*, *Un/ccr*, is a luscious dessert fruit, **desertoga** place in every well **ordered** garden. There is only one variety known in India, and **that** is rather a small kind ; it is desirable, **therefore, that** in **new** sorts should be imported from the Cape, or **elsewhere**.

The catalogue of the London Horticultural Society contains seventy-five varieties, and of these Mr. Forsyth describes seventeen as worth cultivating; these are the 1 Brown chesnut colored Ischia, 2 Black Ischia, 3 Green Ischia, 4 Small brown Ischia, 5 Yellow Ischia, 6 Small white early, 7 Black Genoa, 8 Large white Genoa, 9 Malta, 10 Murrey or brown Naples, 11 Long brown Naples, 12 Madonna, 13 Brunswick or Hanover, 14 Common blue or purple, 15 Gentile, and 16 Brown, and 17 Black small Italian, this last being capable of culture in pots, producing small round and very delicious fruit, of which this author says—" I have gathered from one plant in a twenty-four pot, two dozen of figs at one gathering."

Propagation—may be effected in any way, but that most generally approved is by layers and suckers, which root in less than a month, in the rains.

Soil, &c. This tree thrives in all soils that have not too wet a sub-soil, but they produce the greatest quantity of good fruit in a strong loam, the tree requires also a free open air.

Culture. The moist climate of Bengal, causes the fig to throw out shoots so rapidly as to prevent its maturing its fruit; this must be checked by drainage and pruning; this last, however, should not be done in autumn, the best time being the beginning of March, or in January higher up, at which time also it is well to manure; some experiments have, however, shown

November and December to be good months in that quarter for this operation, preserving always the double eyes as one is almost sure to be a fruit bearing one; branches that have run up naked should then be taken out as close to the bottom as possible, and about a month afterwards the ends of the branches must be stopped to make them throw out side shoots for the next year's bearing. It, in pruning, the shoots bleed profusely, a little of Mr. Forsyth's composition, before described, had better be put on the ends to heal them; and the fruit should be thinned to not less than six inches apart on the bearing shoots; when the fruit begins to swell, which it will do in the month of April or May, the neighbouring leaf shoots should be topped and each fruit should be protected by a small tin box made either in bars, or pierced with holes, to give free access to the air, this will cause it to grow to a larger size, and prevent its ripening prematurely.

In the cold weather, the superabundant side shoots should be removed, and the roots opened and supplied with fresh well rotted vegetable manure; the trees produce fruit in the second year.

The fig tree thrives well if trained in espalier fashion which admits, too, of its being kept in better order.

The PLANTAIN TREE, *Musa*, is too well known to need a description, but there are several varieties, the larger kind, *Musa paradisiaca*, *Mouz*, or* *kéla*, requiring to be dressed as a vegetable to become palatable.

The sort eaten as fruit being more properly called the Banana, *Musa sapientum*, *Ktla*, of which the variety known as the *Cheen'eh chumpa'h*, is the most esteemed; a large kind from Malacca, and one of middling size from Chittagong, and Dacca are worthy of attention.

Propagation—is by suckers, of which the tree gives an abundant supply.

Solly frc. Any soil moderately rich will suit the plaintain.

Culture. No particular care is required, but it is advisable to keep the ground near the roots tolerably free from weeds, and occasionally to earth the stems up with soil from the bottom of a tank; old stems should also be removed as soon as the spine of fruit is cut off.

The PINE APPLE, *Bromelia ananas*, *Anunas*, is, when properly cultivated, one of the finest fruits of the garden, but from neglect, has fallen to be so deteriorated in India as to be hardly desirables, as a fruit, especially gathered, as it generally is, in an unripe state, and kept until ripe, when of course by fermentation it becomes niOst unwholesome, especially to those who are subject to disordered bowels, or predisposed to Cholera. The varieties in the gardens of the London Horticultural Society amounted to 95 : Dr. Neill mentions 56 sorts; of these he enumerates the *Queenpi?ie*, as an useful, quick fruiting kind, seldom exceeding 3 lbs. in weight; *The Black Antigua*, averaging 5 lbs.; *The Black Jamaica*, having oblong fruit,

about 4 lbs., an excellent kind ; *The White Providence*, a pale yellow kind common in India, and averaging in England from 7 to 12 lbs.; as good varieties.

Propagation—is performed by planting the tops or offsets, which speedily take root; they fruit in the third year, or sometimes sooner in the country.

Soil, &c. No soil can be too rich, and no manure too strong for the pine apple; an admixture of salt and lime is said to improve their flavor, but the fruit should be well ripe before it is cut, and not allowed to remain for any length of time after separation from the stock.

Culture. The plants should be put out in rows two feet asunder, the rows about four feet distant from each other, and the earth well drawn up to the stems; in the third year they will begin to produce fruit, and as soon as the blossoms appear, which will be in February, giving previous indication by a peculiar red tinge of the young leaves in the centre of the plant; the roots must be laid open, and all sideshoots and suckers carefully removed to plant out for a fresh supply of plants, if desired; a basket of rotted cow-dung should then be put to each plant, and above that, the like quantity of *fresh strong* stable dung, with litter covering the whole; this will form a ridge about the stem, over which a thin layer of earth should be placed; a trench should then be dug on each side of the plants, which must be every day filled with water,

a moderate quantity being also thrown from a fine rosed watering pot, once a week, over the leaves and fruit. The fruit will ripen to most perfection in April, May and June, and by pursuing the method here recommended, pines may be obtained of as large size, and what is more, as highly flavored as the finest procurable, with the utmost care, in any part of the world.* The stem producing the fruit should be removed immediately that the fruit is cut, a new shoot being encouraged, and no offsets should be allowed to remain round the base of the fruit, whilst it is growing, as they would draw off the nourishment, and deteriorate the flavor.

The fruit ripens, in this country, in the same month (June) as in the ordinary cases in England, as a prelude to which, Dr. Neill gives the following as the preparatory rate of the temperature fittest for ripening :—

	During night.	During day.
March,	.60° to 70°	.70° to 80°
April,	.70 to 75.	.80 to 85
May,	.75 to 80.	.90 to 100
June,	.80 to 85.	.100 to 120

* In my brother's garden, in the years 1839 and 1840, pines were grown from 6 to 7 lbs. each, exclusive of the top ; and of a flavor, and fragrance that I have never known to be surpassed in the best raised for pineries in Britain, at the same time certainly unequalled by any thing of the kind ever met with by him in India during a residence of nearly twenty years, nor by myself since I have been here now almost the same period.

being the temperatures actually maintained in the pineries of the Royal Gardens at Kensington in 1825. This is mentioned as an encouragement to better cultivation in this country, since the natural temperature is here nearly the same, especially during the last two or three ripening months, shewing in this year—

Mean of minimum Temperature,	Mean of the maximum Tempera- ture exposed to the sun.
May.79.1 . . . . .	.121.8
June,81.3 . . . . .	.120.0

and leading to the conclusion, that as good pine apples might, with care, be grown in the open air in India, as in the pineries of England.

INSECTS, &C. The spider is the most troublesome, and should be removed whenever observed; snakes, and lizards also attack the fruit whilst ripening, and must, therefore, be closely looked after and destroyed, as they approach the pinery; the last has the property of assuming a singular likeness, as well in appearance as in color, to the long red tinged, « pointed leaves that grow next to the fruit.



BACCIFEROUS FRUITS—*DANEII KEE p'UUL*.

These are numerous fruits and highly esteemed, comprising the most delicate portions of the desert.

The GRAPE VINE, *Vitis vinifera*, *Tak* or *ungoor*, ranks the first among this class of fruits; it is a hardy

plant, reaching a* very great age, and containing numerous varieties. The London Horticultural Society's catalogue contains 182 varieties; of these Dr. Neill describes twenty, and Mr. Forsyth fifty-five, besides enumerating twenty-eight more, of which those known here are—

1. The *White muscadine*, *^Sdféd ungoor, nahur*, most commonly cultivated, producing middling sized bunches of small round fruit, rather crowded unless thinned out, the flavor sugary and rich, and the plant an abundant bearer, requiring comparatively little attention.

2. The *Black muscadine*, *hubshee ungoor*, is less'' common than the white, and the fruit rather smaller, but in all other respects, except color, resembling that variety.

3. The *Cashmere^ Kushmeer'eh^* or *ooulaeetee ungoor*, or as it is called in England, 'the White Portugal'. The bunches are large and loose, and the fruit also large and long shaped, hard skinned, and sweet, slightly mixed with acid; this grape keeps a long time after ripening, and is commonly packed in cotton in small boxes that are sent to all parts of India.

4. The *Malaga, Sofed ooulaeetee ungoor*, has been lately attempted to be introduced by seed from America; the bunches are large, as is also the fruit, besides being firm and deliriously flavored; it is generally considered, indeed, one of the finest and richest grapes extant, and deserving particular attention.

5. The *Constantia** *Kala ungoor*, originally from the Cape, is of a black and purple variety, though there is also a white kind, but not so deserving of cultivation as the dark ; the bunches, as well as the fruit, are of medium size, the latter of a rich flavor; the plants are somewhat delicate, and the leaves of very large size.

6. *The Muscatel, Muskatel k6 ungoor*, has been introduced from the Cape; the bunches are of medium size, the berry large, round, and transparent, very luscious, and saccharine; it is but a moderate bearer.

Propagation.—The vine is raised by seeds, layers, cuttings, or grafting: the first mode is pursued if it be wished to obtain an esteemed variety where cuttings^{s#} are not procurable ; but if adopted with the intention of producing new varieties, the blossoms should be impregnated by the pollen of some other sort; not more than six or eight seeds should be sown in a small sized pot, as, if put in too thick, the plants draw and become weak; too much water can hardly be given them in this country, and they will generally be a long time before the plants come up, though they afterwards, if well watered, grow very rapidly. When about six inches high, the plants ought to be put out separately into middling sized pots, filled with rich vegetable mould and supported by rods; and again, when they reach a foot and a half in height, they must be transferred to the largest sized pots. Layers produce strong showy plants the first year, but cuttings

are to be preferred for affording plants with well formed tops, proportioned to their roots ; these should be taken from well ripened wood of a year old, having short joints.

The Gardener's Magazine for September 1331, contains an article recommending the raising vines from " Spur eyes," which are ~~Jfus~~ described by Mr. R. Crawshay:—"suppose a vine, on the single shoot system of one year's growth, from the bottom to the top of the rafter breaks every eye on the same, and fruits, or not; I remove in the winter pruning of the year, every year one of these shoots, to the last bud that had a leaf at its side; this small remaining bit of wood I call a spur, which has two minute buds, sometimes quite invisible to the naked eye, one on each side;" these buds are what are called spur eyes, or spawn eyes, and should be planted an inch and a half deep in a well prepared soil of leaf mould, horse dung, &c. which, fermenting, attains a very sensible heat, and promotes the bursting of the eye, and when the shoot has appeared, continues to yield that degree of nourishment, which keeps it continually growing whilst forming its root."

Soil, &c. The vine thrives in any soil, having a dry bottom; in that which is rich and deep it will grow luxuriantly, and produce an abundance of large sized fruit; but in shallow, dry, or chalky soil, the produce is of better flavor, though rather less in quantity. Manure should not be put to the roots of a young plant

too fresh, but should have good time to get mellowed before being applied; but when old, the vine is old, blood, offal, horn, bone dust, leather, are all of benefit; or fresh fish, and oil cake applied at a distance from the roots, are good.

Culture. In planting out the vine, it should be placed so as to be protected from the easterly or other strong wind ; and where a hard bottom is not otherwise obtainable, it will be well to make a sub-soil of stones, bricks, broken pots, shells, bones, &c. with a small portion of lime, such trash being much desired by the young fibres and lower shoots of the roots ; the best time for planting out being during the rains; and in this operation it is advisable to reduce the young plant to not more than two feet in length, rubbing off all but three buds. In the beginning of the second year, select the strongest of the three shoots that the buds reserved will have produced, and cut off the other two, rubbing off at the same time, any superfluous shoots or buds that may have appeared; in September cut down the vine to two buds again. Any blossoms that appear in the third year must be removed; the tree being again cut down, at the close of the rains, to three or four buds. Should any blossoms shew themselves in the following March (the fourth year), they should be pinched off, and the tops of the shoots, as they reach any length, must be taken off, or bent down to check their growth. As the girth of the stem will, at

the close of the rains, have attained fully three inches, preparations may be made for the tree bearing in the following season, and to this end the two shoots that are to remain must be cut down to seven buds on each, and if the bark of the stem be decayed it should be rubbed of clean; bending down the shoots retained, securing them in a horizontal position, and cutting out all the buds that by this means are placed underneath;—as the shoots from those that are uppermost appear, let them be trained, as directed for climbing plants; and if more fruit appear than is equivalent to the scale shewn below, let it be cut off before the berries set. When the fruit is gathered (the fifth year), or at the close of the rains, cut the two shoots nearest the stem on each side, to as many buds as may be necessary to give the required quantity of fruit for the next year; remembering to leave none but round wood and such as have good plump eyes, as flat, lanky shoots seldom bear fruit, or if they do, it is small and poor; all others cut to one bud only, pulling off the loose bark from the stem (the sixth year.) Bearing shoots are always of the production of the previous year, and such as have already borne fruit should be cut out.

In December, or January train the two shoots reserved for fruiting carefully, and, also as they appear, train those issuing from the other reserved buds, and henceforth pursue this system of training two shoots for the succeeding year, and fruiting from two

shoots alternately. At this period, too, the root should be laid bare, washed, and all decayed or unhealthy fibres pruned out, allowing the roots to remain open until the leaf buds swell, when they should be filled in with good vegetable mould and a supply of well rotted manure or fish, dug in at a distance of two feet from the stem *of* the tree, which process must be repeated every year ; as soon as the fruit sets, a liberal supply of water should be daily given to the root of the vine, and continued until the berry attains nearly its full size, leaving off, however, whilst the fruit ripens.

The following scale for bearing fruit on vines, being clear, and well adapted to their culture in this country, is extracted from a recently published work as an useful guide.

" Scale of the greatest quantity of grapes which any vine can perfectly mature, in proportion to the circumference of its stem, measured above the ground.

<i>dr.</i>	<i>lbs.</i>	<i>dr.</i>	<i>Ibs.</i>
3 inches	5	7 inches	45
3 ¹ / ₂	10	n	50
4	15	8	55
4 ¹ / ₂	20	3f	60
5	25	9	65
5 ¹ / ₂	30	9f	70
6	35	10	75
6A	40	10 ¹ / ₂	80

" It will be seen, that if 2£ inches be deducted from
" the circumference of the stem of any vine, the capa-
" bility will be equal to the maturation of ten pounds
" of grapes for every remaining inch of girt. The
it propoionate quantity for fractional parts of an inch
It may be easily calculated.

" No vine in taken cognizance of until its stem mea-
" surcs three inches in girt, as, under that size, vines
11 ought never to be suffered to ripen any fruit.

"The manner in which it is intended that this scale
" should be applied, is to measure the stem of a vine
" at the autumnal pruning, and to retaiia no more good
4i well-ripened fruit buds, than is supposed necessary
to produce the given weight of fruit that corresponds
" to its girt; and I consider every bud, rejecting the
44 two bottom ones on each shoot, as equal to the pro-
" duction of half a pound weight of fruit."—*A practical Treatise on the Cultivation of the Grape Vine, by Clement Hoare.*

In Portugal, where the grape is so extensively grown, the vines are pruned in January, lopping off every shoot of the past year, except one, and of this only about a foot and a half is 'eft, which they double down, and keep in that position by a bit of thread. The sur- fdee of the ground being then dug.

When in bloom the superfluous bunches, OP such as would overburden or weaken the tree, are lopped off.

The GREWIA, *Grewia asiatica*, also *G. sapida*, *PJiaha*, a small dark colored berry, growing on a shrub about ten feet high, and yielding fruit in July and August. The plant requires no particular culture, and is easily propagated by cuttings planted in sandy loam.

The MILNEA, *Milnea edulis* of Roxburgh, *Gumee*, is only inserted here from a presumed possibility that it might be improved by cultivation; the tree grows wild in Sylhet, and the Garrows, and in August and September yields an oval berry of rather more than one inch in diameter, the pulp of which is of rather pleasant flavor, having something the character of the Litchee.

The MULBERRY, *Morus Indica*, *Toot*, of India, is here a poor vapid fruit, of extremely easy culture; but it is most desirable that attention should be paid to the introduction of better varieties.

Propagation—is performed by cuttings, which strike easily in moist ground.

Soil, &c. Any tolerably moist soil will answer for the mulberry of India, but the better sorts delight in rich sandy loam, well manured.

The RASPBERRY, *Rubus pauciflorus anchoo*, of good flavor and size, is abundant in the hills, but will seldom succeed in the plains, the heavy rains abstracting all taste from the fruit. There are two varieties most common, the small crimson fruited, of very rich flavor, and the large red.

Propagation—is performed by planting out the young sucker shoots, which rise plentifully from the root; new varieties are obtainable from seed.

Soil, &c. Although the strawberry fruit suffers from superabundant moisture, yet this shrub requires a moist soil, which should be a rich loam, well manured with vegetable mould, neither sandy, and on a dry rocky bottom.

THE STRAWBERRY, *Fragaria vesca*, or Indica, and *grandiflora*, *Kuhuj*, or *asasunoo*, is universally esteemed as one of the most delicious of fruits, and of it there are numerous varieties; the second edition of the Catalogue of the London Horticultural Society, enumerating one hundred and twelve, which are every year extending. The pine and hautbois are to be preferred; the small scarlet is, however, the most commonly found.

Propagation.—The plant rapidly multiplies itself by numerous runners and suckers, each of which, if planted out, will produce fruit the same year; see; produce new varieties.

Manure.—The strawberry requires a strong manure, such as fresh horse-dung, or

Soil, &c. They thrive best in a light soil, very treated with such raised beds.

Manure.—what is prepared, pig-dung, prepared

Culture.—should be replaced

r. As soon as the rain subsides, on
11 drained sub-soil should be replaced, and

is manured, pig's dung is thin in the the

brought from England, but they have been killed, in his opinion, by over carefulness, being kept constantly covered with mats during the rains to protect them from an excess of moisture; but this covering, confining the vapor that is naturally produced from the action of a hot sun on the moist ground, formed an unnatural and unwholesome atmosphere around the plants, that produce mildew, and, finally, rot, destroying them after they had been about six months in the ground; at the same time their continuance for so many months, comprising the whole of the hot weather, augured well for future attempts made with *less care*.

Another attempt occurred within the author's practice with seed imported from Hobart Town* which arriving in May was immediately sown in pots under shelter, and daily watered; these did not germinate until the beginning of November, when they came up abundantly, and continued to thrive until the following May, when the gardener, to take care of the plants, and keep them out of the sun, put them, in his master's absence, on a journey, into a dark godown, where the want of light and air destroyed them, being then about eight inches high, and well covered with leaves and young shoots.

The EARTH NUT, *Arachis hypogaea*, *Cheena badam* or *moong phulee*, is the produce of a small plant, which has the peculiar property of thrusting its germ

into the earth to ripen and sow itself. When cultivated it should be in a sandy soil, by offsets; the fruit ripening about May or June.

The NUT, *Corylus avellana*, *Jooz*, or *gurdooe*, the tree being called *buhkuVeh*, is little known in India, but it is of easy culture, and deserving attention by those who are permanent residents in the country. The nut grows plentifully in the hills about Simla.

The WALNUT, *Juglans regia*, *Akkrot*, and the CHESNUT, *Castanea Indica*, *Buloot badamgootee*, or *nS&aree*, both abound in the hills, attaining great perfection in the neighbourhood of D&rjulung and Simla; but the long time they require to attain that degree of maturity that is necessary for the production of fruit, makes them of little interest to the mere sojourner like most of the European residents in India* who appear to be the only individuals here who take real interest in the country. The Walnut may be raised from seed, and a very healthy seedling of three years old might lately have been seen in a garden at Burhampore. The Chesnut commonly found, is of small size but well flavored; some from Dorjlung were presented by Colonel Lloyd to the Calcutta Horticultural Society in January, 1840, bearing this character, and offering promise of what might be done by cultivation to effect improvement.-

CUCURBITACEOUS FRUIT.

The MELON needs no description, in a country where it grows so commonly as India.

The *Sweet melon*. There are several varieties of the *Sweet melon*, *Cucumis melo*, *Kuchree*, cultivated here, the most remarkable being the *Common musk melon*, *Khurbooz'eh*, *p̄hoootee*; the *Nutmeg melon*, the *Sweet melon of Ispahan*, *Shumam*; the *Cabul melon*, the *Large Istumhol melon*, and the *Bokhara melon*.

The *Water melon*, *Cucurbita citrulla*, *Turbuz*, or *sufunjeh*, is a very refreshing fruit, of which the best is the *Large round water melon* (that from American seed being the best), the *Pink Cabul water melon*, and the *Persian water melon*.

Propagation—is by seed sown where the plants are to fruit, for though many people transplant them, the plants are never so healthy, or the vines so strong, as when they remain where sown; seed should not be too new, as if less than two years old, it is apt to run too much to vine, and to produce only male flowers. The seed must be put in from the beginning of February to the middle of April.

Soil, &c. The soil can hardly be too sandy, but it should be thickly manured with compost of two parts old well rotted cow-dung, one part stable manure, and one part sand, dug into the soil to a depth of not more than six inches; a layer of about two inches of sand being put over the bed. Some of the finest melons

ever seen have been grown on sand, which had been left by the inundation, in which holes were dug down to the soil wherein the seeds were planted, the vines being trained on the sand, whereby fields of some hundreds of beegahs were made productive after having been considered lost to the cultivator. Before sowing the seed, the beds should be moistened, and the seeds put in holes not less than six (eight is better) feet apart, at a depth of an inch and a half.

Culture. When the seed leaves fall off, or wither, the plants must be thinned so as not to leave more than four plants in each hole, at the same time the leading shoots must be pinched off to encourage the lateral shoots. As those advance, they should be pinned down at intervals with small wooden pegs to prevent their interference with each other, or being blown about by the wind, and the earth must be brought up about the stems. Such shoots as produce only male blossoms must be cut out. When the fruit blossoms open, it is advisable to assist the setting of the fruit by impregnation with the male blossoms. As the fruit increases to the size of an egg, each should have a tile or potsherd placed under it as a protection from any dampness in the earth, or late sown melon plants had better be raised on a low muchan, to prevent their being injured by the rain; during the whole time of their growth the plants should be watered daily; the fruit ripens from the middle of **April** to the middle of June.

INSECTS. The melon is subject to the ravages of a red beetle, commonly called the *soldier*, that destroys the leaves and young shoots; these should be carefully removed by the hand and destroyed, no other method having yet proved effectual.

NATIVE HARD SHELLED FRUITS, ETC.

The COCOANUT, *Cocus nucifera*, *Nuecral*, is but little esteemed by Europeans, and then only in an unripe state for the sake of its refreshing liquor; the shell being then soft, and the kernel but just forming in a pulpy state has rather an agreeable flavor, and is less unwholesome than when it hardens.

Propagation, Spc.—is performed by seed, which thrives best in a moist soil near water, and hence, most probably, its not thriving out of Bengal, although that is by some said to proceed from its preferring the vicinity of the sea shore. It grows to the height of 50 to 60 feet, having all its leaves at the top of the stem.

The BORASSJIS, *Borassus flabelliformis*, *Tal*, or *tee*, is a species of palm yielding a fruit about the size of a child's head, within which are several kernels having a tough skin that, being removed, discovers a pulpy matter very insipid, but liked by some people for its coolness; this tree also yields the taree or *toddy* as it is called, so much drunk by natives, and serving as yeast in the making of bread; this is procured by making a triangular incision, the apex downwards,

within the outer layers of leaves, at the base of a young-shoot, and affixing thereto an earthen pot to receive the juice which runs out freely, and is pleasant enough while fresh, but it soon ferments.

Propagation, Spc.—is effected by seed. The tree prefers a dry soil, and is found in great abundance in Buhar and the Western Provinces, growing to about thirty feet in height.

The ELEPHANT, or WOOD APPLE, *Feronia elephantum*, *Kutb'htt*, is a hard shelled fruit, containing a pulp that has a strong terebinthine odour, seldom liked at first, but generally considered wholesome.

Propagation, Soil, Sfc.—the usual mode of producing this tree is by cuttings, which strike freely. It grows to a large size, and reaches the height of about 40 feet, preferring a Sandy loam, rather rich than otherwise. The tree is handsome in appearance.

The BENGAL QUINCE *Aegle marmelos** (*Cratseva marmelos* of *Linnaeus*) *Bel*, or *sreep,hul* growing on a moderate sized tree ; the fruit is nutritious and fragrant, its cells, twelve in number, containing a tenacious transparent gluten, considered very wholesome, and esteemed an useful laxative, and very good roasted, as a cure for Dyscutery.

Dr. Roxburgh appears to think the *Sreepjtul* of Bengal a distinct variety from the *Bél* of the coast

* " Corrupted from the Marmeleira of the Portuguese, given to it because this people seem to have prepared a marmalade from u* fruit."—*Hamilton*.

of Coromandud, the former is evidently, however, the one mentioned by Sir W. Jones, in the *Asiatic Researches* (vol. ii. page 349), as having a claim to religious reverence among the Hindoos, chaplets of its flowers being offered to **Jo warn** by them.

It requires **little**, or no cultivation, though it prefers a rich loam : the shrub grows from six to sixteen feet in **height**.

The TAMARIND, Tamarindus Indica, *Imlee*, is a well known, large, and handsome tree, its leguminous fruit, when ripe, having a strong but agreeable acid flavor, and either fresh, dried, or preserved, making a pleasant sherbet. The fruit ripens from December to February, but it is seldom cultivated, though few gardens are without a tree of spontaneous growth, and **none** ought to want it, being strongly recommended alike by its **usefulness** as its beauty.

The INDIAN SORREL, as it is falsely called, or Indian Hibiscus is Hibiscus aubdariffa, *Mhta*, of which the capsules are of a crimson, rather succulent, substance, that makes a good tart, a jelly, or a cheese similar to damson cheese, the fruit becoming ripe towards the end of November.

Propagation—is effected by seed, thriving in any good garden soil.

Halentrat.

JANUARY.

KITCHEN GARDEN.—Sow Snake gourd; Country radish; Small red onion; and Orache; or *lal säg*. Plant out Brussels sprouts, and Patna onions; reset Jerusalem artichoke; plant out Red celery in trenches, and in the Upper Provinces sow the White Italian kind; as also country Cauliflowers and French bean; sow Crook-necked squash, and *Pulooul*; plant out Small-leaved green sage. Water must be freely given to all vegetables during this month: at the same time a few lettuces for seed should be thought of.

FRUIT GARDEN.—Cut down the leading shoot of old Peach trees, and trim other young plants; also open out, train, and prune espalier and standard Peaches; and as the blossoms appear, dig a trench, for watering, round the roots. Manure Mango trees, if not done last month. Prune Apple and Pear trees, if in the garden; dig a trench for water round Loquat and Leechce trees as the blossoms appear. Sow Orange pips for stocks. Trim Shaddocks. Trim and break off straggling and superfluous branches of Fig trees, planting some cuttings. Thin out decayed shoots, and leaves, and suckers of Pine-apples; putting the last into a nursery. Train and manure Vines, and plant cuttings, if not done last month.

FEBRUARY.

KITCHEN GARDEN.—Sow Snake gourd; Small red onion, for the main crop; Orache, or red and green *säg*; *Pulooul*; Gourds and Cucumber. Plant out Red celery in trenches, if not done last month. Water all vegetables freely.

FRUIT GARDEN.—As the blossom of the Mango appears, make trenches round the trees for watering. As the blossoms appear, earth up and manure fruiting Pine-apples, digging trenches on each side to be filled **daily with** water. Sow girly Melons, and Water-melons.

MARCH.

KITCHEN GARDES.—Plant out Small red onion; and Turmeric; **ftgp** Orache or red and green *säg*; Cape dwarf Cuminber; *Pulooul*; *Brinjal*; and Gourds, of various kinds. In some parts of the Upper Provinces the cauliflower is sown under shade, but its success is more than doubtful. Water cannot be given too plentifully to such **plants**, as remain. Dig we 11 for fallowing such parts of the garden us are out of use.

FRUIT GARDEN.—Thin out Pomegranates, Biar, &c; as also the fruit on Peach trees. Manure, and thin out Plantains. Water the leaves of Pine-apples once a week, and look over the ai to remove all side-shoots from the fruit stems, and suckers from the roots, as they appear. Pinch off blossoms from young¹, immature Vines. Continue sowing Melons, and train those sown last month.

APRIL.

KITCHEN GARDEW.—Sow* Jerusalem artichoke; Skirret; and Country radish; Orache, or red and green *säg*; Long green, Cape dwarf*§ and most-useful Cucumbers; also early Scotch mash; and *Turaee*; sow, and plant out *B. rinjal*; Bird pepper; Cokro; Gourds; and Bitter Gourd. Plant Yajns, Sweet Potatoes, Ginger, and Turmeric. Give water freely, and distribute manure wherever **the ground** is out of use.

FRUIT GARDEN.—Thin out the ~~<Vuit~~ on Mango trees; put on tin cases to Figs for ripening, & thin out superfluous fruit; cover Loquats to preserve them; plant out young Plantains; look over Pine-apples to keep them earthed up, and watered, and to remove shoots and suckers; sow late Melons and Water-melons; train Melon vines.

MAY.

KITCHEN GARDEN.—Sow Small white bean; Red bean; Small fruited bean; Pertab Sing's bean; Winged pea; Skirret; Country radish; Orache, or red and green *sag*; Cape dwarf cucumber; Early scollop squash; *Taraee*; Indian corn; and Okro. Plant out Ginger; Turmeric; and Mango ginger; Yams; and *Brinjal*. Close in the ground manured as soon as possible after the first shower of rain.

FRUIT GARDEN.—Raise mounds, and put river weeds round the stems of Peach trees to protect the roots from the rain and heat; graft Peaches as soon as the fruit is off; sow Peach stones, Apricot stones, &c for stocks; graft Apples and Pears; sow Pomelo seeds; graft Oranges; thin the fruit on ~~Slmd4<a*i*fr>~~; ease the fruit of Figs, if not done as before directed; make plantations of Pine-apples, and tie up fruiting Pine apples below the fruit, if the weakness of the stem require it; sow the seeds of Grapes; train Melon vines.

JUNE.

KITCHEN GARDEN.—Sow Borecole, or kale; Small white bean; Red Bean; Large white bean; Small fruited bean; Brazilian pea; Assam Bwm: Black bean; Orache, or red aru

green *säg*; Nepal cucumber; Cape dwarf cucumber; Early scollop squash; *Turj.ee*; Indian com; and Okro. Take up and divide Artichokes into nursery beds, and prepare your fruiting beds for-Jie next year. In the Upper Provinces, water must not be spared, the well should be worked night and day.

FRUIT GARDEN.—Prepare layers of Leechees, and grafts of *Peaches*, if not done last month; graft Mangoes; and sow seeds of *Cruava*; make layers of Pomegranate, and Shaddock, also of Mulberry, and Raspberry. Examine also that water courses are in good order to carry off the rain.

JULY.

KITCHEN GARDEN.—Sow Brussels sprouts, and Borecole, or Kale, if not done last month, to prick out the middle or the month; Sow Orache, or red and green *säg*. Plant out *Chives* if not too wet; prepare fruiting beds for Artichokes, if not done last month; plant sweet Potatoe, and *Egyptian Airum*. Sow a few Cabbage lettuces under shelter; Nepal cucumber; Cape dwarf cucumber; *Turage*; Bird pepper; and **Okro. Plant cuttings of *Thymus* Common sage.**

FRUIT GARDEN.—Plant out young plants of fruit trees, if ready; make Chinese grafts of Loquats, and Leechees; make *Myers*, or sow seeds of the Custard apple; plant *Guava* plants; make layers of Vines, and Mangos; and plant out seedlings. Look to all fences.

AUGUST.

KITCHEN GARDEN.—Sow in pots, under shelter, Early York, and Early Battersea cabbage, if desired very soon; Early

cauliflowers ; Early peas in a sheltered spot; also dwarf French beans; White carrot; Swedish turnip; Green Nepal spinach; White beet; Leek; Artichoke; Cabbage lettuce; Endive; White solid celery; Nepal cucumber; Cape dwarf cucumber; Large capsicum; Nepal pepper; and Okro. Plant out Borecole, or kale; Sweet potatoes; Chives; Egyptian arum; a few Early potatoes, and celery.

FRUIT GARDEN.—Trin. Apple trees gently; also Pear trees, if any; remove suckers, and thin out from Rose apples; and plant out these, and slips; plant out Vine layers at the close of this month. This is generally speaking the best month for transplanting, as well as for budding, and grafting most of the vegetable creation, they being in the fullest vigor of growth,

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SEPTEMBER.

KITCHEN GARDEN.—Sow Early York, and Early Battersea cabbage every fortnight, pricking out the August sowing, if any. Towards the 16th, prick out the early September sowings ; sow Sugar loaf, and Drumhead cabbage, also Savoy and Red cabbage later in the month; sow Large cauliflowers for the main crop, and prick out the Early sort; sow Broccoli; earth up and stick the earliest Peas; sow dwarf French beans; plant Potatoes, and Egyptian arum; sow Botan and Swedish turnip; Knolekole; White carrot; Scarlet radish; Roui&d spinach; Spanish spinach; White beet; *Poee säg* ; Bombay, and Patna onions; Small red onion ; Asparagus ; Cabbage lettuce; Endive; Cape dwarf cucumber; Small round tomato; Black round pepper, Long red pepper; Parsley; and Basil. Divide, and plant **out** mint; also set Potatoës.

FRUIT GARDEN.—Expose the roots of Peaches, Loquats, Vines, &c. and trim the fibres. Thin out Pomegranates; trim down young vines; and prepare beds for Strawberries.

OCTOBER.

KITCHEN GARDEN.—Continue sowing Early cabbage; pricking out those sown late in September; plant out the first sown in the beginning, and last month 'en sowings in the middle and end of this month; prick out Sugar loaf, and Drumhead cabbage, and Savoy; about the 12th prick out Red cabbage, and remove again about the 26th; sow a few Late cauliflowers; planting out the Early sorts, and prick out the main crop; prick out Broccoli; sow Early peas for the main crop, also the Early Washington, Dwarf Prussian, and Marrowfat peas; sow Mazagon bean; Dwarf french beans, Scarlet runners, and Lima beans; set Potatoes; replant Jerusalem artichoke; sow Botân turnip; and Knole kole ; plant out Knole kole; sow Early horn carrot; Long orange carrot; Parsnip; Dwarf red beet; and Turnip rooted beet.

Towards the close of the month sow Long blood beet; Scarlet, and Turnip radish; Round prickly spinach; Spanish spinach; White beet; *Poesäg*; Dutch, and Portugal onions; Small red onion; Cabbage-lettuce ; and Endive. Plant Garlic; with White celery in trenches ; sow Italian celery ; Early long warded squash; Early scollop squash; Large red tomato; Small round tomato ; Parsley; Fennel; and Dill; Small leaved green sage; Marjoram; Anise; and Coriander.

FRUIT GARDEN.—Prune and thin Loquat trees, and Lcechees; trim Orange, Lemon, and Lime trees; open out and trim the roots of Vines; plant out Strawberry suckers, and divisions of the roots for fruiting beds ; as also put all stocks for future grafts into pots.

NOVEMBER.

KITCHEN GARDEN.—Plant out the late sown Early York, and Early Battersea cabbage, Sugar loaf, and Drumhead cabbage, and Savoy ; also Red cabbage, early in the month; sow Brussels sprouts, to prick out in twenty-five days or so; plant out Cauliflowers, and Broccoli ; sow Marrowfat, Imperial blue, Green marrow, and Green scymetre peas; sow Windsor beans, Scarlet runners; American flat winter turnip, Early Dutch and Stone turnip, and Botan turnip; plant out Knole kole, sow Early bean; Long orange carrot; Dwarf red beet; Turnip-rooted beet; Long blood beet; Salsify; Spanish radish; Scarlet, and turnip radish; Round spinach; Spanish spinach; and White beet; sow and plant out Sorrel; thin out Bombay, and Patna onions; sow Portuguese, and Dutch onions, and small red onions; plant out Leeks; manure and prepare early Asparagus beds ; sow Sea kale ; plant out Artichokes in fruiting beds; sow Cos lettuce, Cabbage lettuce, Endive, Celery, Early long warted squash, Scollop squash, and Parsley; plant out Basil.

FRUIT GARDEN.—Prune Mango trees that are in espalier, and thin out such as are standard.

DECEMBER.

KITCHEN GARDEN.—Plant out the late Cauliflowers ; sow Knight's dwarf, and Marrowfat peas, and Yellow Canada beans; plant out Knole kole; sow Early horn carrot for a late crop; sow Long blood beet, Salsify, and Turnip radish; plant out Bombay onion; sow Small red onions; earth up Leeks ; manure and make up Asparagus beds, flooding those made last month for an early crop; plant out Artichokes, if not done last month; sow Cos lettuce, Cabbage lettuce, and Endive;

put out Italian celery in trenches ; sow Early long warded squash, and Early scollop squash.

FRUIT GARDEN.—Cover in the roots of Peach trees ; dig round the roots of the Mango trees, and give them manure; train fruiting Vines, and fill in the roots with manure and rich earth ; in the Upper Provinces, however, they leave all these operations for a month later.

Produce of *tyz* Garden.

JANUARY.

VEGETABLES. Early York, and Early Battersea Cabbage, Sugar loaf cabbage, Drumhead cabbage, Savoy, Cauliflower, Broccoli ; Marrow fat, and Imperial DIUA n_{PR} ; Mazagon and Dwarf Canada bf-m -, Poutoe; American flat earl} dwarf, and stone turnip; Knole kole; Early horn carrot; DwftiT red Turnip-rooted Long blood beet; Turnij radish; White beet; Sorrel; Cos and Cabbage lettuce, Endive; Italian celery; Scollop squash; Large, and sraal tomato; Gourd; Brinjal; Arum, or kuchoo.

FHUIT. Native plum, Orange, Plantain or Banana, a feiv Pine-apples, (but not in perfection), a few early *or* force<l Loquats, Tipparee, **Hog-plum**, Averrhoa, and Tamarind.

FEBRUARY.

VEGETABLES. lied, Drumhead, Sugar loaf; and Early York cabbage ; Late cauliflower ; Knight's, and Marrow-fat pea; Windsor, and Lima bean; Scarlet runner, Small white, and Red bean; Potatoe; Knole kole; Early horn, and Large orange carrot; Parsnip; Turnip-rooted, and Long blood beet; Salsify; Country radish; White beet; Sorrel, Orache, *or* red süg ; **Leek**; **Asparagus**; Cos and Cabbage lettuce; Endive; Scollop squash; Large tomato; Okro; Gourd; Arum or kuchoo ; with a few Artichokes, in some parts of thn Upper Provinces.

FRUIT. Loquat, Bullock's heart, Strawberry, towards the latter end, Custard apple but **not** guud, Mulberry, Strawberry-guava in perfection, Guava, Averrljua, and Tamarind,

MARCH.

VEGETABLES. Sugar loaf cabbage, Brussels sprouts, Knight's and Marrowfat pea; Lima bean, Scarlet runner, *Mukunscem*, Brazilian pea; Potatoe; Kaolekole; Early horn carrot, Large orange carrot; Long blood beet; Salsify; White beet; Sorrel, Orache or red and green *säg*; Leek; Asparagus; Endive; Red celery; Long-warted and Scollop squash; Pulwul; Snake gmid; Large tomato; Long ieu pepper; and Okro,

FRUIT. Rose apple, Loquat, Leechee, Bullock's heart, Strawberry, Water-melon, Trrminalia or Country almond, IVJalay apple, Tamarind, and Apple where it can be found to fruit.

APRIL.

VEGETABLES. Lima, bean, Mukunseom; Potatoe; Sugar loaf, and Early York cabbage; Early horn carrot; Small white turnip; Long blood beet; Salsify; Sweet potatoe; White beet; Or. tie or red and green *säg*; Leek; Asparagus; Artichoke; Ited celery; Dwarf cucumber; Crook-necked, and Scollop squa&h; Pulwul; Large tomato; Okro; Gourd; and Snake gourd.

FRUIT. Peach, Apricot, Apple, Pear, Rose apple, Leechee, Bullock's heart, Melon, Water-melon, Banana, Corinda, Terminal ia or Country almond, and Green mango for tarts, &c.

MAY.

VEGETABLES. Potatoe; Salsify; Sweet potatoe; Large and Small red onion; Orache, or red and green *säg*, Beet spinach; Leek; Garlic; Asparagus; Artichoke; Dwarf cucumber; *Pulool*; *Turaee*; Liarge tomato; Gourd; and Cabbage sprouts.

Fiturr. Peach, Mango, Rose-apple, Leechee, Warn pee Jack fruit, Fig, Pine apjltt*, Grape, Melon, Water melon

Jumrool, Pomegranate, Custard apple, Papeeah, Terminulia, Banan a, Earth-nut, and *Aloobolthara* wherever in ripens.

JUNE.

VEGETABLES, Potatoe; Country **radish**; Black-seeded Small white, Red, and Large white bean; Sweet potatoe; Small red onion; Red and green *sü*; Asparagus; Artichoke; Dwarf and Long-warted squash; *Tu rave*; Large tomato; *Brinjal*; Gourd, and Snake gourd,

Fruit. Longan, Wampee, Sweet-sop, Fig*, Pine-apple, Grape, Melon, Mango, a few **Peaches**, *iuava*, *Papetali*, *Shaddock*, *Paneola plum*, *Banana*, and *Eartlimit j*—with some late strawberries at Meerut, and elsewhere.

JULY.

VEGETABLES. **Pertab** sing's and Black-seeded bean; Country **radish**; Red and Green *säg*; Asparagus; Long green Dwarf and Most useful cucumber; Long-warted **squash**; *Ttraee*; *Brinjal*; Indian corn; *Okro*; Tomato; and Snake gourd,

Fruit. Grapes in the Upper Provinces, Wampee, Bullock's heart, Sweet-sop, Fig, Pine-apple, *Shaddock*, *Guava*, *Cym-runga*, *Corinda*, *Papeeah*, *Java plum*, *Paneola plum*, *Grewia*, and **Banana**.

AUGUST.

VEGETABLES. **Assam bean**, **Winged pea**, Small-fruited bean; Red and green *siig*; *Asparagus*; Nepal Dwarf and Most useful cucumber; Long-warted **squash**; *Turaee*; *Brinjai*; Indian corn of **Okroj** and Snake gourd.

FRUIT. Shaddock, Sweet-sop, Bullock's heart, Alligator or avocado pear, a few Pine apples but indifferent, Banana, Guava, Java plum, Paneola plum, and Grewia.

SEPTEMBER.

VEGETABLES. Borecole or kale; a few very early Peaa; Assam and Black bean; Yam; Green Nepal spinach; Small cabbage lettuce ; Dwarf, Nepal and Most useful cucumber ; *JBrinjfal*; Indian corn ; and Bitter gourd.

FRUIT. Sweet-sop, Guava, Shaddock, Paneola plum, and Banana.

OCTOBER.

VEGETABLES. Turnips of kinds; Early Peas; Skirret; Scarlet radish,- Yam; Sweet potatoe ; Round and Spanish spinach; Cabbage lettuce ; Small endive ; Nepal Dwarf and Most useful cucumber ; Bitter gourd.

FRUIT. Sweet-sop, Pomegranate, Guava and Banana.

NOVEMBER.

VEGETABLES. Early York, and Early Battersea cabbage; Early cauliflower; Early pea, for regular succession; Dwarf French bean ; Early new potatoe; Botan turnip; Knole kole; White carrot; Skirret; Scarlet and Turnip radish ; Yam; Sweet potatoe ; Round, prickly, and Spanish spinach; White beet; Young onion ;- Cabbage lettuce ; Endive ; Nepal and Dwarf cucumber; Large capsicum ; Nepal pepper; Okro ; Arum or *kuchoo* ; and Bitter gourd.

FRUIT. Orange, Shaddock but scarce, Papeeah, Banana, Indian sorrel, with Sweet-sop but scarce.

DECEMBER.

VEGETABLES. Early York and Battersea cabbage, Savoy; Cauliflower; Early pea; Dwarf French bean ; Potatoe; Early dwarf turnip; Knole kole ; White carrot; Dwarf red beet; Scarlet turnip, and Spanish radish; Yam ; Sweet potatoe; Round spinach; White beet; Cos and Cabbage lettuce; Endive; White solid celery ; Scollop squash; Small tomato ; Black round pepper; Okro.; *Brinjāl*; Arum or *kuchoo* ; and Bitter gourd.

FRUIT. Orange, Tipparee, Plantain, Banana, Hog plum, Averrhoa, and Tamarind.

Glossary.

- Abbricated*.—One organ shorter than the other.
- Abortive*.—Barren, as of flowers producing no fruit.
- Absorption*.—The process by which vegetables obtain nourishment from the soil, &c.
- Acerose*.—Needle-shaped, as the leaves of the fir tribe.
- Acetic Acid*.—A vegetable acid found in the sap of many trees.
- Acini*.—The granulations of berries.
- Acclimation*.—The act of accustoming plants to a climate differing from their natural one.
- Acycledonous*.—Having no lobes to the sepal.
- Aerial roots*.—Roots issuing from the stem at some height, from the soil, and descending to afford the plant additional support to that ordinarily afforded.
- Æstivation*.—The folding of the various parts of a flower before its expansion.
- Affinity*.—The relation by which plants are referred to the same tribe, &c. from having similar structure.
- Agyreubæ flower*.—One composed of a number of tubular floral.
- Ah'-cdh*.—Openings occurring in the interior of plants.
- Alibumen*.—The organ containing the bulk, or farina of many seeds.
- Alburnum*.—The outer layer of the woody part of the stem of plants.
- Algm*.—Plants of the flag kind, or having leaf and branch united.
- Alpine*.—Plants indigenous to mountains.
- Annual*.—Plants that spring up, and mature their seed in the course of a single year.

Anther.—The small bag at the extremity of each filament in the flower, containing the fine powder, called pollen, causing fructification.

Aquatics.—Plants growing in water.

Armature.—The defences of plants, as thorns, spines, dugs, &c.

Aroma.—The odour of plants.

Assimilation.—The process of incorporating the nutritive part of vegetable food into the substance of the plant.

Axilla.—The angle formed between the leaf stalk with the stem, or

Barren flowers.—Such as have anthers but not pistils.

Bursa.—The papery sac by which the seeds are contained.

*Biennial brooch**—Plants which require the space of two years to

Bark.—The external covering of the stem.

Berry.—A soft pulpy fruit.

Biennial plants.—Plants occupying two years to germinate.

Bleeding.—The process of exuding sap.

Bloom.—The process of rendering plants fertile.

Blossom.—The flower found on the leaves, and the substance of sap caused by incision, or accidental

Bract.—A fine soft glaucous powder, sometimes mistaken for its calyx.

Bristles.—Alcathrae, the small conical substances issuing from the axilla, the extremity of the branches, containing the rudiments

Buds.—The young shoots, leaves, or flowers.

Canter.—A disease which affects the young shoots, and young plants.

Calyx.—The external ring of the flower, or the flower cup.

Cambium.—The descending sap.

Canter.—A disease which affects the young shoots, and young plants, and young plants, and young plants.

Capsule.—A dry kind of pericarp, or seed-vessel separating into valves.

Carina, or Keel.—The lower petal of flowers, like the pea.

Caryopsis.—A species of pericarp, or seed vessel, one-celled and adhering to the seed, as in wheat.

Caudex.—The stem, or trunk.

Cellular tissue.—The pulp constituting the chief part of herbaceous plants, and a great part of the more woody; abounding likewise in seed lobes.

Chromule.—The substance from which a leaf or flower derives its color.

Claw.—The narrow base, or lower portion of the petal.

Cl&sires.—The tubes conducting the cambium.

Clove.—The young bulb growing in the axilla of the scales of an old one.

Compound flowers.—Such as contain several florets on a common receptacle with anthers connected.

Contortion.—The irregular rolling up of a leaf caused by the puncture of insects.

Cormus.—The disk remaining after all the scales are removed from a bulb, from whence the fibres spring.

Corolla.—The interior envelope of a flower, consisting of one, or more petals.

Cotyledons.—The seed lobes which contain the first nourishment of the plant, forming, what are familiarly called, the seed leaves.

Cryptogamus plants.—Those whose organs of fructification are not visible to the naked eye.

Culm.—The stalk, or stem of grasses.

Decomposite'* organs.—Compound organs whose component parts are themselves compound. The root, trunk, and

branches are of this class, because they consist of bark, wood, and pith.

Dehiscent.—Fruits that open of their own accord to discharge their seeds.

Detached calyx.—A calyx that includes the ovary, without adhering to it.

Dicotyledonous plants.—Such as have two cotyledons,

Diocious plants.—Having their male, or stameniferous parts on one flower, and the female, or pistiliferous part on another.

Digestion.—The process by which the nutritive fluids taken up by the root are elaborated through the plant.

Diploë.—The pulp laying between the upper, and under net-work of leaves.

Disk.—The central portion of such flowers as have the florets of the outer ray differing from those of the centre.

Dissepiments.—Partitions of the cells of a compound fruit, or ovary.

Double flowers.—Having some of their parts multiplied to the exclusion of others, generally by a conversion of the stamens into petals.

Drupe.—A fruit having a soft, and pulpy exterior enclosing & nut, or stone.

Ducts.—The vessels conveying the various juices of the plant.

Duramen.—The several circles of wood in the trunk of a plant, forming the heart-wood.

Elaboration.—The process by which the food of plants is prepared for assimilation.

Embracing leaf.—One the base of which surrounds the stem, or branch whereon it grows.

Embryo.—The germ or rudiment of the plant existing in the seed; comprising the radicle, or root part formed for striking

downwards, and the plumule or sprout, **that** takes an upward course, **and eventually** becomes **the** plant.

Ettocarp.—The **shell** immediately investing the **seed** of stone fruit.

Endogenous.—Plants whose growth is effected from the centre, as in the palm.

Endosmose.—Is applied to the impulse by which moisture of the soil **enters** the extremities of the roots.

Jzpicarp.—The outside skin of stone **fruit**.

Epidermis.—The outer coat, covering the surface of a plant.

*Epigynous**—Stamens **originating** in the ovary, or pistil.

Fipipedous.—Stamens originating in the petals.

Ergot.—A disease attacking cereal grasses; apparently a prolongation of the grain, but really a parasitical and poisonous fungus.

Etiolation.—A morbid affection that renders plants pale and **rickly**.

Exogenous.—Plants whose growth is caused by **additions to the** circumference.

Face.—That side of a seed **which** is **parallel** with the axis of a compound fruit, or the line of union in a simple one.

Fascicle.—**The** mode of flowering under which the flowers form a compact bundle.

Fecula.—See starch.

Fecundation.—The act of **fertilizing the** embryo seed by conveyance of the pollen to it through the **pistil**.

Fertile flowers.—In plants that have the stamens and pistils on separate individuals—are such as bear living pistils and ovary, because they only produce seeds.

Filament.—That portion of the stamD, **which** generally supports the anther.

Floral leaves.—See Bractea.

Florets.—The individual flowers, or divisions composing a compound flower.

Flower.—A general term for that part of the plant which comprises the calyx, corolla, stamens, and pistil; distinguished generally for its tints and fragrance.

Flux of juices.—This occurs when the sap ascends too copiously and forms a fissure, whence it flows out, to the great injury of the plant.

Foliation.—The mode in which incipient leaves are folded up within the leaf bud.

Foliolcs.—The leaflets of compound flowers.

Foxtail root.—A woody root is so called, when finding its way into water it puts forth a number of fine filaments from an elongated axis.

Froncl.—An incorporation of the leaf, leafstalk, and branch, forming apparently but one organ.

Fronclmcc.—The leafing of plants is so called by Linnaeus.

Fruit.—The ovary, after all the other parts of the flower have withered and fallen.

Frutex, or Shrub.—A woody plant that sends out its branches from the surface of the soil without a main stem.

Funiculis.—The thread attaching the ovulum to the placenta.

Fungus.—The tribe of mushrooms.

Galls.—Excrescent ^{is} caused by the puncture of an insect of the genus Cynips.

Gamosepalous.—That union of the sepals which causes the calyx to appear a single expansion.

Gangrene.—A kind of rot affecting leaves, and young shoots, from too wet, or too ^{rich} culture; also sometimes caused by excess of heat or cold.

Gems.—Buds.

Genera.—A Botanical classification—or family of plants having the same form, or structure.

Germ,—The embryo is sometimes so called.

Germination.—The process of bringing into action the vitality of a seed, whereby the embryo becomes developed, and rises to a plant.

Glands.—Small organs on the surface of the leaf, and petiole, supposed to be those of secretion.

Glans.—A one-celled fruit seated¹ in a cupule, as the acorn, chesnut, &c.

Glume.—The chaffy calyx of the grasses.

Gluten.—The residuum of flower.

Grafting.—The artificial application of a shoot from one tree, set, or fitted on another.

Habit—The outward, and perceptible appearance of a plant, as shewing it to belong to a particular tribe or family.

Head.—A group of flowers on the extremity of a stem, or branch.

Heart-wood.—The central layers of the stem of dicotyledonous plants. Sse *Duramen*.

Helmet.—The upper side of lipped plants much arched.

Herbs.—Annuals, and plants of soft texture.

Hermaphrodite.—A flower uniting the two sexes, or producing stamens and pistils in one individual.

Hilum.—The mark on the surface of a seed where it has been united on the seed vessel.

Hybrids.—The production of plants springing from sexual union of two individuals of distinct species—the same as mules among animals.

Hygroscopicity.—The property by which vegetable tissue tends to absorb moisture.

Hypogynous.—When the stamens originate in the receptacle.

Imperfect plants.—Such as want any one or other of the conspicuous parts, or organs common to vegetables.

Impregnation.—The same as fecundation.

Indefinite inflorescence.—When the principal axis ends as it extends in a leaf bud.

Inferior calix.—A flower cup including the ovary, but not adhering to it.

Inflorescence.—The mode of flowering, or aggregation of flowers distributed over a plant.

Inhifation.—The act of introduction of gases into a plant.

Insolation.—The exposure of plants to the light of the sun.

Intercellular passages.—The spaces between the cells of plants.

Internal structure.—That part of the vegetable fabric which is discoverable only by dissection.

Internode.—The space between knot and knot, or between the joints of stems.

Interveneum.—The pulp lying between two, or more veins of a leaf.

Integuments.—The envelopes of the organs of plants.

Introsusception.—The act of taking either fluids, or gases into the system of plants.

Involucrum.—A species of floral leaf peculiar to umbelliferous plants.

Irriffition.—Waxing

*Irritability**—The excitement produced by excess of light, heat, or other stimuli.

Kernel—The seed contained within the shell of stone fruit.

Knots.—Excrescence caused generally by an obstruction in the channel of the plant's juice.

LuhiaitiK—Flowers with lipped flowers.

Laç,.*—The vital fluid of plants.

Legume.—A seed vessel of the pea kind.

Lepals.—The sterile stamens.

Liber.—The innermost layer of the bark.

Ligneous layers.—Those parts of woody plants which, annually formed, constitute the woody part of stem.

Lignin.—The woody fibre, produced by maceration, in what are called skeleton leaves.

Lobe.—The division into which some simple leaves are divided, as also the cotyledon of the seed.

Loculi.—The small cells of anthers containing pollen.

Locusta.—The single spikelet that constitutes part of the common spike of many grasses.

Luxuriant flowers.—Such as have the usual number of petals, &c. unusually augmented.

Lymph.—The sap when first taken up by the sponglets.

Lymphatics.—The vessels conveying the sap.

Maculae indicantes.—The colored spots with which many flowers are marked secreting honey.

Marl.—Is a carbonate of lime, or of lime and clay, useful as a manure.

Madidary rays.—Lines observed in some stems as diverging from the centre.

Membrane.—The thin film composing the cellular tissue.

Midrib.—The prolongation of the foot stalk through the centre of the leaf.

Migratory root.—The radicles issuing from the joint of many procumbent stems, and producing new plants.

Molecules.—The minute globules supposed by some to constitute the filmy tissue of the cells, and vessels of plants.

Monacious.—Plants bearing male and female flowers on the same individual.

Monocotyledonous plants.—The seeds of which have only one lobe.

Monogynous.—Having only one style.

Monopetalous.—Flowers having only one petal, or several united.

Monosppalous.—A calyx consisting of one piece or sepal, or of several joined together.

Mucilage.—The gum found in bulbous plants.

Mutilated flowers.—Such as are deficient in any part common to the species.

Naked fruit.—Such as is without any external appendage, as the superior fruits, see page 28.

Naked seeds.—Such as have no conspicuous pericarp.

Naturalization.—See Acclimation.

Neetary.—An appendage of some flowers, attached generally to the corolla, and containing a honey-like juice.

Nerves.—The ramifications of the fibres throughout the leaf are frequently so called.

Nutrition.—The general combination of aliment in plants.

Odrea.—A membranous sheath at the base of the foot stalk of some leaves, embracing the stem.

Offset.—A short lateral branch springing from the root of some plants, capable of forming a separate individual if taken off and planted.

Omphalodium.—The point where the nutritive vessels enter the seed, is by some so called.

Organography.—That department of Botany that relates to the organs of plants.

Ovary.—The lower extremity of the pistil, enclosing the embryo seeds.

Ovula.—The seeds during their several stages of growth.

Panicle.—An assemblage of flowers on one stem subdivided into lesser stems, and forming a spike or spire.

Papilionaceous flowers.—Such as have winged flowers, the pea, *Sec.*

Parasites.—Plants vegetating neither in earth nor water, but attaching themselves to other plants, the bark of which their root-fibres penetrate.

Paries.—The divisions of any containing organ, as of the ovary.

Partitions.—The divisions between the cells of the seed vessel.

Pedicles.—The ramifications of the main flower stem.

Peduncle.—The stem that supports the flower, or flowers, but not leaves.

Pellicle.—Any thin skin.

Perfect plants.—Such as have all the parts, and organs common to plants in general.

Perianth.—A cup-like envelope having the same use as a calyx, or corolla.

Pericarp.—The outer case of the ripened ovary. It is considered to have three parts; the epicarp, or outer integument of the fruit; the endocarp, called also putamen, closely surrounding the seed; and the sarcocarp, or pulp that lies between these two first.

Petals.—The divisions of the corolla are so called, forming in the aggregate what is called the flower.

Petiole.—The foot stalk that supports the leaf.

Phytography.—That department of Botany which describes the entire plant.

Phytology.—That branch of science which treats of the phenomena of vegetable life.

Pistil.—A column-shaped organ, occupying generally the centre of the plffrt, and surrounded by the stamens; it is

divided into the ovary or seed vessel, a fine tube called the style, and the stigma, at the extremity, for receiving the pollen from the stamens.

Pith.—A soft spongy substance, occupying the centre of the stem, root, and branches of Dicotyledonous plants.

Placenta.—That portion of the seed vessel in which the seeds originate, occupying one angle of each cell.

Plant, or Vegetable.—"A living and organized body, insentient, and incapable of locomotion; but originating in a seed - " which springs up into a plant, again producing seed."

Plantlet.—That part of the embryo invested by the cotyledons, and being the future plant in miniature.

Plumule, or Plumelet.—A minute feather-like part of the embryo at the summit of the infant plant.

Pollen.—The fine powder contained in the anther, and supposed to be the active means of fecundating the seed.

Polygamous plants.—Those producing male, female, and hermaphrodite flowers indifferently.

Pomum.—A fleshy pericarp, or fruit enclosing a capsule, generally divided into distinct cells, as the apple.

Pores.—Openings in the membrane of the cellular tissue.

Prickles.—Stiff, sharp-pointed substances issuing from the bark of some plants,

Primie.—The outside coat of the seed in its early stage.

Proliferous flower.—One that protrudes other flowers from its own disk.

Pubescence.—The hair, hooks, scales, or down that covers some plants.

Pulp.—The soft succulent portion of the cellular tissue of fruits.

P?tbinus.—The small protuberance on the stem, or branch which a fallen leaf leaves.

Putamen.—¹The shell of a nut, or stone of fruit.

Pyrena.—The cell of such stones, or nuts as are divided.

Radicle.—The part of the embryo that descends into the earth, and becomes the root.

Raceme.—An assemblage of flowers, each on its own stalk, proceeding from one common stem—a cluster.

*Ramenta**—Small scattered scales appearing on the stems of vegetables, giving them a rough appearance.

Rays.—Divergent rays appear on the transverse section of the stem of woody plants. The outer petals of compound flowers are so called.

Receptacle.—The base whereon the several parts of fructification rest.

Regma —Pericarp consisting of three or more cells that burst with a degree of elasticity from the axis into two valves.

Productive organs.—Such as have their functions specifically operating for the propagation of the species.

Ringent corolla.—A corolla is so called in labiate flowers that have the two lips separated from each other by a wide and regular orifice.

Root.—The part of the plant which attaches itself to the soil on which it feeds.

Runners.—Young shoots issuing from the collar of the root, creeping along the surface of the soil, and producing new roots at their extremity.

Sap.—The ascending fluid that furnishes aliment to all vegetables.

Sarcocat-p.—The fleshy pulp lying between the outer skin and the shell, of stone fruit.

Scales.—The floral leaves when they have a scaly appearance.

Scape.—The flower stalk when it issues directly from the root, and is the only stem of the plant, as in most bulbous plants.

Seed.—That part of the mature plant **which** contains the **rudiments** of a new individual **whence** the species may be **propagated**.

Sepal.—The divisions of the calyx.

Stem.—A perennial plant is so called if the branches proceed direct from the head of the root without any intervening trunk.

Stylus.—A dry elongated **seed** vessel, consisting of two valves with opposite seams to which the seeds are attached.

Stipule.—Shoots detached from a branch, and placed in the soil to vegetate for production of new plants.

Spathe.—The floral leaf, or sheath that encloses **the** unexpanded flowers of the lily, and some other similar plants.

Spike.—That form of flowering which consists of an assemblage of flowers, rising in **succession**, on one common **flower stalk**.

Spindle-shaped Root.—One that tapers down for some depth in the soil, gradually **lessening towards** the end.

Spines.—Sharp hard points formed frequently on leaves, or on **the** divisions of the calyx.

Spiral vessels.—Small corkscrew-formed tubes, interspersed **alternately** with the other tubes of plants, supposed by some to be organs of **insolation**.

Spongiose.—The pulpy **succulent** ends of the root fibres, **absorbing** moisture, **and performing** the functions of mouths to the plant.

Stamen.—Slender fabrics, consisting of filament and anther, and **forming** the male part of every flower, to the perfect **formation** of whose fruit they are indispensable.

Standard.—The upper petal of a papilionaceous **flower**.

Stem.—The **main** channel of the ascending sap, and descending juices of every **plant**.

Stigma.—The summit of the style.

Stings.—Awl-shaped projections on the cuticle of the leaf, or stem, projecting a venomous fluid when lightly pressed.

Stipules.—Small leaves appearing at the base of the leaf stalk of some plants.

Stomata.—The pores, or minute openings, in the cuticle of the leaves of most plants.

Straw.—The culm, or trunk of grasses.

Style.—The filament, or tube of the pistil connecting the ovary with the stigma.

Sucker.—A supernumerary stem sent out by the root, and which if separated forms a new plant

Superfecundation.—Occurs when an ovary, impregnated by the pollen of two distinct species, produces seeds some of one kind, and some of another.

Suture.—The edges where two valves unite.

Tail, or Cauda.—The feather-like appendage surmounting some seeds.

Tendrils.—A spiral thread issuing from the stem, branch, petiole and even sometimes, the leaves of plants, by which they attach themselves to other substances for support, or assistance in climbing.

Tepals.—The divisions, or parts of a perianth.

Testa.—Applied by some to the outer coat of the seed.

Thalamus.—The receptacle of the flower.

Thorn.—An indurated spike originating in the wood, and serving to arm a plant.

Thyrse.—A mode of inflorescence, having an assemblage of flowers, on a primary flower-stalk, having lower ones branching out in a horizontal direction, and the upper gradually becoming shorter, and more erect.

Trunk.—That part of a plant which ascends direct from the root perpendicularly, giving support to the branches.

Umbel.—A mode of flowering when a number of flower stalks diverge from a common centre, having flowers at their summits.

Umbilical cord.—The thread by which some seeds are attached to the placenta.

Valves.—The distinct pieces into which the seed vessel divides, when the seed is ripe.

Vascular organs.—The longitudinal fibres, or tubes for conveying the nutriment, and juices through the plant.

Veins.—The branches of the petiole disposed through the leaf.

Vernation.—The leafing of plants is so called.

TParfc.—Small roundish tubercles, occurring on various parts of some plants.

Wax.—The upper surface of some leaves is found to bear a varnish, having all the properties of wax.

Wings.—The side petals of papilionaceous flowers.

Winged leaf.—A compound leaf, having leaflets on opposite sides of the petiole.

Wood.—The firm compact substance forming the body of the trunk.

ERRATA.

- Page 7 line 6 for "pot" read "spot."
 " " " 17 for "an^m" read "on."
 ,, 26 ,, 24 for "dmuing" read "pruning."
 ,, 37 ,, 10 for "expect" read "except."
 ,, 41 ,, 8 for "ar(fUulous" read "arqMaceows." ,
 ,, 45 ,, 21 for "with" read "to the.*"
 ,, 04 ,, 8 omit "from"
 ,, 61 ,, 18 after "oxalic" supply the word "acid.*"
 ,, ,, 26 for "there" read «they."
 ,, 70 ,, last omit "as closely."
 ,, 74 ,, 2 for "or" read "as."
 ,, ,, 20 for "Scartch," read Scratch; and for "tliat" read "this*"
 ,, 123 ,, 17 omit "to."
 ,, 125 ,, 10 omit "of."
 ..127 ,, 14 for "sa/wft" read "sa/w6."
 ,, 130 ,, 1 for "is ~~then~~ ^{state.}" read "it is then," and for "stately" read
 ,, ,, 20 for "tride" read "tribe."
 ,, 137 ,, 20 for "J?/ww£" read "tf/Kwitf."
 ,, ,, 27 ditto ditto ditto.
 ,, 138 ,, 22 for "Gooj un" read "Goojurr"
 ,, 140 ,, 20 for "fleshly" read "fleshy."
 ,, 144 ,, 24 for "part" read "parts."
 .. 155 ,, 1 for "kind" read "kinds."
 ,, ,, last for "succeeded India" read "succeeded in India."
 ,, 160 ,, 10 for "pae" read "pen."
 ,, 164 ,, A omit "but."
 ,, 176 ,, 11 for " 62-5 " read " 6-2 5."
 ,, 178 ,, 15 for "it surpasses" read "surpasses it."
 ,, 180 ,, last for "contract" read "contact."
 ,, 182 ,, 8 after "transplanted" omit "and."
 ,, 188 ,, 2 for "colar" read "color."
 ,, 190 ,, 1(1 for "fleshly" read "fleshy."
 ,, 191 ,, 20 for "go" read "grow."
 ,, ,, last for "degenerates" read "degenerate."
 ,, 209 ,, 22 after "covering" read "them."
 ,, 210 ,, 1 for "runs" read "run."
 ,, 219 ,, 22 for "then" read "there."
 ,, 2-W ,, 10 for "Suzal" read "Suzab."
 ,, a-W ,, 2 for "petandra" read "pentandura."
 ,, 2W ,, 9 for "or" read "to."
 ,, 2">0 ,, 0 after "each" read "tree."
 ,, 254 ,, 17 for "matter" read "matter)."
 ,, 263 ,, 16 for "train" read "training."
 ,, ,, 18 for "JUGUBE" read «JUJUBE."
 ,, 265 ,, 25 for "ioccur" read "occur."
 ,, 275 JI 6 after "reddish" omit "in."
 ,, 288 ,, 9 after "Gentile" omit "and."
 ,, ,, 18 for "no" read "not."
 ,, 32 ,, 1 for "OF PLANTS" read "ON PLANTS."
 ,, 108 ,, 3 for "purning" read "pruning."
 ,, 207 ,, 2 for "when old, the viue is old" read "when the vine is
 ,, AV* ,, old."
 ,, 297 ,, 11 for "n»^{ie}" reftd line*"
 ,, 298 ,, 6 for "of" read "oif."
 : ffi :: 7 for "in" read "is" "Nectary."
 ,, 333 ,, 10 for "Nectary" read "Nectary."

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N. B.—Native names of plants are in this part of the work written as below in their equivalence to the Persian character :—

*• I a (broad), i, a,

l_> 4_rt A J J)

س — " v

i i * i ^ »• J S

ج ج ج ج j

^ j f f »• C^

^ g s ^ h

^ . i s i AA

NATIVE NAMES OF PLANTS.

د د	.....	<i>d</i>
ذ ذ	.....	<i>z</i>
ر ر	.....	<i>r</i>
ز ز	.....	<i>z</i>
ژ ژ	.....	<i>zh</i>
س س	.....	<i>s</i>
ش ش	.....	<i>sh</i> ⁿ
ص ص ص	.....	<i>ss</i>
ض ض ض	.....	<i>zz</i>
ط ط	.....	<i>t</i>
ظ ظ	.....	<i>zz</i>
ع ع ع	.....	<i>a</i> (broad and guttural)
غ غ غ	.....	<i>g</i> (guttural)
ف ف ف	.....	<i>f</i>
ق ق ق	.....	<i>k</i>
ك ك ك	.....	<i>k</i>
گ گ گ	.....	<i>g</i> (hard)
ل ل ل	.....	<i>l</i>
م م م	.....	<i>m</i>
ن ن ن	.....	<i>n, m</i>
و و	.....	<i>oo, ó</i>
ه ه ه	.....	<i>h</i>
ي ي ي	.....	<i>ee, é</i>
لا لا	.....	<i>la</i>

VOCABULARY
OF
TREES, PLANTS, ETC.

COMPILED FROM THE MOST APPROVED SOURCES.

VOCABULARY.

ع ع *	r	a (broad and guttural)
غ غ *	*	9 (guttural)
ف ف	A3.	I*
ق ق *	s.	7i
ك ك *	. . . . .	k
گ گ *	. . . . .	g(hard)
ل ل	J11	l
م م *	10	m
ن ن *	. . . . .	n, 7w
ج ج *	. . . . .	∞, 6
ح ح *	. . . . .	h
ي ي *	e.	ee, é
لا لا *	. . . . .	la

MARKS DENOTING THE HABITS OF THE SEVERAL PLANTS FINDING PLACE IN THE VOCABULARY.

- | | |
|-----------------------|---------------------|
| A. Aquatic, | Pa. Parasite, |
| B. Bulbous rooted, | S. Shrub, |
| C. Climber, | T. Tree, |
| Cr. Creeper, | Tr. Trailer, |
| F. Fusiform rooted, | Tu. Tuberos rooted, |
| G. Grass, | Tw. Twiner, |
| H. Herbaceous plants, | US. Under shrubs. |
| P. Palm tree, | |

ABBREVIATIONS OF AUTHORITIES NAMED.

<i>JBurm.</i>	Burmans, a Dutch editor.
<i>Chois.</i>	Choisy, a Swiss botanist.
<i>Cole.</i>	Henry Colebrooke.
<i>DC.</i>	De Candolle, a French botanist, founder of the Natural system.
<i>Dr. Ro</i>	Dr. Royle.
<i>Dr. Wall.</i>	Dr. N. Wallich.
<i>Flem.</i>	Fleming.
<i>Gcert.</i>	Gaertner, a German carpologist.
<i>Herb.</i>	The Herbarium.
<i>Jac.</i>	Jacquin, an Austrian botanist.
<i>Juss.</i>	Jussieu, a French systematic botanist.
<i>Ko.</i>	König, a German naturalist.
<i>Lam.</i>	Lamarck, a French botanist.
<i>Lfm.</i>	Lémery.
<i>Lin.</i>	Linnaeus. The Swedish founder of the Linnaean system.
<i>Lour.</i>	Lourett'o, a Portuguese traveller.
<i>N.</i>	Nees v. Esenbeck, a German botanist.
<i>Pro. Lind.</i>	Professor Lindley.
<i>Retz.</i>	Retzius, a German botanist.
<i>Hos.</i>	Roscoe, an English do.
<i>Hot.</i>	Rottboll, a Danish do.
<i>Rott.</i>	Rottler.
<i>liox.</i>	Roxburgh.
<i>Schr.</i>	Schreber, a German do.
<i>Va.</i>	Vahl, a Danish do.
<i>Will.</i>	Willdenow, a German do.

USEFUL TERMS.

Acid, J*1 amul, J&7 turush, uJ ^ chook.

Acrid, Ifo** churpura.

Agriculture, |J^|jj zxxvaxxt, *>.*» seer, کنبت kum-
but, y^Junf kheetee.

Air, <fc baoo.

Alligator, jt, کم kumheer, کنبهیر kumbheer, KU naka.

Alone, H^i ékeela.

Alum, ^s£& %> p'hutkuree.

Always, A^JUb humésheh.

Ant, an, ^5^5- chumtee, y^&j** choontee.

Ant, large black, C-XUJ peeluk, UJ^A. choonta,
^yif- cheeoonta, J;^«^° muk'hoora.

Antelope, see Deer.

Ant hill, a white, l; ^ deeara, f^j rakh.

Aquatic, ^T abee.

Arable, t^ ^ ^ jutae.

Arbour, an, *Ia^ chufteh, 1^^« mundooa.

Ashes, ufW ch'haee, LJ'^ khak, 4h rakh.

Autumn, «-.* ^ khureef, CJJ*- khu^an.

Avenue, an, |jrs) roos, yj*^ rooush.

Axe, UxJ p'hursa, ^ tubur, J*J tubul, ^ 1 / ku-
raree, o?W^ kul'haree.

ENGLISH AND NATIVE

Bark, rind, skin, shell, JXJ or X& bukul or bukia,

JW*- ch'hal, UI^ ch'hulka, y£ kushur.

Barren, ^r^^l abkeśhee, |j*»Ji uosra, !«*>]; randa.

Bason, round a tree to hold water, 3kS t'hala.

Basket,)J>ÿ tôkra.

Bat, a, < rj^s^*~ chumchurukh, L-5; J^^ chumgud-
ree, jtX>&*^ chumgeedur, <+£&y mooshuk.

Bed of flowers, &c. &£ tukhteh, ^^ -kheeaban,
^jW keearee.

Beegah, a land measure of 14,400 square feet,
t*£y beeg'ha.

Before, or in front of, |f| aga, ^ T agé.

Behind, y^i peech'hoo, ±£&?&i pecch'hee.

Below, jij zeer.

Berry, a, |mm*->- Aub, A^^ >lubeh.

Bent, |^«e- j'hubooa.

Bird, jjtxfi puk'heeroo, ^ chureea.

Bitter, UuJ teeta.

Bittern, a, y^tj+f chumrubgulee.

Black, 5ff kala.

Blanket, ^+\$ kumlee.

Blossom, a+yF*** munjur.

Blossom, to, UJ^j p'hoolna, Jute shuguftun.

Blowing, of a flower, ±mJ*&*<* dumcedugee.

VOCABULARY.

Bog, a, see Quagmire.

Border, a, ^j* muree.

Bough, a, ^l£ shakb, فرع fura.

Boundary, *a»j»* surAud.

Branch, young, see Spray.

Branch, a broken, ^<&>' tunde, ^s**y' tondee.

Branch, a large, JV t'hal, SW? t'hala, تھالی

t'halee, ^£ tuhnee, ^Jb dalcc, smJ^^ d'halee,

Ujj deena, *^U« sak'heh.

Break, to, ^k&jj* tórdéna.

Break, to, down, UJJ^^J tórdalna.

Break, to, off or gather, V*Jjy tórléna.

Breeze, a gentle, *&>»* nuseem.

Broken, Uj** p'hoota.

Brook, a, ^^ joo, ^j^ jooee.

Bruise, a, ci^ - chót.

Bud, a, ^ «y' toosee, *s^ ^ uncheh, ±J* kulee, زھر

suhur.

Burst, to, ^jj%» ^hoorna.

Bush, see Underwood.

Bustard, a, ^ churuz.

Butterfly, isjHt teetree.

Canvas, o^ tat.

ENGLISH AND NATIVE

- Carpenter, (an insect so called,))y£ guhooa.
 Capsule, a, or seed vessel, **y*J d'hoond.
 Caterpillar, of the cabbage butterfly, Asr³^
 j'hanjeh.
 Caterpillar, hairy, ^j** b'hooeen.
 Cart, a, ^sJ6 garee.
 Centipede, a, js**J> goojur.
 Chalk, or pipe-clay, uo*?- ch'hooee, i.sj£ k'huree.
 Chpmelion, a, UO* Aurba.
 Clay, ^ uff³^ chuknee, or chiknee mutee.
 Clean, «^Jto ssaf.
 Climate, Iy>jt->T ab-6-huooa, ^%1 iAleem, jj**»*
 dusaoor.
 Climber, ^> bulee, ^JUJ.beelee, UJ luta.
 Clod, a, \$£ dula, iUa>j dhéla, Ibj deela, ^^ ch'har.
 Cloud, a, ^l abur, ^^ badur, J^W badul, ^ls*''
 suAab.
 Cobweb, a, 3U. jala.
 Cold, iYl abrud, l*ii<j t*hunda, ^^Ji^ t'hundee,
 jy*- joor.
 Color, i-&j rung.
 Cord, u^ry rusree, ii/<y rusun, ^5**^ rusee.
 Core, the, or heart, *^*> durooneh.

VOCABULARY.

Cracked from heat, ***ḤU*ĀĴ** tufseedeh.

Creek, a, **Jji** kôl.

Creeper, a, **jy*ḡ** bunoor, **J**** bél, **c^Ui^S** ^usseebat.

Cricket, a, **ḡ&i^** j'heengur, **^J**ḡ** j'hulee.

Crooked, **|\.^j>** turch'ha, **U^** ter'ha, **&>>** béga.

Crow, a, **£!;** z&g, **u-T^** kak, **<^fK** kag, **1^** kuooa.

Crocodile, a, **J ^ ^** g'hureeal.

Cubit, a, (18 to 20 inches,) **«?U** hat'h.

Cuckoo, Indian, **uX** puk.

Cultivated, or cultivation, **^VJT** abad, **^r^T** abadee,
jy>** mamooreh.

Damp cold, **ty*** surd.

Dawn, ***z>lri** purat, **c^W^** purb'hat, ***J** peh, **l^>** tur-
ka, **l,t£»** subeera, **^ »^*«** supeedeh dum, **سحر**
suḥur, **^^** sukar, **-U^>** ssubaA **^>** ssubA.

Daj^r, a, **^** din, **^''^** rôz.

Deer, a, **v_£«** murg, **^ ^** hurun ; (spotted; **JJÜA**-
chectul.

Desert, or fore&fc, **v^u^j** dusht.

Dew, **^1;** zhaleh, **^rj** oos.

Difficult, **J^^»** mushkul.

Ditch, ***,/*•%** pee^ar, **^^** k'haee.

Double, a, flower, **l;Ij*** husara.

ENGLISH AND NATIVE

Dove, turtle, <—&*} punduk, &yd> tuleehh, توترو
tootroo, ^ILM fakhteh.

Drain, a, ^J^ nalee.

Drain, to, IJ ^ I wlch'huna.

Dry, W(^« sook'ha, ^^ shubnum.

Duck, et id genus omne, j*olfe hans J^J budu£.

Dung, ^j^- churkeen, d^i khad; of the cow, گوبر,
gôbur.

Dust, Jyb^ d'hooL

Ear of corn, or spike of flowers, a^j^ khoosheh,
JA*« subul.

Earth, c^ b'hoolut, ^jv b'hooeen, vJ/° turab,
ج matee, ^^ mutee.

—— potter's I^J^LJ^ chucknee mutee.

Early, as applied to fruit, &c. |j»jym peesh rus.

Early morning, u y ^ suooéree.

Earthquake, an, *iyj ^ukuleh.

East, s->jy> poorub.

Egg, Ff1 anda.

End, V^l intiiha.

Empty, ^J^- khalee.

Eradicating, JLaxiwI isteessal.

Estate, an, or farm <*£* chuk.

VOCABULARY.

- Estate, a large, $\overset{\cdot}{s}j^{\wedge\wedge}i^{\wedge}J$ zumeenduree.
- Even, or alongside, $y)f$. burabur.
- Evening, $\overset{\cdot}{s}j^{\wedge\wedge}$ sanj'h.
- Every, $j^{\ast}>$ hur.
- Exact, $^{\wedge}W$ t'heek.
- Exotic, $^{\wedge}^{\wedge}$ purd $^{\wedge}$ see.
- Falcon, $^{\wedge}JJ^{\ast}AJ^{\ast}$ pundooree.
- Falcon, royal, $j^{\wedge}\&$ shu'hbas.
- Fallow, $uuf\>$ putut, $vjui^{\wedge}$ puteet.
- Farm, or rented land, $\ast^{\wedge}U^{\wedge}$ ajareh.
- Fence, temporary, of thorns, $^{\wedge}S^{\wedge}SL^{\wedge}J^{\wedge}A^{\ast}$ kharbundee.
- Fertile, $j^{\wedge}!) apjaoo$.
- Fibre, a, $uJ;^{\ast}$ rug, $\&\&\ast^{\ast}j$ reesheh.
- Fill, to, $Ujfc$ b'hurana.
- Firm, $UUAJ^{\ast}$ $^{\wedge}$ abut.
- Fire-fly, $j-i^{\wedge}$ jugnoo, $LS^{\ast}JS$ kurmuk.
- Flail, a, $i\&\ast^{\ast}JU$ sant.
- Fish, $^{\wedge}s^{\wedge}f^{\wedge}$ much * hee.
- Flower, $^{\wedge}\ll J$ p'hulka, $i^{\wedge}s^{\wedge}U^{\wedge}i$ p'hulooree, $A^{\ast}yCi$
 shukoofeh, $\ast^{\ast}-^{\wedge}$ pushp, $JJ.\ll J$ p'hool, سمن
 sumun, $J^{\ast}J-\ll$ smnbul, $\&j^{\wedge}$ oourud.
- Flower pot, a, $^{\wedge}r^{\ast}V$ chugeer.
- Fly, a, $^{\wedge}g^{\wedge}$ muk'hee, $^{\wedge}jJ^{\ast}$ mugus.

ENGLISH AND NATIVE

Force or strength, *j^)* zoor.

Forest, *u\$yl* atooee, *J^?*- jungul, **l&a** jungleh,
(see also Desert) *^K* kanun.

Foggy, *Ijftvyjo* d'hoond'hra.

Fox, a, *v.^JUJ* *salub*, *i\tjj* roobaeh, ****** sumsum,
*ic*V* looktee, *^sy^* loomree.

Fragrance, *&y** amood, *^ ^ k L* khooslibooee,
*سباس** subas, **uf«*, sugund, **y>&** mushmoom,
نکھت nuk'hut.

Frog, *j*\$l&* dadur, *ui^uj* béng.

Fruit, *^* p'hur, *J^* p'hul, *^4* sumur, *fyf* mecooali.

Fruitful, *J«xyw* sup'hul, *j*k°* musmur.

Full, complete, *)jj** poora.

Furrow, a, *ysj^&j* reeg'haree.

Garden, a, ****jj* roozeh*

Garden, enclosed, *^ W* baree, *g^*. ba^r, *ASJC**. *hu-*
dee^eh, *^tu^Li* shakhsar.

Garden, small **f*^* bagreecheh.

Garden, flower, *eA***^* boostan.

Gardener, a, *^ t «* malee.

Gate, *^jj>*, pooree, **-£&\$** p'hatuk, *j)jd* dooar.

Germinate, to, *^ a.* jumna.

Germinating, *jj* roo.

VOCABULARY.

Gnat, *i pusheli.

Graft, see Scion.

Grain, a, or seed, *i)j daneli.

Grant, a, royal, U*£) iltum^a.

Grass, y^r^ g'has.

Grasshopper, &*J p'hanga,)*> tuda.

Grove, a, ^1 apubun, JjT aram.

Ground, rising, ^*fc^ d'heeha, V.^ deeha.

Glutinous, ^ «- chumsa.

Gum, 5 ص ssumg, گوند goond, ثمر sumur.

Hail, Jjl aool, V aoola.

Half blown, W adk'hula.

Half ripe, AX;^! ad'hpukeh, U^^' ad'hkucha.

Haie, a 1^ . choogura, |j*J>j±- khurgôsh, سبورت
suburt, ^w susa, WJ lum'ha.

Hard, u^s*" sukht.

Harrow, to, or plough in seed, UjtlJj buda'hna.

Harrow, a, ^y. bu2iin, &jij** suraoun, ^jgfc* mce'ec
or ^sy° mciee, %H* hénga.

Harvest, ^j*:- khurmun.

Hawk, |mJ^y turmntoe, lyÿ toonooa, ^ juroh,
چرف churg.

Heap, a, ^ punj_f^J (I'lnigar

- Heat, *yjSiJJ* tabush, $\text{v}^{\wedge}\text{o}$ tup, \wedge tupun.
 Herbage, *ty*** subzch.
 Hillock, $\text{J}\text{J}^{\wedge}$ tul.
 Hired, or contract labor, KXS t'heeka.
 Hoe, a, J) \wedge kôdal, $\wedge\text{Jl}^{\wedge}\text{fi}$ kôdalee.
 Hoopoe, (the bird,) $**>**>$ hud hud.
 Hornet, $a_{\text{jj}}*\text{J}$ smwboor, $*\text{jj}^*\text{j}$ \wedge umbooreh
 Hurricane, a, $\wedge\text{U}$ chooae.
 Husbandman, $a^{\wedge}\text{U}^{\wedge}$. jôtar.
 Hyena, $\text{J}^{\wedge}\text{JS}$ kuftar, $)\text{)j}$ $\text{uJ}^{\wedge}\text{W}^{\wedge}$ b'halook ôala.
 Inundation, KET ahla, $\text{j}^{\wedge}\text{T}$ ahloo.
 Irrigation, $/**\text{q}$ putao.
 Irrigate, to, Us^{**}q seechna, $\%/\text{ji}\text{£}$ shcereh.
 Jackal, a, $\wedge 5^{\wedge}$ juwiboOj $\wedge\text{U}^{\wedge}$ seear, $\text{J}^{\wedge}\text{**}$ seeal, چقال
 ch u / i a l, $\wedge \wedge$ geed'har.
 Joining, a, $\text{jy}\pm$ - joor.
 Juice, $\text{J}\text{J}^{\wedge}$ rus.
 ———milky, *ty* dood, \wedge lubun.
 Juiceless, yj^{\wedge} arus.
 Kernel, a, $\wedge \text{J}^{\wedge}$ gut'hlee, $>\text{m}$ mugz.
 Kid, yjj^{\wedge} - /iulooan.
 Kite, a, J^{\wedge} - cheel, $*\ll 1^*\text{q}$ cheel'heh, $\text{J}>$) *zxxgxxa*.
 Knife, a, $\text{ur}^{\wedge}\text{rf}^{\wedge}$ - ch'huree.

VOCABULARY .

Kottah, a measure of land equal to 720 square feet, W# kut'ha.

Labor, or fatigue,)&)}& dooadoo.

Lake, a, V jula> Jiv** j'heel.

Land, {^j sumeen.

Landholder, aqj^^i^J sumeendar.

Lark, a, V-JJ^J* chukaoouk.

Lattice work, i*s_uj**?» jafree.

. Leaf, S&|J pat, Uy putta, Jj dul. ^ oouruk.

Leech, a, j_uij zuloo.

Level, |jys*_u chorus.

Light, itj&jj rōshun.

Lightning, £j> bur£, ^ b damun, ^ ^ M damunee, U>Joy koond'ha.

Lime, U^ choona.

Little, a,)jj\$ t'hōra.

Lizard, o-y ^ bustooee, _ ^ tuktukee, چاپاسه
 chulpaseli, ^ ^ ch'hupkulee, s^^. ch'hup-
 kee, c^** surut, |J>&£ gurgut.

Lizard, a, red-tailed, y_{tm} ^ > bumunee.

Locust, a, uf^ tuclee, uy teeree, ik» mulukh.

Manure, j ^ - sar.

Marsh, a, ^ - 1 ^ turace, y)-^- j'lmbur.

ENGLISH AND NATIVE

Marshy ground, *jj& shooreh.

Mat, a, L[^]^ V chutae.

Mattock, *-&# beeluk, PjW! p'haora, مورتکي moot-
kee.

Meadow, a, aK_T^churagaeh, J[f*,- churan, ^j ray.

Mildew, 1*3^ hurda.

Mire, ^ ^ guchpuch, cu\$S k'hul.

Misty, &b*iA^ d'hund'hula.

Mix, to, UIU mulana.

Moist, j> tur, u.^t; ru/nb.

Month, a, ^/-^ mas.

Moon, the, «*i^ chund.

Morning, the, ^F* fujr.

Mortar, a, wooden ^5^1 uk'hlee.

Mound, a, i*sj£ tupree,^^ pugar.

Mountain, a, L 2 ^ purbut,/vJ puhar, J ^ . jubul,
^ gur, <-& nug.

Mouse, a, ^^^^ choohee, Uk^< moosa.

Mud, ^-^5- cheek.

Mongoose, or weasel, (Pinera Ichneumon,) u.^*^
beejee, j y>*» sumoor, |j»J^* mungoos_a, راسو
rasoo, Jj^> neeool.

Musquito, مچهر uiucli'hur.

VOCABULARY.

Net, a, J ^ **jal.**

Night, *tsdj* rat,yi; ratur, \سبب•*> sliu)>

Nursery, or seed plot ^y ^ **buhnoor,** ^ be^{ear}.

Open, to, Ufj*S k'holna.

Order, an, ^ hukum.

Ox, an, jjj! gooroo.

Pace, a, ^ /mdum.

Paddy-bird, 1 ^ bugla.

Pan, earthen, s ^ **kundeh.**

Panther, a,)& eeo[^].

Parrotj a, ^y toota, <^J>y tootee, \y» so^{oa}.

Parterre, or bed, ^^ chumun.

Partridge, a, jj* > teetur, ^j < s **duraj.**

Pasture, see Meadow.

Path, a, ^^ **jactuj.**

Peacock, a_{Tj};y^o moour.

Peg* a > us ^ jr ^ k'hoontec.

Petal, a, e ?j & > puk'Jiree, پنهري punk'hr ee, ورد

oo urud.

Pigeon, a, ^rijiS kubootur.

Pith, y. ^ heer,

Plant, a, *Ut **bu£leh.**

Plant, to, Utyj **roowipna.**

ENGLISH AND NATIVE

i'lacc, j*l*. jagoo, &&* > juguh.

Plough, a, J&J nagul, J&U nangul, ^ liur, هل
hul.

Ploughing, a, <^r^ chas.

Ploughman, UU. chasa; a term also commonly
applied to all peasants, or husbandmen.

Ploughshare, J ^ p'lial, j ^ chuoo, e ^ Jturs,
I^JS*** nusee.

Pod, a, Ij^ - chooa, t^s***- ch'heemee.

Pollen, i-f\ri purag, ^j ruj.

Pond, a, LJW talab, j»J talao, u-TldS tudag, Uا
tuleea, ^ ^ suroor, ^ > * « sumur.

Pot, earthen, , \$* & hundee.



Precipice, a, k-&j* » surung.

Produce, J^oU. ^ assul.

Prop, a, I^T arooa, c.jJ teek, ^ teekun, تيوكي
teeuôkee, u ^ *. chuft.

Prop, to, 4;T arna.

Prune, to, U^j^J turashna.

Puddle, L J ^ ^ ch'hupree.

Pull, to, ^ 5 ^ k'heenchna.

Pungent, W^ teek'ha.

Quagmire, or bog, J^ duldul, ejt-^j d'husan.

VOCABULARY.

Quail, *a,ji&* butteer.

Quick, *^*h>* juldee.

Quicksand, *a₉^jy*»* choor-baloo.

Rain, *dl?^* baran, *J^* buruskal, *^J&>* bushtec,
ju.* j'hur, *^ff** mu'hn, **i** mé'h.

Rain, heavy, *Yfy** dureera.

Rainy season, *|j*£i* paoous, *cy^r?* burssat.

Rain, small, *y^jti* p'hoon'hee, *^VJ^J* p'hoon'har,
/>yt>* p'hoo'har, *^ ^ ^* p'hoo'hec, **&f* turushuh.

Rammer, *a,yj***j&* durmus.

Rat, or mouse, *^>j^* choo'ha.

Reaping, *y&* duroo.

Rend, to, or split, *UO^J* p'hatna, *ty*** p'harna.

Rent free, *^ ^ °* ma'afee.

Reservoir, *a, o^-* Aouzz.

Rind, *tmj^* k'hoosa.

Ripe, & piika, *μ*** muj, *fb^* nussecj.

Ripen, to, *U^&I^* pukhteli kurna.

Rising ground, *]^* tecgra.

River, a large* see the Sea.

River, a small, &jj rood, *^^i* nudee, *^* nudeea.

Road, or path, *U«j* rasta, *ij* ra'h, **Z*»j* rustch,

سرك suruk.

ENGLISH AND NATIVE

Roller, ***ixj** peend.

Rolling, **c^lfc^** d'huluk.

Rope, **Lewj** rusee.

Row, a, **|J^&*** pungut.

Roof, a thatched, **j*&*.** ch'hupur.

Root, **^JJ** beekh, **j ^ - jur.**

——, large, ***oi gudeh, j&.*J J**>)** wssul suttubur.

Rotten, **Iu** sura.

Saltpetre, **x>^** shôruh.

Sand, **ji?** buloo, **|^^ij** reet, **CJI^** reeg.

Sandpiper, (the bird,) **u r ^** tutree.

Sandy, **)jk** bulooa.

Sap, **cu^u** sut.

Sapling, **IA^J** pood'ha, **1^** keera.

Saw, a, **«T** areh.

Scatter, to, **WjH\$*** ch'hutrana, **ViKx«^** ch'hutkana,

UJUg>. ch'heentna.

Scion, a, **^ i ^** peeound.

Screen, a, **^^** tutee.

Scorpion, a, **j*-r?** buch'hoo, **j-^rf** beech'hoo.

Sea, the, or large river, **V^** dureea, **^o** durceuo.

Seed, **^** buhun, **^** beea, **^** tukhum, **gJ*** beenjh,

r>^ bu^ur.

VOCABULARY.

Seed vessel, see Capsule.

Seedtime, l/y boowra.

Shade, yWf ch'hanoo, *>W^ ch'han'h, ^U saeea,
fjLu saee'eh, *lk_punaeh.

Shady, J^=> zuleel.

Shoot, a,)5^J noodeh, JV nu'hal, ui?^ 5yi kunoola
pat.

Shrub, a, ^ Jw beelboota, ^^j roop, c^U\$ nubat.

Shutter, a, of mat, w^o^j'ha wp.

Sickle, a, ^ r b das, t^!J dasa, ^ ^ 1; ^ durantee, ^ ^
huseea, l^Jjb hunsooa.

Sieve, a, *i>xj pee^neh, L^ V chulnee, ^ 5 - ch'hut-
na, W^T ak'ha, lmgVlc> j'hulnee, ^ j . ch'hulnee.

Sight or view, j& nuzur.

Sky, vj^-^T as man.

Smoke, ^ dukh, ^ ^ d'hoom, lyj*>d d'hoonooa.

Smell, or odour, y> boo.

Snake, a, L^*5- chutee, u^oU< samp.

Snake-hole, y^^t babnee.

Snake, a black, jK kara.

Snipe, KsJ>fiji P^{un} kookree, J j ^ ^ pun kool.

Sour, ^ kliuta.

Sooner, j&#. péshtur.

ENGLISH AND NATIVE

South, the, [^][^]*3 duch'hun, «>y*» junooob, [^]دکھ
duk'hun.

Sow, or plant, to, Ub| ubana, U[^]I boona, U[^]رو
roopna, Mzjj zurana.

Sparrow, a,][^] chura, [^]p[^] churee.

Spider, a,]/[^] luchra, u[^] ⁰ mukree.

Spike, a, see Ear.

Spotted, w_ggla da</ec.

Spout, a, or gutter, S^Uy p^enala.

Spray, a, _{LB}⁵ pulee, A_s[^]l[^] shakhcheh.

Spread, to, [^]J[^]j p'heelna.

Spring, a, |JW[^]- j'halra, A[^]i[^]ui surchushmeh,
c^{^^}u sôt, [^]*« soota.

Spring, the, {JJ; rubeea.

Sprout, a, I;y3) wnkoora, jij puloo, s[^]Hi p'hun-
gee, JJ£ keel.

Squirrel, a, u\$yj<<[^] chuk'horec, [^][^] cheek'hur.

Stack, a, J[^]l atal.

Staff, a, or stick, [^] dund.

Stalk, a, or stem, y[^] b'heetoo, or ±_{mS}*i&> b'heetee,
|.£d dut'ha.

Stamen, |z*y» soot.

Stone, a, |yj roora, J*« sui.

VOCABULARY .

Stop, to, \hat{j} rókna.

Strength, see Force.

String, $\pm\hat{y}$ sootlee.

Stubble, $t^{\wedge}\&j-\hat{t}$ 'hoont'licc, $\text{ie}\langle\&\rangle\text{li3}$ dant'hci-,
 \hat{y} koont'hee, *ab. bad'h.

Straw, \hat{b} buchalee.

Sunbeam, a, $\hat{J}\hat{J}$ runs.

Summer, or hot weather, $\overset{\wedge}{IMJ3}$ tabustan.

Summer house, uyaJ;W baraduree, LSJJ* - choorec.

Sunshine, $s^{\wedge}j\&f-$ chutkee.

Swallow, a, $\hat{W}\hat{w}$ soopabéna.

Swampy, $\pm\hat{J}\hat{d}$ duldulec.

Tank, see Pond.

Tank, a large, \hat{d} dug'hee.

Tap-root, a, $b\gg y$ moosla.

Tapering, $\hat{J}\overset{\wedge}{*}$ sutkaree.

Teal, a, \hat{s} ulee, $\pm s\&x\gg$ murgabee.

Tempest, a, $u^{\wedge}tr^{\wedge}$ toofan.

Tender, or fresh, $*;tf$ tazeh.

Thin, or weak, $*a$ dubla.

Thicket, a, \hat{j} 'hular.

Thorn, a, or bramble, $/\pm\>$ \hat{h} ar.

Thrive, to, or be nourished, \hat{p} uliui.

ENGLISH AND NATIVE

- Throw, to, away, $\wedge \leftarrow * * - \& J \wedge$ p'k'cukd'cia.
- Thrush, a, uryt-ü nunanoee.
- Thunder, $j \wedge$ chura, $\backslash - \& * * \blacktriangledown$ chukta.
- Tie, to, $U \& \text{d} \text{u}$ bund'hna.
- Toad, a, $* \& \& >$ b'heek'h.
- Tomtit, $u \$ V \wedge$ peedree.
- Tortoise, a, $J \wedge \wedge$ tairabccl. •
- Tough, $) j + * * \blacktriangledown$ chumra.
- Trample, to, $\wedge * * j j$ roondna.
- Tree, a, $* _ \wedge ^4$ butup, $J * J$ peer, $J S$ turu, $) j$ turoo,
 $) j * \blacktriangledown$ turoour, $L \wedge \wedge ; \leftarrow 3$ durukht, $* j \&$ durum, $\wedge j$
 rook'h, $< \% \&$ gach, $J H \wedge$ j'har.
- Trees, a collection of, $j \wedge \wedge$) ashjar.
- Trunk of a tree, $) \wedge >$ teera, $o . j \wedge$ juroout, $\wedge \wedge$ sa/t₉
 $\wedge j \text{Lr} * \text{sulee}$, $\% j >$ nureh.
- Turf, $j V$ char.
- Twine, $j _ e \wedge$ sutlee.
- Twist, a, or coil, \wedge peech, or pečh, $L J \backslash 3$ tab.
- Valley, a, $* * 3$ dureh, $s J \wedge f \&$ nuchan.
- Vegetables, esculent, $\wedge s j \wedge \ddot{y}$ turkarce, $\wedge y \gg \gg$ subcee.
- Vegetated, $* * \& O$ dumeedch.
- Vegetating, $\wedge \wedge$ rooe.
- Vegetation, $\pm j \text{f} * i j$ rooedugeo, $cy \wedge - \dot{}$ iii'»'if

VOCABULAIIV.

Verdant, *—k> ru/ub, y^ eubz, LJIJW ahadab, هرا
hura, u^to hurub, ^ hureela.

Village, \)jyi poorooa, fi gam, ytf ganoo.

Vineyard, a, Jr^T absal.

Viper, a, j^y^ teermar.

Vulture, a, u^Xj ruugut.

Underwood, J+* j'hav, <_?/**• j'haree, جهاز
j*hankar.

Unripe, ^ kham.

Wages, u^Ua iulub, j ^ I ajooreh.

Warm, ^) wshun, ^ gu r urn.

Wasp, lr* burla, kw> huda.

Waste land, ^J^ purbae.

Watchman, a)y?|jji^ chookeedar.

Water, ^T or ujj ab, or ap, Uij puneea, J^ jul.

Waterbag, a, JV^ .puk'hal, ^) J ^ cli*hadan, مشك
mushuk.

Water ing, a, j ^ * - ch'hurkaoo.

Water-lifter, a basket for lifting the water when
not to a great height, ^e&^kJ d'hecnkee.

Waterpot, ^^ kulsec. U.¹ته t'huleea.

Weak, s(e Thin.

Weasel, see Mon goose.

- Weed, a, s^j^- cliuk liurun.
 Weed, to, Uj^j neerana.
 Withered, Uj^ji*. chundrana.
 Weeder, a, ^j^ k'hurpee, ±J>)j&' neeranee.
 Well, a, ** ch'uh, **** ch'hubuclich, oJi kund,
 j# beer jitt kôur.
 West, i-i^° murjrrub, ^ puchum.
 Weevil, a, s^jty putaree, /*Sy» soonda, ^ kun.
 Weighing, or measuring, J^JJȳ tool tal.
 White ant, Lj&dd dee'ook.
 Wide, 1;^. chooura.
 Widgeon, a, i_r>^r^M, surkhab.
 Wind, aḥ bad.
 'Wind, hot, ^ 5 ^ ^ j'hanôlee.
 Windfall, a,)^ çhooa.
 Winnow, to, U^**† pénchna, Viḥi^ ch'hunkna,
 UI^A^ d'hureeana.
 Winter, &&»''; zumustan.
 With, *SU sat'h.
 Wood, timber, «Jys aoud.
 Wolf, jJJb hundar.
 Worm, guinea, l^V nu'harooa.
 Worm, palmer, ^J^H-t b'hundlec,

VOCABULARY.

Worm, a, *jk* puloo, ^ pulooa, ^*jj&** jeeooree,
^ 1, ^ khurateen, *fj* kurum, ^ keer.

Year, a, *J^*«* sal.

Yellow, **-&jdjj* surdrung.

Young, see Tender.

Yoke, a, **y*»* jooeh.

Young, or new, *y'* nuoo, *!P* nuooa.

NAMES OF PLANTS.

Abelmoschus, three flowered, J^hJ^hX^h kurakee, *Abelmoschus triflora*, *Dr. Wall* (C)

Abies **khutor**s, see *Smith's* j>inc.

Abrus **precatorius**, see *Wild Jamaica liquorice*.

Acacia **catechu**, see *Medicinal catechu tree*.

Acacia, **gum**» J^hJ^h **bubool**, ^ y ^ **buboree**, *oh**^h *muigeey*\iiTi^h kot.'kijr,^^^^ kulee *keekur*, ^Hxc^h j **om**^h**eelan**. *Acacia Arabica*, or *Mimosa Arabica*, *Lam.* (T.) Common all over India, and well known for the fragrance of its flowers, and its hard wood, used for ploughs, &c.

Acacia, **soft**, L^h3 **lakce**. *Acacia mollis*, (fi)

Acalypha, *India*

soore: **busunt**. *Acalypha* [*india*]. (H I.) The bruised root is cathartic, and is prescribed by native practitioners in consumption; the leaves being also given to children as a vermifuge.

Acanthus, **holly leaved**, &K^h ^ft> **hurkooch kanta**, R. c^h* **hurkut**. *Acanthus ilicifolius*, (US)

VOCABULARY.

Achillea ptarmica, see Sneezewort.

Achyranthes, alternate leaved, AIOQAS gungalee'ch, *Achyranthes alternifolia*. (US)

Achyranthes aquatica, the water ceritroostachys.

Achyranthes, climbing, kjj^* nooreea. *Achyranthes scandena*, *Rox.* (US)

Achyranthes, rough, lfrj^{**} chuTchura, BT ajgara, JyW aguree, ^A . /mlecm, $\text{iy}=\text{^}$ muAoot. *Achyranthes aspera*, (US) A troublesome weed in the rainy and cold seasons; imt used by natives in bowel complaints as an astringent.

Achyranthes, three stamened, Lrf سانچي sanchee, $\text{V}^1\text{^}$ Bhalooich'eh, It. *Achyranthes triandra*, *Llox*, ((.r))

Achyranthes, ffoolly, ^U chaeaa. *Achyranthes lanata*, *Rox.* (US)

Acoqitum ferox, see Wild wolTa bane.

Acoms calamus, see Sweet ^ag.

Adamsonia digitata, see Ætheopian sour gourd.

Adantum, see Woolly brake.

Adder's tongue, winding, ^! ; £ بھوت راج b'hoot raj.

Ophioglossum B uosi tm, (H)

ENGLISH AND NATIVE

- Adelia, chesnut-like. *LSJ\$J& J ^ bôl kookrec.*
Adelia castinacarpa, Rox. (T)
- Adenantha, yellow flowered, &<&>» **£***) rukt
chundun. *Adenantha pavonina, (S)*
- Adhatoda vasica, see Malabar nut.
- Aegiceras, greater, ^5***^ hulsee. *Aegiceras
majus, Pro. Lind. (T.)*
- Aegle mameos, see Bengal quince.
- Aerides guttatum, see Air plant.
- Aeschynomene, hemp, *siHsf^{K(d)}* d'hunchee. *Aes-
chynomene cannabina Kd. (H)*
- Aeschynomene, large flowered, see Agati.
- Aeschynomene, marshy, ^ sh61a, *^ b'heend.
Aeschynomene paludosa, Rox. (A) The stem is
one mass of pith, which is used for various pur-
poses, such as floats for fishing nets, artificial
flowers, and other ornaments used at native wed-
dings, &c. &c.
- Aeschynomene, sesban. U^JÅ. jeet. *Aeschy-
nomene sesban, Rox. (S)*
- Agallochum, see, Aloes wood.
- Agaric, ejr^{5^} a^areeAoon. *Boletus Igniarius,*

JRox. (Pa) Is used as a styptic, being a fungus growing on the Indian oak.

Agathotes chirayta, see *Chirayta*.

Agati, large flowered, $v_{ta-5}^{\wedge} I$ agutce. $c^{\wedge} * S 1$ agustu. *Agati grandiflora*, *Coronilla grandiflora*, *Will.* *Aeschynomene grandiflora*, *Linn.* (T) The legume is eaten by natives in some parts, and the bark is a tonic bitter.

Agave, cantula, $^{\wedge} liS$) $^{\wedge} gXjij$ ooulacetee ananas. *Agave Cantula*, *Rox.* (S)"

Ageratum, water, $^{\wedge} i * ^{\wedge})y\%$ bura keeshutce-
Ageratum aquaticum, *JRox.* (H)

Aglaia polystachine, $8^{\wedge} j^{\wedge} t$ bandoor pala.
AgLiia polystachya, *Dr. Wall.* (T)

Agrostis diandra, see *Diandrous bent grass*.

Agrostis linearis, see *Doop grass*, and *Thread-like bent grass*.

Air plant, spotted, $*\mathcal{E}j\&$ beearudeh, jy^* moor, $tj^{\wedge} Xui$ akuspoon- *Acridcs guttatum*, *liox.* (Pa)

Ajugadisticha, see *Opposite leaved bugle*.

Alangium, six-petalled, $|Sj|SUi|$ akrakunta, $J^{\wedge} il$ akool. *Alangium hexapetalum*, *Rox.* (T)

Aleurites, three lobed, $\mathcal{C}y^{\wedge} l$ $|\wedge^{\wedge} jd$ durukht-u akhroot- *Alouritcs triloba*, (T)

ENGLISH AND NATIVE

Alhagi **mamorum**, see Prickly stemmed manna plant.

Allium ascalonicum, see Shallot.

Allium cepa, see Common onion-

Allium porrum, see Leek.

Allium sativum, see Garlic.

Allium (uberosum, see Indian chive.

Almond, **Indian**, L_T ^ /»^JW **badam-u-haadee**, **Terminalia Oatappa**, (T) The kernel is eaten fresh, and **has** something the flavor of an English filbert.

Almond/ Persian, ±g»j[^] J » ^ **badam-u-farsee**, jji looz, J\}ji loozan. *Amygdalus communis*, (T) Growing only in the Upper Provinces.

Aloe, common, ^ 'y ^ g'heekuooar, jl>) «eelooa ,yo ssubuT) y[^]*^* mu ss um bur. Aloe vulgar is or, perfoliata, *LJnu*. (US). Tins yields the Barbadoes aloes, and is *easily* cultivated here.

Aloe, spike fl«erd₃ ^-:) ?<eelooa, Cj* IA»*JI} durukht aood,j)yS U^ ch'huta-kiinooar. **Aloespicata**, (BI). A native of Socotra easily cultivated here, **but** the most common is *A. vulgaris*, or **perfoliata**, *Linn*, the Barbadoes aloes.

Aloes woo(1, or agilu wood J>\ agur قلمبک

VOCABULARY.

Aulumbuk, ^{^JJ^jy}: flood hum Ire, *fifSj\sj^e a&od-
&afae*. **Aquilaria** Agallocha, *ftox*. (T) Found in the forests of Sylhet, and producing a fragrant resin, which there is little doubt is the **Calambac**, or Agallochum of the ancients; it is regarded as a cordial by natives, and has been used in Europe for gout and rheumatism.

Alpinia card on mm, **Bee** True cardomum.

Alpinia, Cingalese, ^{v^} tara, tytf taruka. **Alpinia** Allughas. (H)

Alpinia, loose flowered, see the greater Galangal.

Alpinia nodding, ^{V?-1—fyyi} poonag chumpa. **Alpinia** nutans. (El)

Althaea frutex, *J&J* guruhul. **Hi Discus** syriacus. (S)

Altma officinal is, see common marsh mallow.

Althsea rosea, see **Hollyhock**.

Amaranth, black, ^{^ ^ ^} bansputa. **Amarantus** atropurpureus. (H)

Amaranth, eatable, ^{^j*} **mur**^{sa}, مات کي بها جي, matkee b'hajee, ^{v-A«uf«^-} chunde ^{e sag}. **Amarantus** oleraceus, (H) Grown as a pot herb, or **sag**,

ENGLISH AND NATIVE

Amaranth field $K^{\wedge}JJ^*$ - chooree, *Amarantus campestris*, *Linn.* (H) Used as spinage by the poor.

Amaranth, Gangetic, $u-A^*''JS$ lal sag, $iji^{\wedge}Ji$ kulhulooa. *Amarantus Gangeticus*, (H) One of the numerous greens used by natives.

Amaranth, hermaphrodite, $L^{\wedge}^{\wedge}J$ - choolae, $u^{\wedge}yi^{\wedge}b$ rajgceree, $^{\wedge}$ kulga. *Amarantus polygamus*, (II) One of the numerous greens or *sägs* used by natives.

Amaranth, prickly, $u^{\wedge}rjfc^{\wedge}!;^{\wedge}^{\wedge}$ katee rajgeeree. *Amarantus spinosus*. (H)

Amaranth, round headed, $e^{\wedge}t^{\ll}$ mat. *Amarantus tristis*. (H) The leaves are used as spinage.

Amaranth, various leaved, $^{\wedge}J^{\wedge}t^{\wedge}$ gulkésh-*Amarantus cruentus*- (H)

Amarantus hypochondriacus, see Prince's feather.

Amarantus, see Amaranth.

Amaryllis, Cingalese, $\{J^{\wedge}y^*-**+^u$ suk'hdursun. *Amaryllis Zeylanica*, or *Crinum Zeylanicum* of *liox*. the *A. lineata* of *Lam.* (B)

Amherstia, noble, $^{\wedge}$ fliAka. *Amlicrstia nobilis*. *Dr. Wall.* (T)

VOCABULARÝ.

Ammannia, vesicatory, ^ U ^ I J dadmaree, Ammannia vesicatoria, Rox. (H) The acrid leaves are used by natives to raise blisters.

Amomum aromaticum, see Morung cardomum.

Amomum curcuma, see Common turmeric.

Amomum grana paradisi, see Large cardomum.

Aujomum repens, see True cardomum.

Amomum, wild, UUa. 7^umama, Amomum sylvestre. (H)

Amoora, hooded,^-*^o) umur, Amoora cuculata. Pro. Lind. Andersonia cucullata, Rox. (T)

Amoora, Rotuk, ^}j^^ tukt-u-raj, R. j ^ ^ U hareen'hura, R. Amoora Pro. Lind. or Andersonia Rohituka, Rox. (T) The seeds yield an oil.

Amygdalus communis, see Persian almond.

Amygdalus nectarina, see Nectarine.

Amygdalus Persicus, see Peach.

Amyris, camphoric, J^ googul. Commiphora Madagascarensis* Pro. Lind. Amyris commiphora, Rox. (T) Produces India Bdellium, a substance resembling myrrh.

ENGLISH AND NATIVE

Amyris gilcadensis, Rox. sec Balm of Gilead tree,

Anacardium latifolium, see Marking nut.

Anacardium occidentale, see Common« cashew nut.

Anacardium orientale, see Marking nut.

Androgrophis paniculata, see Paniced justicia.

Andropogon, aciculatus, see Needle grass.

Andropogon tricolor, see Two colored grass.

Andropogon glaber, see Smooth grass.

Andropogon muricatus, see Scented grass.

Andropogon saccharatus, see Sweet, or great millet.

Andropogon schaenanthus, see Lemon grass.

Andropogon serratus, see Serrated grass.

Andropogon sorghum, see Indian millet.

Anchusa officinalis, see Common buglos.

Androsace, heart-shaped leaved, ^^Jyi boolec sdfitia* Androsace cordifolia, Dr. Wall. (H)

Androsace Sarmentose, ^*> neeta, ^^ neetu'ha,t Androsace. Sarmentose, Dr. Wall. (H)

Andersonia Roliituka, Box. see Rotuka Amoor.

VOCABULARY .

Anemone hortensis, sec Garden wind flower.

Angelica, garden, $\overset{\wedge}{\underset{\cdot\cdot}{J}} \overset{\wedge}{.} \overset{\wedge}{\wedge} J^*i^{**}$ sumbul klm-
/acc-ce, $\&J^*A^* \&$ anguleen'eh. *Angelica Archange-*
lica. (-H)

Anethum graveolens, or sowa, see Common
dill.

Anethum panmori, see Sweet fennel.

Anise, common, $v^{\wedge}r'^{\wedge}$ wneecsoon, $ji^{\wedge\wedge}yS$ ku-
moon huloo, $IJ^{\wedge}*/J^{\wedge}$ juramanus, u-iywsoonf, $\overset{\wedge}{\wedge}$;
sunpan, $is''M^{**}|ij|j$ razeean'eh roomce, $\overset{\wedge}{tj}^{\wedge}W$ ba-
deean. *Pimpinella anisa*. (H) The seeds are
carminative, and aromatic.

Anise, star, $J^{\wedge}u^{*\wedge}$ anas p'hul, $Aj^{\wedge}ffetiU^{\wedge}cb$
budeeaneh hutaee'eh, $\overset{\wedge}{J^*} \& \pm^* \hat{U}^{\wedge}b$ badéan khufee.
Illicium anisatum, *Pro. Lind.* (H) The fruit
is aromatic and carminative, and yields an oil in
distillation similar to oil of anise, for which it is
substituted. It is chiefly used to flavor liqueurs.

Anneslea, spinous, $U^{\wedge}f^{\wedge} \ll$ muk'hana. *Anneslea*
spinosa, *Dr. Wall*, included by *Pro. Lindley* in
plants " imperfectly known/'

Annona reticulata, sec Bullock's heart.

Annona squamosa, see Custard apple.

ENGLISH AND NATIVE

Anthemis nobilis, see Chamomile.

Anthemis pyrethunv see Pellitory of Spain.

Antidesma panicled, *V ^s&j*- khoodee jam,
R. *Antidesma paniculata*. (S) >

Antirrhinum humile, see Two flowered Indian madder.

Apium graveolens, see Garden celery.

Apium involucratum, or petroselinum, see Parsley.

Apluda aristata, see Bearded apluda grass.

Apocynum, see Dog's bane.

Aponogeton, simple stalked, s?b£ g'heechoo.
Aponogeton monastychon. (A)

Apple, u-^u seeb, ji*» seeo, ^U? tufaA, {jiA slien. *Pyrus malus*. (T)

Apricot, *jfttjj ZWTJL* aloo, ^Jt^b* mushmush
ارمني —US tufa& armunee, J^ bur/^oo/i, &illj^
نك; sheefte'hrunk. *Prunus Arminiacus*. (T)
Roxburgh calls this tree ^ V^a. khoobanee, a name which, it is believed, rather applies to the fruit in a dried state.

Aquilaria agallocha, see Aloes wood.

Arabis Chiuensis, see Chinese cress.

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Arachis hypogaea, see American earthnut.

Aralia, fingered, *rf*)* *daeen*, It. *Aralia digitata*, *liox*. (T)

Arar tree, see Sandarach tree.

Arbor Vitse, see Sandarach tree.

Ardisia, glandulous, [^]*J KJ*[^] *bun nurkalee*, R. *Ardisia glandulosa*, *Rox-* (S)

Ardisia, nightshade like. [^] [^] *bunjam*. *Ardisia solanacea*. (S)

Ardisia, red flowered, [^]*j''*) *umxxr kulee*. *Ardisia colorata*. (S)

Ardisia, two edged, [^] *JS lal jam*. *Ardisia anceps*, *Dr. Wall* (C)

Areca catechu, see Betelnut tree.

Areca gracilis, see Slender Betelnut tree.

Argemone, Mexican, or *prjeldy* ^{فرنگی} *furungee datoora*, *A>|*>JH b'hurb'hand*, **k* ^{شیال کا} *shecal kanta*. *Argemone Mexicana*. (H) The bitter-juice, dropped into the eye, is considered by natives, a valuable remedy in ophthalmia; the infusion is emetic; and the oil is used by Mahomedan doctors for head aches, arising from exposure to the sun.

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Argyrcia nervosa, see Vein leaved silver weed.

Aristolochia Indica, see Indian birth-wort.

Aristolochia longa, see Long-rooted birth-wort.

Aristolochia saccata, see Pouched birth-wort.

Arnotta, heart-leaved, *i*/ⁱ lutkun. *Bixa orellana*. (T) Yielding the dye called arnotta, which is however very fugitive, and chiefly used in Great Britain to color butter and cheese.

Arrowroot, East Indian, *iaⁱ W£ kooaka nushast'eh,[^][^] tuk'hur. *Curcuma angustifolia*. (H) This is the Travancore arrowroot, but is seldom of good color, which has caused a prejudice against the Indian article even when of the true kind: the starch from this is also much weaker than that of the true plant.

Arrowroot, true, uu[^][^]l uvoo root, (cor)yivjuia. jeet aloo. *Maranta arundinacea*. (H) This has been imported, and found to thrive well in Bengal; the first plants were introduced by the late Mr. Leycester, and a few were more recently brought out by the Earl of Auckland.

Artemisia Austriaca, or *paniculata*, see Indian Southern wood.

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Artemisia, elegant, $\text{U}^{\text{a}}\text{N}$ abu/na R. Artemisia clegans, *Rox.* (H)

Artemisia Indica, sec Indian wormwood.

Artemisia vulgaris, see Mug wort.

Artichoke, garden, * $\text{-i}^{\text{f}}^{\text{a}}$ Aurshuf,j&* kungur, * $\text{-}^{\text{f}}^{\text{j}}$) artuchuk (cor), *Cynara Scolymus.* (H)

Artichoke, Jerusalem, cX5UL\& $\text{v}^{\text{j}}^{\text{a}}^{\text{*}}\text{»}^{\text{j}}^{\text{j}}^{\text{y}}^{\text{L}}$. k'hoor purust khanalack, *Helianthus tuberosus.* (Tu)

Artocarpus integrifolia, see Jack tree.

Artocarpus lakoocha, see Bengal bread fruit.

Arum, arched, $\text{y}^{\text{s}}^{\text{a}}\text{ij-}^{\text{a}}$ bees kuchoo, $\text{s}^{\text{a}}\text{sH/}^{\text{a}}$ beer-bukee. *Arum fomicatum, Rox.* (Tu)

Arum, bell-shaped, J^{a} aloo, $\text{J}^{\text{a}}\text{l}$ wool, $\text{^ajy}^{\text{*}}$ soorun, *Arum campanulatum.* (Tu)

Arum, Egyptian, ^ajj aroce, vs;V.^{a} g'hooeean, $\text{y}^{\text{s}}^{\text{f}}$ kuchoo, y^{a} kuchaloo. *Arum colocasia.* (Tu) The tuber is eaten.

Arum nymphaei folium, see Waterlily-leaved caladium.

Arundo Bengalensis, see Bengal reed.

Arundo Karka, see Karka reed.

Asarabacca, common, $\text{\&jj}^{\text{a}}\text{/}$ wsaroon. *Asarum Europaeum.* (H). The roots are purgative,

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emetic, and diuretic; but the plant is by no means common, and chiefly found in the Dukhun. London would derive its name from «, a primitive, and ««p« a bandage, but it is more probably obtained from its Syrian name " wsaroon."

Asarum, see Asarabacca.

Asclepias asthmatica, see Emetic swallow wort.

Asclepias echinata, see Prickly swallow wort.

Asclepias geminata, see Double swallow wort

Asclepias gigantea, see Curled flowered calotropis.

Asclepias odorotissima, see West coast creeper,

Asclepias pseudosarsa, see Indian sarsaparilla.

• Asclepias rosea, see Esculent oxystelma.

Asclepias tunicata, see Coated swallow wort.

Asclepias volubilis, see Green flowered hoyo.

Ash, floribund, u£/i_/S lak kuree, g^j oosheej.

Fraxinus floribunda, *Dr. Wall* (T)

Asparagus, branching, ^j^ti*- sadabooree, R, ^jJuù sutmooleè, (R) Asparagus racemosa. (H)

Asparagus, common, &*}ji eerameeo, «y«^ nak doon, *4j margee'eh, ^j*»| isfuraj, ^j*~/* marchooba, cjy^ huleeoon. Asparagus officinalis. (H)

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Asparagus, linear-leaved, $\overset{\wedge}{\underset{\cdot}{y}}^*$ $\overset{\wedge}{\underset{\cdot}{w}}^*$ suféd
mooslee, Asparagus sarmentosus. (Tw)

Asphodel, club-seeded, بروق burook, خنشي khun
shee. | Asphodelus clavatus. (H)

Assafoetida plant, $\overset{\wedge}{\underset{\cdot}{x}}^*$ > LS[^]^p durukht-u-hung*
JUK kashum, |j&| |JL $\overset{\wedge}{\underset{\cdot}{j}}^*$ durukht angoo[^]eh,
[^]Itto³! anjudan, £* & {+» suk b'henuj. Ferula asafoe-
tida *Pro. Lind.* (H) The foetid alliaceous gum
resin obtained from the four years' old roots is
the Assafoetida of the druggists- This is the most
genuine plant, but Dr. Royle mentions others as
producing the article found in the Bazars in this
country as from F. persica, and F. hooshee. It is
much used by natives.

Astragalus, see Milk vetch.

Atiplex hortensis, see Garden orache.

Atropa belladonna, see Deadly night shade.

Avena sativa, see Common oat.

Averrhoa acida, see Long leaved cicca.

Averrhoa bilimbi, see Bilimbi tree.

Averrhoa carambola, see Carambola tree.

Avicennia, downy leaved, UI*« [^]ICJI booalee
seen a, $\overset{\wedge}{\underset{\cdot}{y}}^*$ booalee, [^] beena, R. Avicennia

tomentosa. (T) The bark is used at Rio Janeiro for tanning.

Balm, common, *iy*»*4** muk'eh subz'dh, بقله (Ju^M bu^l'eh ulfurustum, *ty. £) >&> badrunj booe'eh cXi;^W badrunk. *Melissa officinalis*, (Cr.) was brought to India from Arabia, and is only used as a tea, or diluent in fevers.

Balm of Gilead tree, ^LJb ^ ^ i ^ a ^ durukht-u-roq^un bulsan, y^jj eJj-*" Jty)" u£^j<3 durukht afoóél asmoon roomee, v^^*^ bulsan. *Protium giliadense*, *Pro. Lind.* *Amyris gileadensis*, *JRox.* (T) The resinous gum, called also *Balm of Mecca*, is reckoned, by all eastern people, a perfect panacea.

Balsam, *LS**?" JS* gul mu'hndee, ^ 5 ^ ^ doopatee, R *Impatiens balsamina*. (H)

Bamboo, common, ^U. bans, y*j. bu?wboo, u^^>V ^ussub. *Bambusa arundinacea*, (P) A valuable medicine, according to the Hindoos, called ^A-iUt tfubasheer, of a siliceous nature found by Turner to concise of *silica* with lime and vegetable matter indestructable by fire, unaffected by acid, and with alkalies making glass on fusion,

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is found **in** *the* female **plant**. Roxburgh **mentions** several varieties of bamboo. The seed is also eaten boiled in milk or broth. The young shoots making a good pickle, and when full grown too well known for its multifarious uses to need notice.

^Banana, 1W kela, U^ mocha, jy moou*.
Musa sapientum, (T) in India commonly called the **Plaintain**, which see; this includes however the best varieties used as fruit, such as the *cheeneh chumpahy Sec.*

Banyan, see Indian fig.

Barleria, long leaved, Ut^ JU tal muk'hkana,)yti_^ gook shoora, j^ji gook'huroo. Barleria longifolia, or Ruellia longifolia *Rox.* (H)

Barleria, thorny, ^^ ^^ kanta jatee. R. Barleria prionites. (US)

Barley, native, y*- juoo, ^^* shaer o¹-^ Siilt, iSx£ kushuk, ^> eoo, **\$ jub'eh, R. Hordeum hexastichon, (G) Is mentioned by *Rox.* as the **species** cultivated in India, but this bears a greater affinity to H zeocriton.

Barjingtonia, angular, ^) abju. **Barringtonia** acutangula, *Rox.* (T)

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Basella alba, or rubra, see White and red Malabar nightshade.

Basil, ciliated, ^ bubee, uc?. bubooee, +>fc nazboo, c_/'^ Aubak, ^^j reAan. Ocymu^ n pilosum. (US) The seeds steeped in water are used medicinally.**

Basella lucida, see Shining Malabar nightshade.

Basil, hairy, K SJ > J ^ naebooee. Ocymum pilosum, Box. (H) Very aromatic, and a favorite medicine after parturition with Hindoo women.

Basil, purple stalked, ^^ tulsee, ^ jg ^ ^ tf kalee tulsee. Ocymum sanctum. (US) Held sacred by the Brahmuns to the god Vishnoo, and the leaves are put in the water of the Ganges in administering an oath to a Hindoo.

Basil, sweet, ^ A ^ 35 ^ reeAan, ^ ' ' A * ± J % * &) ** . boorunk kalee tulsee, UA ^^ JW ^ dubanshab, * j L * J b | J » shahusfurum, u J j ^ Aook, j X i J b balungoo. Ocymum basilicum. (H) The seeds are considered cooling, and the juice of the leaves is squeezed into the ear in ear-ache.**

Basil, white, or Indian Tea, ^^ * suféd tulsee, j &) s ^ j j * ! budroogee abees. Ocymum**

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album, *Will** supposed to be the same as *O. suave*, *Will.* (H) The juice of the leaves used as a stomachic, and for catarrh in infants.

Basspa, broad leaved,)J^{^C} mu'hooa. *Bassia latifolia*. (T)

Bassia, long leaved, . e^{^o} mu'hee, &ot« madoo-
 1/2 Bassia longifolia. (T) The oil expressed from the seed forms the principal ingredient in country soap; the milk of the fruit, the bark, and the boiled leaves are used in rheumatic affections.

Batatas, panicled, ^ ^ L ^ ^ b'hoomee koomr'eh. *Batatas paniculata*, *Pro. Lind.* *Convolvulus paniculatus*, *Linn.* *Ipomoea paniculata*, *JBot. Reg.* (Tu.) The large tuberous root is cathartic.

Bauhinia acuminata, see Taper pointed mountain ebony.

Bauhinia purpurea, see Purple mountain ebony.

Bauhinia variegata, see Variegated mountain ebony.

Bdellium, see Camphoric amyris.

Bead tree, evergreen, ^ & bukaeen, ^ J &
 bukarja, gW ban. *Melia sempervirens*. (T) A

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highly ornamental tree of about 40 feet in height.

Bead tree, common, see Margosa tree.

Bean, aconite leaved kidney, o/ môt_y
Phaseolus acconitifolius (Tw.) A small* pulse
much in use.

Bean, Assam, ftw[^]JK kalee seem. StizoloMum
altissimum. (C)

Bean, dwarf kidney, Kb ba[^]la, &j zun, £j*ن^د
nuAbooa, LSJ+»"S dusemuree, j[^]d dujur, حنبل
hu/wbul. Phaseolus vulgaris. (C)

Bean, garden, Mb ba/Ja, c[^]l& bu&ut. Vicia
faba. (H)

Bean, pointed kidney, yj>⁴jl rf bun burbutee.
Phaseolus rostratus. Dr. Wall. (Tw.)

Bean, hairy podded kidney, or Black gram,
^Kd[^]l kalee aorud, ^/-U mash, Phaseolus
Max, (Tr.)

Bean, huzar, J*±y£ k'hursunbul. Dolichos
cultratus Thun, (Tw.) Eaten entire when young,
but when full only the seeds.

Bean, rayed kidney, u£y[°] ^j*> huree moong.
Phaseolus radiatus, (Tw.) Much used on the
Madras side in Mulligatawncc, and curries.

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Bean, small fruited, or Green gram, *tyjl* arood, **مورنگ** moong. *Phaseolus mungo*, (Tr.) A good pulse.

Bea?, three lobed kidney, [^]s[^] kulae. *Phaseolus ferilobus*. (Tr.) Used as food for cattle, **havjXig** a great effect in fattening, but very **Jarse**.

Bean, Tranquebar, *y[^]Jki[^]j** loobee kee p'hulee. *Dolicos Tranquebaricus*, (Tw.) Not much unlike the French bean in appearance and quality.

Beet, Bengal, **cJfq** paluk. *Beta Bengalensis*, *liox*. (H) One of the greens, or **sägs** of the natives.

Beet, common, *l[^]iş[^]* chuchunda, *vXL** sulk, **jtU&a** chu/mndur, **j>JU** pazhoo, **£[^]** [^]rurmuj. *Beta vulgaris*. (H)

Bellis perennis, see Daisy.

Benzoin tree, [^] ban, [^]Vy looban, [^]UI Inban, **ي>Jي** jy: aood loobanee, **&y£** aoud. *Styrax benzoin*. (S) The resin is a stimulant particularly affecting the lungs.

Berberry, holly leaved, *yj[^]>[^]* ambur barus,

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موبرج moobruj. *Berberis ilicifolia*, B : Asiatica of Rox. (S) Native of Nepal.

Berberry, Nepal, }yī** cheetra, ±s/->j*fl awzbur baree, ^ ; l l a, ar^ees. *Berberis aristata*. (IT) The extract of the root (J&J*J russót,) is used in Indian medicine, especially in ophthalmia, which Dr. Royle supposes to be the xkw of Dioscorides.

Bergera, Kcenig's, |S^J\$ kureepak, &*yj. bur-sunga, R. *Bergera Koenigii*, Rox. (T) The Hindoos consider the roots as stimulant, and the leaf as stomachic.

Bergia, ammanioidic, ur^_ ^j*³ dooFeh churce, R. *Bergia ammanioides*. (A)

Betel nut-tree, u5v4*** suparee, ^ U.^, supeea-ree, (J>> fooful, ^°1/ kuramuka, *^i' gooak'eh. *Areca catechu*. (P)

Betelnut, slender, |£ Jj ramgooa, R. *Areca gracilis*, Rox. (P)

Betle pepper, ^ pan, Jj*itf tanbool, ^y^^^Jy. burg tambool, J^^> nagbél. *Piper betle*. (Tr.)

Betula accuminata, see Tapering birch.

Betula bhojpatra, see Indian birch.

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Bignonia Indica, see Indian trumpet flower.

Bignonia suaveolens, see Tree trumpet flower.

Bilimbi tree, *y.fo* bulum boo. **Averrhoa bilimbi**, (S) % syrup is made from the juice of the fruit, and a conserve from the flowers, both esteemed in fevers and bilious complaints. The fruit also makes a good pickle.

Bindweed, creeping, *fl^JS* kulmee säg, **Convolvulus repens**, or reptans, (Cr.) The leaves are used as greens, the root being said, by some authors, to be purgative.

Bindweed, goat's foot, *sjy^ J&i\$~* ch'hagui khooree, R. *^ ^ ^ j ^* dôpatee luta, R, **Convolvulus pescaprae**, *Will.* (Cr.) Growing on sands, which it serves to bind.

Bindweed, involucreted, *JS .^* jurud kulmee, **Convolvulus bicolor**. (Tw.)

Birch, Indian, *Uyĩ* atoosa, *jJ^ ^ ^* b'hôjputur, *KJ'J* #oosh*, *-iji groosh'eh. **Betula bhojpatra**. *Dr. Wall.* (T)

Birch, tapering, *r*^* ooteles, *j%>* b'hooj. **Betula acuminata**, *Dr. Wall.* (T)

Birthwort, Indian, *Jij ur^«* isree ooueel, اسارمل

isarmul, J^tH ispurmool. *Aristolochia Indica*,
(C) The bitter root is said by Hindoos to possess ememnagogue and antarthritic virtues.

Birthwort, long rooted, *tyjj zuraound*¹. *Aristolochia longa*, (Tr.) Used as a slightly '(stimulating tonic.

Birthwort, pouched, UJ₄.U/O muteea chceu
Aristolochia saccata, *Dr. Will.* (C)

Bixa orellana, see Arnotta.

Blackberry, common, *yj^j>* turmush^{LL} khar, JJ^S /mzheel, *jtijj* oorgar, ^{^>} tulee. *Rubus vulgaris*. (S)

Blackberry, Himalaya, J[^] L₅JJ& gooree p^{*}hul_f
(R) *Rubus gowryphul*, *Rox.* (S)

Black wood tree, JUua^{Mi} sut saL *Dalbergia latifolia*. (T)

Boeobotrys, Indian, Jj[^] mool. *Boeobotrys Indica*. (S)

Boerhaavia diffusa, or procumbens, see Spreading hogweed.

Bolete, see Agaric.

Bombax pentandrum, see Silky cotton tree.

Boswellia thurifera, see Frankincense tree.

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Borage, Indian, q̣iS̄iJ^{\wedge} ch'hôta kulpa. Borage Indica, *Rox.* (H)

Rox tree, *cUu&* shumshad. *Buxus sempervirens*,[#] (S) Is found in Western India and Persia.

Brafte, woolly, $u^{\wedge}i^{*\wedge}$ purseaooshan, &\$
* $\text{—}^{*\wedge}$ kulkajamp. *Pteris lumilata* of Carey's
/ \wedge talogue, a species of fern, or perhaps Maiden
hair, (*Adiantum*,) having astringent qualities,
recommending it for dressing leather, and being
of use as a vermifuge.

Bramble, hill, $ys\text{?})^{\wedge}i^{*}$ kwlee anchoo, *j&Ufr**
j'hankur. *Rubus lasiocarpus*, *Dr. Mo.* (S)

Bramble, round leaved, $yf\text{?}\backslash$ *djj* zurud anchoo.
Rubus rotundifolius. (S)

Brasiletto, narrow leaved, \wedge bu \wedge um, ACIU , pU-
tung'eh. *Caesalpinia sappan*. (T)

Bramble, wood, J^{\wedge}^{\wedge} $\text{**}sj\text{£}$ kooree p'hul. *Rubus Indicus* *Hot.* (S) It is chiefly found in the woods between Hurdwar and Sreenugur.

Brassica acephala, see Kale.

Brassica botrytis, or florida, see Cauliflower.

Brassica oleracea, see Cabbage.

Brassica rapa, see Turnip.

Bread fruit, Bengal, $JJ^{\wedge} >$ bur'hul, $Uj^{\wedge} J$ lukoocha. *Artocarpus lakoocha*, *Hox.* (T) The fruit is eaten by natives in curries.

Brinjal, see Egg plant.

Bromelia ananus, see Pine-apple.

Broom, Portugal, $\text{£}j$ rutum, $L-S^{\wedge c}$ alkee. *Oenista Lusitanica*. (S)

Bryony, air living, $\%*\&$ $j^{\wedge} J$ rakus gud'eh, ty loofa, $J^{**} iS > j \backslash$ azunul feel. *Bryonia epigaea*, (Tw.) The root is used in making a liniment for chronic rheumatism. It was once supposed to be the famous Colombo root.

Bryony, bristly, $)j\text{£} \backslash *$ fashura, $^{\wedge} \backslash$ agumukee. *Bryonia scabrella*. (C)

Bryony, globe fruited, $\&MM^{*} \wedge j > y$ moos mus'eh, *Bryonia scabra*, (Tw.) The tender shoots, and leaves after being roasted, are aperient.

Bryony, great flowered, $4 - \wedge$ buwb, $\pm sj \backslash *$ & kudooree. *Bryonia grandis*, *Momordica monodelphia* of *Hox.* (Tw.) The fruit is used in an unripe state as a garden stuff, it is slightly acid, but insipid when ripe.

Buchanania, broad leaved, $j^{\wedge} i$ ppear, JUy peeal.

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Buchanania latifolia, (T) The timber is useful, and the fruit is sometimes eaten by natives as a substitute for almonds.

Buckbean, Indian, ^{^ ^} kumoodunee, ^{^ 8.^] ^} bura cKoolae. *Menyanthes Indica*, Will. (A)

By&kbean, tufted, ^{^ Jj\$-} choolee. *Menyanthes c^Istata*, Rox. (A)

Buddlea, Indian, Iduai neemda. *Buddlea neemda*. (S)

Bugle, opposite leaved, ^{)y%j>} goobra, R. *Ajuga disticha*, Rox. (H)

Buglos, common, ^{jy*| y£<*J} lusan-ul-soor, ^{j^s^} shunjar, ^{^ Ve.^} deem'haj, ^{uMjft} kaoo^uban. *Anchusa officinalis*. (H)

Bullock's heart, ^{t̃)} by 16na ata. *Annona reticulata*, (T) see also Custard apple.

Bullrush, J-w! asul, ^{^yũ<} astoom, ^{^s^yt} burdee, ^{‡&} dukh, ^{yj^t^} dees, ^{^y} lookh, ^{<g>} numiiij, [^] soom, ^{j * *} humar, ^{j/arf} bujra. *Penicillaria spicata*, *Panicum spicatum* of Rox. (G)

Burrage, see Thick leaved lavender.

Butea, downy branched, ^{<j* |j>} puras, ^{I^Ub^} d'hak'ha, ^{yj^H P^{ulas}} - *Butea frondosa*, (T) On

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this tree the lac insects are often found; the seeds are used by natives medicinally, and the gum gives a yellow dye. The juice of the flowers diluted with alum water, and clarified, yields an extract brighter than gamboge changing to a reddish orange with an alkali.

Buxus sempervirens, see Box tree.

Cabbage, a, JK ^J> kurum kula, & kula, <كرنب> kurnub, ,JS kulum, L.^J^ kobee, ^J^^MS kurum ka sag. *Brassica oleracea*. (H)

Cabbage tree, see oleander-leaved *Cacalia*.

Cacalia, oleander-leaved, or Cabbage-tree. ^jJI^UJ lusan wlsoor, ^Jjf goozuban. *Cacalia kleinia*. (US)

Cacalia, sow-thistle leaved, LC*.-^ ^H** suféd goob'hee. *Cacalia sonchifolia*, (H)

Cactus, Indian, ^ |^f^ nag funa, ^4*« J^- jupul seend. *Cactus Indicus*, JRox. (US) The inferior kind of cochineal insect feeds well on this plant.

Caesalpinia sappan, see narrow-leaved brasi-letto.

VOCABULARY
OF
TREES, PLANTS, ETC.

COMPILED FROM THE MOST APPROVED SOURCES.

IN recording the botanical names, London's Encyclopaedia of Plants has been taken as the standard, and all those not otherwise marked, are therefore, on that authority- In the modern changes, Professor Lindley has been assumed as the most approved source, and such exceptions to these two as are derived from other authorities will be found noted accordingly. In some *few* instances, Roxburgh's Flora Indica has been the sole authority for native names, and these are respectively marked with the letter R.

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The following is the system adopted in representing the powers of the Persian letters throughout this Vocabulary:—

<i>Letters.</i>	<i>Powers.</i>
ا	..... a (broad), i, u,
ب ب ب	..... b
پ پ پ	..... p
ت ت ت	..... t
ث ث ث s
ج ج ج j
چ چ چ ch
ح ح ح h
خ خ خ kh
د د d
ذ ذ z
ر ر r
ز ز z
ژ ژ zh
س س s
ش ش sh
ص ص ص ss
ض ض ض zz
ط ط t
ظ ظ zz

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Csesalpinia bonducella, see Small oval leaved *guilandina*.

Cajepute tree, ±J>jA\$ kaeepootee, *3j*jiK kaeepoofreh. *Melaleuca Cajuputi*, PROF. LIND. M. *Lencadedron* as was formerly supposed. (T) Yields the essential oil so useful in rheumatism, &c.

Caladium, water-lily leaved, tq**«) asooee, vS))\ arooee, y*ij*» sur kuchoo. *Caladium nymphaei-folium*. *Arum nymphaBi-folium*, *Rox.* (H) This plant appears to have been mistaken by some for *C. esculentum* ; all parts are eaten by natives.

Calambac, see Aloes wood.

Calamus draco, see Dragon's blood plant.

Calamus rotang, see Cane.

Calamus viminalis, or *zulacca*, see Java rattan.

Calla, poisonous, y^^ki beesh kuchoo, *Calla virosa*, *Rox.* (H)

Callicarpe, hoary, y^> mutureh, It *≡^* mutrunjeh, R. *Callicarpa incana*, *Rox.* (S)

Callicarpe, lance shaped, ijyljS kooamoora. *Callicarpa lanceolaria*, *Rox* (S)

Callicarpe, large leaved, ljL* bustura. *Callicarpa macrophylla*, (S)

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Callitris quadrivalois, see Sandarach tree.

Calophyllum, sweet scented, U^ ^ UaJU suite-
nee chumpa, R. ^j* surpun. *Calophyllum ino-*
phyllum, (T) The seeds yield an oil; and a resin
is obtained from the root, supposed to be the same
as the Tacamahca of the Isle of Bourbon. Hin-
doos offer the flower to Sheva and Vishnoo, it
being very fragrant.

Calotropis, curled flowered, uJ;l aruk,yke <zsh-
ur, i-J^ ak, laifl akunda, j|* <* mudar. *Calotro-*
pis gigantea, *Asclepias gigantea*, *Linn.* (H) The
juice, root, and bark are used in elephantiasis,
leprosy, and convulsions, and the first is a com-
mon cure for ringworm-

Caltrops, downy,)j4j> gook'huroo. *Tribulus*
lanuginosus, *Will.* (H)

Caltrops, small, or Turkey blossom of Jamaica,
گوگورو googuroo,)j>y4> g'hooguroo, cX*cL khusuk,
رومي z^ W''*.* busteetaj roomee, l^itt^o_t.y« soodums-
tura. *Tribulus terrestris*. (H) The leaves and
root are said, by native practitioners, to have a
diuretic property.

Caltrops, water, see Water caltrops.

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Calyptranthes, clove leaved, ꞑJ^tꞑy^ ch'hota jam, &y^ jamoon, *Calyptranthes caryophyllifolia*. (T) The fruit resembles a sloe in taste, but is •white.

Calyptranthes jambolana, see Java plum.

Camilla viridis, and bohea, see Tea tree.

Camphor, tree ꞑyK u u- ^ durukht-u-kafoor, ꞑy& kupoor. *Laurus camphora*, *Dryobalanops aromatica Gcsrt*, *D. camphora* of *Colebrooffie*, *Shorea camphorifera*, *Hox.* or *Camphora officinarum*, (S. T.)

Cane, or rattan, UU^J bét, * & béd. *Calamus rotang*, *Will.* (C) It is a very troublesome jungle in lower Bengal, and to the Eastward.

Canna Indica, see Common Indian shot.

Cannabis sativa, see True hemp.

Canscora, decussated, y^y&A dunkoonee, (R)

Canscora, PROF. LIND. or *Pladera decussata*, *Box.* (H)

Canthium, narrow leaved, ^''&j\$ kôt'eh mul-ee. *Canthium angustifolium*, *Jiox.* (S)

Canthium, small flowered, ꞑK kara, ^K karee.

Cupia tetrandra, *Capthium parriflorum*, *Rox.*

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Webera tetrandra of *Will*, and *Schr.* (S) The fruit is eaten by the poor, a decoction of the leaves or roots is used in flux, and the latter is anthelmintic. The bark and young shoots also are used in dysentery.

Caper, common, *JJS* kubur, u-i^T assuf, J J^ kureel. *Capparis spinosa*, (US) Does not grow in India, but appears well known. Roxburgh enumerates several species, particularly *C. aphylla*, but none with similar character to this.

Caper, Indian, !*^>^ ardunda, *caperis horrida*, *Linn.* (S)

Caper, prickly, J^S kureel, j& kubur, <J^I assuf, *Capparis accuminata*, *Hox.* (S)

Caper tree, three leaved, ^ burun. *Capparis trifoliata*, *Box.* (S)

Capsicum, or red pepper, U y^ murcha, or murucha, i^ ^ r* murchae. *Capsicum frutescens.* (H)

Capsicum baccatum, see Bird pepper.

Capsicum frutescens, see Cayenne, or Chili-pepper.

Capsicum grossum, see Kaffree chili pepper.

Carambola tree, *\$/£ kumruk'h ^ - 4 kumrun

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g'eh. *Averrhoa carambola*. (T) Yielding a fruit of angular shape.

Caranda, jasmine flowered, $K^{\wedge}S^{\wedge}JP \setminus J^{\wedge}J^{\wedge}$. $t^{\wedge}ur^{\wedge}ee$ kurooildee, $U^{\wedge} /$ kurumcha. Carissa, carandas. (T) The fruit is of pleasant taste like a damson, and makes a good jelly.

Caray thorny, see Small flowered canthium.

Cardomum, large $U^{\wedge} \& d S li^{\wedge} a \& il'eh$ kubar, $\< MS J^{\wedge} fc$ heel kulan, $xmj^{\circ} \$) \underline{LJT}^{\wedge}$ buree wlachee. *Amomum grana paradisi*, (H) The seeds are aromatic, stimulant, and cordial.

Cardomum, Morung, $t^{\wedge}rf-Sl^{\wedge} -^{\wedge} \wedge$ m^orun^g wlachee. *Amomum aromaticum*. *Box*. (H)

Cardomum, irue, $^{\wedge} \wedge 8)$ ilachee, $ju^{\wedge} \wedge i$ shoosh-meer, JJ) abul, $J^{\wedge} o^{\wedge} *i^{\wedge} \setminus i^{\wedge} a$ Aul'eh ssugar, $lil Jbl^{\wedge} *$ $^{\wedge} apal a^{\wedge} a,)y.J^{\wedge} ** >$ heelbooa. *Elettaria cardomum*, PROF. LIND. *Amomum repens*, *Smithy* *Alpinia cardamum* *Bos.* and *Box*. (H) The cardamum of commerce, carminative and stomachic.

Carey's tree, yjy peeloo. *Careya arborea*. (T)

Carica papaya, see Papaw tree.

Carissa carandas, see Jasmine flowered caranda.

Carissa, spiny, $LS^{\wedge} J^{\wedge} \wedge S^{\wedge} -$ chootee kuroondee,

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Carissa spinarum (T) The fruit, which is sweet and pleasant flavored, is eaten by natives.

Carob tree, see St. John's bread.

Carrot, garden | -*tijj* surduk, *j*X* gajur, جزر *juzur*, *j^y^* shoondur, *Jiy** ssoo/ul, *^i gur-* muj. *Daucus hortensis*. (H)

Carrot, wild, *JJ>IA£* shu£a£ul. *Daucus carota* (H)

Carpopogon niveum, see White mucuna.

Carpopogon pruriens, see Itching mucuna,

Carthamus tinctorius, see Safflower.

Caryophyllus aromaticus, see Clove tree.

Cashew nut, common, *y^i* kajoo, *J^.^F** *hujlee badam*, R. *Anacardium occidentale*, (T)

Cassava tree, *A^KJJ!* aloo gach'h, *yUo-i* shuft-aloo, *Janipha Manihot*, PROF. LIND. *Jatropha Manihot*, *Lin.* (S) There are some varieties of this plant indigenous in this country, but producing less Tapioca than the Brazilian kind or mandiocca. The juice is dangerously poisonous, but is expressed in the preparation made from it.

Cassia, blunt leaved, *j^* punooar. *Cassia obtusifolia*. (S)

Cassia, broad leaved, *±J>^ | ^s^h* oolajetee aoa-

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tee, &&/***)£ dadmurdun. *Cassia alata*, (S) The juice of the leaves is a cure for ringworm.

Cassia, eared, *jjj>* turoor. *Cassia auriculata*, *Senna fcuriculata*, *Rox.* (S) The powder of the dried seeds is used by native doctors, as an external remedy (blown into the eye) in ophthalmia.

Cassia, four leaved, تشميز چاكسو, *tushmeezukh*, چاكسو *chaksoo*. *Cassia absus*. (US) The powdered seeds are used in ophthalmia.

Cassia lanceolata, or *elongata*, see True senna.

Cassia, oval leaved, *l ^ j ^* chukoonda, *J*J£** chukoonur, *J^i** Aul^ul. *Cassia tora*, *Senna tora*, *Rox.* (H) The leaves are used to adulterate the inferior kind of *Senna* obtained from *C. obovata*.

Cassia, purging, ^UJUI amultas^jJ^U^ kheear shumbur, *yS^J^L*. kheear chumbur. *Cathartocarpus fistula*, *Cassia fistula*, *Linn.* (S) The pulp of the long fruit is a valuable laxative, as also are the seeds ; the roots are held to be a febrifuge; the pendant yellow flowers look at a distance like the *Laburnum*.

Cassia, round podded, *i^s^y^* kusoondee. *Cassia sophora*, *Senna sophora*, *Rox.* (S)

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Cassia tree, or Bastard cinnamon, *sɪk' suleekh'eh, ff^tʊj, y^s^^-J^ darcheenee. *Laurus cassia*, *Cinnamomum aromaticum*, PROF. LIND. (T) The bark is a favorite medicine of native practitioners as a stomachic and cordial ; it is also often sold as real cinnamon, but is less fragrant, and more woody.

Castanea Indica, see Indian chesnut.

Castor oil tree, or Palma Christi, ***j\ arund, *>T and, *ij rund, I^S^HJ réndee, j*ş') JQ béd wnjeer, PJJ±* khurooa. *Ricinus communis*. (S) The best grows about Bhaugulpore, and has a red stem.

Casuarina, muricated, y.j**• ssunoobur, y>S geezh. *Casuarina muricata*. (T) Commonly called the fir, to which it bears resemblance.

Catechu tree, medicinal, *& 12.^*3 durukht-ukut'h, Ijii*~ kheera, ur^.^ khaeeree. *Acacia catechu*, (T) A good and safe astringent.in dysentery, diarrhoea, &c

Cathartocarpus fistula, see Purging cassia.

Cauliflower, ^>^ J^ p'hoolkoḃee, Ja^iSJI al-kxxmheet. *Brassica botrytis*, or Florida. (H)

Cedar, East. Indian bastard, ^J> tun,j^ȳ toon,

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لود lood, R. Cedrela toona. (T) The wood is similar in appearance to mahogany, but wants the close grain of that wood.

Cedfr of Goa, jy- suroo. Cupressus Lusitanicus. (T)

Celastrus, eatable, ci>^ Aat, Celastrus edulis (C) The leaves are said to be of a stimulating nature.

Celastrus robustus, see Hardy staff tree.

Celery, garden, yj*^ kurufus, ^ . ^ 1 ojooa'én. Apium graveolens. (H)

Celosia argentea, Silvery spiked cockscomb.

Celosia cristata, see Common cockscomb.

Celsia, Coromandel, lo^Sfc kakroonda. Celsia Coromandeliana. (H)

Celtis orientalis, see Oriental nettle tree.

Centaurea moschata, sec Sweet sultan.

Centrostachys water, vj^yt hooet. Centrostachys aquaticus, *Dr. Wall.* Achyranthes aquatica, *Box.* (H)

Cerasus acuminate, see Nepal cherry.

Ceratonia siliqua, St. John's bread.

Ceratostema, variegated, iny> JU* jal-u-moot.

Ceratostema variegata, PROF. LIND. (S)

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Chamomile, *tyl> babooneh i^rV^i* keekooash, اءكوان^ aMooan, uo|y Aurass, ^s^*j^ J'^J*1' uhfak-almurzrec. *Anthemis nobilis*. (H) A weak infusion is considered tonic and carminative,¹ but if strong, it becomes emetic.

Chara, forked, CMMK kast, ^ ^ jaluj, £>UF* j'hanj, (R) *Chara furcata*, *Rox.* (A)

Chara verticillata, see Upright water weed.

Chaste tree, quadrangular, ^j^ andrunee, u^Z&jfh * punj angusht, ^ ^ nesundee, 15^*.-^ shuwzbalee, u u ^ i? " funjung-usRt. *Vitex negunda*. (S) The leaves are discutient, and are used in the warm bath for women after deliver)⁷.

Chaste tree, three leaved, v ^ ^ ^ ^ ^ ^ panee-kee-shuwbalee, ^ ^ ^ J^l u^ul keeabee, UjiuJ nusund'ha, _ ^ ^ sudooaree, eu^Cxsr^ punjungusht. *Vitex trifolia*, (S) The leaves are a powerful discutient, and used by native practitioners, for enlarged spleen. The fruit is acrid, and called a^J^AUJ feelfeel bur'eh, or wild pepper.

Chaulmoog'a, scented, /j+l\$- chulmoogra, R. *Chaulmoogra odorata*, PROF. LINI>. (T)

Cheiranthus cheiri, see Wall flower.

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Chenopodium album, see White goose foot.

Cherry, bird, or wild, *ty padum, jkJ& gulnar, **وشنه**, ooshn'ch- Prunus pad us- (T)

Cheñy, common, ji) i\£ sha'h aloo, *>.) *t£ sha'h daneh, w^lji£ keeras. Prunus cerasus- (T)

Cherry, Nepal, jj) aroo, *^ padum. Cerasus acuminate, Dr* Wall. (T)

Chesnut, Indian, i^b buloo*, u y ^ nékaree, Jlx-J* kustul, ^^jtl^W badamgootee- Castanea Indica, Rox* (T)

Chick pea, common, ca^ boot, hbj ru'hla, U^ chuna, ijuiy boont, £y& nuk'nood, u_r ^ ^ hur b'huree. Cicer arietinum, (C) The common food given to cattle, called gram, and called \Jü putra, when unripe.

China root plant, or Chinese yew, L<H^ *T~2* chubcheenee, ^^xj^oL-^^^ khushub sseenee. Smilax China, (C) Recommended as a substitute for sarsaparilla, and yielding the "China root" of the shops.

Chionanthus axillaris, see Axil flowering fringe tree.

Chirayta, *jljfl*-r~*^ ussub aUureer'eh, ALU.

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Cistus creticus, Cretan rock-rose.

Citron, <g> turunj, ^Sl>»# bésak'hee, *چکوڑہ
chukootur'eh, ^/ kurna, J£'tf galgul, ^^ lee-
moon, <£jy^ Jo^runj, <g_J>) wtruj, UOJUM^U marsees-
£a, ^jy^l *utrooga*, Kiy^JU matoolôiga. *Citrus*
medica. (S) Roxburgh mentions four varieties
in the Botanic Garden of Calcutta.

Citrus aurantium, see Orange.

Citrus decumana, see Shaddock.

Citrus limetta, or *lirnonum*, see Lime.

Citrus medica, see Citron.

Clearing nut, see Nut.

Cleome, five leaved, J*>J*> hul hul, *JUJ ku-
naVeh, ^J]/ kuraeela. *Cleome pentaphylla*. (H)
The seeds are administered, in decoction, for
typhus fever, and the leaves are eaten as a
vegetable.

Cleome, viscid, ^* hur hur, ^ ^ . 1 ^ ^ . choo-
rec ajooaen. *Cleome viscosa*. (H) The seeds used
in curries.

Clerodendrum, long flowered. o>Û^ b'hant.
Clerodendrum infortunatum, *Volkameria infor-*
tunata. *Rox.* (S)

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Clerodendrum, smooth, uucUa*^ bun jumaat.
Clerodendrum inerme. (S)

Clerodendrum, spear leaved, yj&^Jto hatee kan,
R. Clcfodendrum hastata, Siphonenthus hastata,
Rox. (S)

Clerodendrum, whorl leaved, ^J&yj*^ bamun
hutee Clerodendrum siphonanthus, Siphonan-
thus Indica, Rox. (S)

Clitoria, wing leaved, *W aprajuta, J^* koo-
uccl, ^^x'yj^^ji kooat'heent'heo, jJ^JK kalee zur.
Clitoria ternatea, (Tw.) Dr. Roxburgh says the
root is not inferior to jalap as a cathartic, and
the powdered seed is purgative. PROF. LINDLEY
states the root to be emetic. There are three varie-
ties, the blue, the pink, and the white blossomed.

Clove tree, I-&J!\JL^JI durukht-u-lông, <-Xs**
meekhuk, J^i^ /mruwful. Caryophyllus aroma-
ticus, (T) The unexpanded buds are the clove of
commerce.

Clover, common, or red, J**^3 Jurfeel, i£«'»yl
aspust, C ^ l asfut, *§^j dumch'eh, v^/^ nustu-
run, J~SJ kurkuman, u^5 kut, *y±J kumee^eh.
Trifolium pratense (H) This is believed to be
the only one attempted to be grown in India,

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and that only to a small extent, it is rather to be expected that, this being indigenous to a colder climate, some other varieties might be more successful, it being occasionally found in parts of Persia and Arabia.

Clubrush, articulated, &=?? | ^s^i putputee chéckka, R. *Scirpus articulatus*, *Linn.* (G)

Clubrush, barbed seeded, ^sjy^ kusooree. *Scirpus kysoor*, *Rox.* (Tu)

Clubrush, erect, *K-rjy* moormooree, R. *Scirpus schcenoides*, *Kön.* (G)

Clubrush, glomerate, y^Hflr*- bura nurbushee, R. *Scirpus glomeratus*, *Linn.* (G)

Clubrush, tall, ^y^ |f. bura juooanee, R. *Scirpus tetragonus*, *Rox.* (G)

Clubrush, tufted, ur;^ gooree. *Scirpus squarrosus*, *Linn.* (G)

Clubrush, two spiked, *£&* ^sjy& kusooree mulung'eh, R. *Scirpus bispicatus*, *Kdn.* (G)

Cnestis monodelphores tÿ"lj^r** sookooa tôta. *Cnestis monodelpha*, (S)

Cocculus cordifolius, see Heart-leaved moonseed.

Cock*s-romb, common, v_/r*r^?£^ taj-u-khurooi

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جٲ jut, ^V juta, 4/^cJ⁸ lalmur^a. *Celosia cristata*. (H)

Cock's-comb, silvery spiked, ^ o LS^XU, sooét *murga*." *Celosia argentea*. (H)

Cocoanut tree, J^J^t-* narjeel, J^jU nareeul, نارجيلي narjeelee, J-^U narjubul. *Cocos nucifera*. (P) The cabbage, as it is called, is the uppermost tender shoots, and known as the «*jy* ^ J^ nareel ka kroot.

Coffee, four stamened, ^FJ^J^_ cheelmaree. *Coffea tetrandra*, *Rox.* (S)

Coffee tree, true, *^y. boond, ^ bun,)jS kuooa, ?j^5 £u'hoo'eh. *Coffea Arabica*. (T) Roxburgh mentions a wild variety, which he calls *Coffea Bengalensis*; since found commonly in *the Rajmuhal range of hills by Mr. Pontet, and others. The coffee of commerce grows well in almost all parts of India, and its stimulating effects are too well known, it being truly to the student " the cup that cheers but not inebriates."

Coix lachryma, see Job's tears grass.

Colchicum autumnale, see Meadow saffron.

Columnnea, balsamic, jy>£ kurpoor, R. *Columnnea balsamica*, *Rox.* (Cr)

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Combretum, round leaved, U^J kooluta. Combretum rotundifolium. (C)

Commelina, Bengal, I&&K kanshèra, R. UtyyK kanoora^a, R. Commelina Bengalensis, (Tr)

Commelina, common JjibiS \3JA. joota kunsheera, R. (Tr) Commelina communis.

Commelina, naked flowered, ±Jj**\£ kandoolee, R. Commelina nudiflora, Linn. (Tr)

Commelina, scape flowering, ^jj>^ koorulee, R. Commelina scapiflora, Rox. (H)

Commelina, willow leaved, ^^^ lankulee, R. jk&Ky^*} panee kansheera, R. Commelina salicifolia. JRox. (Tr)

Commiphora Madagascarensis, see Camphoric amyris.

Conium maculatum, see Common hemlock.

Convolvulus batatas, see Sweet potatoe.

Convolvulus bicolor, see Involucrated bindweed.

Convolvulus, creeping, ^s+K kulmee. Convolvulus reptans. (Tr) The leaves form one of the numerous greens, or sag, eaten by natives.

Convolvulus nil, see Purgative pharbitis.

Convolvulus paniculatus, see Panicked batatas.

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Convolvulus pescaprae, see Goat's foot bindweed.

Convolvulus repens, or reptans, see Creeping bindweed.

Convolvulus scammonia, see Scammony plant.

Convolvulus turpethum, see Square-stalked ipomea.

Conyza anthelmintica, see Saw-wort.

Conyza lacera, see Torn fleabane.

Cookia punctata, see Chinese wampee tree.

Coral tree, Indian, jI*3jU mandar, R. *Erythrina Indica*. (T)

Coral tree, oval leaved, ^iCjUyb huréakeekur. *Erythrina ovalifera*, JRox. (T)

Corchorus, bristly leaved, V^i nurcha, u^ pat. *Corchorus olitorius*. (H) The leaves used as greens, or säg.

Corchorus, heart leaved, ^y' nurcha. *Corchorus capsularis*. (H)

Cordia, broad leaved, |jy^|y. bura lusoora. *Cordia latifolia*, Box. [T) This tree most probably produces the larger kind of Sebesten plumbs, described by Mr. H. Colebrooke, and

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which are not known in our *Materia Medica*, though used by natives.

Cordia, sloping, ^{^^^} goondnee, \)y^ lasoora, *Cordia obliqua Will* (T) The fruit is pleasant tasted, but glutinous.

Cordia, smooth leaved, j'jtf buhooar, j^ty lubeera, £*J lubukh, \jyJ lusoora. *Cordia rayxa*. (T) The fruit is the *Sebesten* of the European *Materia Medica*, and the bark is said, by Dr. Royle, to be a mild tonic.

Cordia, taper leaved, *£*]; ramuteh. *Cordia acuminata*, *Dr. Wall*. (T)

Coriander, common, y^> kushnee*, *-&*»> numshuk, y&& shuneez. *Coriandrum sativum*. (H) The seed is *Uiao d'huneea*, and used as a culinary spice, as also to chew.

Coriaria, Nepal, Ljr<i^:r<j b'hoojunsee. *Cariaria Nepalensis*, *Dr. Wall* (S)

Corinda, jasmine flowered, !*>jy* kuroonda. *Carissa carandas*, (T) yielding a pleasant subacid fruit.

Corinthian grapes, V.-^J# \j>±ja durukht-u-subeeb, C.—H^ ^g*** budusee subeeb. *Vitis vini-*

fera, var: Black Corinth, or Zante. (C) Produces the "dried currants" of commerce.

Cork tree, $j|\pm$) $a\leq?ar$, $Ja^{**}\gg |J^{\wedge}J\&$ durukht-umJur. *Quercus suber*. (T)

Coronella, large flowered, $\wedge \wedge \wedge$ hukutee. *Coronilla grandiflora* (S) An infusion of the leaves is given in cases of catarrh in some parts. See also Agati.

Cornel, or dogwood tree, $J|jyk^*$ geezooran, $U|jS \wedge$ uranea, CXL^{\wedge} , surkhuk, $J^{\wedge}j$ zuffsl. *Cornus mascula*. (T) The fruit was formerly eaten, but is now in disuse.

Corylus avellana, see Filbert, and Hazelnut.

Corypha Taliera, see Talier's palm.

Costus, Arabian, $k\leftarrow j$ kust, $|Jk^{\wedge}S /msh^{\wedge}um, j\&$ \wedge eeoo. *Costus Arabicus*. (H) An infusion of the root is considered, by native practitioners, as a stomachic and tonic, and is given in typhus fever.

Costus, beautiful, $k^{\wedge}i$ kut,y£ keeoo, $-k^{\wedge}$ £us£. *Costus speciosus*. (H) Roxburgh says the dried root of this kind does not at all resemble the *C. arabicus* formerly used in medicine, but natives prepare a kind of preserve from it, that is considered wholesome.

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Cotton tree, ^{^j^} kupas, ^{^laS} *kutun*, قازپاسي /iarpasec, JAC; zabul. *Gossypium herbaceum*, (T) comprehends several varieties according to the place of growth and soil. The produce, *br cotton of commerce is ^{^^j} rooe.

Cotton tree, silky, J[^]J[^] sseemul, Ji^{^^}U.Ia. huteean ka goond. *Criodendron fructuosum*, or *Bombax pentaudrum*. *Lin.* (T) The wood is light, and of little value, and the produce is only used for stuffing pillows, beds, &c. A solution of the gum is given by native practitioners, with spices, in bowel complaints, and the seeds in some parts afford an article of food.

Cotyledon laciniata, see Cut-leaved navelwort.

Cowitch, or Cowage, see also Itching mucuna ^{^LjS} keeoach, ^{f^^J^^K} kanchkooeel-keeb^{^r}, ^{^)^S} keeoanch, Jytf kutool, ^{^1^} kooanch'eh, ^{^^^i^} kanchkoree. *Stizolobium pruriens*, since called *Mucuna pruriens*, *D. C. apud*, PROF, LIND. *Dolichos pruriens*, of *Linn.* (Tw) The bean is eaten by native. The hairs are a mechanical anthelmintic, and a strong infusion of the root is given by native doctors in cholera.

Cowitch or Cowage, Assam, commonly called

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Assam bean, [^]j£*& [^] Assam k'eh keeôach,
[^] L [^] kalee seem. *Stizolobium altissimum*,
chucuna altissima DC. *apud* PROF. LCXD. (TW.)
 Found -in most parts of the Himalaya range,
 especially towards the Eastern portion of it, the
 seeds forming a vegetable very similar in flavor
 to the Windsor bean, and coming in at the close
 of the rains, when other table vegetables are
 scarce.

Crataeva marmelos, see Bengal quince.

Crataeva, religious, J*? bél. *Crataeva religiosa*
Va. (S) The leaves are venerated by the worship-
 pers of Sheva, as the *Toolsee* by those of Vish-
 noo, and being bitter and aromatic are used as a
 stomachic ; the root also being supposed to have
 alterative properties.

Crataeva tapia, see Smooth garlic pear.

Cress, Chinese, [^]JA huleem, uJ [^] huruf. Ara-
 bis Chinensis, *Rott.* (H) A stomachic and sti-
 mulant, but producing abortion if imprudently
 taken.

Cress, common, p*> halum, v&) oond'eh, cMy
 rushad, j»**.; chunsur, i-S}£ 5/ tur'eh té^uk. *Le-*
pidium sativuni. (H)

Crinum Asiaticum, or **toxicarium**, see **Poison bulb**.

Crinum Cingalese, see **Cingalese amaryllis**.

Crocus, see **Saffron plant**.

Crocus sativus, see **Saffron plant**.

Crotalaria juncea, see **Indian hemp**.

Crotalaria, laburnum leaved, U» muna; R. **Crotalaria laburnifolia**. (H)

Crotalaria, silky, ^JJ^J peeolee, R. ʘ^ ^ j'hunj'hun, R. **Crotalaria sericea**. (H)

Croton, plaited leaved, i^*- sunbalee, خودی کرا khoodeeokra. **Croton plicatum**, Will. (H)

Croton, purging, t^JU^junal goota, y^bato, د* & dund. **Croton tiglium**. C. jamalgota, *Hamilton in Linn. Trans.* (S) The nuts have strong purgative powers, and were formerly taken to England under the name of "Molucca grains;" they are said to cure the bites of venomous animals, and the venereal.

Crow's beak, see **Winged clitoria**.

Cubebs, *A^ kubab'eh, ^^ u-^ kubab cheene. **Piper cubeba**, *Linn.* (C) The ripe fruit is the cubebs of the shops, but Dr. Blume considers that the fruit of this species is not sent

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to Europe ; the cubebs of commerce being chiefly furnished by *P. caninum*, *Humph.* *P. cubeba* of *Rox.* of which the fruit is smaller, and less pungent.

Cucumber, acute angled, or stinking luffa, *قراي* turaee, *بنتورا* bunturaee, *جھنگ* j'heenga, *لوف* loowf, *تور* turee, *تور* tooree. *Cucumis acutangulus*, *Luffa acutangula*, *Rox.* and *L. foetida* (Tr) A good native vegetable, either in curries, or plain boiled. Abundant in the rains. In Bengal, at least it cannot claim its last name.

Cucumber, bitter, *جھنگ* wndraeen, *جھنگ* *h*unz-zul, *اندراوند* indraoond, *اندراوند* indraooan, *منخال* mukhal, *مور* mur'eh, *سب* ssab, *کستو* keestoo, *علقم* *alAum.* *Cucumis colocynthis*, (Tr) The fruit contains the bitter resin known in medicine as colocynth or coloquintida, and although considered poisonous alone, in combination with other substances it is a commonly used cathartic. The oil is used in Southern India for lamps.

Cucumber, common, *کھیر* k'heear, *کھیر* k'heera, *ابکھور* abkhoor, *کونکوره* kunkuree, *واری* ooarunk,

بادرنجوي badrunjooee, [^]xs[^]K¹ gaooeejuk, نقوس fufoos. *Cucumis sativus*. (Tr)

Cucumber, furrowed, [^]jj[^] g'heetoorâee. *Cucumis sulcatus Rott.* (Tr)

Cucumber, Madras, ^UU^U seend, <jr/f* kuchree. *Cucumis Madraspatamus.* (Tr)

Cucumber, momordic, ci[^]j p'hoot, *Cucumis momordica Rox.* (Tr) The fruit is somewhat like a melon, and is commonly so called,

Cucumber, most useful, [^]s/S kukree, [^]!; ooar-kar, *-&=yK karjunk, ^viXf[^]i kunoolkuta. *Cucumis utilissimus, Rox.* (Tr) If carefully gathered, the fruit will keep for a long time.

Cucumis melo, see Musk, or sweet melon.

Cucurbita citrullus, see Water melon.

Cucurbita lagenaria, see Bottle gourd.

Cucurbita ovifera, see Squash.

Cucurbita pepo, see Common pumpkin.

Cumin, black, see purple Vernonia.

Cumin, common, |ji) zeera, [^]yS kumoon ojiw sunoot. *Cuminum cyminum (H)* The seeds used as a grateful stomachic.

Cupia tetrandra, Small flowered canthium.

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Cupressus Lusitanicus, see Cedar of Goa.

Curculigo, narrow leaved, [^]»y *t** seea'eh mooslee, [^]y Jtf tal moolee. *Curculigo orchoïdes*, (H) The root is supposed, by Hindoos, to be a purifier of the blood, and also tonic.

Curcuma amada, see Mango-ginger.

Curcuma angustifolia, see E. Indian arrowroot.

Curcuma cesia, see Grey turmeric.

Curcuma longa, see Common turmeric.

Curcuma zerumbet, see Long zedoary.

Curcuma zedoaria, see Round zedoary.

Cuscata capitata, see Round headed dodder.

Cuscata reflexa, see Bent back dodder.

Custard apple! c*T or ~~V~~ ata, or at, J^Uk« seeta-p'hul, &A>J& shureef eh, ~~S~~ Uy hona ata. *Annona squamosa*, and *A. reticulata*, (T) the former the Sweet sop, the latter the custard apple of the West-Indies, but here the latter fruit, from its form, is called the Bullock's heart, and to the former is assigned the r^al name of the last mentioned.

Cydonia Chinensis, see China quince.

Cymbidium, drooping, [^] [^]tfl̄ akas neem,

Epidendrum triste. Cymbidium tristis, *Hox.* (Pa)

A kind of parasite usual on the neem tree.

**Cymbidium, tessellated, 1^ bunda, ^y^| al-
gooch. Cymbidium tessellatum *Will.* Epiden-
drum tessellatum, *Mox.* (Pa)**

**Cymbidium, variegated, 4>W banda. Cymbi-
dium tessaloïdes, *Hox.* (Pa) A beautiful parasite.**

**Cynanchum, green flowered, see Emetic swal-
low wort.**

Cynara scolymus, see Artichoke.

**Cynoglossum diffusum, see Spreading hound's
tongue.**

Cynosurus coracanus, see Dog's tail grass.

Cyperis textilis, see Mat-rush.

Cyperus, see also Cyperus grass.

**Cyperus, rush leaved, l*jy« moot'eh, A_jy^sU na-
gurmoot'eh, U_wy* moosta. Cyperus juncifolius,
JRott. or *C. rotundus, Hox.* (G) A decoction of
the root is considered diuretic by Hindoos.**

**Cyperus, slender, U^A> nagur moot'ha. Cype-
rus tenellus. *C. pertennis. Rox.* (G)**

**Cypress, evergreen, JJW suroo, ^sf suhee, j|^*
nazh, cXi^ui surshuk, y^ shunoo, jy& kunoor,**

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عرعار *ara'ar*, (زاد درخت) *azad durukht*. *Cupressus sempervirens*. (T) A very ornamental tree.

Cytisus cajan, see Pigeon pea.

Daffodil, *ih-sliA*. *khunsee*, &y. *buroou*^ . *Narcissus pseudo-narcissus*, (B) The bulbs, and it is said the flowers also, are emetic.

Daisy, *~*~& huzardan'eh. *Bellis perennis*, (H)

Dalbergia, climbing, UJ!y nooa luta. *Dalbergia scandens*. *Rox.* (C)

Dalbergia latifolia, see Black-wood tree.

Dalbergia sisoo, see Sissoo tree.

Damson, or damascene, *ji*) aloo,yL^Ut sham aloo, ^j»^ \ ijas, |;lsrf^yi alooe bukharā. *A variety of—Primus institia*. (T)

Damsonium, Indian, ^s*s''*Ji* parmeekulu, u^ ^ ^ J panee kulee. *Damsonium Indicum*. (A)

Dandelion, v|^' < J^ J rujul ulgurab. *Leontodon taraxacum*. (H)

Daphne, mezereon, &j}jjH'' mazureeôn. *Daphne mezereum*. (S) The bark is acrid, and used medicinally as a local irritant, and an application for the tooth ache.

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Darnel, slender, A>3^> tulukh dan'eh, جلیف
 juleef, J*j oo^ul, \mJy' fook, Uç ^ufa, ^^tj zoea-
 oon, LS^SJ^ dun/tut. *Lolium tenue*, (G)

Date palm, common, 1;^^. ch'ht'hara, درخت-
 U^ durukht khurma, jy^ k'hujoor, پیند کھجور
 peend k'hujoor. *Phoenix dactylifera*. (P) The
 fruit is the date of commerce, and a diet of
 many Eastern nations, the best being from
Hajiar in Arabia, those of India being very
 indifferent.

Date plum, polyandrous, ^ gab, fy^JJ tundoo-
 ka, *£*£* sunduk'eh, L ^ ? * ^ paneechee. *Diospyrus*
embryopteris. *D. glutinosa*, Kø: *Embryopteris*
glutinifera, *Linn.* (T) The viscid mucus of the
 fruit is used for paying boats, and rendering
 fishing nets more durable.

Date plum, smooth, ^ << ^ teendoo, |j»y*->) ab-
 noos. *Diospyros ebenum*, (T) A native of the
 mountains of Nepal, but the fruit is indifferent.

Date tree, wild, y^s^V^1^ ±3**^TM send'hee idu-
 rukhtee, jy?^ k'hujoor. *Phoenix sylvestris*, *Rox.*
 (P) Common throughout Bengal, and yielding
 the juice called commonly *tarce*, whence is manu-

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factured a kind of sugar. Roxburgh says, twelve pints of juice are boiled down to one of *goor*, whence is extracted one fourth of pure sugar, the rest being molasses.

Datura fastuosa, see Purple thorn apple

Datura metel, see Downy thorn apple.

Daucus carota, see Wild carrot.

Daucus hortensis, see Garden carrot.

Day-lily, copper colored, *gulnurgus*.

Hemerocallis fulva, (H)

Deeringia, berry-bearing, *gola mo-huree*, R. *lutmun*. *Deeringia celosoides*, (H)

Dentilla, creeping, *b'hoomee pat*.

Dentella repens, (US)

Dianthus Chinensis, see China pink.

Didymocarpus, aromatic, *kumkuma*. *Didymocarpus aromaticus*, *Dr. Wall.* (H) Produces an aromatic drug.

Dill, common, *sooe chooka*, *sooa*, *Anethum graveolens*, *A. sowa*, *Rox.* (H) The seeds considered stomachic, and in infusion given by natives to lying-in-women.

Dillenia, large flowered, *chulta*. *Dillenia*

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speciosa, *D. indica*, *Linn.* (T) The fleshy leaflets of the calyx have an agreeable acid taste, and are used by natives as a fruit.

Dillenia, rough, &*> chulta. *Dillenia scabrella*, *Dr. Wall.* (T)

Dimocarpus litchi, see Leechee.

Dimocarpus longan, see Longan.

Dioscorea aculeata, see Prickly stemmed yam.

Dioscorea alata, see Winged stalked yam.

Dioscorea fasciculata, see Fasciculated yam.

Diospyrus ebenaster, see Indian ebony tree.

Diospyrus ebenum, see Smooth date plum.

Diospyrus embryopteris, see Date plum.

Diospyrus melanoxylon, see Ebony tree,

Dipterocarpus. terebinthina, {l/^ is^j** dur-
ukht-u-gurjun. *Dipterocarpus^turbinatus* PROF.
LIND. (T) Yielding wood oil.

Dock, bladder, *-&U t^ chooka paluk. *Rumex vesicarius*, (F)

Dock, sharp, *-(Uj J^ jool paluk. *Rumex acutus*, (F)

Dodder, bent back, &ji |j*& akas poun, ^s
durund, ^yJS) uftumoon. *Cascuta reflexa* (Pa)

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Dodder, round headed, \pm_{mS}^{TM} &) algusee. *Cuscuta capitata*, *Box.* (Pa)

Dog's bane,)£&» sugangoor. *Apocynum*, (H)
It is doubtful, however, whether any of this genus are to be found here; this native name more probably applies therefore, to *Ichnocarpus frutescens* of PROF. LIND. the *A. frutescens* of *Linn*, sometimes used as a substitute for sarsaparilla, or possibly to *Paederia foetida*, the *A. foetidum* of *Burm.* the root of which serves the Hindoos as an emetic.

Dog's tooth violet, iJ^^^gik^ junglee kanda. *Erythronium Indicum*, (B)

Dolichos, bean shaped, ^/±* mutkee. *Dolichos fabasformis. Lin.* (C) It is much esteemed as a vegetable.

Dolichos, black seeded, ^ ^ bun seem, ^ J5 lal seem, ^ U^, jeea seem, +>+» J'<5;^ goordalseem, Jb bulur, R. *Dolichos lablab.* (C) Much used by natives, and often their chief food on a march or long journey.

Dolichos, Chinese, ^ r ^ rooans, U?y loobeea, لوبها loob'ha, |jy. ^sj^i pu'haree boora. *Dolichos*

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Sinensis. (C) Produces what is called the Asparagus bean.

Dolichos cultratus, see Iluzar bean.

Dolichos, Pertab Sing's ^{^SSLSX*} ^{^Jjj}, Pertab-sing k'eh seem. *Dolichos purpureus*. (C) A good substitute, when cut up fine, for French bean before that vegetable is procurable.

Dolichos pruriens, see Cowitch.

Dolichos, sabre podded, ^{^J^} muk'hun seem, ^{ft^s^s^} chofeseem, ^{^M} ublutn. *Dolichos gladiatus*, (C)

Dolichos, small fruited, by boora, ^{^c^} Wburbuttee, ^{uJji} fook, ^{^y} loobee. *Dolichos cutjang* (C) Considered a good substitute for French bean.

Dolichos Tranquebaricus, see Tranquebar bean.

Dolichos, two flowered, ^{±j* >j£} kurt'hee, ^{^AIS} kult'hee, ^{Jy'} fool. *Dolichos biflorus*. Will. (Tw.)

Doodia, hare's foot ^{^S|*LS!J\$} gooluk chakulce, R. *Doodia Lagopodiodes*, *It ox*. (H)

Doodia, painted, ^{|Z*-Jfc*»} sunkar juta, R, *Doodia picta*, *liox*. (A)

Dorema, ammoniac, ^{<j£)} ashu/fc. *Dorema ammonicum* (II) The stem and fruit yield gum

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ammoniac, used as an expectorant, and discutient.

Dracoccephalum Royleanum, Bee Indian dragon's head.

Dracontium polyphyllum, see Purple stalked dragon plant.

Dragon's blood plant, *Dracopis* *alakhoo-
een*, *Dracopis* *aeda roomee*, *Dracopis* *khoo
seeaoshan*. *Calamus Draco*. (H) The resin is
erroneously considered astringent by native prac-
titioners.

Dragon's, head, Indian, *Dracopis* *balungoo*, *Draco-
cephalum Royleanum*, *Dr. lio** (H)

Dragon plant, *Dracopis* stalked, *Dracopis*
jungle kundec, *Dracopis* *kaimn'ch kundee*, *Dracopis*
noosht, *Dracopis* *aecna noosht*, *Dracopis* *arnubeen*,
Dracopis *r/ilool*. *Dracontium polyphyllum*. (II)
Lindley says the species is not found in India,
but *Ainslie* and *Loudon* both name it as an Indian
plant. The root is said to be antispasmodic, and
a valuable remedy in asthma; it is used by
natives in hemorrhoids.

Dryobalanops aromatica, or *caniphora*, see
Camphor tree.

Eagle wood, see Aloes wood.

Earth-nut, American, or Manilla gram, **مونگ پہلی** moong p'hulee, eJ^t^^SjOoulaeetee moong, f K^W ^4*- cheena badam. *Arachis hypogca*, (H) Generally roasted before eating it.

Ebony, see Smooth date plum.

Ebony tree, j^H? téndoo, ^« saj, <g&j\ arduj. *Diospyrus melanoxylon*, PROF. LIND. (T) The wood is valuable, and the bark, mixed with pepper, is given for dysentery by native doctors.

Ebony tree, Indian, ^-y^l wbnnoos. *Diospyrus eben aster*, *Dr. Ro.* (T)

Echinops echinatus, see Prickly globe thistle.

Echites antidysenterica, see Medicinal Oleander.

Echites, clove leaved, iJtft* ma-lutee. *Echites carryophyllata*, (Tw.)

Echites, long-leaved, ^j* hurkee, R. *Echites macrophylla*, *Rox.* (Tw.)

Echites, shrubby, ^/Ai*" seeam-u-luta. *Echites frutescens*, *Rox.* (Tw.)

Echites, two-stemmed, LJ^J£* hapurmalee, R. *Echites dichomata*. *Rox.* (Tw.)

Eclipta, trailing, ^J^jki b'hrungraj, //iy. boon

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gra, ^ y ^ khushooreea,)j&& b'hungra. *Eclipta prostrata*, (Tr) Used by native practitioners as an application to reduce elephantiasis.

Eggplant, common, l^W^r? bun b'hanta, U>1\$1 b'hanta, &£& bégun, oW^^ badunjan, ^/i^f b'hangu. *Solanum melongena*. (H) There is one variety that attains an enormous size, but the most esteemed is a white kind of moderate dimensions.

Egg-plant, cylindrical, ^J^t^^ koolee bégun. *Solanum longum*, *Rox.* (H)

Ehretia, box leaved, *J^ pal'eh. *Ehretia buxifolia Will.* (S) The succulent root, in decoction, is considered a purifier; and Mahomedans esteem it an antidote to vegetable poison.

Ehretia, umbelled, &£ kunuka. *Ehretia umbellulata Dr. Wall.* (T) Dr. Wallich says he is, from not having seen the fruit, unable to decide the true genus of this tree, which is either an *Ehretia* or a *Beurreria*.

Elaeocarpus serratus, see Saw leaved olive.

Elaeocarpus lance-leaved, ^i^i^ sufed pae. *aeocarpus lanceofolius, Eox.* (T)

Elagnus conferta, see Close oleaster.

Elate, prickly leaved, $y^{\wedge\wedge}$ sudoolee. *Elate sylvestris*. (T) The fruit is of sweetish taste and used by poor people to chew like the areca nut.

Elder, common, $^{\wedge\wedge}1$ u/*tee, cA* $^{\wedge}$ khuman. *Sambucus nigra*, (T)

Elecampane, $^{\wedge}j$ rasun, j^{\wedge} Aunus, $u)j\&|$ alneoon, $^{\wedge\wedge}$ junaA. *Inula helenium*. (H)

Elephant, or wood, apple, uu ϕ i keet, $u^{\wedge}ji$ kooét, uu U kaoóét, J#uui* k $\acute{e}t$ bél, $Ji^{\wedge}S$ kut'h bél, $^{\wedge\wedge}t^{\wedge\wedge}jW$. b'heen koobutu. *Feronia elephantum*. (T) The young leaves have a perfume like anise, and are considered by native practitioners as stomachic and carminative: the fruit also has a strong odour.

Elettaria cardomum, see True cardomum.

Eleusine, Egyptian, $^{\wedge\wedge}1$ / * mukrajalee, R. *Eleusine Egyptica*, *Rox.* (G)

Eleusine, Indian, u ξ^{\wedge} ' J $^{\wedge}$ * mal ankuree, R. *Eleusine Indica* (G)

Eleusine, thick spiked $\backslash)j^*$ murooa, $^{\wedge\wedge\wedge}$ maad. *Eleusine coracaua*, *Cynosurus coracanus* *Lin.* (G)

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The grain is of cooling nature much eaten by the common people especially on the Coromandel coast, and Japan. The Mahrattas make a fermented*liquor from it called *?*y. bôj'eh.

Eleusine, upright, ^Jj ragee, \S)J** munroee, ^° murka; Eleusine stricata, *Hox.* (G)
A very prolific grain.

Elm, £15 na*/, ^laš*** seekhdar, ^J^ naroon. *Ulnus lancifolia*, *virgata*, and *integrifolia*. (T)
Are all mentioned by *JRoxbvrgh* as inhabitants of the East, and the Telinga name of the last species is *Nalee*.

Embelia, currant fruited, i_£^v_f W bae burung, UXJ&AJ babérung, R. *Embelia ribes*, PRO. LIND. (C)
The berries have a slight pungency, and are used to adulterate black pepper.

Emblica officinalis, see Shrubby myrabolan.

Embryopteris glutinifera, see Date plum.

Endive, common, ^^ kasneo, ^ kuroo baJjb hundba. *Cichorium endiva*. (H)

Engelhardtia, Roxburgh's, yj~ly. bôlus, R. U^1U*« seelapôma. *Engelhardtia Roxburghiana*, *Dr. Wall.* (T)

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Enhydra repens, see *Creeping mecyera*.

Epidendron, «*l[^] purgach'h,)J[^]W banda. *Epidendrum*, or perhaps *cymbidium*, two genera of parasites.

Epipactis, *babiana*-leaved, ^3yi UI[^]. *chuteea shoo/mr*, R. *Epipactis babianafolia*, *Itox*. (H)

Eranthemum, *nervose*, ^ ^ S K kala jatee, (*StyZ* *goolusham*. *Eranthemum pulchellum*. (US)

Eriodendron anfractuosum, see *Silky cotton tree*.

Eria, *panicled*, ±J*jflj* n^oak^ofe. *Eria paniculata*. (Pa)

Erica, see *Heath*.

Eriobotrya japonica, see *Common loquat*.

Ervum hirsutum, see *Hairy tare*.

Ervum lens, see *Lentil*.

Erythrina Indica, see *Indian coral tree*.

Erythrina ovalifera, see *Oval-leaved coral tree*.

Erythronium Indicum, see *Indian squill*, and *Dog's tooth violet*.

Eugenia, *bractiate*, v ^ ' V ^ u s ¹ ^ hujlee m^en'h-dee. *Eugenia bracteata*. *Hox*. (S)

Eurya Chinensis, see *Saw-leaved teruströmia*.

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Eugenia Jambolana, see Java plum.

Eugenia jam bos, see Common rose apple.

Eugenia Malaccensis, see Malay apple.

Eugenia paniola, see Watery rose apple.

Eugenia pimenta, see Pimenta tree.

Eupatorium, spreading, *tM^j*) seeupunah.

Eupatorium repandum. (H)

Euphorbia, see Spurge.

Euphoria litchi, see Leechee.

Eurya Chinensis see Saw leaved ternstromia.

Euiyale, prickly, *lil^o muk'hana*. **Euryale ferox**, (A)

Exacum, four celled, *ur^r** koochuree. **Exacum tetragonum**, *Rox.* (H)

Faeniculum panmorium, see Sweet fennel.

Fagara, ash leaved, &*; budrunga. **Fagara piperita**, (S)

. **Fagaria**, see Strawberry-

Fennel, Eastern giant, *j y ^ feshoo^, cJjB hung*. **Ferula orientalis**, **F. ammonifera**, *JLSm.* (H) Yielding a gum resin similar to amoniacum, occasionally prescribed by the Hakeems.

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Fennel, sweet, «Juu sunf, *)jy» sô,ooa'h, مايرت maeuree, uA*W badeean, ^ijlj razeeanuj, شمار shumar, ^U-*J busbas, c^ ^ shumrut, LJU*^ shubut, £j£ shood, Lj^Vufe pan mu'hurec. *Faeniculum Panmorium, DC. Anethum panmori, Rox.* (H) The aromatic seeds are used by natives as a carminative and stomachic.

Fennel-flower, Indian, *^SK kalajeer'eh, iU*« ASM seea'eh dan'eh, j&y* soonecz, hj& mugreela. *Nigella Indica, Rox.* (H) The seeds are carminative, and, mixed with oil, are used to cure eruptions of the skin.

Fenugreek, common, *}I^ hulbeh, 1^5*4'^ inee-t'hee, m«U*» shumleet, *ty& kartuneh, c,%*^ jul-julan. *Trigonella Faenugraecum.* (Tr) Used as greens, or sãg; the seeds are used by native practitioners in dysenteric complaints.

Fenugreek, horse shoe, <-&b paluk. *Trigonella comiculata.* (Tr)

Fern, ^J^J* surkhus, ^j* surkhum, <£}*!* busfaeej. Poly pod iaceae, the different species have no distinct native names.

Feronia elephantum, see Elephant apple.

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Ferreol[^]buxifolia, see **Boxleaved maba**.

Ferula, asafaetida, see **assafoetida plant**.

Ferula, orientalis, and **ammonifera**, see **Eastern giant fennel**.

Ficus, see **fig**.

Fig, caoutchouc, ji~»K kasmee, R. **Ficus elastica**, (T) Producing India-rubber; of this tree there is great abundance in the forests bordering on Assam, and some recent specimens, in blocks, have been sent down of great purity and substance.

Fig, clustered, j& gular, j£ goolur, **Ficus racemosa**, (T) The bark is used by native practitioners as an astringent, and the juice of the root as a tonic. The fruit is only eaten by the poor.

Fig, common, ^J^l unjeer, ^ teen. **Ficus carica**. (T)

Fig, downy, j£ goolur. **Ficus goolereea**, *Box*. (S)

Fig, Indian, or Banyan tree, y. bur, cu* but. **Ficus Indica**. (T) Grows to an immense size and extent.

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Fig, round-headed, *j**S* adumbur. *Ficus glomerata*. (T) Large leaved, and shady.

Fig, sacred, *J^JJ* peepul, *&)yu]* wsoat'eh. *Ficus religiosa*. (T)

Fig, veined leaved, *^>*, pakur, *t^b* pakureea. *Ficus venosa*. (T)

Filbert, *J ^ bundu^*, *JJJJ* funduA. *Corylus Avellana*, *var Alba*. (S)

Fir tree, see *Casuarina muricata*.

Flacourtia, many spined, *JUb*, paneeala, *yj~SV*, *^JTJJJ* talus putree, *JMSJ* oudara. *Flacourtia cataphracta*. (S) Gives a fruit something like a plum, but astringent.

Flag, sweet, *^ buch*, *lyu^MaS* *^ussub booa*, *lj&Mg^{ur}* *v*5^^{nee}* *V!^* sooareh, *^r^* oouj. *Acorus calamus*. (A) The root stock contains a bitter aromatic principle, and is a favorite medicine with Indian practitioners in indigestion, &c.

Flagellaria, Indian, **A»vA** harchar'eh, *بن چندر* bunchundur. *Flagellaria Indica*. (S)

Flax, common, *^^^1* atusee, *^jg^* teesee, *مسينا* museena, *u-iy^*- khunoof, *|j~*?|* atees. *Linum usitatissimum*. (H) Hitherto only cultivated in

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India for *tkf* oil seed; but now considered worthy of attention as a fibre.

Flax, three styled, ^{^j^ J^} gul ashrufee Li-
 ««
 num trigynum. (S)

Fleabane, torn, sms^ bukchee. *Conyza lacera*,
Box. (S)

Fleawort, or Plantane, Jj*H ispu^ool, ^ I J J ^
 33 supundan-u-tulkh, U^kS^jj busur fuloona.
Plantago isphaghula, *Rox.* (H) The seeds make
 an emollient mucilagenous drink.

Flos regina, see Oblong leaved *Lagastreaemia*.

Flower-fence, or Barbadoes pride, «^J^ gul
 lur'eh, v^r? \Ji£ kurush churun. *Poinciana pul-*
cherrima. (S) The infusion of the leaves is a
 powerful emmenagogue so as even to cause abor-
 tion; they are also purgative. The wood makes
 the best charcoal, for hookah fire balls.

Fluggea, white, *x*sr* L\XSUM sufed mu/minud.
Fluggea leucopyrus, (S) The root, slightly astrin-
 gent, is eaten by the poor.

Frankincense tree, cAV luban, g£-o bustuj, J*JS
 kundur. *Boswellia thurifera*, *Cole.* (T) The resin
 used as incense, and in some diseases by native

practitioners; it is the *AIPOPOS* of Dioscorides.

Fraxinus floribunda, see Floribund ash.

Fringe tree, axil flowering, QUj. chunaluta.
Chionanthus axillaris. (S)

Fumaria, see Fumitory.

Fumitory, common, a[^]Iat^{*} shahtur'eh, CJXJIXISI
bu/el'eht wlmuluk, *y[~]±H putpupr'eh. *Fumaria offi-*
cinalis. (H) Native practitioners consider it
diuretic, and it is slightly aperient, but its use in
cutaneous diseases, and obstructions of the liver,
has been discontinued by Europeans.

Fumitory, small flowered, jrj^{**}U[»] sha'h turuj.
Fumaria parviflora, (H) Used with black pepper
in ague, Dr. Royle considers the Indian plant,
F. Vaillantii. It is the *caTM_s of the Greeks.

Furze, dwarf, 3j rutum. *Ulex nanus*, (S)

Galanga, narrow leaved, \y.J^{^*} kunjan boora.
Kaempferia angustifolia. (II) The root is used as
a cattle medicine.

Galanga, round rooted, ^i^ s\$y& b'hoon chu-
pa, ^^f-ljtf b'hoouachuropa. *Kaempferia rotunda*.
(H) This has been erroneously supposed to

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yield the ^pdories of the druggists, sec Broad-leaved turmeric, and Zedoary; the flowers are very fragrant.

Galanga, sessile, %y 1,dJ^ chundra nioluka. *Kaempferia galanga*, *Alpinia sessilis* K σ . (H) The roots have an agreeable odour, and warm aromatic flavor, slightly bitter, and are used medicinally by the native practitioners.

Galangal, the greater, J.~*^ khoolunjan, >P)j~^ khusroo daroo, ^ kuleojun. *Alpinia Galangala*. (H) The roots are the *Galanga major* of the druggists, and much used by native practitioners for cure of dyspepsia; they are pungent, acrid, and aromatic.

Galbanum, common, *ii' ^uu'eh, JJ.^U narfeel. *Galbanum officinale*, (S) The gum has the properties of assafetida, but is less powerful; the drug is called ^u. beerzud, and **ty bureej'eh. *Lindley* in his *Flora Medica* says, " It would appear that the opinion of this drug being furnished by *Bubon Galbauum*, *Lin.* or *Ferula fcrulago* is unfounded."

Galedupa, Indian, £>/ kurunj,)y\$£ kunin-

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jooa Galcdupa Indica, *liox.* or *Robinia mitis*,
Linn (T)

Gamboge-tree, Indian, **tixjj* ytoc assar'eh
reound, *Stalagmitis ovalifolia*, S. Gambogio'ides
Ko: *Scanthochymus ovalifolius Rox.* (T) Dr.
Wight maintains that this tree yields Gamboge
in Ceylon.

Gaertnera, clustered, *UjjbsU* mad'hoolta, *UI ^ U*
maltee luta. *Gaertnera racemosa*, (T) Loudon,
although giving it the habit of an evergreen
tree, terms it a climbing woody shrub, which
accords with the native term *luta*.

Gardenia, broad leaved, *JJ\J* papra. *Gardenia*
latifolia. (S)

Garcinia cowa, see *Cowa maugosteen*.

Gardenia dumetorum, or *spinosa*, see Emetic
nut.

Gardenia floida, see Cape jasmine.

Garcinia iinngostiun, or *lancaefolia*, see Com-
mon mangosteen.

Garcinia pictorias, or *gambogia*, see Gam-
boge mango-ttrn.

(*lardneria*, ovate, *LS^^* /mldee, (in Khassee)

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I[^]-Uj oochasooa (in Napal) Gardneria ovata,
Dr. Wall. (C)

Garland flowers, scarlet, b! ^ b'hoodu. Hedy-
chium angustifolium, (H)

Garland flowers, sweet scented, aaiU[^]go^orūk-
nat'ha, «*» JI,a doolalu chump'eh. Hedychium
coronarium, (H)

Garlic, itr[^] bhsun, ^ h,s6n, R. ^-^ b bul-
bous, f^oy s^om. Allium sativum. (B)

Garlic pear, smooth, ^ burun, ^ burmee,
4r? burna, Lwl tupeea. Crataeva tapia. (T) The
bark is used as a tonic in typhus fever.

Garuga, wing-leaved, fj*. joom. Garuga pin-
nata. (T)

Gelonium, fasciculated, ^/i[^] bun narungee,
Gelonium fasciculatum. (S)

Genista Lusitanica, see Portugal broom.

Gentian, depressed, ViUkL. jun/eeana. Genti-
ana verticillata, *Linn.* (Cr)

Gentian, kuroo, oU[^] gooshad. Gentiana kur-
roo, *Dr. Ro.* (H)

Gentiana chirata, see Chirayta.

Gilly-flower, JJJ ^urunfnl. Mathiola in-
cana. (H)

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Ginger, narrow leaved, uJj^l adruk, زنجبيل
zunjubeel Zinziber officinale. (H) Medicinally
useful in many cases; there are several species
of this genus, which are indigenous* to the
hills.

Ginger, wild, I^T^ bun ada. Zinziber casu-
munar. (H) Once used in medicine, but now out
of repute.

Glasswort, Indian, c-&Jb^j^ jôdoo palung.
Salicornia Indica, Va. (Tr) Soda may be made
from this plant.

Globe-amaranth, annual, J**s'' Ji gul muk'h-
muL Gomphrena globosa. (H)

Gloriosa, superb, u_y * ^ kareearee, R. %&'\$_ksy&i
eeshooee langula, R. Gloriosa superba. (B)

Glycine abrus, see Wild Jamaica liquorice.

Glycine tomentosa, see Madras horse gram.

Glycyrrhiza echinata, see Prickly liquorice.

Glycyrrhiza hirsuta, see Hairy liquorice.

Gmelina, tree_g^ gumar, ^S^ ^tf^ jooganee
chuookur, R. Gmelina arborea. Mox. (T) Yield-
ing good timber.

Gomphrena globosa, see Globe amaranth.

Gooseberry, country, see Winter cherry.

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Gooseberry, smooth, U[^]S kureea. *Ribes uva crispa*. (S) Found only far to the North-west,

Goosefoot, white,)j*£i but'hooa, ^g^ kulfee. *Chenopodium album*. (H) It forms one of the numerous greens, or *sägs* of natives.

Gosypium, herbaceum, see Cotton tree.

Gourd, Egyptian bitter, ^sjj&i& g'heea tooree, Jj^ a doondool, R. ^1^ turaee, ^s*^hji P^u roola keendee. *Momordica luffa*, *Luffa Pentandra Rox.* (Tr) Used as a vegetable in curries.

Gourd, hairy bitter, h£ kureela, or kuréla. *Momordica charantia*, (Tw.) There are two varieties, the long and the short, the former is the best.

Gourd, mixed bitter, Jj\$y^ kunkrool, *y» soom. *Momordica mixta*, *Rox.* (Tr)

Gourd, single-styled bitter, u-^ buwb. *Momordica monodelphia*, *Rox.* (C)

Gourd, spiked bitter, |^lr> bura kúrela ^ woocheea. *Momordica muricata*, (Tr.) Much esteemed for giving a pleasant bitter flavor to curries.

Gourd, bottle, I/ȳ toomra, u_r/v̄ toomree, كدو kudoo, W g'heea, j*\$kj* hureea kudoo, قرع

Aura, *fy looka*, ^ ^ ^ *uékteen*. *Cucurbita lagenaria*. (T) Used, as its name implies, by pilgrims and hill people, to carry water, when scooped out; it is then called ^y" toomba, and hence the pipe used by snake charmers ^j^y" toombe.

Gourd, common snake, 1 ^ = ^ *chuchoonda*, &y?*" *chuchoonga*. *Trichosanthes anguina*. (Tr.) Used in curries, &c.

Gourd, dioceous snake, JJ^J *puroour*, J^b *pulooul*. *Trichosanthes dioica*, *Rox.* (Tr.) A common vegetable used in curries.

Gourd, palmated snake, J^s'° *mukhal*. *Trichosanthes palmata*, *Rox.* (C) The fruit is considered poisonous, but, pounded with warm cocoanut oil, is used for sores, in the ears, and in cases of ozoena.

Gram, black, or hairy podded, see Hairy podded kidney bean.

Gram, common, see Chick pea.

Gram, green, see Small fruited bean.

Gram, Madras horse, ^US *kultee*, *Glycine tomentosa*, (C) It is used by the lower classes as food.

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Grass, bearded apluda, |*jjj\$ goorooma, R.
Apluda aristata, *Linn.* (G)

Grass, diandrous bent, ^ ^ ^ ^ béna jönee, R.
Agrostis diandra, *Rox.* (G)

Grass, thread-like bent, 1^=*. juneeooa, cj^a
doob. *Agrostis linearis*, *Rox.* (G)

Grass, cyperus, ^j^S kuseeroo. *Cyperus tube-*
rosus, *Linn.* (G;

Grass, bulbous-rooted cyperus, ^.jVy^ ^j***
ch'hoota gôt'hoobee, R. *Cyperus dubius*, (Tu)

Grass, compressed cyperus, t^W chooncha, R.
Cyperus compressus, *Linn.* (G)

Grass, irregular cyperus,)y& bu'hooa. *Cyperus*
difformis, *Linn.* (G)

Grass, naked cyperus, ^g^ J^ goola mét'hee,
R. *Cyperus nudus*, and *seminudus*, *Rox.* (G)

Grass, one-headed cyperus, ^.jej* goot'hoobee,
R. *Cyperus monocephalus*, *Rox.* (G)

Grass, pangorea cyperus, L^^U-S^^ chumatee
patee. R. *Cyperus Pangorei*, *Linn.* (G)

Grass, round stemmed cyperus, Wy« moot'ha-
Cyperus rotundus, *Linn.* (G)

Grass, running cyperus, *&ko^h paneemu,
lung'eh, R. *Cyperus distans*, *Linn.* (G)

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Grass, slender cyperus, l[^]y[^]fti nagur mot'ha, R. *Cyperus pertennis*, *Rox.* (T)

Grass, tall cyperus, V-[^]lr? bura choocha. *Cyperus Iria.* (G)

Grass, upright cyperus, s[^]v̄y. burt'hee, R. *Cyperus verticillatus*, *Rox.* (G)

Grass, water cyperus, yjfc, patee. R. *Cyperus inundatus*, *Rox.* (G)

Grass, winged cyperus, *£dUJi gul mulung'eh, R. *Cyperus elatus*, *Linn.* (G)

Grass, dog's tail, 1[^]/i* munrooa, ^Tjt/[^] munrooe. *Cynosurus coracanus*, *Linn*, or *Eleusine caracana*, *Rox.* (G)

Grass, doop,)j£*?* juneeooa, ^4 doob, | -!jj& doorba, R. *Panicum Dactylon*, *Linn*, or *Agrostis linearis*, as it is sometimes erroneously called (G) See thread like bent grass.

Grass, elephant or cat's tail, ^ ^ ^ goondnee, هوگلا hoogla, R. *Typha elephantina*, *Rox.* (A)

Grass, Job's tears, J£ gurgur. *Coix lachryma.* (G)

Grass, lemon, J& ^ gund bēl, ^4j/ goor geea, اسخړ askhur, ÅU UJJ[^] gund'ha been'eh, yj[^]^/ wg'hun gas. *Andropogon Schsenanthus.* (G) The

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infusion of the leaves toasted, is given by Indian practitioners to children with weak digestion, and the infusion of the plain leaves is well known as a refreshing drink for persons troubled with fever.

Grass, meadow, ^fii kush, ^V koosha. *Poa cynosuroides*, *Linn.* (G) Held sacred by the Hindoos, and employed in religious ceremonies by Brahmins.

Grass, smooth meadow, ^jS kônee, R. *Poa unioloïdes*, *Linn.* (G)

Grass, slender millet,]^J^JJ^J^ cheeree cheera, R. *Milium sanguinale*, *Rox.* (G) A pasture grass.

Grass, thread-like millet, V-^&K kanka jureea, R. *Milium filiforme*, *Rox.* (G) A pasture grass.

Grass, needle, ^^jd^X* sunk'ha hulee. *Andropogon aciculatus*. *Linn.* (G) Roxburgh gives as its synonyme *Raphis trivalvis* of *Lour*, which however is placed by *Lindley* as of the genus *Chrysopogon*.

Grass, bristly panic, ^ t f J V] / bura jal gantee, R. *Panicum setigerum*, *Linn.* (G)

Grass, broken panic, *tyU nardul'eh, R. *Panicum interruptum*, *Linn.* (G)

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Grass, hairy panic, $y^{\wedge}tfJV$ j_al gantee, R. *Panicum hirsutum*, *Ko.* (G)

Grass, Italian panic, $il/^{\wedge\wedge}$ kangun, $j\text{>}K$ kangoo, $8l$; rala, $)jjS$ kōra, R. *Panicum Italicum*. (G)
Cultivated for its grain, of which it produces fifty-fold; for many purposes it is but little inferior to wheat.

Grass, mountain panic, $^{\wedge\wedge}y^*$ sooatee, R. *Panicum holcoides*, *Rox.* (G)

Grass, prickly panic, $yJ^{\wedge}J\ll^*$ makurjalee, R. *Panicum ciliare*, *Linn.* (G)

Grass, purple panic, $^{\wedge\circ\wedge}$ shama, R. *Panicum colonum*, *Linn.* (G)

Grass, stagnant panic, J^*3 dul, R. *Panicum stagnicum*, *Linn.* (G)

Grass, upright panic, $^{\wedge}$ lupta, $I;U^*$ \vee^{\wedge} doora beera, R. *Panicum verticillatum*, or semiverticillatum, *Rox.* Quære ? may not this rather be *Sattaria verticillata* (G) Eaten by the poor in dry grain countries, but very inferior.

Grass, wheat-like panic, lyt^* sanooa, $cj'y^{\wedge}$ sanooan, $t\ll Lt$ shama. *Panicum frumentaceum*, *Rox.* (G) A nourishing grain; yielding, in good soil, fifty-fold.

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Grass, scented *ji*[^]) wscer. Uṇ beena or béna, گاندر *gandur*, 8U bala, ^W bal'eh. *Andropogon muricatus*. (G) The roots (^ ^s-^ khuskhus,) are used to make screens or *tattees* : which being kept moist in the hot weather, cool the hot air, and emit a pleasant fragrance.

Grass, serrated,]i>o dé tara, R. *Andropogon serratus*, *Linn* (*Q*)

Grass, smooth, UJ^UdJJ gund'ha goorana, R. *Andropogon glaber*, *Rox*. (G)

Grass, two colored, j\y.*- Sṭf kala jooar. *Andropogon bicolor*, *Rox*. (G)

Gratiola monniera, see Thyme leaved herpebtes.

Gratiola serrata, see Serrated hedge hyssop.

Grewia, asiatic, t*H^ p'halsa, isj& shukuree. *Grewia Asiatica* (T) Bearing a small berry, much liked by some people,

Grislea, downy, j*>£ d'haoo, L₂SJ^^ d'haree, 'ytj d'hoou. *Grislea tomentosa*, or *Lythrum fruticosum* *Linn*. (S)

Guava, red, fiarj*'' J* ^ sufree am, f^^jsu* sufree jam. *Psidium pomiferum*. (T)

Guava, white, c ^ l amroot, (d^ji** sufree am

rU jam. *Psidium pyrifera*. (T) The fruit has a strong smell.

Guettarda, great flowered, *^tf £ ^ » puneer ka gach'h, *Guettarda speciosa*. (T) The flowers are sacred to Sheva and Vishnoo.

Guilandina, or Nicker tree, small oval leaved, g>j& kutkurunj, &=* gujga, y^ms^/ ^ n a t a ^ u-runjee, ^jssk^^ kutkuleejee. *Guilandina bonduc*, or *G. bonducella*, *Linn.* *Caesalpinia bonducella*, *Fleming*, and *Rox.* (C) The seeds are used by native doctors as a tonic; and pounded with castor oil, for an external application in incipient hydrocele, as are the leaves fried with castor oil for hernia hemoralis. Dr. Royle supposes it to be one of the kinds of *Eagle stone* of the ancients.

Guilandina Moringa, see Horse radish tree.

Gum arabic tree, see Acacia.

Hastingia scandens, see Climbing holmskioldia.

Heath, ^SLc al/*ee, g's> kukhuj, ^ nukhuj\ *Erica*. (H) The different species have no distinct native names.

Hedge hyssop, serrated, <%> s^yV b'hoomee

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neem, R. $\overset{\cdot\cdot}{\text{S}}^{\wedge}\text{-v}^{\wedge}\text{y}^*$ sooét chumnee. *Gratiola serrata*, *Box.* (H)

Hedychium, see Garland flower.

Hedysarum alhagi, see Prickly stemmed manna plant.

Hedysarum, bat winged, $\overset{\cdot\cdot}{\text{Jf}}^{\llast}$ chumchurkha *Hedysarum vespertilionis.* (H)

Hedysarum gyrans, see Moving plant.

Hedysarum, oval-leaved, $\overset{\cdot\cdot}{\text{L}}^{\wedge}; \text{JUt}$ shal panee, R. *Hedysarum Gangeticum*, *Box.* (H)

Hedysarum, senna leaved, $\overset{\cdot\cdot}{\text{J}}^{\wedge}\overset{\cdot\cdot}{\text{JXXA}}$. jungle mungee. *Hedysarum senno'ides*, *Ormocarpum sennoïdes*, PROF. LIND. (S) The root is tonic, and stimulant.

Hedyotis, auriculated, tf5 UL^{\llast} muteea lata, R. *Hedyotis auricularia*, *Linn.* (H)

Hedyotis, climbing, $\overset{\cdot\cdot}{\text{S}}^{\text{?}}$ gujee. (in Sylhet,) R. *Hedyotis scandens*, *Box.*

Hedyotis slender, $\text{I}^{\wedge}\text{KA}^{\wedge}$ gôshuga sôa, (Nepal) *Hedyotis gracilis*, *Dr. Wall.* (H)

Helianthus annuus, see Sun-flower.

Helianthus tuberosus, see Jerusalem artichoke.

Helicteres isora, see East Indian screw tree.

Heliotropium Indicum, see Indian turnsole.

Hellebore, black, [^]Ij[^]. khurbu£ asood, &>j*»
 *U« khurbu£ seea'eh- **Helleborus niger**. (H) The
 root is a narcotic acrid poison, though employed
 as an emmenagogue, and hydragogue.

Hellebore, fetid, 4f^{ur}* &>j[^] khurbu£ supéd.
Helleborus foetidus. (H) Used as a cathartic, and
 vermifuge.

Hemcrocallis fulva, see Cq^{er} colored day
 lily.

Hemidesmus Indicus, see Indian sarsaparilla.

Hemlock, common, ui&[^] shookran, ^j[^]A
 sheekran. **Conium maculatum**. (H) Powerfully
 narcotic, and as a medicine acting on the consti-
 tution like opium.

Hemp, Indian, ^ sun. **Crotalaria juncea**. (S)

Hemp, true, ^ bujeea, c X ^ b'h&ug, t[^]tf
 ganj'ha, L₄- - ^ ^unub. **Cannabis sativa**, (US) Indi-
 genous to the hills, and cultivated generally in
 small quantities for the fibre, and the fruit and
 leaves for their intoxicating property.

Henbane, common, g^x> bunj, ^^jj[^]- cJ>?*
 ajoan khurasanee, &//*» scecran, ^;1 arusfci,

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•*ifcj beenj- Hyoscyamus niger. (H) A powerful narcotic employed with advantage in spasmodic affections, rheumatism, and gout.

Henna-plant, the, ^ kna, u5'<V** mén'hdee, vj&j) & rkan» Lawsonia inermis, (T) The fresh leaves, beat up with catechu, dye the nails or skin of a reddish orange, much admired by Indian damsels. The Arabs, and Jews too, use it to dye their hair, and beards, as also some Europeans in combination with other substances, but it always retains the reddish tinge.

Heritiera minor, see Lesser looking-glass plant.

Herpestes, thyme-leaved, ^^s.j^ shooutchumnee, ^ ^ a l ad'ha burnee, f£\J^ jul neem. Herpestes monniera, Grafiola monniera, *Linn.* (A) The whole of thi* plant is considered diuretic by the-Hindoos, and the juice mixed with pctrolium is rubbed on parts affected with rheumatism.

Hibiscus, -changeable, u- ^ j ^ Ji gul /ajaeab. Hibiscus mutabilis. (T)

Hibiscus, Chinese, j^ jooua, &yh* jason, U, jupa. Hibiscus rosa sinensis. (T) Yields a lilac dye, but not permanent.

Hibiscus, eatable, $km\hat{s}i$ b'hundee, **بہندی**
 b'heendee, $ur\hat{?}j$ ramturoee, $j''j\pm^*>\&$ d'hunroos.
 Hibiscus esculentus. (H) Roxburgh seems rather
 to identify the Okro of India with the H. longi-
 folius of Willdenow, from which he says this
 differs very conspicuously, both in the shape of
 the leaves and capsules.

Hibiscus, hemp-leaved, uy^{\wedge}' anbaree, $|-f|\sim jh$
 puloo sag. Hibiscus cannabinus. (H) The leaves
 are used as a potherb, the bark fibres as hemp.

Hibiscus Phoenician, $\{p^{\wedge}(m)^{\wedge}m$ suda su'hagun,
 $*''|\pm jy\gg$ sooreeam'eh. Hibiscus Phoeniceus. (T)
 The first native name applies more particularly
 to the white variety.

Hibiscus, poplar-leaved, $ik\&j''M$ parus peepul,
 $yj^{\wedge}i$ parus. Hibiscus populneus, or H. popul-
 neoides, *Box*. (T) A decoction of the •bark--is
 used to wash cutaneous affections, and the
 juice of the fruit serves, in Ceylon, to dye
 yellow.

Hibiscus subdariffa, see Indian red sorrel.

Hibiscus syriacus, see *Althaea frutex*, or *Hibis-*
bus abelmoschus.

Hibiscus target-leaved, see Musk okro.

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Hibiscus, twisted, 5VJ bala. Hibiscus tortuosus, *Box.* (S)

Hingstha repens, see Creeping meyera.

Hippocratea, woody, W^WjV^ Aat'ha pu'hareea, R. Hippocratea arborea, *Box.* (T)

Hogweed, spreading, U;jA&d^ gud'ha poorna, QE^ tukree, &3UA*U seenaduka, Boerhaavia diffusa, B. procumbens of *Box.* (Tr.) The root is used by native practitioners as a laxative.

Holcus sorghum, see Indian millet.

Holcus spicatus, see spiked millet.

Holly, two kernelled, *%*£ kala'h, (Nepalese). Ilex dipyrena, jDr. *Wall.* (T)

Hollyhock, j^ j£ gul kheera. Althaea rosea. (H)

Holm tree, cA^4^ sudeean, £&> bulakh. *Quercus ilex'* (T)

Holmskioldia, climbing, ^jyt^olj dadmaree, R. Holmskioldia scandens, *Hastingia scan dens*, *Box.* (S)

Honey-berry, five petaled, ^sjS 1^ poora kooee. Melicocca pentapetala, *Schleichera pentapetala*, *Box.* (T)

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Hooded-milfoil, fasciculated, ^ ^ ^ janjee, R.
Utricularia fasciculata, *lix.* (A)

Hooded-milfoil, two flowered, ^ ^ ^ ^ ^ j ^ *-
 ch'hôta janjee, R. *Utricularia biflora*, *Root.* (A)

Hordeum hexastichon, or zeocriton, see Native
 barley.

Horse raddish tree, Ust*** suhujna, «V<JU neel-
 kunt'h, ^^k* mungee, ^j&y* moongee. *Hyper-
 ranthera moringa*. *Guilandina moringa*, *Linn.*
 (T) The inner bark of the root, scraped, is used
 as a substitute for the real horse raddish, which
 it much resembles in flavor, the leaves are used
 as spinag-e.

Hound's tongue, spreading, ^LaxII^LJ lusan-
 ul-assafeer. *Cynoglossum diffusum*, *Rox.* (H)

Hoya, green flowered, ^ ^ f ° nukchuknee,
K'^ij^y teetkunga. *Hoya viridiflora*, P^ˆR^ˆO. L^ˆI^ˆN^ˆD.
Asclepias volubilis, *Linn.* (Tw.) The root and
 tender stalks promote expectoration. The leaves
 peeled, and dipped in oil are esteemed by natives
 as a cure for boils.

Hyacinth, oriental, J*i*u suwibul, *jy*l abroad.
Hyacinthus orientalis. (B)

VOCABULARY.

Hydrilla, see Alternated valisneria.

Hydrocotyle Asiatica, see Thick leaved pennywort.

Hymenodictyon, tall, u/U^SK kala buchnak.

Hymenodictyon excelsum, PROF. LIND. Cinchona excelsa. Rox. (T) The inner layers of bark possess the bitterness and astringency of Peruvian bark.

Hyoscyamus niger, see Common henbane.

Hyperanthera moringa, see Horse-radish-tree.

Hyssop, common, u~k±s^jj ^roofae eeabus, Ujj) uzooH. Hyssopus officinalis. (US)

Ichnocarpus, shrubby, UJU salsa. Ichnocarpus frutescens. (S) See also Dog's bane.

^ Ilex dipyrena, see Holly.

Ill^eebrum Javanicum, see knot-grass.

Illicium anisatum, see Star anise.

Impatiens balsamina, see Balsam.

Indian corn, see Maize.

Indian madder, two-flowered, y>t£ sha'htur'eh.

)jj*;> ^>.^ khét papura. Oldenlandia biflora, Linn. Antirrhinum humile, Brum. (H)

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Indian shot, common, $\wedge < \wedge^{AW}$ suroo'ehjeea
 بار J^I a^ulbar. *Canna Indica*. (H)

Indigo, East Indian, J*J leel, J*> neel. *Indigofera tinctoria*. (S) Producing the indigo of commerce.

Ipomaea blue, $\vee \wedge \wedge J \wedge$ neel kulmee. *Ipomaea caerulea*. (Tw) See also Purgative pharbitis.

Ipomaea, great flowered, $stmS < JS \downarrow J \wedge$ doodeea kulmee. *Ipomaea grandiflora*, *JRox*. (Tw)

Ipomaea, palmated, $UJ \wedge \text{ffS}$ langulce luta, R. *Ipomaea pastigridis*. (Tw)

Ipomaea paniculata, see Paniced batatas.

Ipomaea, square-stalked, $\wedge J >$ turbud,)j& tukurra, α^*uS nusoot, $\wedge g+M * \wedge$ dood'h kulmee, $\wedge sjh^*$ teeooree, $\wedge /$ treeputa. *Ipomaea turpethum*, *Convolvulus turpethum*, *Linn*. (Tw) The Tresh root rubbed up with milk is used as a purgative; about six inches, as thick as the little finger, being a dose.

Ipomaea, wing-leaved, $U \wedge jj \wedge Sx$ ashuf peecha, tiL_K kamu luta, R. $\wedge)f^*$ turoo luta, R. *Ipomaea quamoclit*. (T)

VOCABULARY.

Iris, Chinese, $\{1^M y^u$ soosun, $X \gg yj \gg$ soosam, $\{1^M y^u$ by peelgoosh. Iris Chinensis. (H)

Iris, Florence, $U^J I$ weersa. Iris Florentina. (H)
ArabiaA physicians consider that the root promotes suppuration. The dried root-stock is the orris root of the druggists.

Iris, Persian, $^* * *$ hoobur. Iris Persica. (H)

Isoetes Coromandeliana, see Coromandel quillwort.

Itea, large-leaved, $1^U I^1$ wchuleeaja. I tea macrophylla, *Dr. Wall.* (T)

Iunla helenium, see Elecampane.

Ixora, hairy, $j y \wedge \cup$ choonaree, R. Ixora villosa, *Rox.* (S)

Ixora, Pavetta, $* j y^* \sim \{ j j^{\wedge}$ kookoora choor'eh, R. Ixora Pavetta, *Rox.* (S)

$I \ll 5 \gg r a$, rose colored, $1 \gg \wedge \wedge \wedge J^{\wedge \circ}$ muteea chanda, (in Kasse). Ixora rosea, *Dr. Wall.* (S)

Ixora, scarlet, $\pm J \gg \langle \pm \rangle \wedge$ bandutee. Ixora coccinea. (S) The flower is offered to Sheva and Vishnoo.

Ixora, small-flowered, $\wedge j J^{\wedge} a J i$ gund'hul rung. Ixora parviflora. (S)

Ixora, tomentose, $\wedge j y^{\wedge}$ jooe. Ixora tomentosa, *Rox.* (S)

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Ixora, waving, $\text{^s}^* \text{>y} \text{>}^* \text{|\jS\&j}$ paluk joo'hee. *Ixora undulata*, *Rox.* (S)

Jack tree, $\text{J}^* \#$ kut'hul, $\text{sj}^{\wedge} \text{i}$ p'hunus. *Artocarpus integrifolius*. (T) The fruit has a strong odor, but is liked by some people.

Janipha manihot, see Cassava tree.

Jasmine, Arabian, *Ja bél*, ^J zunbu£, $\text{U} \text{z} \#$ mooteea, $\text{|^}^* \text{moogra}$, $\text{t}^{\text{s}/\wedge} \text{t}$ eeasmun, $\text{t}^{\wedge} \text{Aj}^{\wedge}$ ^urnuf* *Jasminum Sumbac*, or *Zambuc*, *Magorium sambac*, *Linn.* (S) Of this there are several varieties, of which three are enumerated by Roxburgh.

Jasmine, auriculated, $\text{L.5}^{\text{RA}} \text{^}$ jutAee, $\text{±sy}^* \text{»}$ jooee.

Jasminum auriculatum. (C)

Jasmine, Cape, ^lybcui gundu'hraj. *Gardenia Florida*. (S)

Jasmino, Catalonian, or Spanish, $\text{fcSU} \text{š-}' \text{s}^{\text{vjalat}}$, $\text{yj} \text{>}^{\wedge}$ jatee, ^U^{\cdot} ja'hee, $\text{^} \text{^}$ chumbulee, i s sumun, $\text{*}^{\wedge} \text{š}$ kund, $\text{^} \text{^} \text{^}$ malutee. *Jasminum grandiflorum*. (C)

Jasmine, downy, $\text{t}^{\wedge} \text{y}$ ^oond'eh, ^y ^oondum. *Jasminum pubescens*, *Linn.* (S)

Jasmine, laurel-leaved, $\text{◇} \text{»}^* \text{*}$ sumsui. *Jasminum laurifolia*. (C)

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Jasmine, narrow-leaved, %^''&|-> ban mulee ka. *Jasminum angustifolium*. (C) The root ground fine, and mixed with the root of *Acorus calamus* is considered useful as an external application to ringworm.

Jasmine, various-leaved, *_=^ gooj'eh, R, U1^ juooana, It. *Jasminum heterophyllum*. *JRox*. (T) Described by *Dr. Wallich*.

Jasmine, woody, t^ji)^ bura koond'eh, KUy) noua muluka. *Jasminum arborcscens*, *Rox*. (T)

Jatropha curcas, see Angular-leaved physic nut.

Jatropha glauca, sec Glaucous-leaved physic-nut.

Jatropha manihot, see Cassava tree.

Java plum, &y|+- jamoon, (\:**M kala jam. R.

Calyptanthes jambolana, now *Eugenia jambolana*, PROF. LIND. (T) The fruit is eaten, of a sub acid quality, but of very astringent quality.

Joncsia eJj^J asook, uJj^)^ ashook. *Jonesia asoca*, *Rox*. (T) A beautiful blossomed tree.

Juglans regia, see Walnut.

Jujube, j& baer, u^ beeree, Jk* cheelan, ^{مي عنابر} diirukhtee «nab, vJ^uJy^J nazuk,

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budun, *Jji kool*, R. *Zizyphus jujuba*. (S) The fruit is commonly eaten as the " native plum." The bark is used as a remedy for diarrhoea.

Jujube, or lote tree, *uʃʃj zufeezuf*, *gx'« sunj*, «y*^ humsood. *Zizyphus lotus*. (S)

Jujube, white, *c_ijij zufzoof*. *Zizyphus nitida*, *Box*. (S)

Juniper, Chinese, *^sj| arduj*, *|jy] arus*, *JW! ab'hal*, *^y^l aourun*, *jZj* arav*, *J^l ab'hool*. *Juniperus Chinensis*. (S) *Dr. Royle* mentions *J. communis* as bearing the name of *J^gjl ab'hool*, but considers it probable to be rather our plant, as being found in the hills whence the berries are brought.

Jussiaea, creeping, *Uaç'« kunchuna*. *Jussiaea repens*, *Will*. (A)

Justicia, adhotoda, see Malabar nut.

Justicia, colored, *i-&j** butearung*, R. *Justicia tinctoria*, *Rox*. (S)

Justicia, curved-flowered, «*£**&# b'hagbut*. *Justicia curviflora*, *Dr. Wall*. (S)

Justicia, double-calyxed, *Ift^UU nasab'haga*, R. *Justicia bicalyculata*, *Linn*. (H)

Justicia, long spiked, *^/^J&J oodoo jatee*. Jus-

VOCABULARY.

ticia ecbolium, *Rhinacanthus ecbolius*, *Pro. Lin.*

(US) Said to be diuretic.

Justicia, many-seeded, *tyf** ^y^- ch'hota mu-
chéta, *Tft*. *Justicia polysperma*, *Rox.* (Cr)

Justicia, panicled, *e*|ij>* krefeit, ^ oosur, toōts'⁰
muha teeta, *fM^K* kalupnata* *Justicia paniculata*,
now *Androgrophis paniculata*, *Dr. Wall.* (US)
Prized as a stomachic in cholera, dysentery, and
intermittent fever; it forms the basis of what the
French call *Drogue arnhre*; it is said also to be
an antidote to poisons.

Justicia, spotted, ^?^ becja. *Justicia guttata*,
Dr. Wall. (S)

Justicia, upright, **Jy~£* kustooleh, R. *Justicia*
verticillata, *Rox.* (US)

Justicia, white flowering, *iB&ty*»i-&b* paluk joo-
hee, *jU\$** ^*Jy*^ kbootur kee ch'har, *Ub* ^>y*»
joo'hee pana. *Justicia nasuta*, *Rhinacanthus corn-*
munis, *Pro. Lin.* (US) The fresh root bruised,
is good for ringworms, and boiled in milk is con-
sidered aphrodisical, and an antidote to poisons.

Justicia, willow-leaved, ^1 arus, ^±*& <*JK*
kalee shumbalee, ^^i bakus. *Justicia gunda-*

rusa. (US) The leaves preserve clothes from insects.

Ksempferia angustifolia, see Narrow-leaved galanga'e.

Kaempferia rotunda, see Round rooted galangale.

Kale, or borecole, $v_{\cdot} \text{---}^{\wedge} * 3^{\wedge}$ umreeb, $****/$ kurum kula, $\wedge \wedge J_{\cdot}$ p'hultee kōbee. *Brassica acephala*. (H)

Kayea, floribund, $)j^*_{\cdot} * jf$ kurum jooa. *Kayea floribunda*, *Dr. Wall.* (T)

Knot-grass, Java, $J^{\wedge} S$ k'hul, *Illecebrum Javanicum*, *Pro. Lin.* (H) The downy white flowers are used to stuff pillows under belief that their odor induces sleep, and allays headache ; whilst the root is considered diuretic.

Knot-grass, sessile, $\wedge \wedge 5^{\wedge} \wedge$ poon'eh guttee. *Illecebrum sessile*, *Pro. Lin.* (H) Used as a spinage, but the botanical name is doubtful.

Kydia, calycine, $U_{\cdot} t f l ;^{\wedge}$ choopaltea. R. *Kydia calycina*, *Pro. Lin.* (T) An infusion of the bark is sudorific.

Kyllinga, one headed, $u r t j \& j Z$ $c^{\wedge} * \ll$ soout gôt-

VOCABULARY.

hoobee, R. [^]jji nurbushee, R. Kyllinga monocephala. (G)

Kyllinga, tufted, [^]j[^]Sjj* .bura got'hoobee, R. Kyllinga umbellata. *Linn.* (G)

Lactuca sativa, see Lettuce.

Ladies' bed straw, U[^] gooma, [^] goom. Pharma-
noceum molluga. (US)

Lagerstræmia, oblong-leaved, JjU. jarul. Lagerstræmia reginae, or Flos regia. *Retz.* (T)
Loudon notes this only as an ornamental shrub growing 12 feet high ; but it is commonly found here as a timber tree.

Lathyrus aphaca, see Yellow vetchling.

Lathyrus sativus, see Chickling vetch.

Laurus camphora, see Camphor tree.

J-[^]uTus cassia, see Cassia tree.

Laurus cinnamomum, see Cinnamon tree.

Laurus sassafras, see Sassafras tree.

Lavendar, spiked, [^] nurd, [^]U nardeen, Lavendula spika. (H)

Lavendar, thick-leaved, [^]i nurd, [^]j₂U nardeen
ijj[^]F[^][^]/UJu* seetakee punjeeree, tA), ooluk-
kjeh[^] Lavendula carnosa. (H) The fresh juice

of the leaves mixed with pounded sugar-candy is prescribed by native practitioners in cynanche. *Dr. Wallich* has named this *Anisochilus*, and *Roxburgh* apparently places it as *Plectranthus strobiliferus*.

Lawsonia inermis, see Henna plant.

Leadwort, Cingalese, J[^]jJg* chuturmool, iij-chuta, }jh\$» cheetra, U[^]- c'heeta. *Plumbago zeylanica*. (US) A slice of the root serves to produce a blister.

Leadwort, rose colored. A[^] J J lal cheet'eh, Uj. JS lal chuta. *Plumbago Rosea*. (US) The bruised root is used as an external application in rheumatic affections.

Ledebouria hyocinthoides, see Indian squill.

Leea curled, ^V[^]/? bun chulta, R. *Leea crispa*. (S)

Leea, hairy, ^&^K kakujang'ha, R. *Leea hirta*, *Herb ; Banks*. (S)

Leea, long-leaved,)j&y*& Jy*«3 d'hool shumoodra. *Leea macrophylla*. (S)

Leea, staphyl,)J[^]JJSJS kookoorj'hooa. *Leea staphylen*, *Rox*. (S)

Leechee, s*s[^] leechec, Itji[^]sj* kôee poor**.

VOCABULARY.

Nephelium litchi, *Pro. Linn.* *Dimocarpus litchi*, *Low*, *Scytalia lichi*, *Box.* classed as *Euphoria litchi*, *Juss.* (T) This fruit is originally from China.*

Leek, Udi£ gunduna, uJjJ^f *zalook*, o] / kurat, JSj rukul, ^kJo teefan, *><J\$ kundan'eh, i£>|/ kuras. *Allium porrum.* (B)

Leersia, bearded, Jt^ ^jjli^ junglee dal. *Leersia aristata*, *Rox.* (G)

Lentil, \.s)y** mussooree,^^-*^ musoor, |j»** adus. *Ervum lens.* (C) It a valuable pulse, much prized, it is very prolific, and even the straw is nourishing, especially to young cattle.

Lemon, see Lime.

Leontodon taraxacum, see Dandelion,

Lepidium sativum, see Common cress.

LctTfsomia argenta, see White silver weed.

Lettsomia nervosa, see Vein-leaved silver weed.

Lettuce, garden, ^^L khus, y*K kahoo, US kuma. *Lactuca sativa.* (H) It would appear that we derive our English name for a variety of this vegetable, the *cos lettuce*, from the Arabic *khus*.

Leucocephalia, grass-leaved, [^]j[^] gooree, R.
 Leucocephalia graminifolia, *Pro. Lin.* (H)

Leucomeris, handsome, |±y& b'hoosea. Leuco-
 meris spectabilis, *Dr. Wall.* (T)

Lichen, rock, *tjtfij&i* pat'hur ka p'hool, %>*
 ch'hureela, ai[^]l ashn'eh. Lichen rotundatus,
Hott. The genus Lichen is now divided, and
 forms the several genera of Cryptogamia.

Ligusticum ajowan, see Lovage.

Ligusticum diffusum, see Spreading lovage.

Lily, Daurian, &&>& bu'hmutan, <—*&j rufeef,
*it/vy** soosun. Liliun Dauricum. (B)

Limacium carnosum, see Toadstool-

Lime, or Lemon, y[^] leemoo, *I-JJJ?** jurook,
*jx*i** neemboo, ur/M*[^] jumb'heeree, y*ff s[^]tr[^]
 shurbutee leemoo, y[^][^]y[^] ka[^]uzee leemoo, y&S
 Iee7wboo,y[^] neeboo. Citrus limetta, and'limo-
 mum. (T) *Roxburgh* includes both species under
 his C. acida. The several varieties are distin-
 guished in the native languages by their charac-
 teristics of country or quality.

Lime-tree, common, *,[^]1 a[^]ar'eh. Tilia ru-
 bra. (T)

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Limodorum, nodding, ^{^i^} pan kulee. Limodorum nutans, *Rox.* (Pa)

Limonia, climbing, ti/∫y loounga Iuta, R. Limonia scandens, *Rox.* (C)

Limonia, five-leaved, ^{^j?^} goonjee, l; j^ yj* J ash shoora, R. Limonia pentaphylla, *Rox.* (S)
The small fruit is eaten by the common people.

Linseed, ^{^ ^ 1} wsee, i-Jjj^ busruk, ^{^g»>∫} teese
LJyw soof, ^{^ ^} p'ha'ha. Linum usitatissimum, (H) Yielding flax, and the seed affording a valuable oil.

Linum usitatissimum, see Common flax, and Linseed.

Linum trigynum, see Three styled flax.

Liquorice, hairy, ^{^ ^ -JlJ^l} wssul wlsoos, *a^*V*juteemad'h, y^∫&* mulut'hee. Glycyrrhiza hirsuta. (H) Common in Bengal, and often mistaken for the true liquorice, or Liquoritia officinalis.

Liquorice, prickly, ^{^y} soos, ^{s^*»y»} soosut, ^{^j^ ^ ^ i^} jeet'hee mud'h. Glycyrrhiza echinata, (H) or more probably G. lepidota, growing

abundantly to the north of the Ganges, and especially in the ruins of Gour.

Liquorice, wild Jamaica, $g'£$ koonch, $t=?^{\wedge}$ goonja, $|j\rangle)y\tilde{>}$ butooas, $g\&$ gunj, $s^{\Delta}sr^{\wedge}$ g'hungu-
chee, $^{\wedge}sf^{\wedge\wedge}$ goomchee. *Abrus precatorius*, Gly-
cine *Abrus*, *Lin.* (C) The root is often sold in
the bazars of Bengal for the true liquorice : its
small seeds are used as weights, and termed $^{\wedge}J>j$
rutee.

Liriodendron grandiflora, see Large flowered
tulip tree.

Lolium tenue, see Slender darnel.

Looking glass plant, lesser, $|,sj^{**}y^{\sim}$ shoondree,
R. *Heritiera minor*, *Rox.* (T)

Longan, $J\&j!$ lòngan, $J^{\wedge}<j\&l$ ash p'hul. *Ne-
phelium longan*, *Pro. Lin.* *Dimocarpus longan*.
Lour, classed as *Euphoria longan*, *Juss.* *Scytalia
longan*, *Rox.* (T) A Chinese fruit of little flavor.

Loquat, common, $o^{\wedge}J$ $16^{*}a\&$, (a corruption,
there being no really native name) *Eriobotrya
Japonica*. (T) Yielding a justly esteemed fruit
of Chinese origin.

Loranthus, round, $laiU^{\wedge}lj^{\wedge}$ ch'hota manda.

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Loranthus globosus, (gen. apud *Pro. Lin.*)
Box. (Pa)

Loranthus, two-colored, IJÖU]^ bura manda.
Loranthus bicolor, *Box.* (gen. apud *Pro. Lin.*)
(Pa)

Lotus, see Water-lily.

Lovage, ^) ^ | ajooáén, ^y) amoos, »^U
nankhooa'eh. *Ligusticum Ajowan*, *Mox.* (H)
Famous for its aromatic seeds; supposed to be
rather from *Sison amomum*.

Lovage, spreading, ^I^I^/CU junglee ajoo-
áén, R. *Ligusticum difFusum*, *Mox.* (H)

Love apple, see Tomato.

Luffa acutangula, or foetida, see Acute-angled
cucumber.

Luffa, bindal, J^ bundal. *Luffa bindaal*,
Rox.-(G) Believed in India to be a powerful
drastic, useful in dropsy.

Luffa, bitter, Jy* kuroola. *Luffa amara*, (Tr)
The fruit is violently cathartic and emetic, as
also the ripe seeds. The juice of the unripe
fruit roasted is considered by natives as good
for headache.

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Luffa, clubbed, $\pm_s\}jZL>$ buntu.aee. *Luffa clavata*, (Tr) Eaten in curries.

Luffa pentandra, see Egyptian bitter gourd.

Lupine, Egyptian, or Turkish, $\}j^{*^f}$ turmus. *Lupinus thermis*. (H)

Lycopodium clavatum, see Common moss.

Lycopodium imbricatum, see Club-moss.

Maba, box leaved, y^{fjh} aeerum bulee. *Maba buxifolia*, *Ferreola buxifolia*, *JRox*. (S) The fruit tolerably well tasted, and the wood is hard and durable.

Mad apple, \mathfrak{Z}^{\gg} doorla, *solanum insanum*. (H) It is a small inferior sort of *brinjal*.

Madder of Bengal, $\&\&^*$ mujeet'h, $*\text{منجيه}$ munjee'ht'eh, ty' foo'h, $^J^J$ roonas. *Rubia cordifolia*, *R. munjista* of *liox*. (Tr) The root and stalks affording a red dye, and known in commerce as "munjeet." It is indigenous to Nepal, and native practitioners prescribe an infusion of it as a deobstruent.

Madder, two-flowered Indian, $*j\text{£}v^>i$ P \diamond papra. *Oldenlandia biflora*. (H)

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Malva rotundifolia, see Round-leaved mallow.

Mandrake plant, uXyũ-l wsturung, ɹd**f murdum geea. *Mandragora officinalis*. (H) The root is narcotic.

Mangifera, see Mango.

Mango, ^1 am, ←*^o amb, *y«! ambe'h. *Mangifera Indica*. (T) The most celebrated fruit of India, of which there are many varieties, some of which are of delicious flavor.

Mango, wild, see Hog-plum.

Mango ginger, !«>t«) amada, ^^Aa Lp^l amb huldee. *Curcuma amada*. (H) Has a strong aromatic odor like the mango, and is used in pickles.

Mangosteen, common, ɹ)*^{fi} kurundra. *Garcinia mangostana*, *G. lancaeifolia*, *Rox.* (T) A delicious fruit.

Mangosteen, cowa, 1^ kooua, R. *Garcinia cowa*. *Rox.* (T) Yields an inferior gamboge, the fruit being edible.

Mangosteen, gamboge, ^^1 ^^.^ oolaeetee imlee. *Garcinia pictoria*, *Royle*, *G. gambogia Will.* (T) The fruit is a pleasant sub-add taste. The Gamboge yielded by this tree in its crude stau.

obtained by tapping this tree, considered a good stomachic by Hindoo doctors. The tree is consecrated to Mariama.

Marica, marsh, $\underline{L}C^{\wedge}\underline{L}JJIY$ chukatee patee. *Marica paludosa*. (A)

Marjoram, common, $|\wedge js^{\wedge}jj^{\wedge}murzuTi^{\wedge}oosh$, عنقز, *anknz*, *yjty* aooeesh. *Origanum vulgare*. (H)

Marjoram, sweet, $\backslash J^*yF^{\wedge}>^{\circ}$ mureunjoosh, مرورا, *murooa*, $J^{***}e$ ssatur. *Origanum majorana*. (H)
The Hindoos offer it to Vishnoo and Sheeva.

Marsilea quadrifolia, see Four-leaved peppermint.

Marvel of Peru, $yj^{\wedge}y^*$. J^{\wedge} gul abas, $\wedge_{\pm} \pounds UJ^{\wedge}J$ *krushna kélee*. *Mirabilis Jalapa*. (F) Native doctors consider the root gently aperient.

Marygold, African, 1^*VI^{\wedge} geenda, $*>^* \pounds$ gend. *Tagetes erecta*. (H)

Marygold, French, $u^{\wedge}***^{\wedge}cM$ gul ujafree. *Tagetes patula*. (H)

Marygold, joint flowering fig, $J>^*^{\wedge}$ $^{\wedge}$ asool. *Mesembryanthemum geniculiflorum*. (H) Yielding soda.

Mast tree, $^{\wedge}1^{\wedge}^{\wedge}$ deebdar, *jjteji** deeooodaroo, $|\ast Jy \gg|$ asoog. *Uvaria longifolia*, Will. (T)

VOCABULARY.

Mastich tree, [^]Ux[^] mus*a/«ee, **j] ara'h,
بغدادی

-&e alik bu[^]rdadec, *I£ kun'eh Pistacia
lentiscus. (T) The resin is considered by native
doctor? as corroborant and balsamic, and is used
to strengthen and preserve the teeth.

Mathiola incana, see Gilly flower.

Meadow grass, v[^]la dab, [^]-*j£ koosha. Poa sy-
nosuroides, Linn, and K'6 (G) Having a religi-
ous character among natives.

Meadow saffron, [^]U[^]** soorunjan. Colchicum
autumnale. (B) It is a well known drug, acting
sometimes as a sudorific; sometimes emetic and
purgative; and in large doses, is a narcotic acrid
poison.

Melaleuca cajuputi, see Cajepute tree.

Melanorrhcea, useful, yt[^]- kheeo. Melanor-
rhoea usitata, Dr. Wall. (T) Yielding the varnish
of Martaban.

Melia azedaructa, see Margosa tree.

IVTelia sempervirens, see Ever-green bead tree.

Melilot, upright, u&J) J Ji) ikuleel al-muluk,
cJ[^].L4 shakhuk, J[^]F³[^] shunjar, vfiM^{*} moofloon.

Melilotus erecta, Trifolium indicum, Will. (H)

Melissa officinalis, see Common balm.

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Melochia, corchorus-leaved, |£}s^s&? teek'hee
ookra, R. Melochia corchorifolia. (US)

Melon, musk, V-rir*" khurbooz'eh, tyij^ khur-
buz'eh, ^ .5 ^ p'hootee, £paj buteekh, ei ^ p'hoot,
£#& fubeekh, %j&) angar'eh. Cucumis melo. (Tr)

Melon, sweet, ^sy^ kuchree. Cucumis melo
var. (Tr)

Melon, sweet Ispahan, ^U-i shumam, Cucumis
Melo *var.* (Tr)

Melon, water, L^U^U:J ab khust, y?ri| abjoo,
&)<*>} abdan, yj> turbu^, ^jZ* shureej, ^IjUw
sufunj'eh, AS^Ij b hundoan'eh. Cucurbita citrul-
lus. (Tr)

Menispermum cordifolium, see Heart-leaved
moon seed.

Menispermum hirsutum, see Hairy moon seed.

Menispermum palmatum, see Palmated moon
seed.

Mentha peperita, see Peppermint.

Mentha pulegium, see Penny royal.

Mentha sativa, see Common mint.

Mentha verticillata, see Upright mint.

Menyanthes Indica, see Indian buckbean.

Menyanthes cristata, see Tufted buckbean.

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Mesua, ferrua, written for Mesua, see Indian rose chesnut, and Fragrant mesua.

Mesembryanthemum geniculiflorum, see Joint flowering fig marygold.

Meyera, creeping, I^IU»1&IGJ& hungtsha sag.

Meyera repens, now Enhydra repens, *Pro. Lin.* Hingstha repens, *Rox.* (H) Used as greens by natives.

Michilia, sweet scented, ^i^- chu?wpa, *-&^ chumpuk. Michelia champaca. (T)

Milium, filiforme, see Thread-like millet grass.

Milium sanguinale, see Slender millet grass.

Milk vetch, hooked, *LSLSJ JJJS*) akleel ulmuluk. *Astragalus hamosus*, *D. C.* (H)

Milk vetch, true, £ kum, <&& Autad,)j& kuteera. *Astragalus verus*, *Olivier.* (S) Yields the well-known gum tragacanth.

Milkwort, wild, *jdj*** méradoo, *R.* *Polygala Arvensis.* (H)

Millet, Bengal, &jjl arzun, ^i^ cheena, ^U saooan, **.*?• cheen'eh. *Panicum miliaceum.* (G)
A cereal grass much cultivated.

Millet, common, see above.

Millet, Indian, $j)y^*$,» jôar, $^{\wedge}sj^{\wedge}y^{\wedge}$ - joondree, $بندى^{\wedge}$ joondec, $ur^{\wedge}>^{\wedge}$ joonree, &jj zurut. Sorghum vulgare, Andropogon sorghum *Hox.* Holcus sorghum, *Linn** (G) There are several varieties of which the grain is used generally as food, and as the basis of the fermented liquor called *moongh* in the hills north of Rungpoor.

Millet, Italian, IU^* . cheena, $*ii^{\wedge}$ cheen'eh, $)jjS$ kôra, $^{\wedge}g\&S$ kungnee, $5l;$ rala, $^{\wedge}/^{\wedge}$ dukhun, &jjl ar^un, $^{\wedge}K$ kakun. Panicum italicum, *Linn.* (G)

Millet, kora, $j*j\$$ koodoo. Paspalum kora, *Iiox.* (G)

Millet, punctured, $JJV^{\wedge}*V$ koodoo ka chaool, $*dj\&$ kôd'eh. Paspalum scrobiculatum. (G) This grain is a palatable food.

Millet, spiked, $]^{\wedge}W$ bajra, $_1^{\wedge}$ lu'hura, $^{\wedge}^{\wedge};^{\wedge}$ jaouris, $^{\wedge}jj)$ arzun. Holcus spicatus, Panicum spicatum, *Hox.* (G) The grain is an extensively used article of food among natives, and forms the basis of much fermented liquor that is distilled: it is believed to yield an hundred-fold.

Millet, sweet, or great, $ejU^{\wedge}*$ deeôd'han, R. $جاري$ jaree. Andropogon saccharatus, *Iiox.* Dif-

fering but slightly from *Holcus saccharatus* of *Linn.* (G)

Millet, wheat like, [^]o[^] shama, R. l^y[^] sawooua, [^]ULSi shamakh. *Panicum frumentaceum*, *Mox.* (G) A wholesome grain yielding about fifty-fold, cattle are fond of it.

Millingtonia, pinnate-leaved, 1[^]4 buteooa, R. *Millingtonia pinnata*, *JRox.* (T)

Millingtonia, plain-leaved, *&j o i b dant-urung'eh. R. *Millingtonia simplicifolia*, *Pro. Lin.* (T)

Milnea, eatable, _{ymt}S[^] gumee. *Milnea edulis*, *Jiox.* (T) Yielding a rather insipid fruit something like a Litchee.

Mimusops, hexandric, y[^]strid* k'heernee. *Mimusops hexandra*. (T) The fruit is only eaten by the poor.

Mimusops, obtuse-leaved, s[^]j£ k'hurnee. *Mimusops kairki*. (T)

Mimusops, pointed-leaved, urrHr'⁰ moolsuree, J.O bukul, sjy* ijj*i b'hôl suree. *Mimusops elengi*. (T) The flower is celebrated in the Puranas, and is one of those in the Hindoo paradise; a

distillation from them is said by Rheede to be of use in melancholia.

Mimosa Arabica, see Gum acacia.

Mimosa, climbing, %oi\$ geela. Mimosa scandens, *Rox.* (C)

Mimosa sensitiva, see Sensitive plant.

Mimosa seris, |J*J»* surus. Mimosasirissa, *Rox.* (T) The wood is remarkably strong and durable.

Mimosa, unarmed, ^ ^ laj oounta. Mimosa adenanthera, *Rox.* (S)

Mimosa, water, ±sH>jj root'hnee, yt?J lujaloo. *Mimosa natans, Rox.* (S)

Mimosa, white, smS^* sumee, tlitf^^U* sa'hee kanta. *Mimosa suma, Rox.* (T)

Mint, common, *H&j> pôdeen'eh, ^UAS nanaa, y<^ Aubu^, £*3y footunuj. *Mentha sativa.* (H)

Mint, upright, \ ^ i panee kula. *Mentha verticillata, Rox.* (H)

Mirabilis jalapa, see Marvel of Peru.

Mistletoe, j) *±* mundar. *Viscum album.* (Pa)

Mollugo, five-leaved, I;UJWS*» khét papara.

Mollugo pentaphylla, Lin. (H)

Mollugo, three-leaved,)JJ* J^ jul papara,
R. Mollugo triphylla. (H)

Momordica charantia, see Hairy bitter gourd*

Momordica mixta, see Mixed bitter gourd.

Momordica monodelpha, see Great flowered
bryony, and Single styled bitter gourd.

Momordica muricata, see Spiked bitter gourd.

Moonseed, hairy, ^Jty Jjy fureed bootee j*&
heur. *Menispermum hirsutum, Will. (T)* A
decoction of the fresh roots, with long pepper and
goat's milk is given for rheumatic, and other
pains of the limbs. The leaves when agitated
in water render it mucilaginous.

Moonseed, heart leaved, <^J> gurchu, Jj*tf gul-
beel, t^H^W bamu'hnee, J*xtf gulneel, ^ guloo,
Cocculus cordifolius, D. C. Menispermum cordi-
folium, Russell. (Cr) The tender shoots, dried,
are bitter, and used as an alterative, the root
being emetic, and considered cooling in certain
urinary affections.

Moonseed, palmated, ^l * ^ ^ulumbakee, UJUÜ
ba^a luta. *Menispermum palmatum, Pro. Lin.*
(Tw) The root is the well known Columbo root,
an excellent tonic.

Morea, Chinese, W»*o dusbu'ha, R. ur⁴*?سب*
 dusbuchundee, R. Moroea Chinensis, *Linn.* (H)

Morinda, broad-leaved, JT al, 4‡-J aooch'eh.
Morinda citrifolia. (S) The root yields a red dye.

Morinda, dyeing, ^1 ach. *Morinda tinctoria*,
JRox. (T) The bark of the roots gives a fugitive red dye. The green fruit is eaten in curries.

Morinda, exsert-stamened, ^_il^>. b'hun ach,
 JI ^ bun al. *Morinda exserta*, *Box.* (T)

Morinda, umbelled, c^fcjl^-^ ch'huta al ka-
 pat, UjJi kuleeba, JI al. *Morinda umbellata*,
Will. (S) The bark of the root yields a yellow dye, but with sapan wood a red one, and the small white blossoms are extremely fragrant.

Moringa, compact, ^ ban, *Moringa aptera*,
Dr. Ho. (T) Supposed to yield the seeds from which the *ben oil* of the ancients was expressed.

Morus, see Mulberry.

Moss, club, isjj?^^ hat'ha jooree. *Lycopodium imbricatum*, *Cole.* (Pa) First mentioned by Mr. H. Colebrooke, as a native of Bengal of the Cryptogamia class.

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Moss, common, *J^I ashn'eh, |jz*L.j&t)j> poozh-'eh durukht. *Lycopodium clavatum*. (Tr)

Mountain ebony, purple, ^y« soona. R. *Bauhinia purpurea*. (C)

Mountain ebony, taper pointed, ej^£ kan-chun, ^ ^ ^ kuchnar. *Bauhinia acuminata*. (S)

Mountain ebony, variegated, J^^ kuchnar, کچنال kuchnal. *Bauhinia variegata*. (Tw)

Moving plant, **^j£ gorachand, S^s^e bu-run chundla, R. *Hedysarum gyrans*. (H)

Mucuna altissima, see Assam cowitch.

Mucuna, itching, (see also Cowitch). LB5-2^I alkooshee. *Mucuna prurita*, *Pro. Lin.* *Carpopogon pruriens*, *Rox.* (Tw) The hairs on the legumes are sometimes used as a vermifuge.

Mucuna, white, y^UoLL khamash. *Mucuna niveum*, *Pro. Lin.* *Carpopogon niveum*, *Rox.* (T) The legume is eaten, as are also the seeds.

Mugwort, !j^« murooa, U^JuJ^^ nagdoona. *Artemisia vulgaris*. (H)

Mulberry, black, ^y^J* shu'h toot. *Morus nigra*. (T) The royal mulberry of Candahar. The bark is said to be cathartic and anthelmintic.

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Mulberry, Indian, |&ỹ toot. *Morus Indica*.
 (S) Grown as food for silk worms : the fruit being, though very indifferent in flavor, prolific, cooling and aperient, but apt to produce diarrhoea if eaten too freely.

Mullein, c o m m o n , ^ ; boosser, i^JJI^I;) *uzan* ttldub. *Verbascum thapsus*. (H) Indian doctors consider it a cure for hemeroids.

Murray's tree, ash-leaved, ^1>UJ beelzar. *Murrayia exotica*. (S)

Musa sapientum, see Banana.

Musaenda, white-leaved, UUU bubeena. *Musaenda frondosa*. (S)

Mushroom, m ^ ft - & u. b6ng ka ch'hata, y.J*)**
 /mdrutee, ^^^ - chaturmar, J ^ ^ ^ ^ j ^ ^ d'hurtee
 ka p'hool, ^ kuma, y.*s deeoou, £jj^*» suma-
 roo<7, |Z*yS kukurmuta, .. y^iy^^r^ samp k6 t6-
 pec, <>sjH* - ±j£^^ kootee ké ch'hutree. *Psalliota campestris*, (a fungus.)

Mustard, Bengal, s\$yy sursôn. *Sinapis dichotoma*, *Rox.* (S)

Mustard, grey, ^ I; C ^ « sooét race, R. *Sinapis glauca*, *Rox.* (H)

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Mustard, large white, ^1; raeaa. *Sinapis trilocularis*, *Rox.* (H)

Mustard, small-seeded, ^1; rae, JI^r^ khurdal, i-i^ui surshuf. *Sinapis ramosa*, *Rox.* (H)

Mustard, spreading, c^J** ^ee^ rae, R. i^sj^1^ kundree. *Sinapis patens*, *Rox.* (H)

Myristica, *moschata*, see Nutmeg tree.

Myrobalan, belleric, 1^ buheera, ^ bula, £l*k buleeluj, *Uḥ buleel'eh. *Terminalia belerica*, *Rox.* *Myrobalanus bellerica* of *Gcert.* (T) Ainslie reckons the fruit astringent, tonic, and attenuant; the kernels are considered intoxicating.

Myrobalan, chebulic, ^ hura, ^WAUIA huleel'eh kulan, Sjc hurla, 1^> hulda, y^j^i^ huleeluj karbulee, **> huld'eh. *Terminalia chebula* (T) The fruit is very astringent; with alum it gives a durable yellow, and with ferruginous mud a black dye; native doctors recommend it as a purgative.

Myrobalan, shrubby, &7 amla, i—Gr* suk, Sjl anoola, ^W umluj, *U1 aml'eh, &U) wmaluka. \$Ji aoola. *Emblica officinalis*, *Goert*, *Phyllanthus emblica*, *Linn.* *Myrobolana emblica* of the *Matcria Medica.* (S) The fruit is acid and

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astrigent, but when dry a mild purgative, and the flowers are considered cooling and aperient.

Myrobalan plum, *L<T aml'eh,)!*!*> hulda. *Prunus cerasifera*. (T)

Myrsine, half-serrated, ^{LB5<<JJ}. bulsee, {g&JS kuluka t'ha. (*JVewaree*.) *Myrsine semiserrata*, *Dr. Wall.* (T) The ripe fruit is eaten, and the wood is esteemed for tool-handles, &c.

Myrsine, small headed, *^U» sead'eh, y^t^sy. b'hooee buloo, (*Newaree?*) *Myrsine capitellata*, *Dr. Wall.* (T)

Myrtle, ^/-T as, tjy moord, ^aj& hudus, ^oJ^o^^Lsj oolaeutee munde. *Myrtus communis*. (S)

Myrtle, dwarf, JJ-OJ^ sunsuA. *Myrtus dumosa*. (CS).

Myrtus pimenta, see *Pimenta* tree.

Nama, Cingalese, ^&5 languleea, R. Nama *Zeylanica*, *Pro. Lin.* (H)

Narcissus, polyanthus, |j***j> nurjus, هر هفت hur'huft, f^j^ nusreen, uUr* nioozhan, زرین قدع tureen *Auda*. *Narcissus tazetta*. (B)

Narcissus, pseudo narcissus, see *Daffodil*.

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Nardostachys jatamansi, see Spikenard.

Nasturtium, officinale, Water cress.

Natchumy, see Eleusine.

Nauclea, four stamened, *i& cu^A shooét-kudum. *Nauclea tetrandra*, *Rox.* (T)

Nauclea, heart-shaped-leaved ^ ^i£ k6lee kudum, R. *Nauclea cordifolia*, *Will.* (T)

Nauclea, shady, *<*& kudum, v^^^S kudumb. *Nauclea cadamba*, *Rox.* (T)

Navel wort, cut-leaved, cJÜa*^" zukhum heeat, كرميA A'emsagur, ^-^yicytUaw Aumudut alrubaA. *Cotyledon laciniata*, *Will.* (H) The Mahomedan practitioners use the bruised leaves to fowl ulcers.

Nectarine, jJUii shuftaloo, j j ^ fursu£, 3<*y« jj] moondla aroo, *Amygdalus neectarina*. (T)

Nelumbium speciosum, see Indian sacred bean.

Nephelium, danurine, *Ijjite* danoora. *Nephelium danurum*, *Pro. Lin.* *Scytalia danura*, *Rox.* (T)

Nephelium litchi, see Leechee.

Nephelium longan, see Longan.

Nerium odoratum, see Sweet-scented oleander.

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Nerium antidysentericum, see Medicinal oleander.

Nerium oleander, see Common oleander.

Nerium reticulatum, see Netted oleander.

Nettle, notched, *^FM anjur'eh. *Urtica crenulata*, *Hox.* (US) One of the most venomous species.

Nettle, round, Uyjs l_al looteea. *Urtica globulifera*. (H) The leaves are eaten as greens.

Nettle, stinging, Ul^e buch'hata, *# gusn'eh. *Urtica interrupta*. (H)

Nettle-tree, oriental, v^y^ cheek6n, R. *Celtis orientalis*, *Will.* (T)

Nicandra, blue flowered, ^K kakunj. *Nicandra physalodes*. (H)

Nicker tree, small oval-leaved, see *Guilandina*.

***Nicotiana tabacum*, see *Virginian tobacco*.**

***Nigella Indica*, see *Indian fennel flower*.**

Nightshade, see *Egg plant* and *Potatoe*.

Nightshade, black berried, called also the Fox grape, vsy⁰*!^9 fooleedoon, ^ ^ K kamoonee. *Solanum nigrum*. (H) A grain or two of the dried leaf has been given as exciting various

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secretions, being[^] also narcotic, and generally used to reduce inflammation. The Spaniards anoint with this plant before burial. It is asserted to be poisonous, but that is somewhat doubtful, although its narcotic quality may dangerously affect the viscera.

Nightshade, deadly, *jj&)t>S**» sug ungoor, %*bjj imSjjS* rooba'eh turbuk, *i^Utflu^vr* anub *ulsalub*. *Atropa belladonna*. (H) Every part of the plant is poisonous, it is well known in English hedges, but only found in the East in the Mogul country, Arabia, and Persia.

Nightshade, downy, *Any)* zirus'eh, R. *Solanum pubescens*, *Will.* (H)

Nightshade, hairy, *cir^Wf!*; ram bégoon. *Solanum hirsutum*, *Rox.* (H)

Nightshade, Indian, *±yJj\$* koolsee, *^s^ijj* oooree'hutee, *J ^ ^ j* ooeekool. *Solanum Indicum*. (S) A decoction of the root is given by native doctors in dysuria and ischuria.

Nightshade, Jacquin's, *L ^ ^ L S ^* b'hutkutae, *دورلي* doorlee, *L£»JJ&)* angoorusug, *hUi* kutaeaa, *داربرين* darbureen, *£y.j* rubzuA, *«JK* kakuneh.

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Solanum Jacquini. (H) The fruit, as well as the root, are used by native practitioners as expectorants.

Nightshade, mad-apple-leaved, $cjj^{\wedge} ?^{\wedge} g\hat{o}^{ta}$
bégoon. **Solanum stramonifolium.** (S)

Nightshade, red, $^{\wedge}s^{\wedge}j^{\wedge}$ goorkhee, R. **Solanum rubrum,** *Will.* (H)

Nightshade, red Malabar, $i—A^{\wedge}r^{\wedge}$ P^{bee} sag.
Basella rubra. (C) An indigenous production very much used as a spinach, both by Europeans and natives.

Nightshade, shining Malabar, $^{\wedge}^{\wedge}$ pôee. **Basella lucida,** (C) Much like the last.

Nightshade, ten-toothed, $j\&^*$ mukoo. **Solanum decem-dentatum,** *Rox.* (US)

Nightshade, white Malabar, $c_r^{\wedge} J^{0*^{\wedge}}$ sôféd
pooee. **Basella alba.** (C) Another of the varieties like the two last.

Nut, clearing, $\&^* \& J^{\wedge}$ chul beenj, $y^{\wedge} Jfji?$ neer-
mulee. **Strychnos potatorum.** (T) The ripe fruit is emetic, although when j'oung it is made into a preserve. The dry seed rubbed on the inside of an earthen pot will cause all impurities in water,

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afterwards poured into it, to subside, leaving it clear, tasteless, and wholesome. This is by some supposed to yield one of the flowers with which the arrows of *Rama*, the god of love, are tipped. Natives eat the pulp of the fruit, but Dr. Roxburgh says it is disagreeable.

Nut, emetic, J*J**** meed p'hul, Jj£\y*» jooz ulkoosul, I^IJT^ joozamee, uuca* mudat, J-A* ^s*l) bussul uUee, J^J j^ mueen phul. *Randia dumetorum*, *Pro. Lin.* *Gardenia dumetorum*, *JRetz.* *G. spinosa*, *Linn.* *Posoqueria dumetorum*, *JRox.* (S) The nut is a powerful emetic, and if bruised and thrown in the water, intoxicates fish.

Nut, hazel, jj^j**±jd durukht-u-joos, ±s)ty gurdooe, ^ gufe'h, *isf buk'hkuleh, £*x>. bunduk. *Corylus avellana*. (S)

Nut, marking, IU# b'heela, ^jhl b'hulaooen, jsk buladur. *Semecarpus anacardium*, *Linn.* *Anacardium latifolium Lam.* A. *Oriente* of *Materia Medica*, vide *Ainslie*. (S) The resinous juice is used for marking linen, and employed by Telinga physicians in some complaints.

Nut, pistachio, see Pistachio nut.

Nut, poison, see Poison-nut.

Nutmeg tree, J ^ ^ v j i ^ J duruk'ht-u-jap'hul, رخت 3)y>jl** joosrbooa durukht, u^xlaJI;^. jooz u|teeb, J*i^J>^ jatee p'hul, J ^ u r V jaeep'hul. *Myristica moschata*. (T) The inner skin, or network of this aromatic nut is the mace of commerce, or 4u*lwj busbas'eh.

Nuwel fruit, see Clove-leaved calyptranthes.

Nyctanthes, square stalked, j|*>J&*» sungarhar, j&X*Hj*> hursungar, JM^S keesur. *Nyctanthes arbor-tristis*. (S) Buchanan tells us that the tube of the corolla is used as an orange dye.

Nymphaea esculenta, see Eatable water-lily.

Nymphaea lotus, see Water-lily.

Oak, Barbary, kjJb*U sha'h buloo*, بلوط التلک buloo^ lilmuluk. *Quercus Ballota*. (T) Appears described in Persian works.

Oak, lance-leaved, iojk bulooJ, j^Xii shungra, R. ^bjJuu sundead. *Quercus lancesefolia*, *Hox*. (T) Reckoned to be a very durable wood.

Oak, open, Ui^SK kala çhookma, R. *Quercus f enestrata*, *Hox*. (T)

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Oak, pointed, U ^ .] ^ burachookma, R. *Quercus spicata*, *Dr. Wall.* *Q. squamata*, *Box.* (T)

Oak, sessile fruited, ^ r ^ l wfees, J + & ' ' U L » ± j & durukht map'hul. *Quercus robur.* ^ T) The galls are used for making ink, as well as for tanning leather, but the species is doubtful as an Indian tree.

Oat, common, ^ ^ J k h ooulaeetee jaoo, J U ^ khurial. *Avena sativa.* (G)

Ocymum album, or suave, see White basil, or Hairy basil.

Ocymum basilicum, see Sweet basil.

Ocymum pilosum, see Olliated basil, or Hairy basil.

Ocymum sanctum, see Purple stalked basil.

Odina, wodier's, A U ^ S kushmul'eh, R. *Odina Wodier*, *Pro. Lin.* (T)

Oily, seed, oriental, * = . ^ * kunjud, J ^ tul, X J J téla, H M sumsum. *Sesamum orientale*, S. *Indicum*, *Linn.* (H) Produces the oil-seed commonly known as "Til," the 2 ^ 0 * of Hippocrates. The oil is used in dyeing silk a pale orange, and from it lamp-black is usually made.

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Okro, musk, $\text{uyy}\ddot{\text{u}}\text{iSK}$ kala kustooree. *Hibiscus abelmoschus*. (S) The seeds have a strong musk flavor, and are used in Arabia to mix with coffee to give it flavor.

Oldenlandia biflora, see Two-flowered Indian madder.

Oldenlandia, chrySTALLine, $\text{*}\&\text{J}$ punk'eh, R. *Oldenlandia chrySTALLina*, *Rox.* (H)

Oldenlandia, winged, $\text{^}\text{ob}\text{Udu}^{\text{^}}$ gund'ha badulle, R. *Oldenlandia alata*, *Pro. Lin.* (H)

Oleander, common, $\text{j}\>.\text{Jl}\text{£}$ kurnooer, $\text{j}\pm\&$ kuneer. *Nerium oleander*. (S) A decoction of its leaves, or bark, makes an arid wash useful to destroy itch and cutaneous vermin; and its flowers are sacred to Sheeva and Vishnoo.

Oleander, medicinal, $\text{y}\>\gg\text{j}^*\text{*}\text{|}$ indurjoo, $\text{^}\text{j}/\text{S}$ kuraeecha, $\text{^}\text{iLajJI}\ \&\text{|}''\text{Ju}\>^*\text{y}\&$ durukht-ul-san-wl-assafeer. *Nerium antidysentericum*, *Linn.* See *Ainslie*, who says "it is the *Echites antidysenterica*, *Rox.* and has given it the "English name of Tellicherry bark/" but it does not appear in the *Flora Indica*. It should more properly be *Wrightia antidysenterica*, *Pro. Lin.* (S) The

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bark called "Cenessi" is common, and good for its astringent and febrifugal qualities, especially useful in dysentery. Decoction of the seed (*indurjoo*) is used in fever, goi£, and worm cases.

Oleander, netted, &j|£ karunta, R. *Ncrium reticulatum*, *Rox.* (Tw)

Oleander, sweet-scented, ^J* kurubee, R. *\$£ kurpud, *j*jj** khurz'hur'eh. *Nerium odoratum*. (S) The flowers are called)j£''dj& dood mugra, and the bark of the root, and the leaves, externally applied, are by native doctors, considered repellants ; the root taken internally being poisonous.

Oleaster, closo,)j|£ gooara, R. *Elagnus conferta*, *Pro. Lin.* (S) The fruit is eaten.

Olive, Indian, ^ ^ 1 atajam. *Olea dioica*, *Rox.* (T) The fruit is eaten, but little esteemed.

Olive, saw-leaved, u\$^£^ julpae. *Elseocarpus serratus*. (T) The fruit is chiefly used in curries, or pickles.

Olive tree, &£i) sectoon. *Olea Europaea*. (T) Not grown in India, but often found in the northern parts of Persia.

Onion, common, *j^ki/*> bura peeaj, J*^ bussnl, *feilr** burapeeaz, loik kanda. *Allium cepa*. (B)

Ononis spinosa, see Common rest-harrow.

Onosma, bitching, *vfejjg gaδ^uban*. *Onosma bracteatum*. (H)

Ophioglossum flexuosum, see Adder's tongue,

Ophioxylon, red flowered, JòU.1^ chôtachand,);^U chandra. *Ophioxylon serpentinum*. (US)

The root is used on the Malabar coast as a remedy in cases of bites by snakes, or of scorpion stings. It is also made use of by Telinga physicians as a febrifuge.

Opoponax chirorum, see Rough parsnip.

Orache, garden, &y» surmu^, !y^ bu'htooa, w-ikS /*mtiif*. *Atriplex hortensis*. (US)

Orange, ±*£j^* narungee, ^U naruj, |J&J rung-tura, %öyw-ii« sungtur'eh, *KjS* koowla, *tjS* koola. *Citrus aurantium*. (T)

Orchis mascula, see Salep.

Origanum marjorana, see Sweet marjoram

Origanum vulgare, see Common marjoram.

Ormocarpum senno'ides, see Senna-leaved *hedysarum*.

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Oraitrophe serrata, see **Saw-leaved schnictelia**.

Oryza sativa, see **Rice**.

Osier, common, £j*& ^unduru^. **Salix viminalis**. (S)

Oxalis, procumbent, ±J*j*tt U7?ibootee, JJJ/*°I amrool, likyo) ambushta. **Oxalis corniculata**. (B) The leaves and flowers are cooling.

Oxalis, sensitive, U§^S lak'h chuna. **Oxalis sensitiva**, *Will.* (B)

Oxystelma, esculent, tfJs^j dood'h luta, ^J>*j* dood'hee, R. **Oxystelma esculentum**, *Periploca esculenta*, *Linn.* **Asclepias rosea**, *liox*. (Tw) A decoction is used in ulcerous affections of the throat and mouth.

Paederia, fetid, ^ 1 ^ gundalee, R. **Paederia fctida**. (C) See also dog's bane.

Palm, fan-leaved, or **Palmyra**, /\$ tar, Jtf tal, jV> J^ bultar, J ^ ^ ^ geen gool. **Borassus flabelliformis**. (P) The juice is commonly known as "toddy," the tough stringy fibres are made into a coarse cordage, and the leaves are used for a variety of purposes, as well as for writing on. The juice is boiled down to a coarse muscavado sugar,

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but *it cannot be made, by any process yet discovered, to lose an acidity and predisposition to dissolve, or cake.

Palm, Taker's, |p tara, LyLcu^«J durukht khurma, J^» nukhul. *Corypha Taliera*, *Rox.* (P)

Palm, toddy, see Date tree.

Palma, Christi, see Castor oil tree.

Palyporus, soft, &j»ij& ^aree^oon. *Polyporus fomentarius* (Fungus). Styptic and cathartic, used also for *Amadou*.

Panax, fragrant, ^y*^^ gootee soona, R. *Panax fragrans*, *Rox.* (T)

Pancratium, three flowered, JJAS »\$L« sada kunool. *Pancratium triflorum*, *Rox.* (B)

Pandanus fctidus, see Foetid screw pine.

Pandanus odoratissimus, see Green spined screw pine.

Paneola plum, see Many-spined flacourtia.

Panicum ciliare, see Prickly panic grass.

Panicurn colonum, see Purple panic grass.

Panicum dactylon, see Doop grass.

Panicum frumentaceum, see Wheat-like panic, or millet grass.

Panicum hirsutum, see Hairy panic grass.

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- Panicum holco'ides**, see Mountain panic grass.
Panicum interruptum, see Broken panic grass.
Panicum Italicum, see Italian panic grass and Italian¹ millet.
Panicum miliaceum, see Bengal millet.
Panicum setigerum, see Bristly panic grass.
Panicum spicatum, see Spiked millet, also Bull rush.
Panicum stagnicum, see Stagnant panic grass.
Panicum verticillatum, or semiverticlatum, see Upright panic grass.
Pansy, j^fi^ - kheeroo, o y ^ ^ kheearee, |j'')j\$ijpj rutun puroos. **Viola tricolor**. (H)
Papaver, see Poppy.
Papaw tree, U^ pupeea, *flijj poopae'eh, **w\ odJjb amb'eh hundee. **Carica papaya**. (T)
Papyrus, ancient, c^<* burdee, J\$*|J fafeer **Papyrus antiquorum**. (A)
Pareira-brava-root, six stamened, J^fjAM béd-rook'hura. **Cissampelos hexandra**, *Rox.* (Tw) This diflers slightly from the genuine Pareira brava-root, although it possesses most of its properties.
Parietaria Indica, see Indian pellitory.

Paris, many-leaved, U# beema. Paris polyphylla, *Dr. Wall.* (H)

Parsley, &j**>| ajmood,))j> kurooz, |j~>j\$ kurufus, ^ ^ } ; rmdnee, u)j»i>) aneeson, L^JJ^CJITH ajooan khôrasanee. *Apium involucratum*, and *A. petroselinum*. (H)

Parsnip, or parsnep, garden,)j*» juzur, ^^akwl is^ufeen. *Pastinaea sativa*. (F)

Parsnip, or parsnep, rough, jiAJ^ jaoosheer, j*£J6 kaoo sheer. *Pastinaea opopanax*, *Opopanax chirorum*, *D. C.* (T) The root gives a resin called opopanax, similar in effect to assafoetida, and considered as a discutient by Arabian physicians.

Paspalum, circular, *&£ kodeh. *Paspalum kora*, *Linn.* (G) Cattle are found of this grass.

Paspalum kora, see Kora millet.

Paspalum, scrobiculatum, see Punctured millet.

Paspalum, wheat like, jjdjS kooduroo, j&ji koodoo. *Paspalum frumentaceum*, *Linn.* (G) The grain tastes something like rice, but there is a variety that is very unwholesome, producing vertigo.

Passion flower, laurel-leaved, &*j4?* j'hoomka. *Passifloru laurifolia*. (Tw)

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Pastinaca, see Parsnip.

Pea, common, $\dot{\text{u}}^{\wedge}-\check{\text{V}}$, butanee, ^JbK kabulcc, AJU^{\wedge} kursun*eh, $\text{j}\check{\text{f}}\ll$ mutur, $\text{**}\check{\text{f}}\check{\text{f}}$ kushn'eh. Pisuni sativum. (C)

Pea, field, $\check{\text{f}}\check{\text{f}}$ kuraoo, $\text{)jjj}^*\text{>\&}$ d'hoorooa. Pisum arvense, (C)

Pea, pigeon, or hill-dhal, $\text{Jl}\check{\text{y}}$ tooar, $\text{^U}^{\wedge}\text{li}$ shakhsar, $\text{j}^*\text{j}\backslash$ arhur, $\text{J}^{\wedge}\text{^}^{\wedge}\text{S}$ shakhool, $\text{J}^{\wedge}\text{.US}$ kushakhul $\text{^y}\check{\text{u}}\text{r}^{\wedge}$ buree tour. Cytisus cajan. (H)
A very valuable pulse.

Pea, winged, $\text{j}^{\wedge}\text{y}^{\wedge}\text{^}^{\wedge}\text{i}$ pank kee mutur. Tetragonolobus edulis. (C)

Peach, ^T aroo, $\text{y}\text{t}\dot{\text{i}}\text{a}^{\wedge}$ shuftaloo, ^y^{\wedge} kliookh. Amygdalus persica. (T;

Peach, clingstone, $\text{\pm s}^*\text{J6}$ kardee. Amygdalus persica, *var.* (T)

Peach, freestone, $\text{y}\&$ kuloo. Amygdalus persica, *var.* T.

Peach, sweet common, ^HI b'humee. Amygdalus persica soligna. *Dr. Royle.* (T)

Pear, common, fyy) amrood $\text{u}\check{\text{r}}\text{A}^{\wedge}$ kum ^u ree, $\text{^}^{\wedge}\text{^}^{\wedge}\text{xiU}$ nashputee. Pyrus communis. (T) Not commonly found in India, though it has been

grown and ripened by Mr. C. Steer at Kishnagur, and by others in the Upper Proviuces.

Pear, wild, *jy^| akhgoor*. *Pyrus tomentosa*, *JRox*. (T) Supposed to be the tree that yields the spurious quince seed, sold commonly in the bazars as Beehee-ké beech.

Pedalum, prickly fruited, *jj\$ybj**. bura gook 'huroo, *fyfy\$j->* bura g'hookuroo. *Pedaliu murex*. (H) The leaves have the property of giving out mucilage in milk or water, and are used by sellers of milk to give a rich appearance to their adulterated mixture ; the seeds afford a meal useful for poultices, or when mucilaginous drinks are prescribed.

Peganum harmala, see Syrian rue.

Pellitory of Spain, *U^JJU aaAur^ur/*a*. *Anthemis pyrethrum*. (H) The pungent root is useful in toothache, or rheumatic affections of the face. .

Pellitory, Indian, *cJu«Ls^ bulunjasuf*, عاقرقرحا
a,a£ur£urAa. *Parietaria Indica*. (H)

Penaea, heart-leaved, *esjjtt wnzuroot*, کنجدہ
kunjud'eh. *Peuca mucronatn*. (S) A gnm rosin

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exuding from this shrub, called *Sarcocolla*, is supposed by the Arabians to have the virtue of uniting wounds,

Penicillaria spicata, see Bull-rush.

Pennyroyal, v- & ^ boodunk, *tidjj*, poodun'eh. *Mentha pulegium*. (H) Like other mints it is aromatic, and is chiefly used in hysterical attacks, obstructed menstruation, and hooping cough : though the vulgar use it for many other complaints.

Pennywort, thick-leaved, *flk* lulkura, R. *Hydrocotyle Asiatica*. (Tr.)

Pentapetes, scarlet flowered, *kjid*)* dô p'hureea. *Pentapetes Phoenicia*. (H)

Pentaptera, arjun, e>>syl wrjoon, R. *Pentaptera arjuna*, *JRox*. (T) A timber tree.

Pentaptera, hairy, ^/-^ ans, J^*# peeasal, R. *Pentaptera tomentosa*, Z>. C. *Terminalia tomentosa*, *Pro. Lin.* (T) A large timber tree, the bark being an astringent febrifuge.

Pepper, betle, see Bctle pepper.

Pepper, bird, <gj''d*>A d'han muruch. *Capsicum baccatum*, (US)

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Pepper, black [^]j₂[^]J₂K kalee murchee, فلفل اسود fulfill usooud, *UM-JAJL»' fulful seea'h, %*\$ lad'eh Q75-chooea. Piper nigrum, (Tr.)

Pepper, cayenne or chili, [^][^]r[^]JS lal murchee, [^]j[^] gach muruch. Capsicum frutescens. (H)

Pepper, chaba, *>U* chab, ur<<- chooe. Piper chaba. *W. Hunter* in *Asiat. Res.* (Tr) Cultivated in Bengal chiefly for its root, which is used in medicine; its fruit resembles closely the long pepper.

Pepper, kaffree chilli, [^]j[^]urj[^] kufree muruch. Capsicum grossum. (US)

Pepper, long, Jjy peepul, ,[^]1[^] peeplee, Js'dsj]* dar fulful, [^]Ua tebee. Piper longum. (S) It yields in Bengal on an average, about four maunds (80 lbs. each) to the beega ([^]d. of an acre) of fruit annually for three years, and the root is then useful in medicine.

Pepper-mint gi** *nana*. *Mentha piperita*. (H)

Pepper-wort, four-leaved, [^][^]5 - chupatee. *Marsilea quadrifolia*, *Pro. Lin.* (H) Growing in ditches and swampy places, its leaves are used

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by the poor native as a spinage, its properties are unknown.

Pergularia, lesser, ^{^cAV} luban luta. Pergularia minor. (C.)

Periploca esculenta, see Esculent oxystelma.

Periploca Indica, see Indian sarsaparilla.

Periploca secamone, see Alpine secamony.

Periwinkle, Madagascar, i—^{fc^J^} gul-u-furung.

Vinca rosea. (US) The pink and white varieties are common in India.

Persicaria, downy, ^{^j^A^i^tj^Mt} sooet panee muruch. Polygonum lanatum, *Rox.* (A) It appears a variety of P. Hydropiper, or water pepper.

Persicaria, flaccid, ^{^j''±£^i} panee muruch. Polygonum flaccidum, *Rox.* (A)

Pharbitis, purgative, ^{^^^J^} neelkuhnee. Pharbitis nil, *Chois.* Convolvulus nil, *Linn.* Ipomsea ccerulea, *Rox.* (Tw.) The seeds are sold by natives under the name *ili) 8K *kala dan'eh*, and are an effectual cathartic when roasted like coffee, and administered in doses of 30 to 40 grains.

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Pharnaceum, five-styled, | ^ f U «] ^ ^ dousura
sag. R. Pharnaceum pentagynum, *Hox.* (H)

Pharnaceum molluga, see Ladies' bed-straw.

Phaseolus aconitifolius, see Aconite-leaved
kidney bean.

Phaseolus max, see Hairy-podded kidney
bean.

Phaseolus mungo, see Small-fruited bean, or
Green-gram.

Phaseolus radiatus, or black-gram, see Ringed
kidney bean.

Phaseolus rostratus, see Pointed kidney bean.

Phaseolus trilobus, see Three-lobed kidney
bean.

Phaseolus vulgaris, see Dwarf kidney bean.

Phellandrum stoloniferum, see Creeping rooted
water hemlock.

Phillyrea, hardy, *Iff&fre.* bhooen moora.
Phillyrea robusta. (S)

Phlomis, Cingalese, ^ j ^ J ^ hal k'hoosa, R.
| j + £ g'humra, ^ J A hulkusa. Phlomis Zeylanica,
Will. (H)

Phlomis, eatable, or Indian, ^ ^ tuwbee, گومرا

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goomra. *Phlomis esculenta*, *Pro. Lin.* P. Indica, *Linn.* (H) Used as a spinage, but very acrid. It is said the juice of the bruised leaves drawn up the nose to a cure for the bite of snakes, but this is very doubtful as it has little aromatic flavor or scent. The Malays squeeze it into the eyes to make them bold and intrepid in war.

Phoenix dactylifera, see Common date palm.

Phoenix sylvestris, see Wild date tree.

Phrynum, double stemmed, djooul'eht ^{^J^y} mooktupatee, ^{^sh^i} pateeputee. *Phrynum dichotomum*, *Rox.* (H) This is the plant whence are made the *cold mats* called ^{±J^J^fr*} seetulpatee.

Phrynum, overlapped, ^{^^J*a} peetulee pata.

Phrynum imbricatum, *Rox.* (Tu.)

Phyllanthus, cheramel, ^{K-SJ^J**/*} hurp'hurooree.

Phyllanthus cheramela, *Rox.* (S)

Phyllanthus emblica, see Shrubby myrabolan.

Phyllanthus, Indian annual, ^{^l^>} bu'heen aoonl'eh, ^{^ ; l} arjuta ^{^^^i^^} AlcUu suda huzur mune. *Phyllanthus niruri*. (H) The fresh root has been successfully used in jaundice. The root,

leaves, and young shoots are by native practitioners esteemed as deobstruent, diuretic, and healing; and the leaves a good stomachic.

Phyllanthus longifolius, see Long-leaved cicca.

Phyllanthus, many flowered, J^sSK kala muA-
mud, [•] y?^ punjoolee, R. [^] *Phyllanthus multi-*
florus, *Will.* (S)

Physic nut, angular-leaved, [^]*k/i bugreen-
dee, i^s^^- junglee arundee. *Jatropha cur-*
cas. (S) The oil is used as a remedy for eruption
and rheumatism.

Physic nut, glaucous-leaved, u^r abub, U*fi
nu^umba. *Jatropha glauca*. (H) A stimulating
oil is extracted from the seeds, used in rheuma-
tic and paralytic affections.

Physalis peruviana, or *angulata*, see Peruvian
winter cherry.

Physalis somnifera, or *flexuosa*, see Clustered
winter cherry.

Pierardia, palatable, jXlf lutkoo. *Pierardia*
sapida, *Box.* (T) The fruit is of acid flavor,
but very inferior.

. Pimenta tree, Jj^j pulpul. *Pimenta vulgaris*,

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now *Eugenia pimenta*, *Pro. Lin.* *Myrtus pimenta*, *Linn.* (T) The dried fruit is the Allspice of commerce.

Pimpinella anisa, see Common anise.

Pine-apple, *j^Aii* *anunas*. *Bromelia ananas*. (H) Some are of opinion that this fruit is conducive to cholera, which is not improbable in the ordinary way of eating it, after it has been cut many hours, often days; as the profuse juice soon ferments, and cannot but then be injurious, but eaten when quite ripe and *fresh* cut, it has none of these bad qualities, and is a delicious and grateful fruit. The fibre of the leaf is very fine and strong, like flax.

Pine, dammer, *Jl*; *j^L-jd* *durukht-u-ral*, *^l&y^** *d'hoona gach*, *c^lc* *aluk*. *Chloroxylon dupada*, *Buchanan*. (T)

Pine, Devdar, *j)4y>A* *deeddar*, *tyj\jl&* *deeoou-aourd*. *Pinus deodara*, *Hox*. (T)

Pine, long-leaved, *jj£-* *choor*, *^i^** *ssunoobur*, *j.^J/'* *surul peer*, *^y'* *nooj*. *Pinus longifolia*. (T) The wood is called *<J^* *surul*.

Pine, Smith's, *&j* *raga*, *^iUSI*; *rateeanuj*. *Pinus*

Smithiamis, *Dr. Wall.* Abies khutrow, *Dr. JRo.*
(T)

Pink, China, J ^y ^urunful. Dianthus Chi-
nensis. (H)

Piper betle, see Betle pepper.

Piper chaba, see Chaba pepper.

Piper cubeba, see Cubebs.

Piper Ion gum, see Long pepper.

Piper nigrum, see Black pepper.

Pisonia, prickly, *^t*^? bag'ha char'ch, R.
Pisonia aculeata. (T)

Pistachia-nut tree, *w_ pust'eh, J ^ y foosta/f,
j j l ^ c ^ ^ j durukht-u-juloos. Pistacia officina-
rum. (T) This is very rare in India, and only
found in the western and central parts, where it
may have been introduced from Arabia.

Pistacia terebintha, see Turpentine tree.

Pistia, the floating, &^Ii) imturgunga, lib_ |£y
tooka pana. Pistia stratiotes, *Pro. Lin.* (H) A
decoction is considered demulcent by Hindoo
doctors, and the leaves are used as a poujtice for
piles.

Pistacia lentiscus, see Mastich tree.

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Pisum, see Pea.

Pladera decussata, see Decussated canscora.

Plantain, see Banana.

Plantain, common; / moouz, %£ k£la. Musa paradisiaca. (T) Differing from the Banana in having the fruit much larger and the skin tough. The fruit roasted or boiled when not quite ripe is frequently used instead of bread, or in curries, &c; the leaves make good mats, and when tender are used as a cool drawing for parts where there have been blisters. The skins being in some parts also used in dyeing leather black.

Plantain, Nepal, hfj^jZ goompoo k£la. Musa Nepalensis, Dr. Wall. (T)

Plane tree, oriental, j|s^ chunar, ^1 arus |m->i& dulub, *|<£» supeeda'eh. Plantanus orientalis. (T)**

Plantago ispaghula, see Plantain flea-wort.

Plantane, see Fleawort.

Plectranthus, aromatic, JJ+J&¶, put'hur choor.

Plectranthus aromaticus. (Cr)

Plumbago rosea, see Rose colored lead-wort.

Plumbago zeylanica, see Cingalese lead-wort.

Plum, common, yi aloo, *jJ alooch'eh. *Prunus domestica*. (T)

Plum, hog,]/•) amra,)jx~) ambura, جنگلی ام junglee am. *Spondias mangifera*. (T) The fruit is eaten, but is harsh flavored. The trunk yields an insipid gum like Gum Arabic. The root is considered an emmenagogue; the bark is held useful in dysentery, and decoction of the wood in gonorrhoea.

Plum, Java, see Java plum.

Plum, native, see Jujube tree.

Plumieria, acuminate, ^/S^** gulacheen. *Plumieria acuminata*. (T)

Poa cynosuroides, see Meadow grass.

Poa unioloides, see Smooth meadow grass.

Podocarpus, broad-leaved, k^Sjky sôplông.
Podocarpus latifolia, *Dr. Wall.* (T)

Poinciana pulcherrima, see Barbadoes flower-fence.

Poison bulb, ^j***** suk'hdursun, *Crinum asiaticum*, or *toxicarium*. (B) The bulbs are a powerful emetic.

Poison nut, ^ kuchla, wJWljjiU^ khunanu£-

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alkelb, ^*Jtyfe** jaooz al[^]ee, *yja**)*j**>) su'hureumeen, ^l[^]lil azara/[^]ee. *Strychnos nux vomica*. (T) The seeds are highly poisonous; but are effectively employed medicinally in paralysis, dyspepsia, dysentery, affection of the nervous system, &c. Dr. O'Shaughnessy has shewn the identity of this bark with what is called the *False angu&tura*, and also that *brucea* may be procured from it in abundance. The natives but too often use the seeds to increase the intoxicating quality of their distilled spirit

Polyanthes tuberosa, see Common tuberose.

Polygala arvensis, see Wild milk-wort.

Polygonum lanatum, see Downy persicaria.

Polypodiaceæ, see Ferns.

Pomegranate, *j*^) anar, *fj*)*d* darum, *sJ*^*j* ruman, *j** nar, £13 tag. *Punica granatum*. (T) The best are found to the North Westward. The root is a vermifuge of the most powerful and certain efficacy.

Pongamia, smooth-leaved, <*g*£ kurunj, lyp[^]kurunjoa. *Pongamia glabra*, Galedupa Indica, *Lam*. *Dalbergia arborea*, *Will*. *Robinia mitis*, *Linn*. (T)

Pongatium, Cingalese, *gj* J***- jeel mureech,
R. Pongatium zeylanicum, *Pro. Lin.* Sphenoclea Zeylanica, *Will.* (A) ,

Pontederia, sheathed, *^y' nooka*, R. *K^ looka*
Pontederia vaginalis, *Will.* (A)

Pontederia, spreading, *| ^sj^ kachuree*. Pontederia dilatata. (A)

Poplar, black, *| ^g*D)j*» Aoor roomee*. Populus nigra. (T)

Poplar, common, *; ^ junar, jy**. *^oour, Jo^chunar, P^ ta^*. Populus Graeca. (T)

Poplar, white, *jl***^ supeedar, ^ pur'eh, ^JuiLJ shashdan, c-j^ ^urb, ^l<5;^, durdar*. Populus alba. (T)

Poppy, prickly, see Prickly poppy.

Poppy, white *y ^ ^ u^5 ^ khush khash, jUSjS kooknar, c^ ri poost, j&i*> heeshur*. Papaver somniferum. (H) The juice of the wounded capsules being known as opium, *^1 afeem*.

Portilaca quadrifida, see Creeping purslane.

Posoqueria dumetorum, see Emetic-nut.

Posoqueria, marshy, *y] ^ peraloo*. Posoqueria uliginosa, *Rox.* (T)

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Potatoe, y! aloo. *Solanum tuberosum*. (Tu)
The term, *aloo*, is applied to nearly all tuberous
rooted esculents.*

Potatoe, wild, ^{^/i^y^} shoondeekee. *Solanum*
pubescens, *Linn.* (Tu) It is eaten fried, but is
rather bitter.

Pothos, armed, y f ^ K kanta kuchoo, R. *Pothos*
lasia, *Hox.* (H)

Pothos, officinal, 1

— . «. . „ ? see Useful scindapsus.

Pothos, officinalis,)

Pothos, peeplee, ^{^^k&j} peeplee, R. *Pothos peep-*
la, *Ilo\$.* (Pa.)

Premna, entire-leaved, ^{i^s^jHi uxxtf} b'hoot b'hee-
roouee. *Premna integrifolia*, *Pro. Lin.* *P. serra-*
tifolia, *Will.* (S) The root is cordial, and stoma-
chic in decoction.

Premna, herbaceous *fonsj*** b'hooee jam, R.
Premna herbacea, *Hox.* (S)

Premna, thorny, ^{u^j-v^} goon'huree, R. *Premna*
spinosa, *Hox.* (T)

Prickly poppy, see Mexican argemone.

Primrose, Stuart's, ^{I^J^UJ^U} masooneetu'ha.
Primula Stuartii, *Dr. Wall.* (H)

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- Primrose, toothed, t-^ neetu'ha, (Nepalese.)
Primula denticulata, Sir J. JS. Smith. (H)
Prince's feather, &S kulga. *Amarantus hypochondriacus*. (H)
Protium giliadense, see Balm of gilead tree.
Prunus Arminiacus, see Apricot. W
Prunus cerasifera, see Myrabolan plum.
Prunus cerasus, see Common cherry.
Prunus domesticus, see Common plum.
Prunus institutia, see Damson.
Prunus padus, see Bird, or wild cherry.
Prunus spinosa, see Sloe.
Psallia campestris, see Mushroom.
Psoralea, hazel-leaved, vsJ^W baoochan, ^jf-jlj
ooaôchee, -^ÿ^ ha^ooch. *Psoralea corylifolia*.
(H) The seeds are prescribed by natiye practitioners in inveterate cutaneous diseases.
Psychotria, herbaceous, ^ j ^ * c ^ j ^ koodee
munkoonee, R. *Psychotria herbacea*. (US)
Psidium pomiferum, see Red guava.
Psidium pyrifera, see White guava.
P tar mica vulgaris, see Siieezewort.
Pteris lumilata, see Woolly brake.

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Pterocarpus, emarginate-leaved, JW£*^ pét sal.
Pterocarpus marsupium. (T) Roxburgh supposes this tree to produce *gum kino*, a well known astringent; but the real gum is rather obtained from *P. erinaceus*.

Pterocarpus senitalanus, see Red saunders wood.

Pterospermum, various-leaved, J**£\^y moocha koonda, R. *Pterospermum suberifolium*. (T)

Pumpkin, common, or red, &+*≤& kudeem'eh, lAr*\$ kumru'ha, UA*J koond'ha, ^ L C S ^ meet'hee kudoo, J>\$UU. seetap'hul. *Cucurbita pepo*. (Tr)

Punica granatum, see Pomegranite.

Purslane, creeping, LLJ\$* choolee, K.S'K^ choo-lae, uJ;UJ)iLSj buAlut'eh alumbaruk, *^«3J^ oopudeek'eh. *Portulaca quadrifida*. (H) An infusion of the leaves is considered a diuretic and bruised, they are used as an external application for erysipelas.

Purslane, small, tfi^ khurf eh, ^**tf kandlee, iy loona, **y looneea, Vjy' nooneea, Jj.^ g'hool, U^IXiSj buAlut'h *ulhumka*. *Portulaca oleracea*. (H) One of the numerous greens, or sägs, of natives.

Pyrus communis, see Pear.

Pyrus malus, see Apple.

Quercus ballota, see Barbary oak.

Quercus fenestrata, see Open oak.

Quercus ilex, see Holm tree.

Quercus lanceefolia, see Lance-leaved oak.

Quercus robur, see Sessile fruited oak.

Quercus spicata, see Pointed oak.

Quercus suber, see Cork tree.

Quillwort, Coromandel, [^]Z g'hee, Isoetes. Coromandeliana. (A) It grows in low moist grounds, and is eaten by the common people.

Quince, Bengal, i-^{*}b bulb, J[^] bél, J[^]u[^]" sree-p'hul. *JEgle* marmelos, *Crataeva marmelos*, Linn. (T) Corrupted from the marmeleira of the Portuguese, given to it because these people seem to have prepared a marmalade from its fruit. The aperient and detersive quality of the fruit, and its efficacy in removing costiveness is well known; the unripe fruit roasted has also great effect in cases of dysentery.

Quince, China, J[^][^]^{*}" sufurjul, £^{*} béh. *Cydonia chinensis*. (T)

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Radish, common, ±>J turub, Jsꞑ» fujul, مولی moolee. *Raphanus sativus*. (T)

Ramoon tree,)jkk» seeoora, ^ 5 * ^ nukchulnee. *Trophis aspera*. (T)

Randia dumetorum, see Emetic-nut.

Randia, racemose, &JJꞑ peetunga. *Randia racemosa*. *Rox.* (T)

Randia, upright, U^i^u^u* sooét buruna. *Randia stricta*, *Rox.* (S)

Raspberry, scant-flowered, ^! anchoo. *Rubus pauciflorus*. (US) Found in the Nepal, and the Himalaya range.

Rattan, eu& bét, J^ b6d. *Calamus rotang*, *Rox.* or rudentum. (C) It furnishes the ratan canes, &c.

Rattan, Java, CUJꞑ bét, Hu bu^a. *Calamus viminalis*, or zalacca. (H) The fruit is eaten, and consists of two or three sweet kernels.

Red-wood tree, ^J*>JJ roo'hoona. *Soymida febrifuga*, *Pro. Lin.* *Swietenia febrifuga*. *Will.* (T) The bark is a remedy for the jungle fever, and in cases of gangrene. The wood, hard and durable, is used for posts, &c.

Reed, Bengal, J>M? gaba-nul, R. *Arundo Bengalensis*, *Linn.* (G)

Reed, karka, |£*&j> nurkut, ^ buroo, j' nur, JU nal, ±s|i naee, w.*a3 yJussub. *Arundo karka*, *Linn.* (G) What are called Durma mats are made of the stalks split open. Pens for Writing the Persian, and other Eastern characters are made of the dressed reed.

Rest, harrow, common, ^jyi* keerooj. *Ononis spinosa* (H)

Rhizophera, see Mangrove.

Rhubarb, medicinal, ^|j yj^^jA durukht-uraound, *&yj reeoond, v:^^Ji3 dulub,y*3 duloo, U^I; rasuna. *Rheum palmatum*. (F) Producing the rhubarb of commerce; *Dr. Wallich* has also made us acquainted with another useful plant of this family, *R. emodi*, which has been found very efficacious as a purgative, with tonic and astringent properties also, and less disagreeable to take.

Rhododendron, aromatic, ^i^JUs foleesfur, j&x* mafur *Rhododendron lepidotum*, *Dr. Ro.* (S) The leaves are highly fragrant, and of a stimulant nature.

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Rhus coriaria, see Elm-leaved sumach.

Ribes uva crispa, see Smooth gooseberry.

Rice, *jjl* aruz, *J^d* d'han, *gj**.burunj. *Oryza sativa*. «(G) There are an immense number of varieties known to natives.

Ricinus communis, see Castor oil tree.

Rivina paniculata, see Persian salvadora.

Robinia, white-blossomed, *|j^t* butas. *Robinia Candida*. (T)

Rock rose, Cretan, *&&%* ladun. *Cistus Creticus*. (S) The resinous gum Ladanum is produced from this, it is stimulant.

Rondeletia, colored, *%&^* *87S* toola lod'h, *R. Rondeletia tinctoria*, *Rox.* (T)

' *Roscoea*, five-stamened, *UGi* kungeea, *R. Roscoea pentandra*, *Rox.* (C)

Rose, a, *Ji* gul, *^* gulab, *^* gulbun, *J;^* oourud. *Rosa*. (S) The generic name of all kinds.

Rose, Bussorah, *KSJY»\$* *g^l* sooree. *Rosa gallica*. (S)

Rose, China, *^* & kut'h gulab *Rosa Chiensis*. (S)

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Rose, damask, $\hat{j}\hat{f}$ Uo) adna gulee, \pm سر گل
gulsurkh, I_£JL* ssudburg. *Rosa damascena*.
(S)

Rose« double, L_£JJ^JS gul ssudburuk. *Rosa*
centifolia. (S)

Rose, many-flowered, U^Ji gul rana. *Rosa*
multiflora. (Tr)

Rose, sweet briar, \hat{j}^{**} J^ gul nusreen, &)J^*»|
z/sturoon. *Rosa rubiginosa*. (S)

Rose, white, \pm &*i» seeootee, **Jy.** ssudburg
 \hat{j} ui nusturun. *Rosa glandulifera*, *Hox*. (S)

Rose, wild, $s^{\wedge}y^{\wedge}.jZ$ gulbéfurman, $\overset{\wedge}{\wedge}$
nusreen. *Rosa arvensis*. (S)

Rose-apple, common, $\overset{\wedge}{\wedge}$ jam, J^L^^ gulab-
jam. *Eugenia jambos*. (T) A pleasant fruit, as
some think, but its only good quality is its fra-
grance, being dry, tough, and unpalatable.

Rose-apple, watery, $\hat{a}JUih$ paneal'eh jam.
Eugenia paniola, *Box*. (T) The fruit is watery
and insipid.

Rose-bay, oval-leaved, see *Wrightia*.

Rose, chesnut, Indian, $j^{**}t\$$ |^f^ nag keesur,
سرJA> angeesur. *Mesua ferrea*, *Will*. (T) The

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dried flowers are used as a medicine, as well as being esteemed for their fragrance.

Rosemary, common, *J[^]LL.) ^I[^]OA*. Aussalban akhsslir, *Hj#* buburee'eh, *jWl J*¹**' akleel wl jubul, *Rosmarinus officinalis*. (US) It has been successfully used as a cephalic medicine for headache, and to excite the mental powers. An infusion, it is said, will keep the hair in curl, and prevent baldness. It is much used in Eau de Cologne, &c.

Rottboellia, compressed, *i/^i* pamshroo, R. Rottboellia (gen. ap. *Sclir.*) compressa, *Linn.* (G)

Rottboellia, perforated, *^S,* kurkee, R. Rottboellia (gen. ap. *Schr.*) perforata, *Hox.* (G)

Rottboellia, smooth, **&4* buksha, R. Rottboellia (gen. apud *Schr.*) glabra, *Rox.* (G)

Rottlera, dyer's, *yi«J[^]* pundaloo, *&y&|Ji*[^]j&* durukht-u-kumood. Rottlera tinctoria. (S) The red powder covering the capsules. is used to dye scarlet, and the root to give a red dye.

Rottlera indica, see Naked trewia.

Roylea, elegant, *^fy* putkuree. Roylea elegans, *Dr. Wall.* (H)

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Rubia cordifolia, or munjista, see Madder of Bengal.

Rubus gowry-phul, see Himalaya blackberry.

Rubus Indicus, see Wood bramble.

Rubus lasiocarpus, see Hill bramble.

Rubus pauciflorus, see Scant flowered raspberry,

Rubus rotundifolius, Round-leaved bramble.

Rubus vulgaris, see Common blackberry.

**Rue, common, $\text{ur}^{\#}$ sudab, $\text{ur}^{\#}$ suturee
L^JMI sundub, 1 ^*^ suzab, J^{\wedge} - kheel. Ruta
graveolens, (US) Used in domestic medicine as
" rue-tea" being acrid, and stimulant, anthelmin-
tic and sudorific. -**

**Rue, Syrian, $J^{\wedge}y^{\wedge}$ - ^urmulu. Peganum har-
mala (H) The seed is used in medicine.**

Rue, wild, $*\#$ asfund, $**\% \gg$ supund. Ruta
albiflora. (US)**

Ruellia, long leaved, see Long leaved barleria.

**Rumex acutus, see Sharp dock, and Bladder
dock.**

Rumex vesicarius, see Common sorrel.

**Rush, club, $1\% ^{\wedge}$ chuchka. Scirpus luzulae. (G)
see Bladder dock.**

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Bush, mat,)jjS kôra. *Cyperus textilis*, *Thunberg*. (G) Used for making mats.

Rush, soft, ^y lookh, |+&* /mssba, ^y^l astooin. *Juncus effusus*. (H)

Rye, common, &/*£ kunkuran, j^J^- chao-dar. *Secale cereale*. (G) This grain, from its easy adaptation to all soils, and ready growth, deserves attention from the agriculturist.

Sacred-bean, Indian, <JS kumul, ^o^» puduma, p*j pudum, j>jk* neeloofur, Jy^ kunooul, **& tyX kunooul ka gun'eh. *Nelumbium speciosum*. (A) The seeds are eaten raw or roasted, and * the tender shoots of the roots in curries. An attribute of Vishnoo, and peculiarly sacred to his wife Luchmee, the lotus-like, and hence the flower has become an emblem of female beauty.

Saccharum cylindricum, see Cylindrical sugar grass.

Saccharum fuscus, see Fuscous sugar grass.

Saccharum munja, see Munja sugar grass.

Saccharum officinarum, see Sugar cane.

Saccharum procerum, see Tall sugar grass.

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Saccharum sara, see Sara sugar grass.

Saccharum spontaneum, see Spontaneous sugar grass.

Safflower, JSUOJ* assfur, f*j£ koosum, f*£ Khsum, معصر massur, s^s? kujeer'eh, ^j^a^ jureessus, رطم* /tuvtam, WH-1*^ kusumb'ha. Carthamus tinctorius. (H) The petals dried form the Safflower of commerce, and are used in dyeing rose, purple, and violet colors; the seeds are used as a laxative.

Saffron-plant, J/^J zafran, ^uc abeer, j^S keesur. Crocus sativus. (B) Hindoo doctors prescribe it in nervous affections, typhus fever, &c.

Sage, Bengal, jioju« seestur^^tf^^^Sj ooulaeetee kapoor, jy^s.Jkh ooulaeetee kafoor, *u?|*» salbee'eh ^j*SVi» sufa^us. Salvia Bengalensis, HotL (S) The leaves differ in a small degree from the common sage of Europe, but have the same qualities, and are used here for the same purposes.

Sago tree, ^ 1 * saookce, ^^j^ saboo-keegach. Sagus laevis (Jack: in comp. Bot. mag.) (P) Is the true sago tree, but I believe the native

names given would equally apply to *S. farinifera*, *JRox.* *Sagucrus Rumphic, Rox.* said by Dr. Hamilton to produce a very fine kind of sago *Caryota urens*; *Cycas revoluta*; or to *C. circinalis*; as they all will yield the sago of commerce to a greater or less degree.

Salep, I[^]JJU[†] salub, *JJI kund'eh. *Orchis mascula.* *Tacca pinnatifida, Will. (Tu.)* The preparation from this tuber is highly strengthening, and given by Arabian physicians in consumption. Lindley considers that this article is more likely to be the produce of *O. variegata*, *O. taurica*, or *O. militaris*; and Dr. Royle, that the plant yielding it in Cashmere belongs to the genus *Eulophia*, and this appears borne out by fact, but the specimens obtained were not sufficient to enable the species to be identified; the substance consisting almost entirely of a chemical principle called *Bassorin*; it is said to have the property of depriving sea water of its saltness.

Salicornia Indica, see Indian glass-wort.

Salix Babylonica, see Weeping willow.

Salix rosmarini-folia, see Rose-mary-leaved willow.

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Salix tetrasperma, see Four-seeded willow.

Salvadore, Indian, J[^] jal, [^]difct-J;![!] aruk hundee, [^]S/y[^]o musooak, L-H;) irak. *Salvadora Indica*, *Pro. Lin.* (T) The leaves are of a purgative nature, and the fruit, which is edible, is called *ij\$*i peel, or j[^]jy peeloo.

Salvadore, Persian, JUI peeloo, u-/JI aruk, &&) rudee[^], |->&j*» surdub, e*U£ kudas, J[^]y** khurjal, *Salvadora Persica*, *Pro. Lin.* *Rivina paniculata*, *Linn.* (T) The berry has a strong aromatic taste like cress, and the bark of the root is so acrid as to be used by natives to raise blisters. It is supposed to be the mustard tree of Scripture.

Salvia Bengalensis, see Bengal sage.

Salvinia, hooded, l& pana. *Salvinia cucullata*, *Pro. Lin.* (A)

Sambucus nigra, see Common elder.

Sandal-wood tree, J*^u[^] ssundul, *uiuu^j*^u[^] ssundul suféd, &*^u*^u*- chundun. *Santalum album*. (T)

Sandarach tree, Ara tree, or Jointed arbor vitae, |j»jj*&*» sundroos. *Thuja articulata*, now *Callitris quadrivalvis*, *Pro. Lin.* (T) Yields the

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resinous substance called *Sandqrach*, from which *Pounce* is made.

Sanseviera, Cingalese, *t^^fy** murgabee ka crud'eh^U/* murooua, *Lc^r^u^?^* shoochee mookhee. *Sanseviera Zeylanica*. (H) An electuary made from the root is prescribed by native practitioners in consumption. A strong hemp, fit for bowstrings, is obtained from the leaves, and a white paper may be made from it of good quality.

Sapindus detergens, see Indian soap berry.

Sapindas emarginatus, see Emarginated soap berry.

Sappan wood, see Brasileto.

Sarsaparilla, Indian, *j * ^ mukooee, *>)** mugarboo, *Jy*k<A*Ul* anunt amool, *uyf^*aU* sad'eb booaree, R. *J^S* kurul. *Hemidesmus Indicus*, *Pro. Lin.* *Periploca Indica*, *Will.* *Asclepias pseudosarsa*, *JRox.* (Tw) Considered quite as efficient as the sarsaparilla of America as a medicine. There is another substance *in* the Indian bazars called *|*»j|* *aooshba*, usually translated sarsaparilla, but the plant that produces it is unknown.

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Sassafras treejfc^jjiLiA-yy sasafras. Sassafras, officinale. *Pro. Lin.* or *Laurus sassafras.* (T) Yielding the well-known medicine.

Saul tree, J^ sal, j«&Lu sank'hoo, Jti shal. *Shorea robusta, Dr. Wall.* (T) An useful timber tree growing extensively in the Morung, yielding also a balsamic resin called Uybj d'hoona.

Saunders-wood, red, ^^i*. JS lal chundun, ^a-l JI«*i-* ssundal a^mur, M)*&^<JZ*&J rukut chundun, ^.^wJt^L* ssundul surukh, **&& tmdum, *E> bu£um. *Pterocarpus santalanus.* (T) The wood is used by the dyers.

Saussurea, cotton-like, J-^^W^ p'haén kumul. *Saussurea gossypina, Dr. Wall.* (H)

Saw-wort, anthelmintic, or purple vernonia, ^js& bukchee, ^)j**y» soomraj. *Vernonia anthelmintica, Pro. Lin.* *Serratula anthelmintica, Rox.* *Conyza anthelmintica, Linn.* (H) The fruit is considered a very powerful medicine in worm cases, as well as the root.

Scaevola, Purslane-leaved, |mS^c^ - ^ ^ y^ durukht-u-choomuk'hee. *Scaevola lobelia.* (US)

Scammony plant, ^J^A« su^môneea, <^*^s^° mu/imood'eh. *Convolvulus scammonia.* (Tw)

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The resin, or drug is obtained from the root.

Schmidelia, aporetic, ^{^^ ^^} g'hee kushee.
Schmidelia aporetica, *Pro. Lin.* Ornitrophe
aporetica, *Rox.* (S)

Schmidelia, saw-leaved, *J-H* J^L> rakhul p'hul.
Schmidelia serrata, *Pro. Lin.* Ornitrophe sar-
rata, *Will.* (S) The ripe berries are eaten, and
the root, being astringent, is used to stop
diarrhoea.

Scilla maritima, see Squill.

Scindapsus, useful, J#s ^ guj peepul, }J*AJ
ousheera, J ^ *J ^ hat'h p'hood. *Scindapsus of-*
ficinalis, *Pro. Lin.* *Pothos officinalis*, *Hox.* (Pa)
Roxburgh says, the dried fruit is an article of
some importance in Hindoo Materia Medica, but
he does not inform us of the purpose to which it
is applied, going by the name of *guj peepul*.
It is said that a decoction is used for rheumatic
complaints as a fomentation.

Sciratula anthelmintica, see Anthelmintic saw-
wort.

Scirpus articulatus, see Articulated clubrush.

Scirpus bispicatus, see Two-spiked clubrush.

Scirpus glomeratus, see Glomerate clubrush.

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Scirpus kysoo^{ee} Barbed seeded clubrush.

Scirpus luzulae, see Clubrush.

Scirpus schcenoïdes 'see Erect clubrush.

Scirpus squarrosus, see Tufted clubrustu

Scirpus tetragonus, see Tall clubrush.

Screw pine, green spined, ^Q* keetukee, کيورا
keeora, J^{fcai}S gugund'hool. *Pandanus odoratis-*
simus. (T) The immature fruit is reputed to be
an emmenagogue, and the leaves are in some
parts made into mats: the tender white petals
of the flowers being extremely fragrant. It is
the *whana* tree of Otaheite. It is offered to
Mariama and Vishnoo.

Screw pine, foetid, UK *jj*^S keeora kanta.
Pandanus fctidus, *Rox.* (T)

Screw tree, East Indian, ^J^{j&y}" muroor
p'hulee, *i*^{sjjf} murooree. *Helicteres isora*. (S)
The juice of the root is said to be of use in affec-
tions of the stomach.

Scytalia danura, see Danurine nephelium.

Scytalia lichi, see Leechee.

Scytalia longan, see Longan. .

Secale cereale, see Common rye.

Secamone, alpine, |&yJ**» su/*mooneea. Scca-

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mone alpini, *Pro. Lin.* 1^Pploca secamone, *Linn.* (Tw) A drastic, supposed, though it is but doubtful, to yield *Smyrna Scammony*.

Semecarpus anacardium, see Marking nut.

Senna auriculata, see Eared cassia.

Senna sophora, see Round podded cassia.

Senna tora, see Oval-leaved cassia.

Senna, true, 'tī** suna, ^ ^ ^ ^ sôna mukee, tbỵ-^{*} soonapa*. *Cassia lanceolata*. *Drs. Wall.* and *JRoyle*, *C elongata* of *Leñiaire*, see *Lindley's Flora Medica*, (S) This differs in some respects from the *C. lanceolata* of *Forskahl*, which is by many supposed to be the *Suna* (^*0 of the Arabs.

Sesbania, or *Scsbana*, Egyptian, c^j;» jét. *Agati graijdiflora*, *Pro. Lin.* *Sesbania iEgyptiaca* or rather *S. grandiflora*. (H) The bark is a powerful bitter tonic.

Sensitive plant, y^ lujaloo. *Mimosa sensitiva*. (H)

Sesamum orientate, or *Indicum*, see Oriental oily seed.

Shaddock, y&' L_sjfe butaoouee neemoo, چکوتا

chukoota, s²^j.^hukootur'eh, *fy>y*~ chookoo-
tur'eh. *Citrus decumana*. (T) Originally from
China and Japan.

Shallot, J^y peeas, ^Uj peeaj. *Allium asca-
lonicum*. (B) One of the most commonly found
of the onion species in this country,

Shorea camphorifera, see Camphor tree.

Shorea robusta, see Saul tree.

Sida, dwarf, &V junka, R. *Sida humilis*. (H)

Sida, Mauritius, ^J&JS koongoonee, ^cJ^
kungoonee, u^Ai^ khuba^ee, ^.^ ^. khu^mee.
Sida Mauritiana. (H) Used as a substitute for
mallow-leaf, and native practitioners give infu-
sion of the root in fever.

Sida, rhomboid-leaved, & bula. *Sida rhombi-
folia*, *S. rhomboidia*, *liox*. (S)

Sida, small-flowered, ^ ^ j'hampee, R. *Sida
Asiatica*. (H)

Silk cotton tree, common, J*J*U seemul, J^4*«
see?wbul. *Bombax heptaphyllum*. (T) The wool
is used to stuff pillows, &c.

Silk cotton tree, five-stamened, J^*« سویت
sooét seemul, R. *Bombax pentandrum*. (T)

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Silver weed, veiny-leaved, कृष्णं रं bees taruka,
R. *Argyreia nervosa*, *Pro. Lin.* *Lettsomia ner-*
vosa, *Box.* (Tw)

Silver weed, white, स्यात्तुं सुमोदर'च शोका,
R. *Argyreia argentea*, *Pro. Lin.* *Lettsomia ar-*
gentea, *Rox.* (Tw)

Sinapis, see Mustard.

Singara nut, see Water caltrops.

Siphonanthus Indica, see Whorl-leaved clero-
dendrum.

Sissoo tree, यं सीसू, स्यात् sheeshum. *Dal-*
bergia sisoo. *Rox.* (T) The wood is dark colored,
and handsome for economical purposes.

Sisum sisarum, see Skirret.

Skirret, or white potatoe, यिं चिना लो.
Sisum sisarum. (Tv)

Sloe, एतुं अलुंग. *Prunus spinosa*, (T) Seldom
met with in India.

Smilax, China, see China-root plant.

Sneeze-wort, अं अं कुन्दुस. *Achillea ptarmica*,
now *Ptarmica vulgaris*, *Pro. Lin.* (H) The
whole plant is pungent, and provoking a flow of
saliva, the dried leaves cause sneezing.

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Soap-berry, eflferginated, **hj* reet'eh, ريشته
reesht'eh, ٲ? aia .^J^i bundukee hundee, اريشته
areesht'eh. *Sapindus emarginatus*. (T) The cap-
sule is a valuable expectorant.

Soap-berry, Indian, |**uj* reet'ha. *Sapindus*
detergens. *Rox.* (T) It is doubtful whether this is
not a mere variety of *S. saponaria*.

Solanum decemdentatum, see Ten-toothed
nightshade.

Solanum hirsutum, see Hairy nightshade.

Solanum indicum, see Indian nightshade.

Solanum insanum, see Mad apple.

Solanum Jacquini, see Jacquin's nightshade.

Solanum longum, see Cylindrical egg plant.

Solanum lycopersicum, see Tomata.

Solanum melongenum, see Common egg plant.

Solanum nigrum, see Blackberried night-
shade.

Solanum pubescens, see Downy nightshade, or
Wild potatoe.

Solanum rubrum, see Red nightshade,

Solanum stramonifolium, see Mad apple-leaved
nightshade.

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Solanum tuberosum, see P&atoe.

Sonerila, spotted, s[^]y* sootlee, (in the Khassee language.) R. *Sonerila maculata*, *Rox.* (H)

Souneratia, petal-less, |jy[^] khoora, R. *Souneratia apetala*, *Pro. Lin.* (T)

Sorrel, common, *[^] chook'eh, **»J> turs'eh, ciA+a» /iumazz. *Rumex vesicarius*. (H)

Sorrel, Indian red, or Indian hibiscus, uyl*>! ambaree, UuJ[^]« mésta. *Hibiscus subdariffa*. (H)

Sorrel, yellow wood, or procumbent oxalis, y[^]y[^]| ambootee, *Oxalis corniculata*. (B)

Sorghum vulgum, see Indian millet.

Sonchus orixensis, see Orissa sow-thistle.

Sorgmida febrifuga, see Red wood tree.

Sour gourd, (Ethiopian, called also the Baobab tree, or monkies' bread tree, [^]_^'v[^],[^]? bumnee imlee. *Adamsonia digitata*, (T). The fruit is a pleasant tasted, sub acid; and the dried leaves powdered, are found serviceable in diarrhoea and fevers. The tree is the largest in the world, the trunk having been found 30 feet in diameter. The fibres of the bark are made into rope and a coarse cloth, but it is of no use as timber.

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Southern-wood/Indian, *^^ X-eesoom, c-i«V.s^ burunjasuf, *ij& doon'eh, %j^fij^t barunk booe, i-Xsr^ junjuk. *Artemisia Austriaca*, *A. paniculata*, *Rox.* (US) The plant is offered to Shera, and to Vishnoo.

Sow thistle, Orissa, ^r|°K kamraj, t-tyrf bunpaluk. *Sonchus Orixensis*. (H) Used as greens by natives.

Sphaeranthus, Indian, ^4** mundee, y& du^oo, ur^ J^V chagul nudee. *Sphaeranthus Indicus*. (H) The seeds are by Indian practitioners, considered anthelmintic-

Sphaeranthus, soft, |j-jj JtoU^ khamadroos. *Sphaeranthus mollis*, *Mo.* (H)

Sphaerocarya, eatable, j%& lushpoo, ^^ bun am, (Nepalese). *Sphaerocarya edulis*, *Dr. Wall.* (T) The fruit is liked by the Nepalese.

Sphenoclea Zeylanica, see Cingalese pongatium.

Spinach, tetrandrous, ^UU*«) isfanaj, ^UU«#1 isfanakh, u5*?^ choolae, yj^i punees. *Spinacia tetrandra*, *Rox.* (H) Much and deservedly cultivated,

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Spikenard, $\overset{\wedge}{\underset{\cdot\cdot}{U}} \hat{U} \hat{j}$ 'hutamansee, سنبل الطيب w
 suwbul ul fceb, $\overset{\wedge}{\underset{\cdot\cdot}{ifc}} J^{***}$ suwbul hundee, چيهر
 chee'hur, j^{\wedge} ch'hur, « $\overset{\cdot}{y}$ nurd, \hat{j}^{\wedge} nardeen.
 Nardostachys jatamansi, *D. C. Valeriana jata-*
tnansi of Sir W. Jones, and Rox. (H) napda<rra \times *o(r*
or KapdosivdiKq of Dioscorides, the real spikenard
of the ancients, highly esteemed alike as a
perfume, and as a stimulant medicine; native
practitioners esteeming it valuable in hysteria
and epilepsy. Some writers doubt its identity
with this, but Dr. Royle's arguments may be
considered conclusive on this point, vide Roylds
Illustrations, p. 241 to 244.

Spiderwort, axillary, $US\text{th}$ бага нула, سوترا
 sootraj. Tradescantia axillaris, *Rox. (H)*

Spondias mangifera, see Hog plum.

Spurge, oleander-leaved, $j^{*}>j\text{£}$ t'hoo'hur, سيج
 seej. Euphorbia neriifolia, (S) The acrid juice of
 the leaves is prescribed as a purgative in the vis-
 ceral obstructions consequent on long continued
 intermittent fever by native practitioners, and
 also with *margosa oil* in contraction of the limbs
 by ill-treated rheumatic affections.

Spurge, sheathed, $\xi i^* \ll Uoy \ll$ moonsa seej, R. $\xi u^* jy6 \pm j^*$ munssoor seej, $**Ki \gg$ see'hund. *Euphorbia ligularia*, *Box.* (T) The root mixed with black pepper is used to cure snake bites. '

Spurge, spreading triangular, J/AJJ tud'hara, aifXui see'hund, $S^{\wedge} \text{ }^{\wedge} \text{ala}$, $\text{Y}^* \text{yU}$ nar-u-seej. *Euphorbia antiquorum*. (S) The juice is used by native doctors as an external application in rheumatic affections.

Spurge, thyme-leaved, t^* dud'hee, $\text{J}^{\wedge} \text{iy}^{\wedge}$ $*\&jji^*$ » so'et kheroog'eh. *Euphorbia thymifolia*, *Linn.* (H) The leaves and seeds are given to children in worm cases, and the juice, made to a paste with flour, is a strong purgative.

Squash, or vegetable marrow, $\text{J}^* \text{J} \$ \text{J}^*$ » sufura koomra. *Cucurbita ovifera*. (Tr.)

Squill, $\text{J}^* \text{**} \text{l}$ is[^]eel. *Scilla maritima*, *Pro. Lin.* (B) Having medicinal properties which are supposed to be possessed also by *S. indica*, *Roz.*¹

Squill, Indian, $\text{J} \text{ } \text{J}^{\wedge} \text{J} \&^*$. junglee peeaz, $\text{J} \text{ } \text{ }^{\wedge} \text{X}^*$ anssul, $\text{K} \text{ } \text{K}$ kanda, $\text{J}^* \text{S} \ll \text{l}$ isAeel, $\text{ }^{\wedge} \text{ }^{\wedge} \text{ }^{\wedge}$ peeaz-u-dushtee. *Ledebouria hyacintho'ides*, *Pro. Lin.* *Erythronium indicum*, *MotL* (B) Used as a sub-

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stitute for the true squill, and chiefly given to horses.

Staff tree, hardy, J r ^ sheelkool, R. *Celastrus robustus*, *Rox.* (T)

Stalagmitis gambogia, see Painter's Xanthochymus.

Stalagmitis ovalifolia, or *gambogioïdes*, see Indian gamboge tree.

Star-anise, see Anise.

Star apple, Indian, !;&JO petukara. *Chrysophyllum Roxburghianum*, *Dr. Wall.* Ch. *acuminatum*, *Rox.* But distinct from Ch. *acu.* of *Lamark.* (T) The fruit is eaten by natives, but is indifferant.

St. John's bread, yj&> u ^ k khurnoob nubfee. *Ceratonia siliqua.* (T) Considered to be the locust of the scriptures.

Sterculia fctid, f!|c^^^ junglee badam.

• *Sterculia foetida.* (T)

Sterculia, small-leaved, %jrjW;*[lj ram julparee, R. *Sterculia parvifolia*, *Rox.* (T)

Sterculia, stinging, ^ bulee, R.]uK kateera. *Sterculia urens.* (T)

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Stizolobium altissimum, see Assam bean.

Stizolobium pruriens, see Cowitch.

Strychnos, axillary, KfV* ^ur kuchla. *Strychnos axillaris*, *Cole.* (C)

Strychnos, colubrine, UJ &£ kuchla luta. *Strychnos colubrina*, *Will.* (C) Said to have virtues in the cure of snake bites.

Strychnos nux vomica, see Poison nut.

Strychnos potatorum, see Clammy nut.

Strawberry, <g4 ku'huj, y*uU) asasunoo. *Fagaria vesca*, and *F. Indica*. (H) The latter is common in Assam and the Himalayas.

Storax, common, uJjk^) ussluruk, cu & ^ su-lajut, *WO meeaut'eh. *Styrax officinale*. (S) The resin is well known as a drug, and is considered a stimulating expectorant.

Styrax benzoin, see Benzoin tree.

Succory, wild, %mS^^ kasnee, Uxia hindba. *Cichorium intybus*, (H) called *C. cosnia* by *Dr. Hamilton*. Used in medicine as a tonic, and in large doses as an aperient.

Sugar-cane, *^l uook'h, *O) Meek'h, «J'T ak, Uś guna. *Saccharum officinarum*. (G)

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Sugar grass, cylindrical, y>l teooloo, yi uloo)jJ) ulooa. *Saccharum cylindricum*, *IAnn.* (G) Used for thatching-

Sugar grass, fuscous, u^ khuree, R. *Saccharum fuscus*, *Rox.* (G)

Sugar grass, munja, ^y* moonj. *Saccharum munja*, *Rox.* (G)

Sugar grass, sara, +» sur, W^it* seent'ha, te^***'' seent'hee. *Saccharum Sara*, *Rox.* (G)

Sugar grass, spontaneous, |j»% kas,)jfl& kagara, R. *Saccharum spontaneum*, *Linn.* (G) Used to make mats, and for thatch.

Sugar grass, tall, c^*« surput, U^« surputa, lfr» surkura, ^SxS tung. *Saccharum procerum*, *Rox.* (G)

Sumach, elm-leaved, jU^ suma/^, ^ turn turn. *Rhus coriaria*. (T) " Does not grow in India; but I perceive that the plant has a place in the Ulfaz Udwiye, and is therefore known in the higher tracts of Hindoostan."—*Ainslie*. It is a powerful astringent, and a native of Persia.

Sunflower, ^s^^jy sooruj muk'hee. *Helianthus annuus*. (H)

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Swallow-wort, coated, LXII kuleea luta, چاگل
پاتي chagul patee, R. yūyl arustoo. *Asclepias*
tunicata, *Rox.* (Tw)

Swallow-wort, double, Ula^a l? ^ ch'hota
dood'hluta. *Asclepias geminata*, *Rox.* (C)

Swallow-wort, emetic, or Green flowered
cynanchum, Jy*^l wntamool, J^l atmul.
Cynanchum viridiflorum, now *Tylophora asth-*
matica, *Pro. Lin.* *Asclepias asthmatica*, *Rox.*
(Tw) Answers the same purpose as *Ipecacuanha*,
and successfully used as such by Dr. Anderson,
Physician General at Madras, and others.

Swallow wort, prickly, ^! atrun, ^ 1 ^ sug-
oanee, y*»j) arustoo, *Asclepias echinata*, *Rox.*
Cynanchium extensum, *Linn*, and *Will.* (Tw)
The leaves are anthelmentic.

Sweet briar, see Rose.

Sweet flag, see Flag.

Sweet potatoe, yi*^S/^ shukur^und aloo, yi*^
pundaloo. *Convolvulus batatas*. (Tu)

Sweet sop, see Custard apple.

Sweet sultan, yty- azeez, ai«^*ti sha'h pusund.
Centaurea moschata. (H)

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Swietenia febrifuga, see Febrifuge mahogany tree.

Symplocos ferruginosa, ^^ dookuteea, R. *Symplocos ferruginea*, *Rox.* (T) Used for dyeing yellow.

Symplocos, prickly, ^*sjym* booree. *Symplocos spicata*. (S)

Symplocos, racemose, <*j lood'h. *Symplocos racemosa*, *Rox.* (T) The bark is used in dyeing red as a mordant, and the red powder thrown about at the *Hoolee* festival, is in some places made of this bark.

Tacca, small, UqJ^* ^y mootee moond'ha. *Tacca levis*. *Rox.* (H) The tuberous root yields a fecula, or starch, similar to arrowroot.

Tacca pinnatifida, see Salep.

Tagetes erecta, see African marygold.

Tagetes patula, see French marygold.

Tamarisk, Indian, j^ j'haoo, ^ 1 aj, ^ e ^ j a durukhtu kuzhum, y* > j^ shoor'eh gus. *Tamarix Indica*, *Linn.* (S) Dr. Royle says the galls of this, as well as of *T. dioica*, and *T. orientalis* are

highly astringent, and used both in medicine and dyeing.

Tamarisk, French, £ guz. Tamarix Gallica.
(T)

Tamarisk, furas, |j»|?' furas, cPl asul. Tamarix furas, *Dr. Ho.* (T)

Tamarind tree, ±^°) imlee, i^ ^I imbulee, ^dia^S tumur hundee. Tamarindus Indica. (T)

Tapioca, see Cassava tree.

Tare, hairy, jj**'' musoor. Ervum hirsutum.
(C)

Tea, Indian, see White Basil.

Tea tree, U* cha. Camellia viridis and C. bohea, or Thea viridis, and T. Bohea, *Linn.* (S)

Teak tree, ^y* saj. ciA* sagoon. Tectona grandis. (T) Yielding a strong and durable timber, reckoned superior to any other for ship-building.

Tectona grandis, see Teak tree.

Terminalia catappa, see Indian almond.

Terminalia, hairy, ^T asun. Terminalia tomentosa. (T) The tree on which one species of the tussur silk worm feeds.

Terminalia belerica, see Belleric myrabolan.

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Terminalia cucuula, see Chebulic myrabolan.

Terminalia, winged, (^ri& an&9 (1/^j) arjun.

Terminalia alata, *Pro. Lin.* Pentaptera tomentosa, *Box.* T) The bark is astringent and febrifugal-

Ternstroemia, saw-leaved, lyij oalooa. *Ternstroemia serrata*, *Pro. Lin.* or perhaps rather *Eurya Chinensis*, *Pro. Lin.* (T)

Tetragonolofcus edulis, see Winged pea.

Tetranthera, petalless, Uj ^ ^ ^ y kookree cheeta.

Tetranthera apetala, *Pro. Lin.* (T)

Thea viridis, and bohea, see Tea tree.

Thistle, prickly globe, l/ISts^l woont kutara, j\JS kutara. *Echinops echinatus*, *Rox.* (H)- A native of Mysore, camels are fond of it.

Thistle, yellow, or prickly poppy, seo Mexican argemone.

Thorn apple, downy, *—&* kunuk. *Datura metel.* (H)

Thorn apple, purple,)jy* >* d'hutoora, ly&«jStf kala d'hutoora, J&*jy* > jooz masul, ^4j^ goos geea'eh, ±s^*th^{bun}J dushtee. *Datura fastiiosa.* (H) Pieces of the plant are smoked in cases of asthma, and a powder of the root is given in

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epileptic cases by Mahomedan practitioners; the fresh leaves making a poultice for scrophulous diseases, and cancer, with the Hindoos. Its strong narcotic principle has caused it to be ranked among poisons.

Thunbergia, great-flowered, UffJ** mél luta.
Thunbergia grandiflora. (Tw)

Thyme, garden, /\$ ipar, t^| irpa, L&U> ^asha.
Thymus vulgaris. (US)

Toadstool, Jb* futfur. Limacium carnosum.
(Fungus) The native name applies to all *noxious* plants of the family.

Tobacco, Virginia, jiUS tumakoo, ^UJJ tum-
bakoo, cX^^æJ bujurb'hang. Nicotiana taba-
cum. (H)

Tomato, or Love apple, ii/^^J\$ goot bégun,
^/JU^^L\$J oulaeeté bégun. Solanum lycopersi-
cum. (H)

Toon, see East Indian bastard cedar.

Tooth-ache tree, Budumgan, ut)Jj budrung,
(Sylhet). Xanthoxylum budrunga, or Fagara
budrunga, *It ox.* (T) The seeds are aromatic, and
used medicinally by the natives.

Tooth-ache tree, peppery, >&H^ shu'lineas.

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Xanthoxylum piperitum. (T) Used in China, and Japan as an antidote against poisons.

Tooth-ache tree, winged, ^.* durmur. **Xanthoxylum alatum, Rox.** (T)

Tradescantia axillaris, see Axillary spiderwort.

Tragia, hemp-leaved, ^sjy^^ kanch kooree, ^^*^ kasug'hunee. **Tragia canabina.** (Tr)

Travancore arrow root, see East Indian arrow root.

Tilia rubra, see Common lime tree.

Thuja articulata, see Sandarach tree.

Trapa bicornis, see Chinese water caltrops.

Trapa bispinosa, see Two-spined water caltrops.

Trefolia, Indian, ^^ bun met'hee. **Trifolium Indicum.** (H)

Trewia, naked, yiJ^ pund-aloo, |*J^ peetalee. **Trewia nudiflora, Will,** or **Rottlera Indica** of *Gcett.* (T)

Triantha, five-stamened, |fi£^j''4 bus k'hupra. **Triantha pentandra.** (Tr) Used by native medical men.

Triantha, purslane-leaved, u&§^U nasur

jungee, *i*sfi±i* punurunaouee. *Trianthea monogyna*. (Tr) The root is slightly cathartic.

Trianthea, trailing [^] [^] 1 [^] guda bunee. *Trianthea decandra*. (Tr)

Trichosanthus dioica, see Dioceous snake gourd.

Trichosanthus palmata, see Palmated snake gourd.

Trichosanthus anguina, see Common snake gourd.

Tribulus lanuginosus, see Downy caltrops.

Trifolium pratense, see Common clover.

Tribulus terrestris, see Small caltrops.

Trigonella comiculata, see Horse shoe fenugreek.

Trigonella fsenugraecum, see Common fenugreek.

Triphasia, three-leaved, [,] [^]/[^] [^]s[^] cheenee narungee. *Triphasia aurantiola*. (S)

Triticum aestivum, see Summer wheat.

Trophis aspera, see Bamoon tree.

Truffle, *f\$* kum, UJ kuma. *Tuber cibarium*, (Fungus.)

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Truropet-flower, Indian, &y» soon. *Bignonia Indica*. (T)

Trumpet-flower, tree, J;^ parul. *Bignonia suaveolens*. (T)

Tuber cibarum, see Truffle.

Tuberose, common, <.*£ shubu, y.***+& J\$ gul shub boo. *Polianthes tuberosa*. (Tu)

Tulip, common, (jEULC shu^aee^, *W lal'eh, f& shuAur. *Tulipa gesneriana*. (B) Is little known in India, though originally from Persia, and taken thence to England in 1559.

Tulip-tree, large-flowered, Vx^ us*.* doolee chumpa, R. *Liriodendron grandiflora*. *Rox.* (T)

Turmeric, common, \J»J*Q peetrus, UU^ . Auma- ma, *j>fr&jj zurd choob, <^A hurd, i^s<&* huldee. *Curcuma longa*, *Amomum curcuma*, *Gmelin*. (H) Forming a prominent part of all curries, and useful as a common yellow dye. Bitter, aromatic, stimulant, and tonic ; and used in debilitating ferns, &c. also by natives for cleansing foul ulcers.

Turmeric, grey, *J^J*^ neel kunt'h, كالا هلدي kala huldee. *Curcuma cassia*. (H)

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Turnip, a, *Jd£* shul[^]um, $\underline{L}^{\wedge}F^{**}$ suljume, cui/
luft. *Brassica rapa.* (F)

Turnsole, Indian, $\underline{b}^{\wedge} \wedge^{**}$ hutee shoora, $u^{\wedge}Hf''$
sureearee, $LS^{**}JJJ+>$ b'hoo roondee, $\wedge \wedge$ kasnee.
Heliotropium indicum. (US) The juice of the
leaves is applied by nativd practitioners to gum
boils.

Turpentine tree, *fh-i* bufum, $\wedge \wedge$ sukur. *Pistacia*
terebinthus. (T) It furnishes the Cyprus turpen-
tine by wounding the bark.

Tylophora \wedge *asthmatica*, see Emetic swallow-
wort.

Typha elephantina, see Elephant, or cats* tail
grass.

Ulex nanus, see Dwarf fern.

Ulnus, see Elm.

Unona, bushy, $\wedge \vee \wedge \wedge \wedge P^3$ foobae char'eh.
Unona dumosa, *Hox.* (C)

Unona, long-leaved, \wedge kulakura, R. *Unona*
longifolia, *Pro. Lin.* (T)

Urena, angular-leaved, \wedge bun ookra, R.
Urena lobata. (US)

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Urena, cut-leaved, [^].j&\$ kungooeea, R. *Urena sinuata*. (US)

Urtica crenulata, see Notched nettle.

Urtica globulifera, see Round nettle.

Urtica interrupta, see Stinging nettle.

Utricularia, see Hooded milfoil.

Uvaria longifolia, see Mast tree.

Valerian, ^ur ^ J ^ jal lukree, y foo. *Valeriana villosa*. (H) Found in Deyra Dhoon, but common in the Hills.

Valeriana jatamansi, see Spikenard.

Valisneria, alternated, ^{^^^}1^ janjee, ¹⁵^-^ jajee. *Valisneria alternifolia*, *Rox.* Hydrilla of *Hamilton*. (A) Is used in refining sugar, to supply the moisture requisite to separate the molasses.

Valisneria octandrous^1.^* soouar. *Valisneria octandra*, *Will.* (A)

Vanguiera, prickly, ^{v^^*} mudun, ^{J^^*} meen p'hul. *Vanguiera spinosa*. (S)

Vateria, lance-leaved, ^{jy<>} mooal. *Vateria lanceifolia*, *Pro. Lin.* (T) Produces the balsam called ^{iJ^} goond by the Brahmins.

Vegetable, marrow, see Squash.

Ventilago, Madras, *£&; ruktuput'eh. Ventilago Madraspatana, *Gcert.* (C)

Verbascum thapsus, see Common mullein.

Verbesina, Ceylonese, ^Xi^j^jy peela b'hungur'eh, |ijj>& kushooreea, ^i*) */&fj b'hungur'eh asfur. *Verbesina calendulacea.* (H) The whole plant is aromatic, and considered deobstruent.

Verbesina, climbing, *g}j&j& b'hrungraj. *Verbesina scandens.* (G)

Vernonia, purple, see Anthelmintic saw-wort.

Vervain, creeping, ^13 tan, I/^j*? b'hoeee ookra, *Zapania nodiflora*, now *Lippia nodiflora*, *Verbena nodiflora*, *Linn.* (Tr)

Vetch, bean-like, *i&£ kushn'eh, *3j)S kulool'eh. *Vicia faba.* (Tw) This is the horse bean cultivated in Nepal.

Vetch, chickling, uy*-* kusaree, jy>& kusoor. *Lathyrus sativus.* (C) The plant is good fodder for cattle, and the seeds are used as food by natives.

Vetch, common, |&j| arud'eh, ur;^' ankaree, ur/Gl tmkree, ^r^5 adus. *Vicia sativa*, (Tw) Cattle are fond of it.

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Vetchling, yellow, U₄x ; ^ musoor chuiia. *Lathyrus aphaca*. (C)

Vicia faba, see Garden bean, also Bean-like vetch.

Vicia sativa, see Common vetch.

Vinca rosea, see Madagascar periwinkle.

Vine, bearded, *jj>^£ tagoor'eh. *Vitis barbata*, *Dr. Wall.* CO

Vine, black grape, ^ u ^ ; J durukht ôveen. *Vitis vinifera*, (C) *var.*

Vine, broad-leaved, &^ gooueela. *Vitis latifolia*, *Rox.* (C)

Vine, common, <_Tff tak, jj ru.c, ,*/ kurm, js&| angoor. *Vitis vinifera*. (C) *Vitis parvifolia*, *Rox.* is described as having the same habit, and is a native of the eastern part of Bengal.

Vine, Indian, a^J^J amd'hook'eh, *Vitis indica*. (C)

Vine, red-leaved, ^J>&*>U rajgagee. *Vitis rubifolia*. *Dr. Wall.* (C)

Vine, white grape, j*& na'hur. *Vitis vinifera*, (C) *var.*

Viola tricolor, see Pansy.

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Violet, shrubby, $y^{\wedge}jji^{\wedge}j$ rutun poorus. *Viola suffruticosa*, Will. (H) The leaves and tender stalks are demulcent, and are used in decoction by natives-

Violet, sweet, *£ÄXJ bunufsh'eh. *Viola odorata*. (H)

Viscum album, see Mistletoe.

Vitex negunda, see Quadrangular chaste tree.

Vitex trifolia, see Three-leaved chaste tree.

Vitis, see Vine.

Vitis vinifera, see Corinthian grapes.

Volkameria infortunata, see Long flowered clerodendron,

Volkameria, smooth, $\wedge \wedge$ t-Slw sung koopee, \wedge Ijii kundalee, $\wedge^* > = \wedge$ bunjooma. *Volkameria inermis*, Linn. (S) Occasionally employed in medicine on account of its slightly bitter, sub-astringent quality. *Ainslie* says, that Hindoo doctors prescribe the juice of the root in scrophulous affections.

Wall ^flower, J ^S Aurunful, لهواشبو lu'hooa shuboo, cH^" kheeree. *Cheiranthns cheiri*. (II)

Walnut, &jj±-) akhrôt, | ^s**y*jj?- jooz du-

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rukhtee, ^j=^ akhroo*, >H>V charmu^xr, خسف
khusuf. *Juglans regia*. (T)

Wampee tree, Chinese, ^ • ' j ooampee, وامپيچ
ooampeech. *Cookia punetata*. (CT) Affording a
small fruit of sub-acid taste, juicy, and very re-
freshing to persons suffering from the parching
thirst attending fever.

Water caltrops, Chinese, J/«&*» sung'hara.
Trapa bicornis. (A) Not much used in India,
but in Japan the seed is put into soups, &c.

Water caltrops, two-spined, Jtji^ttj panee p'hul,
R.)J^XLU sung'hara. *Trapa bispinosa*, JPro. Lin.
(A) The nut is eaten.

Water cress, j^My* deeoookandur, |J\ym susab,
^|jb K ^ib panee ka halum, ^^ pundoo, ^^j
rooas, ^i^ kubeekuj. *Nasturtium officinale*. (A)

Water hemlock, creeping rooted, ^s^J*^ pan
turasee, R. *Phellandrum stoloniferum*, JRox. (H)

Water lily, g>) abju, ^ ^ kôee, J*J& neerufur,
gy/ mnbuj, c-fc;U« sarung, ^j^ baruju, jijlxi nee-
loofur. *Nymphaea lotus*. (A) Common in pools.

Water lily, eatable, *«£ kumud. *Nymphaea*
esculenta. (A) The tuberous root is eaten and
held in esteem by natives.

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Water melon, see Melon.

Water weed, upright, uu*«K kast. *Chara verticillata*, *Rox.* (A)

Webera, climbing, V*yj#s* gujer £ota, R. //i kara, *Webera scandens.* (C)

Webera, corymbose, \J&£ kunkara. *Webera corymbosa.* (S)

Webera tetrandra, see Small flowered canthiun.

West coast creeper, Uf *≡?« kunj'eh luta, R. *Asclepias odorotissima*, *Rox.* (Tw)

Wheat, summer, y^^ geehoon, y_t bur, *£ goom, R. ***\$ gundum, A-ka* humt'eh. *Triticum aestivum.* (G) Several varieties are grown in the cold season.

Willow, four-seeded, QJJ bed, U^ . ^u panee chooma. *Salix tetrasperma*, *Rox.* (T)

Willow, rosemary-leaved, uXi^ juu b6d mushk, J^> ban. *Salix rosmarinifolia.* (S)

Willow, weeping, u^i ^urub, &y£ kubood, *kt b6d. *Salix babylonica.* (T)

Willughbeia, eatable, (•l_u# lutee am, R. *Willughbeia edulis*, *Rox.* (C) The fruit is eaten by natives, it also furnishes birdlime.

VOCABULARY .

Windflower, garden,) ^ 1 CJU**^ boostan afroosr.
 Anemone hortensis. (B) Found only in Persia,
 and some of the mountains.

Winter-cherry, clustered, %&&»| wsgund'eh,
 J I U asgund, ar o^j b'ehmun. *Physalis somnifera*,
 or *flexuosa*. (US) The leaves steeped in oil are
 applied to inflammatory tumours; it is said to be
 narcotic, ditiretic, and alexipharmic, and suppos-
 ed to be the *srpvxw wcmjcos* of Dioscorides.

Winter-cherry, Peruvian, or eatable, called
 also the Country gooseberry, | ^ Jupureea, *i^
 poot'eh, *Physalis Peruviana*. *P. angulata Linn.*
 (US) It is cultivated for its fruit which is of
 pleasant subacid flavor.

Wolfs bane, wild, *jfyj* ooésh, g* bekh, or
 beekh, u.^ ^ t J ^ ^ khanu ^ ^ lzeeb, ^ Jv ^ beesh,
 U^*? beeshma. *Aconitum ferox, Dr. Wall.* (H)
 From the root is extracted the virulent poison
 used for arrows by the Nepalese.

Wood apple, see Elephant apple.

Wormwood, Indian, Ujjjdoona, ^kLuJI afsun-
 teen, \$ guloo, cXp ^ junjuk, ^Ucxii gundmar,
 مستارو mustaroo. *Artemisia indica*, (H) The leaves

are slightly aromatic and bitter, and considered in India an antispasmodic, and deobstruent; it is the *afyivQiov* of the Greeks.

Wrightia, or Rosebay, oval-leaved, see Medicinal oleander.

Wrightea, common, $\wedge U \underset{\cdot}{U} \wedge$ ch'heelpatee.
Wrightea caryotoi'des. (T)

Xanthium, Indian, $\}j\&4$ g'hag'hra. Xanthium Indicum of *Kdnig. Roxburgh* thinks it the same as Xanthium orientate. (H)

Xanthophyllum, green, $\underset{\cdot}{c} r \wedge$ goondee, R.
Xanthophyllum virens, *Pro. Lin.* (T)

Xanthaxylum alatum, see Winged tooth-ache tree.

Xanthoxylum budrunga, see Farunga budrunga, or Budrungan tooth-ache tree.

Xanthoxjdum piperitum, see Peppery tooth¹ttche tree.

Xantochymus ovalifoliu?, see Indian gamboge tree.

Xantochymus, painter's, JUJ tumal, $J \wedge \pm s^* > t$
du'hee p'hul, R. $di \wedge \wedge Uac$ assara reeound. Xan-

VOCABULARY-

thochymus pictorius, Stalagmitis gamboja, *Rox.*
(T) The juice when inspissated yields a kind of indifferent gamboge.

Ximenia, Egyptian, {11/^ hungun. Ximenia
iEgyptica, *Juss.* (T)

Xylocarpus, granular, jy*i pusoor, R. Xy-
locarpus granatum, *Pro. Lin.* (T) Extremely
bitter.

Xyris, Indian, jUda* cheena #a2a, R. Wj^^*3
dabee dooba, Xyris Indica, *Linn.* (A) The
natives of Bengal consider it a cure for ring-
worm.

Yam, fasciculated, s^&y** soot'hnee. *Diosco-
rea fasciculata, Rox.* (Tu)

Yam, prickly stemmed, yicxiAS^ chôta pund
aloo. *Dioscorea aculeata, (Tu:)* This a very
delicate and valuable species.

Yam, Winged-stalked, yij; rutaloo. *Dioscorea
alata, (Tu)*

Zapania, knot-flowered, see Creeping vervain.

Zea mays, see Maize.

ENGLISH AND NATIVE

Zedoary, long, *WjJ zurunbad, jy? kucloor,
خار>K kakhar. Curcuma zerunbet. (H)

Zedoary round, j^***. judooar, Jlj&j zudooar,
سي^i^ nurbusee, cj**^! ambee huldee, J^ bar.
Curcuma zedoaria. (H) Employed in heartburn,
colic, cramp, and torpor of the intestinal canal;
the Hindoos use the root as a perfume.

Zinziber officinale, see Ginger.

Zizyphus jujuba,* see Jujube.

Zizyphus nitida, see White jujube.

Zizyphus lotus, see Lote tree jujube.

USEFUL TERMS.

UJ) ab, Water.	V-7?*) ajoor'eh, Wages.
^dl*] or dWJ abad or abadee, Cultivation.	V«>l adk'hoola, Half blown.
UU) wbana, To sow, or plant.	*&%*) ad'h puk'eh, Half ripe.
لر) abur, A cloud.	ادھچا ad'h kucha, Half ripe.
رد;) abrud, Cold.	j)j) aram, A grove.
سال) absal, A vineyard.	u»j\ arus, Juiceless.
شہی^l abkeeshee, Barren.	U;) arna, To prop.
اب وھوا ab-6'huooa, Climate.	)jz\ arooa, A prop, yl ar'eh, A saw/
ہی^1 abee, Aquatic.	ال*AXI') isteessal, Eradicating.
^1 apubun, A grove.	اسمان asman, The sky.
j|si) apjaoo, Fertile.	j|sA) ashjar, Trees,
اتال atal, A stack,	اشن wshun, Warm.
اتوی atooee, A forest,	اصل سطر wssul suttubur,
اجارہ ajareh, Farm, or rent.	اقليم i^leem, Climate.

NATIVE AND ENGLISH

اکھا ak'ha, A sieve.	باد bad, Wind.
اکھلی ttk'hlee, A wooden mortar.	بادل or ^jlj badur, or badul, A cloud.
اگی or tfl aga or agé, Before, or in front of*	بادہ bad'h, Stubble.
اگمغا iltum<7a, A royal grant.	باری] ; ^ baraduree, A summer house,
الچھنا ulch'huna, To drain.	باران baran, Rain.
امل amul, Acid,	باریW baree,, An enclosed garden.
امود amood, Fragrance.	بارغ W ba<7, An enclosed garden.
انتھا >l intu'ha, End. .	بچہ ^ b. ba^eech'eh, A small garden.
اندا anda, An egg.	باو W baoo, Air. .
انکورا il ankoora, A sprout.	بوتپ J butup, A tree.
اوسرا ftoosra, Barren,	بچیا** biclialee, Straw,
اولا or J^l aool, or aoola, Hail.	بچھو rf bich'hoo, A scorpion.
اهلو or to*I a'hla, or a'hloo, The inundation.	بداھنا buda'hna, To harrow, or plough in seed.
اچھلی >fji) aeerum bulee, Box-leaved, arum.	بدق buduii, A duck.
بابی W babnec, A snake hole.	بر *)y. burabur, Even alongside.

VOCABULARY.

برسكال buruekal, Rain.	y. boo, Smell, or odour.
لبرق bur£, Lightning.	لوارا boara, Seed-time.
لبرلا burla, A wasp.	بوستان boostan, A flower garden.
بوزن buzun, A harrow.	
بوستوي* bustooee, A lizard.	لونا l bona, To sow, or plant.
بشتي&J bishtee, Rain.	لو كولا H? b'haloo kôla, Hvena.
بلكر butteei ⁸ ; A quail.	
بلقله bu^l'eh, A plant.	لهرانا b'hurana, To fill.
بلا > or J^ bukul, or buk-la, Bark, rind, &c.	لبن bu'hun, Seed.
بلا* bugla, A paddy-bird, or stork.	لج^J b'hundlee, The palmer worm.
بلو^ buloo, Sand.	لورH? b'hunoor, A nursery, or seed plot.
بلووا bulooa, Sandy.	لپولت* b'hoolut, Earth.
بلي H or ^Jk bulee, or beelee, A climber,	لپوین > b'hooeen, Earth.
بلي*? bumunec, A red-tailed lizard,	لپوین b'hooeen, A hairy caterpillar.
بزر buzur, Seed.	بتي b¥. .or yÛ^ b'heetoo, or b'heetee, Stalk, or stem.
بندنه JJÛ bund'hna, To tie.	
ببور^ bunoor, A creeper.	بكه iM b'heek'h, A toad.
	بیا > beea, Seed.

NATIVE AND ENGLISH

bee ar, A nursery, or seed plot.	پتپت or L^aj putut, or puteet, Fallow.
beejee, A mungoos, or weasel.	پتاری putaree, A weevil,
beecli'hoo, A scorpion.	پتاو putao, Irrigation.
beekh, A root.	پنه کرنا isgi pukht'eh kurna, To ripen.
beer, A well.	رات; purat, Dawn.
beega, Crooked.	پراگ purag, Pollen.
becg'ha, A Beegah, in Bengal 14,400 square feet.	پرت purbut, A mountain.
bel, A creeper.	پرت پرت purb'hat, Dawn.
beel boota, A shrub.	پرت پرتی purtee, Waste land,
beeluk, A mattock.	پرت پرتیسی purdése, Exotic.
beenj, Seed.	پشپ pushup, A flower,
béng, A frog.	پشه push'eh, A gnat.
pat, A leaf,	پک > puk, The Indian cuckoo,
panee, Water.	پکا puka, Ripe.
paoos, The rainy season.	پکھال puk'hal, A water-bag.
	پکھری puk'hree, A petal.
	پکھرو puk'hecroo, A bird.

VOCABULARY.

<i>j&g</i> pugar, A mound.	پوروو poorooa, A village,
<i>lib</i> pulna, To thrive, to be nourished.	پوري pooree, A gate. & p'eh, Dawn.
<i>jb</i> pulou, A sprout, or spray.	<-&^; p'hatuk, A gate. UJUJ p'hatna, To rend, or split.
<i>yj</i> puloo, A worm.	پهار pu'har, A mountain, or hill.
UJ puna, A leaf.	پال p'hal, A plough- share.
*UJ puna'h, Shade.	پهوارا p'haora, A mat- tock.
<i>gi</i> punj, A heap.	ل^; or j%* p'hur, or p'hul, Fruit.
ک&ک punduk, The turtle dove.	پير peer, A tree,
پندوري pundooree, A falcon.	پهوسا p'hursa, An axe. پهلا p'hulka, A flower.
ري^ ui pun kookree, A snipe.	پهوارو phulooareo, A flower.
كول ^ P ^{un} ^00^ ^ snipe.	م^ت كري p'hut kuree, Alum.
er*&J pung^t, A row.	پهنگا p'hunga, A grass- hopper.
Uj puneea, Water.	
|jbt> pood'ha, A sapling,	
پورا poor^a> F ^u ^> com- plete.	
پورب poorub, East.	

NATIVE AND ENGLISH

پهنگي p'hungee, A sprout.	A نشتر <i>ii</i> péshtur, Sooner,
پهوتا p'hoota, Broken.	پيش رس peesh rus, Ear-ly, as applied to fruit.
پهورنا p'hoorna, To burst.	چارا J pé#ar, A ditch.
پهول p'hool, A flower.	زيبلك peeluk, The large black ant.
پهولنا p'hoolna, To bios-som.	پناللا J penala, A spout, or gutter.
پهونهار or \wedge s [^] yH p'hoonee, p'hoo'hee, or p'hoon'har, Small rain.	پنچنا \wedge péchna, To winnow.
پهيلنا p'heelna, To spread.	پيند fçj peend, A roller.
پهينا دينا \wedge 4 J p'hénk déna, To throw away.	پوند % peeound, A scion.
پيچ péch, A twist, or coil.	تاب J tab, A twist, or coil.
پهيا*! or j%fH pee-ch'hoo, or peech'hee, Behind.	تابان-qli' tabustkn, Summer, or hot weather/Heat.
پيدري peedree, A tortoise.	تات #tat, Canvas.
پيزنه pee2;n'eh, A sieve.	تازو tazuh, Tender, or fresh.
	تالو or U»SU talab or tulaoo, A pond.

VOCABULARY.

- |5 ta?wbeel, A tor-
 toise.
- لبر tubur, An axe.
- بل3 tubul, An axe.
- تپن or v-ö tup, or tu-
 pun, Heat.
- تپري tupree, A mound.
- تتری tutree,ف» The sand
 piper.
- تي5 tutee, A screen,
- تنه^ tukht'eh, A bed
 of flowers,
- تخم tu'hum, Seed,
- تدا tuda, A grasshopper.
- تداگ tudag, A pond.
- تدي tudee, A locust,
- تر tur, Moist.
- ترو or^# turn, or turoo,
 A tree.
- تراب3 turab, Earth.
- تراي turaee, A marsh.
- ترش turush, An acid.
- . ترش* turushuA, Small
 ram.
- ^i]7 turashna, To
 prune.
- لركا turka, Dawn.
- ركارى* turkaree, Escu-
 lent vegetables.
- ترمتي turmutee, A
 hawk.
- تلىXlJü tufseed'eh, Crack-
 ed from heat.
- تكتي tuktukee, A lizard,
- تلى tul, A hillock.
- تليه£ tulee'h'eh, A turtle
 dove.
- تليا tuleea, A pond.
- توندي or ,r*xiJ tundee,
 or toondee, A bro-
 ken branch.
- توتي or Uÿ tôta, or too-
 teo, A parrot.
- توترو tootro, A turtle
 dove.
- تورالنا tôrdalna, To
 break down.
- توردينا tôrdéna, To break.

NATIVE AND ENGLISH

تورلينا tôrléna, To break off, or gather.	تهیکا t'heeka, Hired, or contract labor.
توسي toosee, A bud.	تينا teeta, Bitter.
] / ȳ ðokra, A bas- ket,	تتر teetur, A partridge.
Jtf Jÿ tîl tal, Weigh- ing, or measuring.	تتری teetree, A butter- fly.
lyÿ toonooa, A hawk.	ترا teera, The trunk of a tree.
تہ or SV JV t'hal, t'hala, or t'halee, A large branch.	تچہ or U^-jt? teerch'ha, or turch'ha, Crooked.
تہالا t'hala, A bason round a tree to hold water.	تہمارا teermar, A viper, تہرہا tér'ha, Crooked.
تہلیا? t'huleea, A water pot.	تہری teeree, A locust, تہکن or uXJ teek, or teekun, A prop.
تہندی or)*&& t'hunda, or t'hundee, Cold.	تہکھا teek'ha, Pungent. تہگرا teegra, Rising ground.
تہنی tu'hnee, A large branch.	تہہہ teookee, A prop,
تہورا t'hôra, A little.	تہابت sabut, Firm.
تہوی t'hoot'hee, Stub- ble.	تہلب salub, A fox.
تہیک fheek, Exact.	تہمر* sumur, Fruit, also gum.

VOCABULARY.

جادج j aduj, A path.	*&*** or J^ jungul,
جگو U. jagoo, Place or space.	or juugl'eh, A forest, or waste.
JU. or JU* jala, or jal, A cobweb, or net.	^yh- junoob, South.
جھالرا j'halra, A spring.	جوی or جو joo, or joo-ee, A brook,
جبل^ jubul, A raountain.	j^y*- jôtar, A husbandman.
جلیا-jutae, Arable.	جور joor, Joining,
جبر&. jur, A root.	جور joor, Cold.
جرت)j*. juroout, The trunk of a tree.	جونگ jôuk, A leech,
جرا-jur*ch, A hawk.	جوه joo'eh, A yoke.
جری* a* j^free, Lattice-work.	جھابڑ j'habur, A marsh.
جیو&*. jugnoo, A fire-fly.	جھار^ j'har, Underwood.
جگه jug'eh, Place or space.	جھاپ^ t^ j'hawip, A shutter, or screen of mat.
جگول?>>>jul, Water.	W?^?- j'hanj'ha, The caterpillar of the cabbage butterfly.
جلا^ jula, A lake.	j^h?* j'hankur, Underwood.
جلدی^ juldee, Quick.	y^y^^ j'hanoolee, Hot wind.
جمنا jumna, To germinate.	ly^ j'huboo, Bent.
جمنبو jumboo, A jackal,	

NATIVE AND ENGLISH

پهر* > j'hur. Rain.	چرپرا - churpura, Acrid.
جهلار j'hular, A thicket, or waste.	چورز** churu.?, A bustard.
جهلي j'hulee, A cricket,	چورغ churg, A hawk.
جھل c?-j'heel, A lake.	چورکين* - churkeen, 'Dung.
j&bs?* j'heengur, A cricket.	چورپيا» chureea, A bird.
چورسجج* & jéoooree, A worm.	چورکت chuft, A prop.
چار^- char, Turf.	چورته^ chuft'eh, An ar- bour.
چاس chas, A ploughing.	چورقال. chuAal, A jackal.
چاسا* chasa, A plough- man.	چورک^ chuk, An estate, or farm.
چوتاي* U*. chutae, A mat.	چورکچ V chukaook, A lark.
چوتکا^ chutka, Thunder.	چورکني**_**£** chuknee mu- tee, Clay.
چوتکي chutkee, Sunshine.	چورکني^ u ^ ^ chuknee suntee, Potter's clay.
چوتي^ chutee, A snake,	چورکهرن chuk'hurun, A weed*
چورا*~ chura, Thunder.	چورر^^- chugeer, A flower pot.
چوري- or [ft. chura, or churee, A sparrow.	چوراسه^ chulpaseh, A li- zard.
چوراکاه^ churaga'eh, A meadow.	چورچلي* cliulnee, A sieve.
چوران churan, A mea- dow.	

VOCABULARY .

^ ^ chumtee, A n ant.	چوت cliót, Bruise.
چمچرخ chumchurukh, A bat.	چوربالو choorbaloo, A quicksand.
چمرا* chumra, Tough.	چورس' chorus, Leaved.
چمربگلی chumrubgulee, A bittern.	چوری?- choouree, A sum- mer-house.
چمسا chum ia, Gluti- nous.	چوک chook, Acid.
چمگدري or ر^ ^ chum- geedur, or chumgud- ree, A bat.	چوکیدار JSJ*- chôkeedar, A watchman.
چم5- chumun, A par- terre, or bed.	چوگرا*- choogura, A hare.
چم1*. chund, The moon.	چونا*- choona, Lime.
چمژانا jio*. chundrana, Wi- thered,	چم5 or ر^ ^ 5* choonta, or cheeontee, The large black ant.
چو*- choo, A plough- share.	چمft- choontee, An ant.
چوا. chooa, A pod.	چوها choo'ha, A rat, or mouse.
چوا chooa, A windfall.	چوهی^ choo'hee, A mouse,
چوایی chooae, A hurri- cane	چوہ چہ chu'h, A well.
	چہادان^ chhadan, Wa- ter bags.
	چہار* ch'har, A clod.

JW*.	ch'hal,	Bark,	چھلکا	ch'hulka,	Bark,
	rind, &c.			rind, &c,	
yl*j*	or vita^	ch'han, or	چھنکنا	ch'hunkna,	To
	ch'hanoo,	Shade.		winnow,	
	چھای	ch'haee,	آشہ	ch'hooee,	Chalk.
	چھہ	cli'hubcliu'h.	A	چھہ	A
	well.			pod.	
	چھہ	ch'hupur,	A	چھہ	To
	thatched roof.			scatter.	
	چھہ	ch'hupree,	Pud-	چھہ	A spot-
	die, or caked mud.			ted deer.	
	چھہ	ch'hup-	چھہ	چھہ	Mud.
	kfo, or ch'hupkulee,			چھہ	A kite.
	A lizard.				
بنا	ch'hutrana,	To	حاصل	Aassul,	Produce.
	scatter.		حب	huh or //ub'eh,	
کنا	ch'hutkana,	To		A berry.	
	scatter.		یقہ	^udee/i'eh,	An
ہتنا	ch'hutna,	A siev(i).			nclosed garden.
ہرکاو	ch'hurkaoo,	A	حرکاو	Aurba,	A chame-
	watering.			lion.	
زی	ch'huree,	A	حرث	Aurs,	A plough-
	knife.			share.	

VOCABULARY.

- حکم Aukum, An order. eM*^ kheaban, A bed
 حلوان Auloan, A kid. of flowers.
 حوض A`ozz, A reservoir.
 ^j»]d das, A sickle.
 خار. khar, A thorn, or jS* dadur, A frog.
 bramble. داغي da\$ree, Spotted,
 *xj;łt khar bundee, دالي dalee, A large
 A fence, of thorns branch.
 (temporary.) دامن damun, Light-
 *ماک. khak, Ashes. ning.
 نالي. khalee, Empty, دانتھی dant'hee, Stub-
 خراطین khuralccn, A bl,
 worm. *» dan'eh, Grain, or
 خرگوش khurgoosh, A seed.
 hare. دبا dubla, Thin, or weak,
 *رم khurmun, Har- dut'ha, A stalk,
 vest. دخ dukh, Smoke.
 H^ khuree, Autumn. دهن or ^f«^^ duk'hun,
 ین>^ khujzan, Autumn. or duch'hun, South,
 y^j** khooshbooe, دراج duraj, A partridge,
 A fragrance. درانتی durantec, A
 شہ yL khoosh'eh, A; i sickle.
 ear of corn, or spike »±j\$ durukht, A tree,
 of flowers. درم durum, A tree.

NATIVE AND ENGLISH

درمس durmus, A ram- mer,	دמידه dumeed'eh, Vege- tated.
درو duroo, Reaping*.	دن dun, Day.
دروته duroon'eh, The core, or heart,	دند dund, A staff, or stick.
دوره dur'eh, A valley,	دوار dooar, * A gate.
دریا dureea, The sea, or a large river.	دوادی doodoo, Labor, or fatigae.
دریبرا dureera, Heavy rain.	دود dood, Milky juice,
دوساور*o dusoor, Cli- mate."	دهالی d'halee, A large branch.
دشت dusht, A desert, or forest.	دهریانا d'hureeana, To winnow.
دگهی dug'hee, A large tank.	دهسان d'husan, A quag- mire, or bog.
دل dul, A leaf,	دهگار d'hugar, A heap,
دلا dula, Cold.	دهلک d'huluk, Roll- ing.
دلدل duldul, A quag- mire, or bog.	دهندهلا d'hund'hula, Misty.
دلدلی duldulee, Swam- py ground.	دهول d'hool, Dust,
دמידگی dumecd ugee, Blowing of a flower.	دهوم d'hoom, Smoke,
	دهوند d'hoond, A cap- sule, or seed vessel.

VOCABULARY.

دهوند هرا d'hoond'hra,	راسو ra&oo, A mungoose,
Foggy.	or weasel.
yÿtod'hoonooa, Smoke.	£]; ra#, A meadow,
دهيلا d'héla, A clod.	«fy rak'h, Ashes.
دهينكي d'hecnkee, A wa-	راندرا randa, Barren,
ter-lifting machine.	راه ra'h, A road, or path,
ديارا deeara, A white ant	ربيع rubeea, The spring,
hill, a land deposited,	رج ruj, Pollen,
ديلا déla, A clod.	رس rus, Juice,
دينا dccnn, A largo	رسن rusun, Cord.
branch.	رسري or y^j rusee, or
y-Jyt* deeoek, A white	rusree, Cord,
ant.	رسي rusee, A Rope.
دهيها or l^J dee'ha or	رطب ru£ub, Verdant,
d'heeha, Rising	رطب rufub, Moist,
ground.	رگ rug, Fibre,
رات; or j/j ratur, or rat,	رئس runs, A sun-beam,
Night,	رنگ rung, Color.
راخ rakh, A white ant	رنگت) rungut, A Vul-
hill,	ture.
راسنا ra^ta, A roud, or	رر roo, Germinating.
path.	روباه rooba'ch, A fox.
	روپ roop, A bhrub.

NATIVE AND ENGLISH

پنا3j roopna, To sow or plant.	il; zag, A crow, *»/ zhal'eh, Dew.
رود rood, A small river., رورا roora, A stone.	زراعت suraaut, Agri- culture.
روز rbz, Day.	زرد رنگ J zxxrd rung, Yel- low.
روش or |j»)) roos, or rooush, An avenue, روشن rôshun, Light.	زینا j airana, To sow, or plant.
روضه ll roozz'eh, A gar- den.	^f) ^u^un, A kite, ^^uLzul'eh, An earth- quake.
رکنا j rôkna, To stop.	J) jsuloo, A leech.
رکھ rook'h, A tree.	d£***j ^umustan, Win- ter.
رکھپنا jjz roowipna, To plant.	{jy.^j #umeen, Land,
رکھنا Sjj roondna, To tram- pie.	j|<&i*j jgizmeendar, A landholder.
روی rooee, Vegetating.	زی;)dxx*f zumeendaree, A large estate.
رویڈگی rooedugee, Ve- getation.	زنبورا wjyty' ^uwiboor, or ^unboor'eh, A hornet,
ریت reet, Sand.	
ریشہ ij reesh'eh, Fibre.	
ریگ ij reeg, Sand.	
ریگھاری reeg'haree, A furrow.	پج zoov, Force, or strength.

VOCABULARY .

زهر 2uhur, A bud.	سبیرا*** subeera, Dawn,
زیر seer, Below.	سپهل sup'hul, Fruitful,
	سپیده دم supéd'eh dum,
ساته sat'h, With, together.	Dawn.
	ست sut, Sap.
سار sar, Manure.	ستکاری sutkaree, Tapering.
ساق*- sa£, A trunk of a tree.	ستلی sutlee, Twine.
ساکه sak'h'eh, A large branch,	سحاب suAab, A cloud.
	سحر su//ur, Dawn.
سال sal, A year,	سخت*- sukht, Hard,
سانپ samp, A snake,	سرا sura, Rotten.
سانت sant, A flail,	سراون suraoon, A harrow.
سانجه sanj'h, Evening,	
سایار saear, Shade.	سرت surut, A lizard.
سباس** subas, Fragrance,	سرچشمه surchushm'eh, A spring.
سبروت subrut, A hare,	
سبز subs, Verdant.	سرحد surAud, A boundary.
سبزہ*** subz'eh, Herbage,	
سبزی subzee, Esculent vegetables.	سرخاب surkhab, A wid-geon,
سبیل subul, An ear of corn, or spike of flowers.	سرد surd, Damp, cold.
	سړک suruk, A road, or path.

NATIVE AND ENGLISH

<S>j*» surung, A precipice.	v-Cr-r" suooere^ Early morainer.
jij" surooi'j A pond.	J^ or jU*« seear, or
I*** aasa, A haje.	seeal, A jackal.
d&vsuguud, Fragrance.	'u>aa" seecjhna, To irrigate.
cU sul, A stone.	
^^ sul 3e, A trunk of a tree.	^i« seer, Agriculture.
^J^> sulie, N teal	j-^> shakb, A bough.
j**» sumur, A pond.	^U shakliLheh, A spray.
|HUA« sumsum, A fox.	
ti*w sumuD, Flower.	^lu*i.Li shakhsar, An enclosed garden.
jy» sumoo ¹ *, A mrngoos, or weasi],	i^bU shadat, Verriant.
JJSM, sumd ¹¹¹ , J ¹ flower.	**~Z shub, Nigt.
\y» sooa, A parrot.	f•if- shuboum, Dry.
UUUQIMI soopabéna, A swallow .	*tiy^ shukibofeh, A flower.
cy*- S0t, A >piilJg.	i ¹ ^a^i shuguftun, To blossom.
ci>y- soot, A stamen.	
^jlj^ sootie, String.	*)y& shoor'eh, Mar?iy ground, or saltpetre.
WV« sook'Im, Dry.	
JSi*y* soonda, A weevil.	شهباز shu'bbaz, The poyal falcon.

VOCABULARY.

شيرة sheer'eh, Irrigat- ed.	y& /iushur, Bark.
	^Uj*aS /msseebat, A creeper.
ساف ssaf, Clean.	
سباح ssubaA, Dawn.	//i kara, A black snake.
صمغ ssumg, Gum.	کاک or کاک kak, or Lag, A crow,
طلب /ulubj Wages.	کالا kala, Black,
طوفان fôfan, A tempest.	کانم kanum, A forest.
	کوبوتر kubootur, A pige- on.
ليل zuleel, Shady.	کتها kut'ha, A kotta'li of measure tho part of a beegah.
عود aoud, Timber wood.	کدالي kudaleo, A hoe.
غنچه (/unch'eh, A bird,	کراړي kuraree, An axe.
	کرم kurum, A worm.
ته^li faklit'eh, Turtle dove.	کرمک kurmuk, A fire- fly-
فجر fujur, Morning.	کفتار kuftar, A hyena.
فرع fura, A bough.	کلسي kulsee, A water pot.
م JS /eiiduro, A pace.	کلهاړي kul'haree, Axe.

NATIVE AND ENGLISH

کلی kulee, A bud,	کھت k'hut, Mire.
کملی kumlee, A blanket.	کھتا k'huta, Sour.
جx&ui ur JA*Af kum'heer, or kuwb'heer, An alligator.	کھری k'huree, Chalk, or pipe-clay.
^ kun, A weevil.	کھریپہ k'hurpee, A weeding knife.
تیس kund, A well.	کھوسا k'hoosa, Rind, or bark.
uUb'vS kunbut, Agriculture.	کھولنا k'hôlna, To open.
»jJi kund'eh, An earthen pot.	کھوتی^ k'hoontee, A peg.
c^UŞyi kunoolapat, A shoot.	کھیتی k'hétee, Agriculture.
کوا kuooa, A crow.	کھینچنا k'heenchna, To pull.
کودال kôdal, A hoe.	کھیری^ keearee, A bed of flowers.
کول kol, A creek.	کیر keer, A worm,
کوتھی koont'hee, Stubble,	کیرا keera, A sapling,
کوتھی koond'ha, Lightning.	کیل keel, A sprout.
کھاد k'had, Dung.	گاج gach, A tree,
کھائی k'haee, A ditch.	گاری garee, A cart.

VOCABULARY.

<i>Jt</i> gam, A village,	لچرا luchra, A spider,
ytf ganoo, A village.	لما lum'ha, A hare,
گتھلی gut'hlee, A ker- nel.	لوکتھی looktee, A fox.
گچپچ guchpuch, Mire.	لومری loomree, A fox.
<i>J></i> gur, A mountain.	متھی or >^ متھی matee, or mutee, Earth.
گورگت gurgut, A lizard,	ماس mas, A month,
گرم gurum, * Warm.	مالی malee, A gar- dener.
گدہ gud'ch, A large root.	متمم musmur, Fruitful.
گج*ز\$ gôbur, Dung of the cow in particular.	مہیہ iuj, Ripe.
گج*ز\$ goojur, A centi- pede.	مچھڑ much'hur, A mus- quito.
گورو gooroo, An ox.	مچھی 5^ much'hee, A fish,
گوند goond, Gum.	مورگابی murgabee, A teal,
گھاس g'has, Grass,	مورگ murg, A deer,
گھریال g'hureal, A cro- codile.	موری muree, A border.
گھوا gu'hooa, A carpen- ter insect.	مک* mushuk, A water bag.
گیدہ ہار geed'har, A jackal.	مک" mushkul, Diffi- cult.
<i>jd.</i> lubun, Milky juice.	موم k* mushmoom, Fra- grance,

NATIVE AND ENGLISH

موشك mooshuk, A rat.	مهر [^] mu'hn, Rain.
معافي ma'afee, Rent free.	موة** meeoo'uh, Fruit,
معمورة mamoor'eh, Cultivation.	ميه méh, Rain.
مجب** mu [^] rub, The west.	موي or [^] sk* mee'ee, or mōee, A harrow.
مجز~ mugz, A kernel.	مجا naka, An alligator.
مكري mukree, A spider.	مجانگل or J&' nagul, or nangul, A plough.
مكهي muk'hee, A fly.	مجالي nalee, A drain.
مكهورا muk'hoora, A large black ant.	مجات [^] * nubat, Vegetation.
مكس mugus, A fly.	مجات j nubat, A shrub.
ملانا mulana, To mix.	مدي ^{>} or [^] ti ^{>} nudeea, or nudee, A small river.
ملخ muluk, A locust,	
مندا* mundooa, An arbour.	نرة nur'eh, A trunk of a tree.
منجر munjur, A blossom.	نسي nusee, A plough-share.
موتكي mootkee, A mattock.	نسيم ³ nuseem, A gentle breeze.
مور moor, A peacock.	نصب ^{>} nusseej, Ripe.
موسا moosa, A mouse.	نظر lii nuzur, Sight, or view.
موسلا moosla, A tap root.	

VOCABULARY.

نڪھت nuk'hut, Fra- grance.	la* huda, A wasp, JJbuVfchud'hud. A hoopoe
نڪ nug, A mountain,	j* hur, Every.
ننانوي nunanooe, A thrush.	هل or j*> hur, or hul, A plough.
نو or)y nuooa, or نوو, New, or young.	] /> hura, Verdant.
*.y noodu'Jj, A shoot.	c^> hurub, Verdant.
نهاروا nu'liarooa, A gui- nea worm.	هردا hurda, Mildev .
نهال nu'hal, A shoot.	هرن liurun, Adeei.
نچان ncechan, A valley.	هريلا hureela, Verdant.
نچا]^ neerana, To weed.	[fly* hu^ara, A double flower.
نچانني neeranee, A weeding knife.	هسوا or l^fc huseea, or husooa, A sickle.
نچول neeool, A mun- goos, or weasel.	هميشه humésh'eh, Al- ways.
نورد ourud, A petal, or flower.	هندار hunucii, A wolf.
نورق ourud, A leaf,	هندي hundcc, An Ear- then pot.
نوس oos, Dew.	هير heer, Pith,
ناتھ hat'h, A cubit.	هينگا hénka, A harrow,
نانس hans, The duck, &c.	يكيلا ékeela, or ékéla, Alone
	يوز ceooz, A panther.

NAMES OF PLANTS.

الراغيس a'argrees, Nepal berberry.	ابلم ablum, Sabre pod- ded dolichos.
ابج abuj, Water lily.	ابنوس! abnoo", Smooth date plum, Indian ebony tree.
ابج abuj, Angular bar- ringtonia.	
ابجو abjoo, Water me- lon.	ابحال ab'hal, Chinese juniper.
ابخست ab khust, Wa- ter melon.	ايار ipar, Garden thyme.
ابخور sri) abkhour, Cucum- ber.	ابرا جوتا ' apra juta, Wing- leaved clitoria, Crow's beak.
ابدان*) abdan, Water me- lon.	اتا / qr c^T at, or ata, Custard apple.
ابروء JJ abrood, <i>Oriental</i> hyacinth.	اتاجان U.tf) atajan, Indian olive.
ابولنا; l abulna, Elegant artemisia.	اترج ttruj, Citron.
ابل abul, Cardamum tree.	اترن atrun, Prickly swallow wort.

VOCABULARY.

31 atusee, Common flax.	Common	اچلیا جا uchuleeaja, Large leaved itea.
انمل atmul, swallow wort.	Emetic	المرضي (ج)Jc^ ahdak ul- murzzee, Chamomile.
اتوسا atuoosa, birch.	Indian	اختوط or iag/^-1 akhrôt, akhtoof, Walnut.
اتیس atees, flax.	Linseed or flax.	اکگور^1 akhgoor, Wildpear. irJjd) adruk, Ginger.
JJI asul, Furas tamarisk- اثل کیابی usal keeabee, Three-leaved chaste tree.		j±''^ adumbur, Round- headed fig tree. ادنکلی adna gulee, Da- mask rose.
اچ aj, Indian tamarisk, اجاس ijas, Damson, اجمود ajmood, Parsley.		ادها برنی ad'ha burnee, Thyme leaved her- pestcs.
اخراسانی ajooan khôrassanee, Com- mon henbane; appli- ed also by son i Common parsley.		اذراقی azara^ee, Poi- son nut. اراه ara'h, Mastich tree, ارتچک artuchuk, (cor.) Garden artichoke,
اچوایر ajooaén, Lovage.		ارپا irpa, Garden thyme,
اچ ach, Dyeing mo- rinda.		ارجتا arjuta, Indian an- nual phyllanthus.

NATIVE AND ENGLISH

ارjun, Winged terminalia.	ارسه wrus'eh, Downy night-shadp.
ارjun znjoon, Arjun pantaptcra.	ارک aruk, Persian salvadora.
ارjun arduj, Ebony tree, Chinese juniper.	ارک iruk, Indian salvadora, Curl flowered calotropis.
اردندا ardunda, Indian caper.	ارکان ^rkf»n, Henna plant.
ارده arud'h, . Common vetch,	ارک hundee, Indian salvadora.
ارuz, Rice.	
ارzun, Spiked millet, Italian millet, Bengal millet.	ارunbeen, Pur. pie stalked dragon plant.
ارus, Chinese juniper, Willow-leaved justicia, Oriental plane tree.	ارند nrund, Castor-oil tree.
ارustoo, Coated swallow wort, Prickly swallow wort,	ارoo, Nepal cherry, Peach.
ارusfa, Common henbane.	ارood, Green gram, Black gram, Small fruited bean.
	اروس aroos, Malabar nut.

VOCABULARY.

اروزوت wroo root, (cor.*) True arrow-root.	d«»w) aspust, Corn- mon clover.
اروي arooe, Egyptian arum, Water lily lea- ved caladiurD.	J y^j^ ispurmool, Indian birth- wort.
ارهـر ar'hur, Pigeon pea. ارشته) areesht'eh, Emar- ginated soap-berry.	اسپغول ispugrool, Flea- wort.
ازاددرخت azad durukht, Evergreen cypress.	استرنگ MSturung, Man- drake plant.
ازوب J/j] wzan wldub, Common mullein.	استرون ttsturoon, Sweet- briar rose.
ازونل فيل) azunul feel, Air living bryony.	استوم astoom, Soft rush, Bull rush.
ازوفا uzoof'd, Common hyssop,	jss^] askhur, Lemon grass.
اس as, Myrtle.	ازيل^s/»| isreeooeel, In- dian birth-wort.
اسارمل isarmul, Indian birth-wort.	اسطفين is/ufeen, Gar- den parsnip.
اسارون asaroon, Common asarabacca.	اسفانج) isfanaj, Spi- nage.
اساسنوو اساسنوو, Straw- berry.	اسفانك'ل isfanak'h, Tet- randrous spinach.

NATURAL

اسلوت aslut, (Joimnon cloV<T.	اشپهول ashp'hul, Lon- gan.
استوراج isturaj, Common asparagn	شورا shoora, Five-leaved limonia.
اسفند asfund, Wild rue.	اشق ashu/;, Ammo- iac dorema.
اسفیل isfcel, Squill, Tu- dian squill.	اشنه ashn'eh, Rock li- chen.
اسگندہ asgund, or ii.sjjund'eh, Clus- tered winter cherry.	اشنه il ashn'eh, Common moss.
اسوک*) or u-£'') asook, or ashook, Jonesia.	اسام ک'ہہچ I^AJAS^UI assam k'eh keeoach, Assam cow-
اسوگ asoog, Mast tree, Long-leaved uvaria.	اصف assuf, Pric ¹ per, Common caper.
اسل asul, Bull rush,	اصطربک ussturuk, niori storax.
اسن asun, Hairy termi- nalia.	اصل السوس Hairy liquorice.
اسواتہ usooa Veil, Sacred	اطروففا utrooffa, Citron.
اسوی IMJUCX», Waterlily- leaved caladium.	ایار'لی Common lime tree.
اسیر 7/scer, Scented	

VOCABULARY.

- ^jiUjlil a^areeAoon, c^iSl akntniukt, Oval
Agaric, Belete. **leaved** nicker tree.
- yoï*i uftantooi, Ber, it- Uikyi **akrakanta**, Six-
back dodder. petalled **alang** imn.
- ^ki^Jt afsunft een, In- y^wij akuspoon, Sp<t- **I**
tliaii worunwood. ted air plant.
- اڤيس ufees, Sessile J^-! J^J^! okleel «1-
fruited o.k. jubul, «Common rue.
- اڤيم afeem, White Poppy. uJ^U)!j,^l akleel 'I mu-
• si*) M/HOO, Common **luk, Hooked milk"**
eldier. votcli, Upright ineli-
^yr*) sJt)ooan, Chamomile. lot.
- IOJJ! a^ulbar, (Common Itiii) ak unda, Cnrl-
Indian shot. ill:wered calotropis.
- t_fl ak, Curl **Howered** JjS! akool, Six-jx:t;ii ed
calot^opis, Sugarcane. **alangiuin.**
- Uil^t^l akarkanta, Six- ujyb'l or \)W egara, or
petalled **alang** iin). agaree, Rough achy-
rentiiUll).
- اڤون akas pooun, اڤتي agutee, LAI'ge
BunI buck dodder. **fl>wered ag;i.**
- *ij(-.fei akus necUJj £'ad L^M^cI agust ii, La pge
cymbidi um. **fl<wered',agat' Large**

KATIVE AXD ENGLISH

- flowered aeshyno- ^/'! ilgoocli, Tessalat-
 xnene. cd cymbidium.
- J\ i/gur, Sweet flag, L.S-*. \;ilung', Sfoe.
- A lues \vood, or Agila y yi'x!) ulneoon, blccam-
 wood. paiiL¹ plant.
- ^^i\ ngnmukee, Brist- _j/I a loo, B:-II shaped
 Iv bryony. anun, D.unsun, Com-
 U''V''g'»«ngas, Le- mon]jiim, Pota-
 mon gras. too, and applied gn-
 JI a), Droa:1-leaved ner.illy to edible tu-
 morujua, Umbelled bers.
 Mcriuda.)jfl or yi 7/100, or ?floon,
- ie*J] ilacbee, Carda- Cylindrical sugar-
 mum tn e. gras?.
- £U ^ al/zji], Prickly ft»yi aloodtVli, Com-
 stemmed manna plant. llinij pltili).
- .j^1 »]scc, Unseed. <Jj^j-i uluo gacli'l), Cas-
 t;*'Jn aUu?^bec/t Cau- sava tree.
 liflower. j'-^"y' aluoee bukli-
 v^f^jtX aikoosliee, Itch- ra, Damson.
 ing inncuna. J¹ am, Mango tree.
- ^5*^1 algiuci*, Round- It^J nmada, Mango
 beaded dodder. ginger.

VOCABULARY .

KU1 ttmaiuka, Shrubby myrobalan.	•5y^l amrood, Common pear.
|mr~*| ainb, Mango tree.	J;/' ⁰¹ amrool, Procumbent oxalis.
tf-~*l aspiibiidhtsi, Procumbent oxalis.	tfVf' am jr celun, G.im uc-icia.
⊖A^I ?/nibnj, Water lilv.	⊖ ama^1 amla, or am-Teh, Shrubby myrohalan.
)j±'' ambijfa, Hog-Ium.	⊖ am^1 amla, or am-Teh, Shrubby myrohalan.
⊖^1 imbuleo, Tamarind tivr.	⊖ am^1 amla, or am-Teh, Shrubby myrohalan.
⊖tv-^^l nmb huldec, Mango ginger.	⊖ am^1 amla, or am-Teh, Shrubby myrohalan.
⊖A^I aiub'li, Mnngotrcc.	⊖ am^1 amla, or am-Teh, Shrubby myrohalan.
⊖Sjtj**] aiiid ^a hook*tli, Indian vino.	⊖ am^1 amla, or am-Teh, Shrubby myrohalan.
⊖mur, IloodeJ uinoora.	⊖ am^1 amla, or am-Teh, Shrubby myrohalan.
⊖1 amra, II«g plum,	⊖ am^1 amla, or am-Teh, Shrubby myrohalan.
⊖^1 t/mur kiilec ^k , Red flowcnul ardisia.	⊖ am^1 amla, or am-Teh, Shrubby myrohalan.
⊖ auiroot, Wliite guava.	⊖ am^1 amla, or am-Teh, Shrubby myrohalan.

NATIVE AND ENGLISH

kee b'hajec, Indian i «1 sorrel, Hemp icavcd hibiscus.	انچو anchoo, Few flowered raspberry.
انبربارس I ambur barns, Holly-leaved berber- ry-	اندروان) indraooa.i, Bit- ter cucumber.
انبربارس I amburbarec, Nepal berberry.	اندراین or Jò^ixS) indra- oond, or vndraeen, Bitter cucumber.
انبربارس) tmbootee, Pro- cumbent oxalis.	اندرجو indurjoo, Medi- cinal oleander.
انبربارس) ambec hul- dee, Round zedoary.	اندرنی) andrunec, Qua- drangular chaste tree.
انتامول wntamool, Eme- tic swallow wort.	اندرروت) wn^uroot, Heart- leaved penaea.
انتر گنگا untur gunga, Floating pistia.	انکره or u5y^*1 ankaree, or wnkrec, Common vetch.
انجندان anjudan, Assa- foetida plant.	انگارہ) angar'eh, Musk melon.
انجوره anjur'eh, Notched nettle ¹ .	انگلینه) anguleen'eh, Gar- den angelica.
انجور yux*] wnjeer, Common fig	انگورسج) angoorusug, Jackquin's nightshade.
انجل aujul, Common marsh mallow.	

VOCABULARY IV.

r-Uil anunas, Pine-apple.	^V HOOIOO, Cylindrical sugar-grass.
Jy<l U*V>l atmnt amool,. Indian sarsaparilla.	lI^Uiii^l aount kutarra, Prickly globe thistle.
Syl anoola, Slirubby myrobalan.	^ j l aoacsli, Mavjorarii.
ujij^l unee&oo'ii, Common anise.	*Ujb) ai ea puna'h, Spteadtog enpatoriun.
^J—AJI anee&on, Parsley.	,\^s*)j p<*i) at'eda roomee, DraJ; ;'i' blood plant.
*-j' aoch'eb, Broad leaved morinda.	\»»jiy versa, Florence iris.
Wjl uocheca, Spiked bitter gourd.	<£;l aee'eh, Sugar cane.
&J)) aorun, Chinese juniper.	[j-bj ueelooa, Spike-ered aloe, CommoTi aloe.
U^l aosliba, See Indian sarsaparilla.	c^'V ايد aee aanoousht, Purple stalked dragon plant.
*^l aook'h, Sugar catie.	
jy wool, Bell-shaped arum.	
Sjl aoola, Shrubby myrabolan.	

NATIVE AND ENGLISH

زنگ [^] yb babérung, Cur- rant fruited embelia.	& دیا ^h badeean, Panmo- rium funnel, sweet
ونه [^] b baboon'eh, Chamo- mile.	fennel, common anise.
باتو* batoo, Purging cro- ton.	^ k i ^ b j b badeccn klm- /cc iStar anise.
جرا* bhnjrn, Spiked millet.	jb, bar, Round zedoary.
ی ^u* | i م - b badani-u-far- see, Persian almond.	> بارج > baruju, Water lily, ب. تبروی j b. b.irunkboo- cv, Lidiaa southern wood.
ی [^] V - b badamn r otce, Indian chesoot.	
ام هندی : bhadsm - i l » un- dec, Indian ahnou !.	* ^ - b basook'ch, MJ ^ - bar nut.
یه 7 * 7 ^ * b budrunjb > o- o'eli, Common l » alm.	UTib luiya luta, Palmat- ed tnoonsee'l pl.u.t.
یک, O V J badruuk, Com- mon balm.	مانا? ba/ihi, Garden bean, Dwarf kidney bean.
بادرنگ bad rung, Cu- cumber.	یاکس or JS % < J b.ik ur, or bakus, Malabar nut.
زبان [?] j U or ^ ft j W ba- dungan, or badun- jan, Common egg- plant.	یاکس bakus, Willow-lcM- vedjusticia. باکالا baganula, Axillary spider-wort.

VOCABULARY.

- باچاره W bag'ha char-
 V'li, Prickly piso-
 nia.
- بلاء or S^r bala or bal'eh,
 Seen fed grass, Twist-
 cd liibiscu>.
- بلوغو lf buluugoo, Sweet
 basil, liidiau Jnu
 gon's head.
- بامون هتي / *[^] bamun'huteo,
 Wlmrl-leuvcd clcro-
 dendrum.
- بامونى bamu'hncp,
 Ileart-leuvcd moon
 seed plant.
- بان ban. Benzoin tree,
 Evi-r greeu bead tree,
 Compact moringa,
 Rosema:y-leaved wil-
 low.
- بانداج A/J banda, Variegated
 cymbidium, Tessa-
 lated cyindium, Epi-
 deudron.
- باندوتس ^ ^ bandutcc, Scar-
 let ixora.
- باندنور pala, J[^] j[^] W bandnor pala,
 Pulystachinc aglaia.
- بانس W bans, Common
 bamboo.
- بانسپوتا VJLWU bansputa, Black
 amaranth.
- بانمُلْكا KxU ^-> ban mulceka,
 Karrow leaved jas-
 mine,
- بانوچان e; ^-? ^ baoochan, Ilazcl-
 Iruvid psoralia.
- بانوچان U-^>-«_C'J bae burunsr>
 Currant fruited em-
 bolia.
- بانوچان ^;W baeer, Jujube.
- بانوچان isj# or ^ ^ bubeejor bu-
 boocc, Ciliated basil,
- بانوچان ':>H bubuřeci'eb, Com-
 mon rosemary,
- بانوچان s^jy^i bubooree, Gum
 acacia. .
- بانوچان i}y>i bubool, Gum acacia.

NATIVE AND ENGLISH

|\H# b LI been a, White-leaved musaenda.	بکھکلہ? bukhkul'eh, Hazel nut.
c^r* but, Indian fig.	بدرنگ* > budrung, Budrungan toothache tree.
^j''^ butas, White blossomed rob i nia.	
<^IVJo butanee, Common pea.	بدرنگا^-i budrunga, Ash-leaved fagara.
مو&{ms/-^}> butaoouee neemoo, Shad lock.	ابیز 5^? J*l budroogee abeez, White basil.
نتھوا but'hooa, White goose foot.	بیدبیب Jy^*''*-* budusee zu-beeb, Corinthian grapes.
بوتیا/جیخ> buteea rung, Colored justicia.	ہتیا &U^ budeen'eh huttaceeh, Star anise.
بوتیووا buteeooua, Pinnate-leaved millingtonia.	بر bur, Indian fig,
)js£ bujra, Bull rush.	براییز! OT ^t|x*- bura pee-aj or bura pcea2r9 Common onion.
i^S&tffsJ bujur b'hang, Virginian tobacco.	
^s^ bujeea, Hemp plant.	بیرا جال? burajal gan-tee, Bristly panic grrss.
بج* buch, Sweet flag,	
بوتوا? buchlooa, Garden orache.	بیرا جوآنس^ burajooance^ Tall clubrush.
بھاتا 5^ buch'hata Sting-ing nettle.	بیرا چوچا^^ lji bura choocha, Tall cyperus grass.

VOCABULARY .

- بورا چوکما *./y, bura chookma, bushee, Glomerate
 Pointed oak. clubrush.
 بورا چوولے *j>^>ولي bura choolee, Small
 Indian buckbean. fruited dolichos.
 بورا کریلا > bura kuréla, Up-
 Spiked bitter gourd. right cyperus grass.
 بورا کوندہ ^>y. bura koond'eh, Ancient
 Woody jasmine. papyrus.
 بورا کیشتی > bura keeshtee, Bullrush.
 Water ageratum. بورا کیشتی *ty burdee, Bullrush.
 بورا گوت ہو بی s^ye^lrt buragotôt'hoo-
 bee, Tufted kyl-
 linga. بورا گوت ہو بی *jj bursunga, König's
 bergera.
 بورا گوکھو رو)j&j&l?i or)j^j&f* bura
 g'hookuroo, or bura
 gook'hu roo, Prickly
 fruited pedaliu. بورا گوکھو رو *j> h|irkook Apricot.
 بورا لسوورا ? bura lusoora, burg tam-
 Broad-leaved cor- bool, Betle pepper.
 dia. بورا لسوورا *or بورا لسوورا ^ir* burma,
 burmee, or burun,
 بورا ماندا لبرا ماندا bura manda, Smooth garlic pear.
 Two colored loran-
 thus. بورا ماندا لبرا ماندا *burun, Three Jeaved
 caper tree. .
 بورا نریشی bura nur- Burun, Rice.
 Moving plant. بورا نریشی *bu»|ss>j> burunjasuf, In-
 dian southern wood.
 بورا نریشی ^f. burun chundla,
 Moving plant.

NATIVE AND ENGLISH

برو* buroo, Karka reed.	^^ busfaeej, Fern.
بروق* buroo^, Daffodil, Club-seeded aspho- del.	س كهپرا* dus k'hupra, Five stamened trian- thema.
برهل bur'hul, Bread fruit tree.	وصل > bussul, Common onion.
بي5*"s^ buree ulachee, Large cardamum.	صل القي bussul <i>ulkec</i> , Emetic nut.
بري تور* buree toour, Pi- geon pea.	طا; butta, Java rattan.
بي كروندي* buree kuroon- dee, Jasmine flowered caranda.	بلم* bulum, Turpentine tree,
بزنجا* busur Autoona, Flea-wort.	باج bulaj, Musk melon.
بزرک buzruk, Linseed.	بنا* i > bu^lut, Garden bean,
بباسuu busbas, Sweet fennel.	بقلة الحمقا buklut'h-ul-hum- Aa, Small purslane.
بستمج bustuj, Frankin- -cense tree.	بم* J£J&IA > bu^l'eh wlfu- rustum, Common balm,
بسترا* bustura, Large- leaved callicarpa.	ب (JÜJiaSj bu/dut'eh a- lumbaruk, Creeping purslane.
بستيچ رومي busteetaj roomee, Small caltrops.	*-CUI XISJ bu/d'eht u|-

VOCABULARY .

- muluk, Common fumitory.
- ^bu/mmj Narrow-leaved brasiletto, Red saunders wood.
- ٢^ &. bubarja, Evergreen bead tree.
- ^K*: bukaoen, Evergreen bead tree, Margosa tree.
- بب bukchee, Purple vernonia, Torn flea-bane, Anthelmintic saw-wort.
- بكشا buksha, Smooth rottboelia.
- J^bukul, Pointed-leaved mimusops.
- بببببب Cbugreendee Angular-leaved physic nut.
- ^ bula, Belloric myrobalan.
- k bula, Rhomboid-leaved sida.
- f* > bulakh, Holm tree.
- j*K > buladur, Marking nut.
- w^ bulb, Bengal quince.
- WJ>& bulboos, Garlic.
- /S JJ bul tar, Fan-leaved palm, Palmyra.
- jl > bulur, Black seeded dolichos.
- ^UJb bulsan, Balm of Gilead tree.
- بببب > bulsee, Half-ser-rated myrsine.
- بببب (X? bulumboo, Bilimbi tree.
- بببب^ lap^ bulunjasuf, Indian pellitory.
- بببب buloof, Indian chesnut, Lance-lea veil oak.

NATIVE AND ENGLISH

بلوط الملك > buloo < u | mu- luk, Barbary oak.	زبرج bu?wboo, Common bamboo.
لي > bulee, Stinging sterculia.	تا & iift bun b'hanta, Common egg-plant.
ب or ا buleel'eh, or buleeluj, Belleric myrobalan.	پاك^ bun paluk, Oris- sa sow thistle.
W^ji** bumnee im- lee.	ف!Air*bun turaee, A- cute-angled cucumber, Clubbed luffa.
^ bun, True coffee tree.	ij bunj, Common hen- bane.
بناچ bunL ach, Exsert stamened morinda.	ليو^L bunj dushtee, Purple thorn-apple.
ادا^ bun ada, Wild gin- ger.	ام^^ bun jam, Night- shade-like ardisia.
بنال bun al, Exsert sta- mened morinda.	ع^e^ bun jumaat, Smooth clerodendrum.
ب^ bun am, Eatable sphcerocarya.	بنجوما bunjooma, Smooth. volkameria.
y ! j. bumb, Single styl- ed bitter gourd, Great flowered bryony.	تا^^ bun chul t a, Curl ed leea.
بريئي Irijt bun burbutee, Pointed kidney bean.	در^ . ^ bun chundur, Indian flagellaria.

VOCABULARY.

بندعل bundal, Luffa Uy boota, Maize, bindaul.	*-&<*> boodunk, Penny-
بندق XJ bundu/*, Filbert, Hasel nut.)jy>	royal. . bôra, Small fruited
بندجی Jub ^ J J O bundukee hundee, Emarginated soap berry.	dolichos. i-fyy. boorunk, Sweet basil.
بندسیم ji bun sgem, Black seeded dolichos.	بوری booree, Prickly symplocos.
بندشه ax> bunufsh'eh, Sweet violet.	بوز (i) yJ£*Hj> boostan af- rooz, Garden wind flower.
بندمیتھی z> bun mét'hee, Indian trefoil.	بوسیر > boosseer, Com- mon mullein.
بندگی)^^ bun narungee, Fasciculated geloni- um.	بوعلی or W*Vsk>* boo- alee seena, or boo- alee, Downy-leaved avicenna.
بندگی i ^ bun nurkulee, Glandulous ardisia.	بوا M|*Jy*. boolee sôa. Heart-shaped andro- sacc.
بندگرا (%J> bun ookra, Angu- lar-leaved urena.	
بونت or K&JJ boot or boont, Common chick- pea.	بوں کوکری y. bool kookree, Chesnut-like adelia.

- بولس > b'olus, Roxburgh's
engelhardtia.
- بوند > boond, True roff'rc
tree.
- بونگرا > boongra, Trailing
eclipta.
- بگبت > b'hugbut, Curv-
ed justicia.
- بھانتا > b'hanta, Connon
egg-plant.
- بھانگ > b'hiui[^], Homp
plant.
- بھانگ گندنا > b'haug gun-
duna, Indian chive.
- بھانگ > b'hang'un, Com-
mon egg-plant.
- بھتا > b'huta, Maize.
- بھت > b'hut kutacc,
Jacquin's nightshade.
- بھت & z > b'hur b'liand,
Mexican argemone,
Yellow thistles or
prickly poppy.
- تسومر > TSU m unjj'cij, Trail-
ing eclipta, Climbing
verbesina.
- بھلا وین > b'hulooocn,
Marking nut.
- بھمتان > bu'hmutan, Dau-
rian lily.
- بھممن > buhumun, Cluster-
ed winter cherry.
- بھمی > b'humee, Sweet
common peach.
- بھنگرا > b'lmngra, Trailing
eclipta.
- بھنرہ اسفر > b'hungureh
asfur, Ceylonese ver-
besina.
- بھوا > bu'hooa, Irregular
cypcrus grass.
- بھوادا > b'lioo ada, Scarlet
garland flowers.
- بھوار > bu'hooar, Snioolh-
leaved cordia.
- بھوت بھیری > b'hoot b'lic-

VOCABULARY.

rooeo, Kn tire-leaved
prexna.

* ^J^yVb'hoot raj, Wind-
ing ;>dder's tongue.

^^ b'hooj, Tapering
birch.

y-^y^i b'hooj putur, In-
dian birch.

L < ^ ^ b'hoojunsee,
Nepal coriaria.

)jj# b'lioora, Common
mangrove.

^jJ^j.^ b*hoproond ee,
Indian turnsole.

^is^y^ h'liomee pat,
Creeping dentella.

^j^^v^y^, b'hooir
B
koomr'eb, Panicked
buatas.

f f'<?*. b'hooxn neem,
Serrated hedge hys-
sop.

UW)y^ or Ui*^ye *Jtyiftv bu'been aoon-

b'hoon chumpa, or
b'hopua chumpa,

Round-leaved galan-
gale.

^y# h'lj"oeea, Haml-
so the Leucomerifl.

jJ-i^yV. lj'hoec bnloo,
Small-leaved myr-
sine.

A^ LSy^ b*hoeee jam,
Herbaceous premna.

^jyo^jtyx b^hoeeen moo-
ra, Manly phillyrea.

^jh ^syr-- b'hoeee ookra,
(Creeping vervain.

.c<yu&>. or t^^rf b'iinn-
due, or b'heendei,
Eatable hibiscus.

I^yj bu'heera, 1Betlcric
*

myrobalau.
^^J b'hcghi, Marking
nut.

NATIVE AND ENGLISH

Peñ, Indian annual phyllanthu-	uCu ouu, bed uiiislik, Rosemary-lea[^]ed wil-
*H*J b'heend, Marshy seschynomene.	low. yfy# beerbukee, Arch-
•l*/j£ e [^] bu'heen koo- butu, Elephant, or	ed aram. ^>j# beeree, Jujube,
wood apple.	jjc* j _M xj bees kuchoo, Arched arum.
xj/n [^] Ujbeearud'eh moor, Spotted air plant.	^<U ^J [^] J bees taruk,
£+& bet, Cane, Rattan.,	Veiny-leaved silver weed.
£& beeja, Spotted ju s- ticia.	^j [^] UJO be [^] ak'hee, Ci- tron.
& beh, China quince.	y? [^] J [^] . beesh kuchoo, Poisonous calla.
^ Ix'k'h, or beek'li, Wild wolf's bane.	U-"id or ^/^ beesh or beeshma, Wild woliV
4 [^] bed, Cane Rattan, Four-seeded willow, Weeping willow.	bana ^C*J begun, Common egg-plunt.
jAsPj [^] m; [;] i anjeer, Cas- tor oil plant.	J [^] bel, Religious cra- tffiva, Aral nan jiis- rmine, Bengal quince.
J [^] t i u, b6d rook'hura, Six stamened Pareira brava root.	

پانا pan a, Hooded salvia.	پانی کان شیرا panee kansheera, Willow-leaved commelina.
پان نراسی pan turasce, Creeping rooted water hemlock.	پانی کلا panee kula, Upright mint.
پان کی متر pank kee inutur, Winged pea.	پانی کلی panee kulee, Indian damasonium.
پان کلی pan kulee, Nodding limodorum.	پانی کی شنبالی panee keeshunbalee, Three-leaved chaste tree.
پان مہری pan mu'huree, Pamory dill.	پانی مریچ panee muruch, Flaccid persicaria.
پان مہری pan mu'huree, Sweet fennel.	پانی ملنگہ panee mulung'eh, Runing cyperus grass.
پانی جام paneal'eh jam, White rose apple.	پاپی pupeea, Pupaw tree.
پانی ہل paneep'hul, Twospined water caltrops.	پاپرا put papra, Two-flowered Indian madder.
پانی چوما paneechooma, Four-seeded willow,	پانی چیکا putputechechka, Articulated clubrush.
پانی چے paneechee, Plyandrous date plum,	
پانی کاہلم paneeka'halum, Water cress.	

VOCABULARY.

- IJUSJ* putpupr*eh, Common fumitory.
- iSJ&* putkuree, Elegant Roylea.
- A ^ J pntung'eh, Narrow-leaved *bnasiletto*.
- y)*j*ū* put'hur choir, Aro^iatic plectranthus.
- uy*i *j**i* put'liurka-p'hood, Rock lichen.
- l/cjj* or *M&J* nihluiit, or pudma, Indian sacred bean.
- ^ I ^ J puras, Downy branched butea.
- jtXtu tS cJliaw t->^Jy i>Lirt;il>* sling k'iji seem, see Pertab Sinor's Dolichos.
- ^U j UO^J pu rseeaoo u - shaDi Woolly)>rake.
- 4*-%ji* purgacli'li, Epidendron.
- jiA* puroour, Dioceour snake gourd.
- ^ ^ w i ^ puroola keen-dec, Egyptian hitter *gc>urd*.
- ijj* pur'eh, White poplar.
- *uw pust'eh, Pistaciaiiia-iiiiit tree.
- iy&i* pusoor, Granular xylocarpus.
- (^ ^ J pulas, Downy branched butea.
- JAU* pulpul, Pinieiiita tree.
- L*^y*^* pal/ooputee, Doublestemmsdphri-niinii.
- └A*yb puloo sag, Hemp leave•I hibiscus.
- JJ-IJ* pulooul, Dioceous snake gourd.
- ^s^&I^ij punj angasht, Quadrangular chaste tr<e.

NATIVE AND ENGLISH

L ^ & = ^ punjungusht, Three-leaved chaste tree.	gach'ch, Great-flower- ed guetarda. .j~&i | punees, Jpinage.
^>^punjooke, Many- flowered phyllanthus.	t^W poopae'eh, Papaw tree.
yi^ij pundi aloo, Dyer's rottilera, Sweet po- tatje, Naked tre- wia.	*UJ^ | pòdeen'eh, Cum. mon mini, Penny- royal. .sfljyi | oorakooee, Five. petalled horney ber- ry-
j^ij pundoo, Water cr ^{ss}.	|.±+*~j&*J& poozhV'h du- mkht, Coin in on xnoos. >^~^jpoost, While pop. vy- Li>^»_ ^4^; poon Rgchum pa, Nodding ;il)inia. ^f&fyj, poon'eh guteo, Sessile knot-grass.
^ U y j punur naouee, Purslaneleaved train- themia.	^W or ^-^ pooee, or poo- eea, Malabar H-ght. sbade.
tiX> punk'eh, Chrystal- line oldenlandia.	<^J poe't, Shining ma. laltar nightshade.
j\yj, punooar, Blunt- leaved cassia.	
iUij punceala, Paneola plum, Many spined flacourtia.	
t.j^bpi meerik, Round- leaved mallow.	
**~^K^JAJ puneer ka	

<p>^fUjy, poee sag. ! Ied mala bar nightshade.</p>	<p>ج. UJ or j'w jeeaz, or peeaj, Shallo t.</p>
<p>hftisi)\i pu'haree bôra, Chinese dolichos.</p>	<p>پياز دشتي peeaz-u-dush- tee, Indian sqnill.</p>
<p>UJI^J p'hal sa, Asiatic ewia.</p>	<p>JU,UJ peeas al, Ha'try pentaptera.</p>
<p>^gr WJ pu'ha'ha, Li; seed.</p>	<p>پيال peeal, Broad-leaved</p>
<p>J*^ پهاير p'haeen kumul, Cotton-like saussurea.</p>	<p>ل>uclianania. JUJ peeal, !leasari; (la- vored chironi.1.</p>
<p>پهلتی کوی p'hultee kô- bee, Kale, or bore- cole.</p>	<p>پپل peepul, Sacred fig. v-^^-» pcepl<ee, Peeplee</p>
<p>ج~**i l'hunus, Jack tree.</p>	<p>پوٹھس pothos. u-\$y or L C ^ peeplee, or peeptd, Long pep- per.</p>
<p>c^j^ p'hoot, Momordic cucumber.</p>	<p>^J' پیتا peetalee, faked trew fa.</p>
<p>^^ or c^:J p'hoot, or p'ho«tee, Musk me- lon.</p>	<p>پیترس peetrus, Com- nion tunneric.</p>
<p>vj^drt P>ho01 k(V)ee, Cauliflower;</p>	<p>پیت سال pét sal, Emar- gual e-leaved pteio- carpu s.</p>
<p>^UJ pear, Broi d-leaved * buclianai.ia.</p>	

VOCABULARY.

J ⁱⁱ Ur tanbool, pepper.	Betle	<i>fly</i> turuuj, Citron.
UAJ tupeea, garlic pear.	Smooth	(ir [^] =jy turunjeebun, See prickly stemmed manna plant,
£j tuj, (Cassia tree.		jj turoor, Earl cas- sia.
[;UJJ tud'harn, Spread- ing triangular squire.		UJyJ turoo luta, Wing- leaved ipomea.
تراي قري or توري turaee, turee, or tooree, A- cute angled cucum- ber, Egyptian bitter gourd.		i_jy±> ty tureli te [^] uk, Common cress.
1 [^] turub, Common ra- dish.		U [^] J/ treepuba, Square stalked ipomea.
J [^] J turbud, Square stalked ipomea.		[^] jb* [^] tushi neezkb, Four leaved cassia.
yiji turluic, Water me- lon.		[^] U? tufa//, Apple.
s*»y turseh, Sorrel.		[^] i [^] 1—UJ tuft h arriU- nee, Apricot.
[^] y turmus, Egyptian lupine.		[^])ju>£ tukt-u-raj, Ro- tuk amoor.
[^] J ^y turniush, Com- mon blackberry.		)J& tukura, Squai e stsilked ijM...»a.
		[^] cy£ tukree, Spreadine hogweed.

NATIVE AND ENGLISH

<i>j+G</i> tukinn, East Iudi- ao arrow root.	t-JOJ fcung, Tall sugar grass.
Jj"tul,O] ier[oily seed. *Jli>j]j tuluk'h daneh, Slender daniel.	LJOJ turn!ee, Eatable perlomis. il, ʔ t>oar, i'pigeoni pea.
^" i tulsee, Purple stalked basil.	u:>ȳ toot, Indian inul- beny.
^tj tule e, Common blackberry.	Uḅ^j took a pana, Float- ing pistia.
J^UJ tunakoo, Virgi- niau tobacc-0.	*V V toola lod'di, Colored rorideL ^e tia.
JUJ tumal, Pailiter's xanthochymus.	5/y" or ^y" toomra, or toomree, Bottle gourd.
*A*J turn turn, Elm leav- ed sumach.	^y" toon, East Indian bastard cedar.
^jjjyj tumur hunt!ee, Tamarind tree.	J ٲٲٲ thoolinr, Oleander- leaved squerge.
ij tun, East Indian bastard cedar.	»>S L ^-, Met kunga, Green-fl owere 4 hoya.
yuiJ tumbaco, Virgi- titan tobacco.	tS^ʔ teesee, Common * flax.
l(jjjj tuadooka, Polyan- drous date plain.	lj- ٲٲٲٲ teek'hee ookra,

VC>CAIILARV-

Corelorus-leaved melocchia.	^jyU- jaree, Sweet, or great millet.
tʃ tehi, Oriental oily seed.	^^U. jasoo, Chinese hibiscus.
^ ʒ teen, Common i;g.	JU jal, India n salvadora.
jjJJ teendoo, Smooth dale plum, EL'ony titæ.	fV J ^a li' Forked chara.
^jyti teeorec, Square stalked ipomea.	t^tf JV jal gantce, Hairy panic grass.
سلب salub, Salep, plant,	uf/*JV- jal lukree, Va- ia.il.
سوم soon;, Garlic.	jal-u-môrt, Vari- egated ceratostema.
^>V jatee, Catalonian jasmine.	^U jam , White guava, Rose apple.
جاتي پھل jatee p'hul, Nutmeg tree.	J ; ^ ^ jamroil, Malay apple.
ج ^a La. jajee, Alternated valisneria.	جامون or جامن jamun, or jmoon, Narrow- leaved eugenia, Java pl>; m.
جارل jarul, Oblong-leaved lagerstroemia.	جانجي janjee, Fascicu- lated hooded milfoil.

NATIVE AND EKOufi II

- LV^^-janjee, AJtemat-**
ed ralisneria.
- ^-ijU. jaoourus, Spik-**
ed millet.
- ^alljla. iaooc aUie,**
^m **Poison mit.**
- yir-^^ j:aoosheer, Rough**
parsnep.
- ^ytoU ja'hee, Catalonian**
ja-mine.
- J^LJ^1^ jae** pliul, Nnt-
meg tree.
- «Aa.jub'eh, Native bar-**
ley.
- U= juj»n, Chinese hibis-**
cus.
- jjuuu JJA iupul seend,**
Indian cactus.
- Ik or c^^ jut, or**
j i.ita, Common cocks-
comb.
- L_s=^v jutAee, Auricu-**
lated jasmine.
- i A Uua. juteemad'eh,**
Hairy liquorice, prick-
ly liquorice.
- jb^ jndooar, Round**
zedoary.
- LJVJU)aw jura inanus,**
Common aniee.
- |^^>i^ jvrud kulmee,**
Involucrated bind-
weed.
- u-T^ jurook, Lime.**
- ^rMo^a-jurecssus, Saf-**
flower.
- j)*- jusur, Carrot, Gar-**
den parsnep.
- I^^Jfc-julpapara, Three**
leaved mollugo.
- iJ^h- julpae, Saw-**
leaved olive.
- IJVLV juljulan, Coin-**
ni on fenugresk.
- (<*ij^- jul neem, Thyme-**
leaved herpestes.

VOCABULARY.

- wiuU julioef, Slender J L_{ff}l[^]⇒. junglt't; an),
 dairuel. Hog plum.
- Uj? J^{*}-? * jumal goota, JaUJLft*. **junt**lee ba-
 Purging croton. it dam, **Fcetida** str-
 ^U^ juna//, Elecam- culia.
 pane. ^•Uj^JiJ^ junglie peeaz,
 JS^ junar, Common **Indian** squill.
 poplar. jlj^jliio. **jungle** dal,
 (j | ^ i * **jumb'hiere**, **Bearded** Leersia.
 Lii!ne. ljJK^jliia. jungloe kan-
 ^Ui>^ **junteana**, iDe- da, Dog's tooth vik<-
 p nssed gentiaii. lot
- i-Xsr¹^ **junjuk**, Indian ^^s LJXU. **jonglee**
 southerQwood. •
 *-f^{**?}• **junjuk**, Indian **kundee, Purple**talk-
 w **irmwood**. e4 dragon plait.
 ***. **junka, Dwarf sida.** jungle
 (ji y?' us ^ V j^{un} g^{lee} a- mungee, Senna hedy-
 jooai'U, Spreading s*irura*.
 lo\age. l^i>>-ju neeooa, Thread-
 like **ben t** grass.
- ^jjjI^jJUG-i. **jungles a-** [r^? * j^{1 1} e¹ooa • Doop
 rnndec, Angular leav- grass.
 ed p) i ysie nut. ?> joou, **Native** l>aii-ay.

NATIVE AND ENGLISH

جوا jooa, Chi:eselli- biscus.	duruK hit, Nutmeg tr»e.
جوار jōar, India lt mil- let.	جوز مائل jooz masul, Purple thorn apple.
جوارا jooara, Maize.	^jiAjdy*: June (lurilkll- tee, Walmit.
جواسي jooasee, Prickly stemmed hed ysaruin, Prickly stemmed man- na plant.	جوگانی چوکر jooganee chookur» Tree gme- liua.
جوانا jooana, Various- leaved jasmine.	^V J ^ j°(j) paluk, SIarp dock.
جوتاکنشیرا jootakunshee- ra, Common comm<- lina.	*y*.joomi, Wind-leaved garuga.
جوہ و پالنگ jōdoo palung, Indian i^lass v^ort.	ijrSS* or ^>r±, ^j^ jooiii lreee, joondee, or joouree, Indian mil- let,
w^jJa.!'!;*^- io oz ultee b, Nutmeg tree.	جوہی پانا joo'hee pana, White Govi ering jus- ticia.
L*WI^**joo^ a lkee, Eme- tic nit.	k-fr?- i'boee, tVuriculati d ja smine, Tomentose
جوز الکوسل jooz alkoosul, Emetic nat.	i\"ra.
جوز بواد رخت jooz booa	

VOCABULARY.

جهانپي j'hampee, Small-
flowered sida.

£»l«* j'haoj, Forked
chara.

Jol& j'bankur, Hill
bram¹ »le.

jlt»j'haoo, Indian tama-
rijk.

^^iUljL^j'lii tamansee,
Sp'tkenard.

c/i!FH^ j'hunj'liun, Sil-
ky crotalaria.

tC^j'hoomka, Laurel.
leaved passion flower.

I^U^ j'heenga, Acute
angled cucumber.

p^U^ jeea seem, Black
seeded dolichos.

جيت jeet, Sesban æs-
chynomene, Egypti-
ai sesbania.

جيت الو jeet aloo, True
arrow root.

JJ^JJ^ jcul mureeli,
Cingalese pongaLi-
urn.

I^ c!a, Tea tree.

<^,U chab, Chaba pej>
per.

y^J^- ch; nugz Wnl-
nut.

y*iU. chaksoo, Four-
leaved cassia.

^Ojii^ chogul patee,
^R Coated swallow wort.

^jjJiU. chugul lludee,
India n sphœranthus.

i^joU. chandra, Hed
flowered ophi xylem.

چاودار chaoudar, Com-
mon lye.

چايا chacea, Woolly
achyran til*s.

^4** chapatee, Four-
leaved pepper wort.

U [^] chuia, Cingalese	[^] Jb [^] J&M.	chukatee pa-
Leadwort.		to, Marsh mari-
j ^l * y [^] chatur mar,		ca.
Mushroom.	[^] iy [^] eJttkoota,	Shad-
[^] yoJU. chutUT mool,		dock.
Cingalese leadwort.	[^] [^] X A.	cnukootur-
j ^b [^] &t ⁻ chuteea shoo-		'eh, Shaddock, Cit-
ter, Babiana-leaved		ron.
epipactis.	! [^] y [^]	chukoonda, Oval-
*% [^] clmchka, Club-		leaved cassia.
rusli.	/y*»	cbukoontir. Oval-
Iji [^] t- chuchunda, Com-		leaved cassia.
mon beet.	f* & J [^] -	chul beenuj,
) SijfT chuchoonda,		Clearing nut.
Common snake gourd.	IAU-	chulta, Rough dil-
K [^] chuch(xraga, Com-		lenia, Large-flowered
moii snake gourd.		dillenia.
SJ [^] ff- cIUil'Ht'rll, Chi-	1!A*V	chulmoogfra,
nivta.		Scented chaulmoog--
Ij- [^] churchura, Rough		ra.
achyranth<es.	, [^] Vus* [^] *?"	chumitee pi-
Ji&i*. chuAundur, Com-		tee, Pangiaea c>!"&-
uoioit beet.		rus grass.

VOCALULARY.

- \±j?*T chumchurk'lia, **Bat-winged hedysarum.** J.la-G^a. **ch6ta chand,** Rec! (lowered ophi-oxylon.
- IU chuna, Common duck pea. ^t*Jif+. cl (hotee see Ji). Sabre podded **doli-**(-I)OS.
- j\±*~ chunar, Oriental plane tree, Common poplar.. Ls^is*|*s*rt~ **chfitee ku-roondee,** Spiny **caria sa**
- U,U». chuna luta, Axil flowering **fringe-tr** e. j * . choor, **Long-leaved pine.**
- ^yKi*- **chumbulee,** Cas taJonian **jasmine.** ^syj*- **chooree,** Field **amaranth.**
- t_fxxa. or *^a- **churopa,** or Hiuw/puk, Sweet scented **michelia.** ^جوري اجوائيه chooree a-jooaeen, Viscia cle-ome.
- چندن chundun, Sandal wood tr<e. uX'b1^ **chooka paluk,** Bladder dock.
- U%yHiJ^h, **indee sag,** Eata''Ac **amaranth.** *^ ^ **chookooture],** Shaddock,
- ^*i^ **chunsui,** Common cress. sirt~ **chookeh,** Sorrel
- Ux'b^ chooj>ii lteea, Calycine kydia. cf 5 ^ **choolae,** Creeping **purslane,**

NATJVE AND ENGLISH

UT ³ !^ ckoolae, Herma- phrodite <i>anuarantb</i> , Te tandrous spinach.	<i>jlyi u^ eb'huta</i> ku- nooar, Spike-flower- ed aloe.
±Jy*- clioolee, Tllftcd bnckbean, Creeping pin'slane.	^ ch'hur , .Spike- nard.
y i ^ t f ^ choota band aloo, Prickly stem- med yam.	3l\jtf- ch'hareela , <i>llock</i> lichen.
Sr^Mt^ choonaree , Hai- ry ixoru.	JLa Uj^a, cl.) 'hōta jam, Clove-leaved calyp- tranthes.
Wj* chooncha , Com- pressed cypems grass.	y چہرتا جانجی ch'hōta jan- jee, Two-lobed booded milfoil
^s^- ch oooo , Chul>a pepper,	UJK^^IJ^A. ch'hōla dood'h luta, Double swallow wort.
^^ chooeea , Black pc]>ji er.	^^^4*- ch'hoota kuljta , Indian borage .
^sjS** J^W^ ch'hagul khooree , Goat's-foot bindweed.	Lr!j*h^\$i? ch'hōi a goot- 'boobee, One-head- ed eyperus grass.
o\JKJJU^ ch'huta alka pat , Qmbelled morin- da.	'-kiUI^- ch'hōta m'inda , Round lornii <i>thus</i> .

VOCABULARY.

چھوتا مچیتا ch'hôta mu- cheeta, Many-seeded justicia.	چینہ or چینا cheena, or cheeneh, Common millet, Indian millet, Bengal millet.
چھہارا ch'hu'hara, Com- mon date palm.	چینا الوو cheena aloo, Skirret, or White potatoe.
چھیلپاتی ch'heelpatee, Wrightea.	چیناغازا cheenagaza, In- dian xyris.
چیتا or چیترا cheeta, or cheetra, Cingalese leadwort.	چینی بادام cheenee ba- dam, Earth-nut.
چیترا cheetra, Nepal berberry.	چینی نارنگی cheenee na- rungee, Three-leaved triphasia.
چیرونجی cheeroonjee, Pleasant-flavored chi- ronia.	چہر chee'hur, Spike- nard.
چیری چیرا cheeree chee- ra, Slender millet grass.	حاشا hashā, Garden thyme.
چیکون cheekôn, Orient- tal nettle tree.	حباکی hubak, Ciliated basil.
چیلان cheelan, Jujube.	حبوق hubuk, Common mint.
چیلماری cheel maree, Four-stamened coffee.	

NATIVE AND ENGLISH

ji^tfyjUi*. /uiteean ka- goond, Silky cotton tree.	-pliJlod^A- Aumudutal- rubA, Cut-leaved navel wort.
t_ju*^ Aurshuf, Garden artichol e.	^x». Auna, Henna plant. iJ-via. Aumbul, Dwarf kidney bean.
J^o- /mrmulu, Syrian rue.	t•Jalo- AuW^i, Summer wheat.
^oiwlyjUiUaa. Aussalban akhzzar, Common rosemary.	(J.Jaio. /ainzzul, Bitter cucunilxer.
AJA- //.nlj'dj, Common fenugreek.	i_/5-*. Aook, Sweet ba- sil.
^ydi*. /tuldee, Common turmeric.	iy*. Aoor, Common poplar.
^jJa. /tuldee, Ovate gardeneria.	_m^Aijjy^ floourroomee, Black poplar.
JHWA Auleem, Rough ticliyrantes.	JKU^A. Aemsagur, Cut- leaved navelwort.
o»Uo. /mmazz, Sor- rel.	^U. khar, Common Mackberry.
UUa. /mmama, Wild amomum, Common turmeric.	^j^oULk, khaniadroos, Soft sphseranthus.

VOCABULARY.

- ^U U . khamash, White *Ijfyj***- khur^u'hur'cli
Diucuma. S¹weet scented olean-
u^jJI^jpU. khanu/i u\ - der.
z<eb, Wild wolf's JU^i. khur/al, Com-
bane. mon oat.
<jrji^- khaeeree, Meili- *tiji. khurfeh,* Shall
cinal catechu tree. **purslane.**
u s v ^ khubaree, Man- ^j k x i u j y ^ khurnoob
ritius sida. nub/ee, St. John's
j ^ - khubaz, Round- **bread.**
lea vud umllow. &j*~ kliurooa, Castor-
£y*|&ji>*|i|x|r\n|k asoodj oil plant.
Black **helleboi**e. ,L J ^ khuree, Fuscous
o^cH/^ khurbu/i su- sugar grass.
peed, 1'Vititl helle- {j»± khus, Garden let-
bore. tuce.
nU^^^i. khurbu/e see- v - .s-^khuskhu^Scont-
a'ch, Black **nellebore.** ed grass.
¹ *tjjij*** khurbooz'eh,)j*3jj*»±' **khusuroo** da-
Musk melon. roo, Greater galan-
L)A-J^- khurjal, Per- **gale**•
sian salvadora. «—j»^ khusuf, Walnut.
Jlj/w khurdal, Small- «-X*i. khitsuk, Small
seeded mustard. caltrops.

NATIVE AND ENGLISH

^^JUS w-£A khushub gseenee, China root plant.	1ij i- khooda, Petal* sonneratia.
^JtUw^ki. kuahkhash , White poppy.	^XiSUU^Li,^--^^ khooda- purust khan a laelc, Jerusalem artichoke.
Ui^yi^ khushooreea, Trailing eclipta.	gi ^=^yL khoodunjan, Greater galangale.
^^Ja^ khu/mee , Man- ritius sida.	ci^jUw^yi. khood sea ooshan, Dragon's blood plant.
jU^ khoodan , Common elder.	/ii- khood , Cucmber. 1 *i>>^^*- khood claim- bur, Purging cassia.
wifJ|jpU^ khoodanuA ttl-kulb, Poison nut.	jjJ^Ui. khood shun- bur, Purging cassia.
j^lxi- khood , Daffo- "dil.	^£>Ui- khood , Pansy.
^^iii. khood , Club- seeded asphodel.	t' ^ C H ^ khood j)apara, Five-leaved mollugo.
uJyi* khood , Com- mon flax.	\jJ U C I ^ khood papura.
•rj*~ khood , Peach.	T\vo-floAYered khood- Iandfa.
^U^^j^i. khood jam, Paniced antid^srna.	1;J^ khood , Medicinal catechu tree.
l/jt^y^- khood ookra, Plaited-leaved croton.	yj^w khood , Pansy.

VOCABULARY.

^jrji^ kheeree, Wall- flower.	دارم darum, Pomegranite.
Jji. kheel , Coinunon rm.	A^J u^Jb dant-u-rtiDg:- 'e'li, Plain-leaved mil- ling ¹ onia.
^ klieeoo, Useful in lanorrhoea .	Uyb danoora, Danu run nephelium .
,_jb dab , Mr-ado, grass.	,_r^b daoodee , Indian chrysanthemum .
\->j* ,*\$£ dabee dooba , Indian zyris.	داين daeen, Fingered aralia .
,jyU^|j dachnarw, Ve- sicatory amniana, Climbing holmskiol- dia.	ujLi ^bj dubaa sbab, Sweet basil.
^y* islii dad murdun , Broad-leaved cassia .	^o (lujur, Dwarf kitl- ii?y bean.
^jijlt dar bureen, S: quin's nightshade.	^ duklj, Bull rush .
^^jj^^b dar clraenee , Cassia tree, Real cin- namon.	^^ duk'hun, Italian millet .
J^U)b darfalful , Long pepper.	^^ j dud'hee , Tfeyon- leaved spurge . درخت ايبول or درخت ايبول durukhtabh'ul, or du- rukht ab*hool , Com- \nijn juniper .

NATIVE AND ENGLISH

درخت اخروت durukht akhroot, Three-lobed aluerites.	درخت چب چيني dur- ukht-u-chub cheenee, China root plant.
درخت اقويل رومي du- rukht a/*oo61 roo- mee, Balm of Gilead tree.	چومکهي^;4 durukht- u-choomuk'hee, Purs- lane-leaved scaevola.
جو^C3J) |JL***J£ durukht- indurjoo, Oval-lea v- ed wrightia, or rose- berry.	بما^fj^^jd durukht-u- khurma, TaHera palm, Common date palm.
ورftlL^^.3 durukht an- goor, Common vine.	Jl; ^^jd durukht-u- ral Dammer pine.
انگوزة^ - ^j durukht an- gooz'eh, Assafoetida plant.	درخت راوند durukht-u- raoond, Medicinal rhubarb.
ت جابهل^ ^ ^ durukht-u- jap'hul, Nutmeg tree.	روغن بلسان uu^;^ du- rukht-u-roo^run bul- &an, Balm of Gilead tree.
ت جلوز*3*JA durukht ju- looz, Pistachio nut tree.	د ختنه زيب durukht-u- zubeeb, Corinthian grapes.
ت جوز^ J& durukht-u- jooz, Hazel nut.	درخت عود durukhtaood, Spike-flowered aloe.

VOCABULARY .

درخت کته durukht-u- kut'h, Medicinal ca- techu tree.	درخت وین durukht oo- een, Black grape vine.
درخت کتم |J>±J& durukht-u- kusum, Indian tama- risk.	درخت هنگ 3 durukht- u-hung, Assafoetida plant.
درخت کمود durukht-u- kumood* Dyer's rott- lera.	درخت اب Sc^S^jd durukhtee anab, Jujube.
درخت گرجن durukht-u- gurjun, Terebinthine dipterocarpus.	درخت ار durdar, White poplar.
درخت لسان العصاره >^* dur- ukht-u-Iusan ulassa- feer, Oval-leaved wrightia, or roseber- ry.	درخت درند durund, Bent back dodder.
درخت لونگ durukht-u- 16ng, Clove tree.	درخت جی Jjks^^ dusbuchun- dee, Chinese morea.
درخت ماپهل durukht-u- map'hul, Sessil fruit- ed oak.	درخت سبها dusbu'ha, Chinese morea.
درخت متطر durukht- u-muntur, Cork tree.	درخت سمری dusmuree, Dwarf kidney bean,
	درخت دو du&oo, Indian sphsG- ranthus.
	درخت دل dul, Stagnant panic grass.

NATIVE AND ENGLISH

tM*ta dulub, Oriental plane tree, Medicinal rhubarb.	bjtf jo dc>op'hureea. Scarlet-flowered pen- tapetes.
yf duloo, Medicinal rhubarb.	^j^aj^dood'U kulraee, Square-stalked ipo- mca.
^^SLj dumalakhoo- een, Dragoon's blood plant.	l^a doodmugra, See sweet scented olean- der.
As^ti dumcheh, Com- mon clover.	Ufs^j duodh ltita, Escu- leut oxystelma.
^0 (liuid, Purging cro- ton.	^jBjJ-i dood'hee, Escu- lent oxystelnaa.
c^&J dun/mt, Slender daraeL	ic*^,J;ii doodeea kul- mee, Great-lowered ipotniea.
^jjjXiii dunkoonee, De- cussated canscora.	SyJ doorla, Mad ap- |>e.
UJJ^ doop, Thread-like bent grass, Doob grass.	!;^!;j^ doora beeara, Upright panic grass.
^jd dopai< ee, Bal- sam.	W^ijJ doorba, Doop grass.
Uf ^J'^JJ dooputce Iu- ta, Goat's-ibot bind weed.	J ; ; j doorlee, Jacqui's night shade.

VOCABULARY,

دوسر اساک 3 doosura sag,	^U*3 d'han, Rice.
Five-styled pharna- ceum.	j£j''d^*A d'han muruch, Bird pepper.
دوتیا jd dookuteea, Ferru- ginous symplocos.	jlw dhao, Downy gris- lea.
دولال چمپہ 5* J^ doolal chum- p'eh, Sweet scented garland flowers.	lyJb*J d'hutoora, Purple thorn-apple, Jr^^sir* ⁴³ d'hurtee ka- p'hood, Mushroom.
دولہ چری dool'eh churee, Ammanioidic bergia.	ج د' hunchee^Hemp leaved aeschynomenc.
دولہ چمپا doolee chum- pa, Large-flowered tulip tree.	^J^J*** d'hunroos, Eat- able hibiscus.
دونا d doona, Indian worm- wood.	Ua> j dhuneea, Coriander, UwaAb^ d*heemna, Elon- gated cissus.
دوندول doondool, Egyp- tian bitter gourd.	ytjd'hoou, Downy gris- lea.
دونہ doon'eh, Indian southern wood.	hjj** d'hoorooa, Field pea.
دھاری d'haree, Downy grilea. A	hc^-iJ^Aj d'hood shu- moodra, Long-leaved , leea.
دھاکھا d'hak'ha, Downy branched butea.	

NATIVE AND ENGLISH

دھونا گاج d'hoona gach,	&|JbAj}& deeo d'haii,
Dammer pine.	Sweet millet.
دھي پھل duhee p'hul,	j|<*K ji& deeo kandar,
Painter's xantochy-	Water cress,
mus.	
ديبدار dcebdar, Mast	^iUtyratecanuj, Smith's
tree, Long - leaved	pine.
uvaria.	راجگي rajgagec, Red-
ديتارا dé tara, Serrated	leaved vine.
grass.	راجگيري rajgeeree, Her-
ديس dees, Bullrush.	maphrodite ama-
دک id dék, Margosa tree,	ranth.
ديماج deem'haj, Com-	راخل پھل rakhul p'hul,
mon buglos.	Saw-leaved schmide-
ديا deeoou, Mushroom,	delia.
ورد)^d deeo aourid,	بجج razeeanuj, Sweet
Deodar pine.	fennel, Panmorium
ديودار deeoodar, Deodar	fennel.
pine.	رازيانہ رومي ra^eean'eh
ديودارو deeoodaroo, Mast	roomee, Common
tree.	anise.
باري ji& deeo daree,	رامتہ ramot'eli, Taper-
Long-leaved uvaria.	leaved cordia.

VOCABULARY.

{UJm}j rasun, Elecampane.	رايا raeaa, Large white mustard.
{±*»}j rasuna, Medicinal rhubarb.	قج rubzuk, Jacquin's nightshade.
%^^J^}J rakus gud'eh, Air-living bryony.	yiS; rutaloo, Wing stalk-ed yam.
^ 1; ragee, Upright Eleusinc.»	Jj rutum, Portugal broom, Dwarf furze.
S; rala, Italian millet, Italian punic grass.	W*S* J) rutun puroos, Pansy, Shrubby violet.
M)j^hi f> r a m bégoon, Hairy nightshade.	c^I^fl J^ rujul ttl^rurab, Dandelion.
ي}ffl) ram turuee, Eatable hibiscus.	&£j rudee/<, Persian salvadora.
ري^fb ramjulparec, Small-leaved ^civulialia.	)j ru2r, Common vine.
رامگوا ram gooa, Slender betelnut.	رشاد rushad, Common cress.
راندني randnee, Parsley,	رصوت russôt, Nepal berry.
رامي race, Small seeded mustard.	رعا raga, Smith's pine,
	رعلول ralool, Purple talked dragon plant.

NATIVE AND ENGLISH

ixy rufeef, Daurian lily.	زئاس <i>z roonas</i> , Madder of Bengal.
رکتپتہ <i>ruktuput'eh</i> , Madras ventilago.	روهنا ^{OT} <i>n^V roo'hun</i> , or <i>roo'huna</i> , Febrifuge mahogany tree.
نUخuu^ <i>rukut chundun</i> , Red saunders wood, Yellow flowered adenanthera.	روهو <i>roo'hoona</i> , Redwood tree.
JJ; rukul, Leek.	رہا <i>ru'hla</i> , Common chickpea.
<i>d**j ruman</i> , Pomegranite.	ریتہ <i>reet'eh</i> , Emarginated soap-berry.
<i>**j rund</i> , Castor oil tree.	ریتہا <i>reet'ha</i> , Indian soap berry, Emarginated soap-berry.
رنگتورا ^ا <i>rungtura</i> , Orange,	
رواس <i>rooas</i> , Water cress.	
تس <i>tyj rooans</i> , Chinese dolichos.	رحان <i>reehariy</i> Ciliated basil, Sweet basil.
روباہ تربک <i>rooba'eh turbuk</i> , Deadly nightshade	ریشٹہ <i>reesht'eh</i> , Emarginated soap-berry.
می <i>Mhj root'hnee</i> , Water mimosa.	ریدی <i>reendee</i> , Castor oil tree.
	ریوند <i>reeoond</i> , Medicinal rhubarb.

VOCABULARY .

زخم حیات <i>zukhum</i> Aeeat,	$\wedge f y \wedge J$ <i>zalook</i> . Leek.
Cut-leaved wort.	J4? su ^{al} , Cornel, or
دوار ; sudooar, Round ze-	dog-wood tree,
doary.	$\leftarrow b \rightarrow$ ^o ufeof, White
رند $J \% j$ <i>zuraoond</i> , Long-	jujube,
rooted birth-wort.	$\leftarrow \rightarrow$ $\& f$ <i>sufeezuf</i> , Lote
زرت ; <i>zurut</i> , Indian mil-	treejub.
let.	s\$) -sun, Dwarf kidney
ردالو ; <i>zurud aloo</i> , Apri-	bean,
cot.	$g x \rightarrow$) $z \backslash x n b \backslash x k \%$ Arabian
انچو $\& j j$ 2:urud anchoo,	jasmine.
Round-leaved brain-	$\ll U \gg$; <i>jsumpan</i> , Common
ble.	anise.
ردچوب ; <i>jsrurud choob</i> ,	J [^] -pp [^] [^] unjubeel, Ginger.
Common turmeric.	w-feis [^] -jj soofae eea-
زردک <i>zurduk</i> , Carrot.	bus, Common hyssop.
زردباد $*j j$ <i>zurunbad</i> , Long	t & *j j P O <i>suhur zumcen</i> ,
zedoary.	Poison nut.
زردچند $j \rightarrow j j$ <i>tureen Auduh</i> ,	$\wedge H$) [^] eeaoon, Slender
Folyanthusnarcissus.	darnel.
زابل <i>zabul</i> : _f Cotton tree.	$\& y i j$ <i>zeetoon</i> , Olivetree-
زعفران <i>zafiran</i> , Saffron	)j $\rightarrow j$ 2;eera, Common
plant.	cumin,

NATIVE AND ENGLISH

^LJ*^" sabookee gach, Sago tree.	سالسا salsa, Shrubby ich- nocarpus.
جړ^u saj, Teak tree, Ebo- ny tree.	توپي ^ <-f^*'' sawp kee tôpee, Mush- room.
وري* kUu sada booree, Branching aspara- gus.	تفتي*« sanchee, Three stamened achyran- thus.
يل^JibU sada kunool, Three flowered pan- cratium.	سانگهو sank'hoo, Saul tree.
يژ/جژ*|d|* sad'eh booa- ree, Indian sarsa- parilla.	سانوا samooua, Wheat- like millet.
سارنگ sarung, Water lily.	سانوان or lyU« sanooa, or sanooan, Wheat-like panic grass.
سافراس*|h| sasafra, Sas- safra tree.	ساوان« saooan, Bengal millet.
ساگووانی sagooanee, Prick- ly swallow-wort.	ساوکی saookec, Sago tree.
ساگون sagoon, Teak tree, سال sal, Saul tree.	تاننا tfj^feU sa'hee kanta, White mimosa.
ساگ*|K| salbee'eh, Bengal sage.	سپاری suparee, Betel nut tree.

VOCABULARY .

- سپند supund, Wild rue. سدواري sudoarec, Three
 سپندان تلخ supundan-u- leaved chaste tree.
 tulkh, Flea wort. سديان sudeean, Holm
 »پياري supearec, Be- tree.
 tel-nut tree. *كاب suzab, Common
 *دار supeedar, White rue.
 poplar. سر sur, Sugar grass.
 *دهه supeeda'eh, Ori- *پتا or ^^ij^ surput,
 ental plane tree. orsurputa, Tall sugar
 ستري suturee, Common grass.
 rue. سرپن surpun, Sweet
 ست سال sut sal, Black scented calophyllum.
 wood tree. *س surkhus, Fern.
 LS|^*M sutmoolee, Bran- *نک » surkhuk, Cornel,
 ching asparagus. or dogwood tree,
 سجالاط sujatal, Catalo- سرخم surkhum, Fern,
 nian jasmine. سردب surdub, Persian
 ب)^w sudab, Common salvadora.
 rue. سرس sur us, Seris mi-
 *جن Ju suda su'hagun, mosa.
 Phoenician hibiscus. سرسون sursôn, Bengal
 *) wi>tW,fiida huzur mustard.
 mune, Indian annu- *SL&J™ surshuf, Small
 al phylfcnthus. seeded mustard.

NATIVE AND ENGLISH

<i>iS&j*</i> surshuk, Ever- green cypress.	<i>J^i w</i> sufurjul, China
<i>yzfj*</i> Burkuchoo* Water- lily leaved caladium.	<i>f^sAm</i> ^{quince} sufree am, White guava.
<i>\J>j^</i> Burkura, Tall su*j ^{ar} grass.	<i>jU-^j^iw</i> sufree jam, Reil truava.
<i>jk>Jj»></i> surul peer, Long- leaved pine.	<i>*«**•</i> sufonj'eh, Water- melon,
<i>(3^*-</i> surmuA, Garden orach c.	<i>^J\J .A/iu, su f; j</i> pae, Lance-leaved eleocar- pU9.
<i>j^Misiiroo, Ei</i> ^{ergreen} ey- <i>\r<</i> as, Cedar of Goa.	<i>LJ-UU^AA**.</i> sufed tulsec. White basil.
<i>Ua.Kj^«.</i> suroo eh j ^{ee} , Common Indian shot.	<i>Lj*j^Okio*</i> suf^d Goob- ' hee, Sowthistle loav- ed cacalia.
<i>^|\>j^.</i> sureeare'. Indian tar nsole.	<i>-Ao^oji*-</i> sufed\ mu/rn- mud, <i>\white</i> iluggea.
<i>J-سريد</i> <i>sreet'</i> lml, Bengal quill'	<i>y^U^niAA*</i> fiufud muos- leB, Linear-leaved as- paragus.
<i>i>|>«</i> susab, Watercress.	
<i>^jJi^</i> sufa/iU3, Bengal sage.	
<i>)y>^jSUM</i> Bufura koomra, Squash, or Vegetable marrow.	<i>^w^«iu«</i> jmAmooneea, Scammony plant, ' Alpine scammony.

VOCABULARY.

uCw suk, Shrubby my-
robalan.

^iixC **Bukbeenuji** Assa-
foetuja plant.

y*» sukur, Turpentine
tree.

J»MJ6^ **Buk'hdursan,**
Poison **bulb.**

e»»i|*iu. **suk'hdursun,**
Cingalese **crinum.**

^jAiL* **Buk'hdursun,**
Cingalese **amaryllis.**

JJ&J (F*« sug **angoor,**
Deadly **nig litsbade.**

jj&l** sugangoor, Dog's
bane.

سگوانی sugooanee, Prick-
ly swallow-wort.

sj^s^iu **sulajut, Com-**
mon stoiar.

oU suit, Native bar-
ley.

ic«?^ **suljumea, Tur-**
nip.

'U^jt^-jLklw sul^anee
chumpa, Sweet seent-
ed calophy **llum.**

L-CU fiu Ik, Common
br et.

t1*^''*suleekb'eh, Cassia
ton.

cyjUw sninaroo_7, Musli-
roidm.

jU* **BumaA, El in-lea v-**
ed sumach.

JJ-***" sutii-ii/', **Laurel-**
leaved jasmine.

f»f» **Bumsum, Oriental**
oily seed.

(F*- sinnuti, **Catalonian**
jasmine.

%j£>«j jy*« **Bumood r'eh**
shôka, White silver
weed.

^ sun, **Indian hemp.**

^^ **sumoe, White m i-**
moea.

^« **suna, True senna.**

NATIVE AND ENGLISH

سنبالی sunbalee, Plait- ed-leaved croton.	سنف sunf, Sweet fen- nel.
سنبُل sumbul, Oriental hyacinth.	«*نکار جتا sunkar juta, Painted doodia.
سنبُل suwbul u\teeb, Spikenard,	سنبهله sunk'ha hulee, Needle grass.
سنبُل khutae'e'e, Garden an- gelica.	سنگارهار sungar'har, Square stalked nyc- tanthes.
سنبُل hundee, Spikenard.	سنگتور'eh, Orange.
سنبُ sunj, Lote tree jujube.	سنگ کوپه sung koopee, Smooth volkameria.
سندب sundub, Common rue.	سنگهارة sung'hara, Chi- nese water-caltrops, Two spined water- caltrops.
سندروس sundroos, San- daraj tree, Arar tree, or Jointed arbor vitae.	سنبوت sunoot, Common cummin.
سندوک'eh, Poly- androus date plum.	سنبو sooa, Common dill,
سندید sundead, Lance- leaved oak.	سواتی sooatee, Moun- tain panic grass.
سنبسق sunsu^, Dwarf myrtle.	سویار sooyar, Octandrous valisneria.

VOCABULARY,

سوارۃ sooar'eh, Sweet flag.	سوريامه sooreeam'eh, Phoenician hibiscus.
سجکیم سٔوپلٔونگ Sjkym šoplong, Broad- leaved podocarpus.	سوست or {j}»y» soos, or soosut, Prickly li- quorice.
سوتاپاط sootapal, True senna.	سوسن soosun, Daurian lily.
سوتراج sootraj, Axillary spider-wprt.	سسام or ^y^ soosun, or soosam, Chinese iris.
سوتھوبی SOOUt g 6 - t'hoobee, One-headed kyllinga.	سوف - soof, Linseed.
سوتلی sootlee, Spotted sonerila.	سفید پوی sôféd pooe, White Malabarnight- shade.
سوتھی «soot'hnee, Fasci- culated yam,	سوکوآ تٔتا {j}»y» sookooa tôta, Monodelphous cnestis.
سودمسترا soodumstura, Small caltrops.	سوم soom, Bullrush, Hairy bitter gourd.
سورج مکھی sooruj muk- *hee, Sunflower.	سوم راج soom raj. An? thelmintic saw-wort, Black cumin.
سورن soorun, Bell-shap- ed arum.	سون soon, Indian trum- pet-flower.
سورنجان soorunjan, Com- mon meadow saffron.	

NATIVE AND ENGLISH

ٲٲ»soona, Purple mountain ebony.	roog'eh, Thyme-leaved spurge.
ٲٲ*iy» soonamukee, True senna.	ٲٲ ui<*iy» sooét rae. Grey mustard.
سوف soonf, Common anise.	سوت سيمل sooét see-mul, Five-stamened silk cotton tree.
سونيز sooneez, Indian fennel flower.	سوت مرغا s^ét mur<7a, Silvery spiked cockscomb.
سواه sôooa'h, Sweet fennel,	
ٲٲ^Ljy sooe chooka, Common dill.	ٲٲ*sr**» su'hujna, Horse radish tree.
ٲٲ>ji*ty» sooét burna, Upright randia.	ٲٲ* ¹ su'hee, Evergreen cypress.
ٲٲ W L I ^ ^ sooét busunt, Indian acalypha.	ٲٲ fu* ^u seeam - u - luta, Shrubby echites.
ٲٲj''|^ٲٲ*y*z**:y ^M sooét pance muruch, Downy persicaria.	ٲٲ سياه دانه seea'h dan'eh, Indian fennel flower,
	ٲٲ سياه seead'eh, Small-leaved myrsine.
ٲٲ*^u^*u sooét chumnee, Serrated hedge hyssop.	ٲٲ K> seeah mooslee, Narrow-leaved curculigo.
سوت خيروگه sooét khee-	

VOCABULARY.

سيب seeb, Apple.	|*'jih* seela pōma, Rox-
پهل seep'hul, Bengal	burgh's engelhardtia.
quince.	t^*^l seemul, Silky cot-
پهل &* > seeta p'hul,	ton tree.
Pumpkin.	foU*-' seenaduka, Spread-
پهل * » seeta p'hul, Cus-	ing hog weed,
tard apple.	Jw.'" seewibul, Silky
پهل ^ s ^ ^ tjijū* Seeta kee	cotton tree.
•	
•	
punjeeree, Thick-lea v-	^5*^4*' or W^4*« seent'ha,
ed lavender.	or seent'hee, Sugar
پهل ^ • | - i J * i ^ M seetulpaiee,	grass.
See double-stemmed	4 ^ " seend, Madras cu-
phrynium.	cumber.
پهل i * « seetee, The noble	L f * ^ i > L s * > 4 i i * » seend'hee
magnolia.	Wild date tree.
دُرُکھت durukht,	
پهل f k « seej, Oleander-leav-	y « seeoo, Apple.
ed spurge.	L 5 ? J * U i seeootee, White
پهل s * ^ seekhdar, Elm.	rose.
پهل سستور seestur, Bengal	) j j £ w seeoora, Ramoan
sage.	tree.
y x j ^ u seesoo, Sissoo tree,	^ - i ^ see'hund, Spread-
پهل y U c u seek ran, Common	ing triangular spurge,
henbane.	Sheathed spurge.

NATIVE AND ENGLISH

شاکسار shakhsar, Pi- geon pea.	الو atA sha'h aloo, Com- mon cherry.
شاخک shakhuk, Up- right melilot.	لووط < > *t£ sha'h bulool, Barbary oak. .
شاخول shakhool, Pi- geon pea.	پسند £ sha'h pusund, Sweet sultan.
شاشدان shashdan, White poplar,	شاه تروج £ sha'h turuj, Small flowered fumitory.
شال shal, Saul tree.	شاه توره *Ut sha'h tur'eh, Two- flowered Indian mad- der.
شال پانی shal panee, O val-leaved hedysa- rum.	شاه توره sha'htur'eh, Com- mon fumitory.
شالونچہ shaloonch'eh, Three-stamened achy- ranthes.	شاه دانہ sha'h dan*eh, Common cherry.
شاما shama, Purple pa- nic grass, Wheat-like panic grass, Wheat- like millet.	شاهسفرم sha'husfurum, Sweet basil.
شاماکھ shamakh, Wheat- like millet.	شباب shubu, Common tuberose.
شامالو sham aloo, Dam- son.	شاموت {& shubut, Panmori- um fennel.
	شربت لیمو t£ shurbutee lee- moo, Lemon.

VOCABULARY .

شورهج shureej, Water melon.	شمرود| shumrut, Sweet fennel.
شورهج shureef eh, Custard.apple.	شمشاد| shumshad, Box tree.
شورهج shaeer, Native barley.	شملهت shumleet, Common fenugreek.
شفتالو shuftaloo, Cassava tree, Nectarine, Peach.	شنبهه shunbalee, Quadrangular chaste tree,
شفايق shu^aeE, Common tulip.	شجره shj u r, Common buglos, Upright melilot.
شورهج shu*a/ml, Wild carrot.	شنگره shungra, Lance-leaved oak.
شورهج shuAur, Common tulip.	شورهج shunoo, Evergreen cypress.
شورهج shukur^und aloo, Sweet potatoe.	شورهج shunee2r, Coriander.
شورهج shukuree, Asiatic grewia.	شورهج shoohtchum-nee, Thyme-leaved herpestes.
شورهج shul^um, Turnip.	
شورهج shumar, Sweet fennel.	شورهج shoochee mookhee, Cingalese sanseviera.
شورهج shumam, Sweet Ispahan melon.	

NATIVE AND ENGLISH

شود shood, Panmorium fennel.	Yellow thistle, or prickly poppy, Mexi- can argemone.
شوره گز & shoor'eh gus, In- dian tamarisk,	ت [^] L _r i _r £ sheer khusht,
شوره [^] -i shooshumeer, Cardamum tree.	Prickly-stemmed man- na plant.
شوکران shookran, Com- mon hemlock.	izfaA sheeshun, Sissoo tree,
شولا shôla, Marshy iEs- chynomene.	شيفته رنگ sheeft'eh runk, Apricot.
شوندیکي shoondeekee, Wild potatoe.	شیکران sheekrah, Com- mon hemlock.
شوندر shunder, Carrot.	شکل A shcelkooul, Har- dy staff tree,
شوندري shoondree, Les- ser looking-glass plant.	شین sheen, Apple.
شوه [^] C [^] * & shooét kudum, Four stamened nau- clca.	صاب ssab, Bitter cucum- ber.
شوه [^] shu'htoot, Black mulberry.	صبر ssubur, Common aloe.
شهنيز shu'hneez, Pep- pery tooth-ache tree.	سد برگ ssud burg, Da- mask rose White rose.
UiU. JUi sheal khauta,	

VOCABULARY.

صعتر ssatur, Sweet mar- joram.	4*do lubeekh, Mu&k melon.
لآك0 ssundul, Sandal wood tree.	بوريا ^upureea, Peru- vian, or eatable win- ter cherry.
دل احمر*** ssundul ah- mur, Red saunders wood.	تيجو furfeel, Common clover.
دل سرخ** ssundul su- rukh, Red saunders wood.	طلكرا /ulkura, Thick leaved pennywort.
دل سفید* ssundul suféd, Sandal wood tree.	جاری J» foobaec cha- reh, Bushy unona.
نوبر* ssunoobur, Muri- cated casuarina, Fir- tree, Long-leaved pine.	طورنج tfoorunj, Citron.
صوطل ssoofol, Carrot, صیمل ssecmul, Silky cotton tree.	دورا djk foolecdoon, Black berried nightshade.
At /abcc, Long pep- per.	طهوكا ^'hooka, Noble am- herstia.
طالیسفر laleesfur, Aro- matic rhododendron.	لوسی Jo feesee, Linseed, طیطان feefan, Leek.
	تورحاً c «,a^ur^urAa. In- dian pellitory, Pcl- litory of Spain.
	بب abub, Glaucous- leaved physic nut.

NATIVE AND ENGLISH

ڤل سياء <i>ik fulful seea'h,</i> Black pepper.	Thin-leaved chaste tree.
ڤتڤي*» <i>funjungusht,</i> Quadrangular chaste tree.	ڤاپال اڤا <i>/*apal a#a,</i> Car- damum tree.
ڤدق <i>ii fundu£,</i> Filbert.	ڤتڤ <i>/eat,</i> Eatable celas trus.
ڤو <i>foo,</i> Valerian.	
ڤوتنچ <i>footunuj,</i> Com- mon mint.	ڤيڤاڤا <i>/eatha pu'ha-</i> reca, Woody hippo- cratea.
ڤاق <i>Lyfoosta^,</i> Pistachio nut tree.	ڤيڤاڤا <i>arpasee,</i> Cot- ton tree.
ڤاڤل <i>>y fooful,</i> Betel-nut tree.	
ڤوك <i>fook,</i> Slender dar- nel, Small fruited dolichos.	ڤاڤل <i>kaʔul'ch</i> ssu^ar, Cardamum tree.
	ڤاڤل <i>kakVeh</i> kubar, Large cardamum.
ڤول <i>fool,</i> Two-flowered dolichos.	ڤاڤل <i>ala,</i> Spreading trian- gular spurge.
ڤوه <i>foo'h,</i> Madder of Bengal.	ڤاڤل <i>ut,</i> Common clover, ڤاڤل <i>utab,</i> True milk vetch.
ڤيشوق <i>feshoo^,</i> Eastern gaint fennel.	ڤاڤل <i>udrutce,</i> Mush- room.
ڤيل برة <i>aii» feelfeel bur'eh,</i>	

VOCABULARY .

لواص /mrass, Clminu- mile.	*UBSU balsu- recr'ch, Chirayta.
5رانيا A-uraneea, Cornel, or dpgwood tree.	تـبوا ^a *ussub booa, Sweet flag.
قرطم kurtum, Safflowercr.	كـS Au<uf Garden orache.
قرع Aura, Bottle gourd.	ا^aS Aufun, Cotton tree,
قرنفل Aurunful, Clove tree, Gilly flowered, China pink, Wall flower.	J*& h|||kxx|و Oval-leaved cassia.
يـy" Auzheel, Common blackberry.	قلمباكي /ailumbakee, Palmated moon-seed plant.
تـ Aust, Arabian cos. tus.	كـ^J ftulumbuk, Aloes wood, or agila wood.
سط Aust, Beautiful cos- tus.	يـ^J" دارچيني /mlmee darcheenee, Real cin- namon.
سطل S Ausful, Indian chesnut.	فمريب Aumreem, Kale or borecole.
قشطم Aush^um, Arabian costus.	بـB Aunub, Hemp plant.
صب S //usb, Bamboo, Karka reed	رق^ AundruA, Com. mon osier.
با^S Aussba, ti&t rush.	

NATIVE AND ENGLISH

(j~^» Minns, Elecam- jmne.	ur^-^ kachuree, Spread- ing pontederia.
&±> /riuiV'Ii, Common gal banum.	j^^ kakhar, Long ze- doary.
*<tiy or *&>y A-oond'eh, or froondum, Downy jasmine.	jj^ or LSJ% karee, or kara, Small floweret ¹ canthium.
*JV AuhooVh, True cof- fee tree.	jjtf kara, Climbing web- era.
^S UJ Aeessoom, Indian southernwood.	*•ty% kartun'eh Com- mon fenugreek.
&"/eeeo, Arabian cos- tUfl.	*•XU^K karjuuk , Most useful cucumber.
^UK kaboolee, Cora- nion pea.	r-^i^kardee, Clingstone peach.
I^K kateera, Stinging sterculia.	^'ft karnuta, Netted oleauder.
^SJ^J ^X katee raj- geeree, Prickly ama- ranth.	L.r/ifi karcearee, Su- perb gloriosa.
j*-% kajoo, Cashew nut.	^^ kas, Spontane- ous sugar grass. u:^tf kast, Upright water #eed.

VOCABULARY.

کاست kast, Forked cha- ra.	AJ^K kakun'eh, Jacquin's nightshade.
کاسمیر kasmee, Caout- chouc fig.	کاگارا kagara, Spontane- ous sugar grass.
کاسنگهني kasung'hunee, Hemp-leaved tragia.	رUسفSK kala buchnak, Tall hymenodictyon.
کاسني kasnee, Common endive, « Wild suc- cory, Indian turnsole.	تولسي \$£ kala toolse'e, Sweet basil.
کاشم %»% kashum, Assafoeti- da plant.	کالاماتي JK kala jatee, Ner- vose eranthemum.
کاوژمو %m siic\^ kaauzee lee- moo, Lime.	کالاجام kala jam, Java plum.
کافور >K kafoor, Camphor tree.	کالاجوار ^^ kalajooar, Two- colored grass.
کاک-و-جنگه s&Uwu/K kak-u-jangeh, Hairy leea.	کالاجیر SK kalajeer'ch, In- dian fennel flower.
کاکروندا dJj^£ kakroonda, Coro- mandel celsia.	کالاکچوما *JK kala chookma, Open oak.
کاکو J& kakuu, Italian mil- let.	کالادھتورا K kala d'hutoa- ra, Purple thorn ap- ple.
کاکنوج fiK kaknuj, Blue-flow- ered nicandra.	کالاکوستویری ylaiSK kalakustooree, Musk okro.

NATIVE AND ENGLISH

کالا محمد kala mu/unud, Many-flowered phyl- lanthus.	^}j^ kamraj, Orissa sowthistle.
کالی V6 kala huldee, Grey turmeric.	^*^ kamuluta, Wing- leaved ipomea
کالی kalupan^, Pani- cled justicia.	usV*^ kamoonee, Black berried nightshade,
کالکاتھا kalukat'ha, Half- serrated myrsine.	جاتی Uif kanta jatee, Thorny barleria.
کالی اورد kalee aoorud, Hairy podded bean.	کانتا کچھو (S±)6 kanta kuchoo, Armed pothos.
کالی تلسی kalee tulsee, Purple stalked basil.	کانش کورے kanch koorec, Cowitch, Hemp-leav- ed tragia.
کالی زر kalee zur, Wing- leaved clitoria.	کانش کویا کبیڈی* kanchkoo- eelkcebeen^, Cow itch.
کالی سیم kalee seem, Assam cowitch, or bean.	کانش کون kanchun, Taper- pointed mountain ebony.
کالی شنبالی kalee shuw- balec, Willow-leaved justicia.	MK kanda, Common onion
کالی مرچی kalee mur- chee, Black pepper.	!^tfkanda, Indian squill, ^ ^ kandlee, Sm. purslane.

VOCABULARY .

ندولف kandoolee, Naked flowered corame- lina.	نا يو پوتہ kaeoopoot'eh, Cajeputi tree.
درا kanschecra, Ben- gal commelina.	J.^ L-?V kubab chec- nee, Cubebs.
کانکا جربا kanka jureea, Thread like mil- let.	كبابه kubabeh, Cubebs.
کانگو or ^GK kangun, or kangoo, Italian panic grass.	كباث kuba\$, Persian sal- vadora.
کانونہ کونڈی kanuneh kun- dce, Purple-stalhed dragon plant.	کوبر kubur, Prickly ca- per, Common caper.
کانووا kanoovu&i, Ben- gal commelina.	کوبود kubuod, Weeping willow.
کانوسبان kaoosuban, Com- mon buglos.	کوبوتور کچھار hubootur ké- chiriar, White flow- ering justicia.
کانوسھیر kaoosheer, Rough parsnip.	کوبکوج kubeckuj, Water cress.
کاھو ka'hoo, Garden let- tuce.	کوپاس kupas, Cotton tree.
کاپوتی kaeapootee, Ca- jcputi tree.%	کوپور kupoor, Camphor tree.
	کوت kut, Beautiful cos- tus.
	کوتارا kutara, Prickly globe thistle.

NATIVE AND ENGLISH

کتایا kutaeaa, Jacquin's nightshade.	کچرا kuchja, Poison nut.
کچرا kutkurunj, Small oval-leaved guilandina.	کچرا kuchla Iuta, Colubrine strychnos.
کچرا kut kuleejee, Small oval-leaved guilandina.	کچرا kuchnar, Taper-pointed mountain ebony, Variegated ebony
کتول kutool, Cowitch.	کچرا kuchnal, Variegated mountain ebony.
کچرا kut'h bél, Elephant, or wood apple.	کچرا kuchoo, Egyptian arum.
کچرا kut'hgulab, China rose.	کچرا kuchoor, Long zedoary.
کچرا kut'hul, Jack tree.	کچرا kukhuj, Heath.
کچرا kuteera, True milk vetch.	کچرا kudumb, or kudum, Shady nauclea, Kudum nauclea.
کچرا kujeer'eh, Safflower.	کچرا kudoo, Bottle gourd,
کچرا kuchaloo, Egyptian arum.	کچرا kudeem'eh, Pumpkin.
کچرا kuchree, Madras cucumber, Sweet melon.	کچرا kurat, Leek.
	کچرا kurat'eh tukt'eh, Chirayta.

VOCABULARY.

- ^j»)J> kuras, Leek. ^S\JJiji kurshna kelee
 &*1/ kuramuka, Betel Marvel of Peru.
 nut tree. ijJij* kurufus, Parsley,
 j1/ **kjiraoo**, Field celery.
 pea. JuSjS kurkuman, Com-
 &jj& kuraecclia, Oval- mon clo\re.
 Leaved wrightia, or ^JJ> kukree, Perforated
 rosebay, **fi 1 eander**. rottboellia.
 ڤلا 'J> kuraela, Five-lcav- J^ kurul, Indian savsa-
 ed cleome. parilla.
 ^S kurubee, Sweet- */ **kurum**, Com in on
 seen t(ed oleander. vine.
 LV^kurpud, Swcct-scent-)****£ kurum jooa, Flo-
 ed c. ٢٠١١١١٢٢. **ribund** I. ayea.
 JJ*J\$ kurpoor, Balsamic \^fM%*j\$ kurm ki sag,
 columnnea. Cabbage.
 ^>J kurt 'hee, Two- %*j\$ kurum kula. Cab-
 flowTjr.il **dolichos**. bage, Kale, or bore
 A^u^'ivtirsun'eh, Com- cole.
 mon pea. ^*/ kurumctia, Jas-
 ^^ (J^^kuru sh **chiirun**, mine flowered caraiula.
 Barbadoes flower 4/ **kurna**, Citron,
 fence. ^>J> **kuruwb**, Cab!age.

NATIVE AND ENGLISH

gS/kurunj, Indian galedupa, or smooth-leaved pongamia.	کريل kurecl, Prickly caper, Common caper.
نوا؟fS kuruujooa, Indian galednpa, or smooth-leaved pongamia.	ربلا^ kureela, Hairy; bitter gourd,
درا*/ kurundra, Common mangosteen.	كساري kusarec, Chickling vetch.
زوير> kurnoocer, Common oleander.	كستوله kustool'eh Upright justicia.
كرو kuroo, Common endive.	كسم kusum, Safflower.
زj£ kurooz, Parsley,	كسها^S kusumb'ha, Safflower.
ل^yJ kuroola, Bitter luffa. -	كسي>y»\$ kusoondce, Round podded cassia.
1 J i ^ kuroonda, Jasmine flowered corinda.	كسي^ kusoorce, Barbed seeded clubrush.
ل^ij\$ kureela, Smooth gooseberry,	كسوري ملنگي kusooree mulungee, Two spiked clubrush.
2>^xij& krceat, Panicked justicia.	كسيرو kuseeroo, Cyperus grass.
ك^J kureepok, Kinnig's bergera.	كش kus'h, Meadow grass.
	كش^U^ kusha khul. Pigeon pea.

VOCABULARY.

- كشك kusliuk, Native barley.
- كشمه^ kushmureh, Wodier's. odina.
- كشوربا&£ kushoorcea, Ceyloncse verbesina.
- كشنه kushn'eh, Common pea, Bean-like vetch.
- كشني^i kushnccz, Coriander.
- كعلاء kaia'h, Two kernelled holly.
- ككولي3AUIJO katkuleejee, Oval-leaved nicker tree.
- ككرفيS kufrec muruch, Caffree chilly popper.
- ككرماتا kukurmuta, Mushroom.
- ككروة kukr'ch, Early-rooted mangrove.
- ككروي kukree, Most useful cucumber,
- ككلا kula, Cabbage.
- ككلاي5K kulaae, Three-lobed kidney bean.
- ككلايS & kula kura, Long-leaved unona.
- ككلايW kultee, Madras horse gram.
- ككلاي^S kult'hec, Two-flowered dolichos.
- ككلاي> kul //ulooa, Gangetic amaranth.
- ككلايAi kulfee, White goose foot.
- ككلايKS kulka jump, Woolly brake.
- ككلاي kuign, Hermaphrodite amaranth, Prince's feather,
- ككلام kulum, Cabbage.
- ككلامي kulmee, Creeping convolvulus.

NATIVE AND ENGLISH

كلمى ساگ kulmee sag, Creeping bindweed.	كمد kumud, Eatable water lily.
كلو kuloo, Freestone peach.	كمره kumruk'h, Caram- bola tree.
سي|i kulool'eh, Bean-like vetch.	كمره kumruh, Caram- bola tree.
UJf kuleea luta, Coat- ed swallow wort.	كمرنگه kumrung'eh, Ca- rambola tree.
كلي انجو kulee anchoo, Hill bramble,	كمرها kumru'ha, Pumpkin.
كليبا kuleeba, Umbel led morinda.	ككما kumkuma, Aroma- tic didymocarpus.
كليجن kuleejun, The greater galangale.	ككمي kumkee, Three- flowered abelia.
كلي كيكر kulee keekur, Gum acacia.	كمل kumul, Indian su- cred bean.
كم kum, True milk vetch.	كي بي** kumoodunee, In- dian buck bean.
كما or f\$ kum, or kuma, Truffle, Garden let- tuce, Mushroom.	كمون kumoon, Common. cumin.
x^sj^ kumsuree, Com- mon pear.	كمون حلو kumoon /JU100, Common anise.
	كميزه kumec^eh, Com- mon clover.

VOCABULARY

- *JUi kunal'eh, Fire-leaved cleome. (^-axS kundus, Sneezewort.
- t^jLsr^ kunjan boora, Narrow-leaved galangale. tjy;^ kundooree^ Great flowered bryom.
- Vff"kinijud, Oriental oily seed. \&> kuud'eli, Salcp.
- *d»» kunjud'eh Heart-leaved pencea. LS±\$ kunuk, Downy thorn apple.
- IK is^ kunjeh luta, Wist coast creeper, \j&£ kunkara, Corymbose webera.
- lx=r" kuncluina, Creepingjüssisea. iJj&\$ kunkuran, Common rye.
- <A^ kuru, Catalonian jasmine. J;yj^ kunkrool, Mixed litter gourd.
- ^looikundalee, Smooth volkameria. ic/^S kunkuree, Coniion cucumber.
- Ajj5i kundan'eii, Leek. j&S kungur, Gardien artichoke.
- »jj^ kundur, Fraukincense tree. ^yi^kungunee, Italian millet.
- ^ciiiS kuiiduree,opreaaing in^anl. ^jXii kunrooee, Mauntius sida,

NATIVE AND ENGLISH

گویا kungooeea, Cut- leaved urena.	کواکانشاسته kooaka nu- shast'eh, East Indian arrowroot.
کگیا kunjcea, Five sta- mened roscoca.	کوامورا ktooamoorn, Lanc- shaped callicarpa.
گور >i kunoor, Evergreen cypress.	کوانچہ kooanch'ch, Cow itch.
گول^ kunooul, Indian sacred bean.	کوبی kôbee, Cabbage.
گاکد!ji& kunooulka gu- d'eh, Indian sacred bean.	کوبی koopec, Indian acalypha.
گکتا yi kunoolkuta, Most useful cucumber.	گملی y koot'eh mulee, Narrow-leaved can- thium.
گند kun'eh, Mastich tree.	گچری *jS koochuree, Four celled exacum.
گنیر S kuueer, Common oleander.	گوداکاچول S kôda ka chool, Punctured paspalum.
گوا kooua, Cowa man- gos teen.	گودرو 2jS kooduroo, Wheat- like paspalum.
گوتہی [jz] kooa t'heen- t'hec, Wing-leaved clitoria.	گودو koodoo, Kora mil- let.
گوار kuooar, True coffee tree.	گودو koodoo, Wheat-like paspalum.

VOCABULARY .

كوده kôd'eh, Punctured paspalum, circular paspalum.	كوره*-|j££ kookoora choo- r'eh, Pavetta ixora.
كوري^ J^ xs&*£ koodee munkoonee, Herbace- ous psychotria.	كوكورجهوا kookoor j'hooa, Staphyl leea.
كورا kôra, Italian panic grass, or. Italian mil- let.	كول kool, Jujube, كولا koola, Orange.
كورا kôra, Mat-rush.	كولتا kooluta, Round- headed combretum.
كورلي koorulee, Scape- flowered commelina.	كولسي koolsee, Indian nightshade.
كوري پهل kooree p'hul, Wood bramble,	كولي بيگم koolee bégun, Cylindrical eggplant.
كوسم koosum, Safflower.	كويچ koonch, Wild Ja- maica liquorice.
كوشا koosha, Dog's tail meadow grass, Mea- dow grass.	كوي داها yi koond'ha, Pump- kin.
كوكري^ kookree, Maize.	كونگونني koongoonee, Mauritius sida.
كوكري چيتا* >kookree chce- ta, Petalless tetran- thera.	كونلا koonla, Orange.
كوكنار* &jf kooknar, White l>opp}.	كوي جي kônee, Smooth meadow grass.
	كوي kôec, Water lily, كوي بورا kôee j)ooraa, Lee- chee.

NATIVE AND ENGLISH

كوييل kooueel, Wing-lea v- ed clitoria.	كيسر* keesur, Square- stalked nyctanthus.
كيج > kuhuj, Strawberry.	كيستو kcestoo, Bitter cucumber.
ك'هيجور k'hujoor, Common date palm, Wild date tree.	كيسر keesur, Saffron plant.
ك'هل Lu^S k'hur surobul, Iluzar bean.	كيجر keckur, Gum aca- cia.
ك'هرنبي k'hurncc, Obtuse- leaved mimusops.	ك'كوش keekooash, Cha- in u mile,
ك'هل S k'hui, Knot grass,	ك'كلا k'cla, Banana.
ك'هيرا k'hccra, Cucumber.	ك'زلي J+f keel rae, Spread- ing mustard.
ك'هينبي k'hecrnee, Hexan- dric mimusops.	ك'كياي كدم kélee kudum, Heart-shaped leaved nauclea.
ك'يت* keet, Elephant, or wood apple.	ك'كيو kecoo, Beautiful cos- tus,
ك'ويل VL^j* k'otbél, Ele- phant, or wood apple.	ك'يج ^ or <Q'J*S keeooach, or kceooanch, Cowitch.
ك'فيو kectukee, Green- spined screw pine.	ك'جرا kecoora, Green spined screw pine.
ك'يراس kceras, Common cherry.	ك'كانتا Ijjif keeoor kanta, Fetid sc*cw pine.
ك'روج S kecrooj, Common rest harrow.	

VOCABULARY .

ب £ gab, Polyandrous date plum _t	گجیر قوتا gujér kôta, Climbing webcra.
نل W?_gaba iiul, Bengal reed,	پي ^)*^ guda bunco, Trailing trianthera,
گاجر gajur, Carrot.	ہاپورنا ^ gud'ha poorna, Spreading hogweed.
مرن ^ gach muruch, Cayenne, or Chili pepper.,	گران گران güran, Ten stamen- ed mangrove.
گالگل galgul, Citron,	چ > gurchu, Heart-leav- ed moonseed.
گانجہا ganj'ha, Hemp plant.	جوبی J gurdooc, Hazel nut.
گاندور gandur, Scented grass.	جور > gurgur, Job's tears grass.
جان J J% gaoo ^uban, Branching onosma.	A^/gurm'ch, Centaury- like chironia.
گاوےجک gaooejuk, Cu- cumber.	جگرہ gur'hul, Althaea frutcx.
ل ^ ; ^ guj peepul, Use- fiil scindapsus.	گنز gnz, French tamarisje.
م gujga, Oval-leaved nicker tree.	گزنہ gusn'eh, Stinging nettle.
گجی gujee, Climbing hedyotis.	گشnee^ & gushnee^, Corian- der.

NATIVE AND ENGLISH

هفہ guf'ch, Hazel nut.	بر!^uP gul kheera, Hol-ly hock.
گندھول /gugund'hool, Green-spined screw pine.	د J^ gul daoodce, Indian chrysanthe-mum.
بKfor Ji> gul, or gulab, A rose.	گلر gular, Clustere: ¹ . fig.
جام S& gulab jam, Rose apple.	گل رعنا gul ran a, Many-flowered rose.
ز*ج gulacheen, Acu-minated plumieria.	گل سرخ gul surkh, Da-mask rose.
ل اشرفي \$ gul ashrufee, Three-styled flax.	گل سوري gul sooree, Bus-sorah rose.
ل gulbun, A rose.	گل شيب بو gul shub boo, Common tuberose.
زبي فرمان J\$ gul bé fur-man, Wild rose.	گل صديرك gul ssud bu-ruk, Double rose.
يل * & or Jj£^ gul beel, or gul neel, Heart-leaved moonseed.	گل طره gul tfureh, Barba-does flower fence.
ي J3 gul-u-jafree, French marygold.	س-Uc Ji gul abas, Mar-vel of Peru.
چيني J^ gul cheenee, Indian chrysanthe-mum.	گل عجايب gul ajaeeb, Changeable hibiscus.

VOCABULARY .

- زنگ Ji gul-u-furung, /[^]gumar/Treegmelina.
 Madagascar periwin-
 kle.
 گلگیش, gulgeesh, Vari-
 ous-leaved amaranth.
 س^JJ gul mukhmul,
 Annual globe ama-
 ranth.,,
 ملنگه Ji gul limiting-
 'eh, Winged cyperus
 grass.
 گل مهندي gul mu'hundee,
 Balsam.
 گلنار gulnar, Bird cher-
 ry.
 نرگس Ji gul nurgus,
 Copper colored day-
 lily.
 گل نشرين gul nusreen,
 Sweetbriar rose.
 گلو guloo, Hcart-leav-
 cd moonsced, Indian
 wormwood.
- گمي gumce, Eatable
 milnea,
 \$& gunj, Wild Jamaica
 liquorice.
 گندالي gundalee, Foetid
 prederia.
 ل«^ gund bcl, Lemon
 grass.
 گندم gundum, Summer
 wheat.
 دمار & gundmar, Indian
 wormwood.
 گندنا gunduna, Leek.
 بادلي |J*±& gund'ha ba-
 dulee, Winged olden-
 landia.
 گندهابينه gund'ha been-
 'eh, Lemon Grass.
 گندهاگورانا gund'cha goo-
 rana, Smooth grass.
 گندهراج gundu'hraj, Cape
 jasmine.

NATIVE AND ENGLISH

گندھل رنگن gund'hul run-	*:ẏ gooj'eh, Various-
gun, Small flowered	leaved jasmine,
ixora.	^ V ! ^ gôrachand, Mov-
گنگا تیه gungatee'eh, Al-	ing hedysarum* Mov-
ternate-leaved achy-	ing plant.
ranthes.	گورخې goorkhee, Red
گوارا gooara, Close oleas-	nightshade.
ter.	گوردل سيم goordul seem,
گواکھ gooak'eh, Betelnut	Black seeded dolichos.
tree.	گورکنا تھ gooruk nat'hu,
گوالا تھ gooala lata, Vine-	Sweet scented gar-
leaved cissus.	land flowers.
گوالیا gooaleea, Lobcd	گورجیا; j^ goorgeea, Lemon
cissus.	grass.
گوبرا goobra, Opposite-	گوروینا J\$ goorooina, Board-
leaved bugle.	ed apluda grass.
ټی Joo |3 J\$ eôta bé-	گورې fi gooree, Grass-leav-
goon, Madapple-leaved	ed leucocephalia.
nightshade.	گورې goorce, Tuted
گوت بیگن i wy' goot bégun,	clubrush.
Tomata, orlove-apple.	گورې پھل gooree p'hul,
گوتھی سونا ^ gootee soona,	Himalaya blackber-
Fragrant panax.	ry.

VOCABULARY.

گوزبان <i>goo[^]uban</i> , Olean- der-leaved cacalia.	گولامیتھی <i>goola mét'hee</i> , Naked cyperus grass,
گوز گیاه <i>gooz geea'eh</i> , Purple thorn-apple.	گولشام <i>goolusham</i> , Ner- vose eranthemum.
گوشاد <i>gooshad</i> , Kuroo gentian.	گولر <i>goolur</i> , Downy fig.
گوشگاسوا <i>gooshuga sooa</i> , Slendcy hedyotis.	گولک چاکلا <i>gooluk cha- kulce</i> , Hare's foot doodia.
گوشورا <i>gook shoora</i> , Lon g-leaved barle- ria.	*J> <i>goom</i> , Summer wheat.
گوکورو <i>gookuroo</i> , Long- leaved ruellia.	گوما <i>'or fj></i> <i>goom</i> , or <i>goo- ma</i> , Ladies' bed straw.
گوکھورو <i>gook'huroo</i> , Long- leaved barleria. Dow- ny caltrops.	گومپوکھلا <i>goompoo kéla</i> , Nepal plantain.
گوگرو <i>googroo</i> , Small caltrops,	گومچی <i>goomchee</i> , Wild Jamaica liquorice.
گوگل <i>googul</i> , Camphoric amyris.	گومرا <i>goomra</i> , Eatable phlomis.
گولاموہنی <i>goola moo'hu- nec</i> , Berry-bearing deeringia.	گونجا <i>goonja</i> , Wild Ja- maica liquorice.
	گونجی <i>goonjee</i> , Five- leaved limonia.

NATIVE AND ENGLISH

گوندنی ^ا goondnec, Ele- phant grass, Sloping cordia.	roc, Egyptian bitter gourd, Five-stamened luffa.
گوندی ^ا goondee, Green xanthophyllum.	گیتورای & g'heetooraec, Furrowed cucumber,
گووےلا gooueela, Broad- leaved vine.	گھیچو g'heechoo, Simple stalked aponogeton.
گھاگھرا g'hag'hra, Indian xanthium.	گھی ^ا g ^ا g'hee kushce, Aporetic schmidelia.
گھمرا g'humra, Cingalese phlomis.	گھیکووار gheekooar, Aloe, گیز geezh, Fir tree,
گھنچی g'hunchee, Wild Jamaica liquorice.	گیلا geela, Climbing mi- mosa.
گھوگھرو g'hooguroo, Small caltrops.	گھند ^ا or گھند ^ا geend, or geenda, African Ma- rj ^ا gold.
گھول g'hool, Small purs- lane.	گھون ^ا gee'hoon, Suni- mer wheat,
گھوےان g'hoeean, Egypti- an arum.	
گھی g'hee, Coromandel (juillwort.	U ^ا r81ajoounta, Unarm- ed mimosa.
V ^ا g'heea, Bottlegourd.	گھی ^ا ladun, Cretan rock rose.
گھیا توری gheca too-	

VOCABULARY .

- لاد'ه lad'eh, Black pepper.
 لاسورا lasoora, Sloping cordia.
 لاک کوره* t-J''J lak kuree, Flo-
 * ribund ash.
 لاکوچا lakoocha, Bread fruit tree.
 لاکھچنا lak'h chuna, Sensitive oxalis.
 لاکھی lakee, Acacia, soft.
 لال جام lal jam, Two-edged ardisia.
 لال شوتا lal shuta, Rose colored leadwort.
 لال چوندند 8 lal chundund, Red saunders wood.
 لالچتہ JSlalchect'eh, Rose colored leadwort.
 لال ساگ /UJ5 lal sag, Gange-
 tic amaranth.
 لال سفری ام J8 lal sufree am, Red guava.
- لال سیم lal seem, Black seeded dolichos.
 لال لوٹیا lal looteea, Round nettle.
 لال مرچی J8 lal murchee, Cayenne, or Chili pepper.
 لال مویا lal muiy/a, Common cock'scomb.
 لال'ه lal'eh, Common tulip.
 لال ماکولے ^ Mankulee, Willow-leaved commelina.
 لال گلیا J8 languleea, Cingalese nama.
 لال گلیا لوتا y^^^ langulee luta, Palmated ipomia.
 لال بان* J luban, Benzoin tree, Frankincense tree.
 لال بان لوتا /UT luban luta, Lesser pergularia.
 لال بکھ lubukh, Smooth-leaved cordia.

VOCABULARY .

ly loofa, Air-living bryony.	ed amaranth, Eatable amaranth,
لوكا looka, Sheathed pontederia, Bottle gourd.	&jJyl* matoo' lûnga, Citron.
لونا lûna, Bullock's heart.	fyjU madooka, Long-leaved basil,
لوزيا or ljl loona, or looneea, Small purslane.	13y* •* I* mad'hoolta, Clustered Gaertnera.
Utt&y loongaluta, Climbing limonia.	b^Umarchooba, Common asparagus,
لونگان lônğan, Longan.	Uuj^U marsees^a, Citron.
لہرا lu'hura, Spiked millet.	* 4 ^ margee'eh, Common asparagus.
لہسن lu'hsun, Garlic.	s\$jjj** masreeoon, Mezezeon daphne.
لہواشبو lu'hooa shuboo, Wall flower.	ماسونیتہا masoo nectuha, Stuart's primrose.
لہچی & leechee, Leechee.	ماش mash, Hairy podded kidney bean,
لہل/ leel, East Indian indigo.	ماش mash, Black gram,
لہمو leemoo, Lime.	مال انگری مال ankree, Indian eleusine.
لہمون JJ leemoon, Citron.	
لہبو lee??iboo, Lime.	
مات کئی بہاجی mat kce b'hajee, Round leav-	

NATIVE AND ENGLISH

مالٲي malutee, Clove- leaved echites, Cata- lonian jasmine.	مٲيتٲه mujét'h, Madder of Bengal.
لٲا^ maltee luta, Clustered gaertnera.	مٲاتيتٲا muAateeta, Pani- cled justicia. .
ماندار . mandar, Indian coral tree.	مٲز***' mu^mood'eh, Scammony plant.
مايرٲي maeeree, Sweet fennel.	مٲحوط muhoot, Rough achyranthes.
مٲتر mutur, Common pea.	مٲخال muk'hal, Bitter cucumber.
مٲترنجٲه mutrunj'eh, Hoa- ry callicarpa.	مٲخال mukhal, Palmat- ed snake gourd.
مٲترٲه mutur'eh, Hoary. callicarpa.	مٲ 1 <*' mudar, Curl- flowered calotropis.
مٲٲكي mutkee, Bean- shaped dolichos.	مٲدعت mudat, Emetic nut.
مٲٲٲٲٲ> muteea chanda, Rose-colored ixora.	مٲدن mudun, Prickly vanguiera.
مٲٲٲٲا^ muteea cheeta, Pouched birthwort.	مٲ^» murcha, Capsicum.
مٲٲٲٲالٲا muteealata, Auri- culated hedyotis.	مٲ^VJ^° murchae, Cap- sicum.
	مٲردمٲگيا murdum geea, Mandrake plant.

VOCABULARY.

- مرزنجوش *murzunjoosh*, $\hat{U}x^{***}$ *musfa[^]ee*, Mas-
Marj oram, Sweet mar- tich tree,
joram. $s^{\wedge\wedge}y^{**}$ *musooak*, Indi-
رسا* *inursa*, Eatable an *salvadora*.
amaranth. *jy^{***}* *musoor*, Hairy tare.
مرکا *murka*, Upright $y\gg^{**}$ *musoor*, Lentil,
eleusino, $j^{\wedge}jy^{*\sim}\gg$ *musoor chuna*,
ك د ^ K ^ I ^ *murgabee ka* Yellow vetchling.
gud'eh, Cingalese san- $U\text{U}\ll^{\wedge}$ *museena*, Com-
sevieria. mon flax.
مروا *murooa*, Thick spik- $|J\sim Jf$ *mushmush*, Ap-
ed eleusine. ricot.
مروا *murooua*, Sweet $j*L\&^{*}$ *mussu?7^bur*, Com-
marjoram, Mug wort, mon aloe.
Cingalese sansevieria. $\overset{\wedge}{5}^{\wedge}0/0$ *mussooree*, Len-
مروور $ijzj^{**}$ *muroor* phu- til-
lee, East Indian $\text{£}|^{**}>$ *maad*, Thick spik-
screw tree. ed eleusine.
مرووري *murooree*, East jb^{****} *massfur*, Saf-
Indian screw tree. flower.
موره *mureh*, Bitter cu- $j^{**}\sim$ *mafur*, Aromatic
cumber. rhododendron,
مروو *mustaroo*, Indi- $u^{\wedge}i^{*0}$ *mu[^]eelan*, Gum
an Wormwood. acacia.

NATIVE AND ENGLISH

^J U. JLC mukra ja- lee, Egyptian eleu- sine.	y^s^ mulut'hee, Hairy liquorice,
مكرجالي mukur jalee, Prickly panic grass,	i&JU mulkuk, Round- leaved mallow.
مكو mukoo, Ten-toothed nightshade.	منا muna, Laburnum- leaved crotalaria.
مكوي mukooee, Indian sarsaparilla.	منجيهته muitjee'eht'eh, Madder of Bengal,
مكهانا muk'hana, Prick- ly euryale.	مندار inundar, Mistletoe.
مكهانا muk'hana, Spin- ous anneslea.	مندي munde, Indian sphaeranthus.
مكهانه muk'eh subs'eh, Common balm.	منروي or Ijji* munrooa, or munrooe, Dog's tail grass.
مكهين سيم muk'hun seem, Sabre-podded doli- chos.	منروي munrooe, Up- right eleusine.
مكفي fei_/* muke' jaree, Maize.	مسيج yyAi* munssoorseej, Sheathed spurge.
مكرابو mugraboo, Indian sarsaparilla.	منكي mungee, Hovse- raddish tree,
مكغريلا mugreela, Indian fennel flower.	موال mooal, Lance-leav- ed vateria.
	موبرج mooburuj, Hol- ly-leaved berberry.

VOCABULARY.

- موت** mdut, Aconite-leaved kidney bean,
موتها moot'ha, Rush-leaved cyperus.
موتها moot'ha, Round stemmed cyperus-grass.
موتيا mooteea, Arabian jasmine.
U> 'OJy i*J>y mooteemoond'ha, Small tacca.
Uy« moocha, Banana.
موتچا کوندا moocha koon-da, Various-leaved pterospermum.
مورد moord, Myrtle.
مورموري moor mooree, Effect clubrush.
مورنگ 31 چي mōrung alachee, Morungcardomum.
موز moouz, Banana.
- موزان** moozhan, Polyanthes narcissus,
موستا moosta, Rush*leaved cyperus.
مسه Kjy • moos museh, Globe-fruited bryony.
مولون* moofloon, Upright melilot.
موکتياطي mooktupafee, Double stemmed phrygium.
موگرا moogra, Arabian jasmine.
مول mool, Indian boeobotrys.
موسوري moolsuree, Pointed-leaved mimu sops,
مولي moolee, Common radish.
مونج moonj, Munja sugar grass.
موندلا ارو moondla aroo, Nectarine.

NATIVE AND ENGLISH

fju« Uuyo moonsa seej, Slieatlied spurge.	LL*J^* mésta, Indian red sorrel.
tXy« moong, Green gram.	Ä*J-« meeout'eh , Com- mon storax.
(Jfcji_ŷy« moong p'hul, Earth nut.	UJJA* mél luta, Great- flowered Thunbergi? ¹ .
us^*-TM^ moong p'hu- lee, American earth- nut.	J^ (J^ meen p'hul, Emetic nut. Prickly vanguiera.
)JY* muhooa, Long- leaved bassia.	J^J^UX mén'Jidee, Hen- na plant.
L^> muhee, Long-leav- ed bassia.	(^S^/IJ^ nata kurunjee, Oval-leaved nicker tree.
^J** meet'hee, Com- mon fenugreek.	jU nar, Pomegranite.
jjj^^^uw* meet'hee ku- doo, Pumpkin.	J-»^A* narjubul, Cocoa- nut tree.
*-fe^° meek'huk , Clove tree.	^*J3 or JJ^;^ ilar- jccl, or narjeelee, Co- coanut tree.
J^j^fr* meed p'hul, Eme- tic nut.	*tf*>>U narduleh, Broken panic grass.
iSj^« meeradoo, Wild- milkwort .	

VOCABULARY .

لي ناردين li nardeen, Thick-leaved la vender, Spike-nard.	سر جنگي <u nasur jungée, Purslane-leaved trian-thema.
ج* -yU nar-u-seej, Spreading triangular spurge.	اشپتي > nashputee, Common pear.
ل' & 'jU narfeel, Common galbanum.	جU na^r, Elm.
ج;U narunj, Orange*	^J^li nakdoon, Common asparagus.
نارنگي narungee, Orange.	Jj.^t> nagbél, Betle pepper.
سججU naroon, Elm.	^j«3 vJ^U nag doona, Mugwort.
ناريل > nareel, Coconut tree.	s3yoj£|j nagur mote'h, Rush-leaved cyperus.
زجU nazboo, Ciliated basil.	ناگرموتها > nagur moot'ha, Slender cyperus.
روي^U nazbooe, Hairy basil.	فنا | -f|* ' nag funa, Indian cactus.
تjA? uJ^U nazuk budun, Jujube.	ناگيسر or ناگ کيسر nagee. sur, or nag keesur, Iron mesua, or Indian rose chesnut.
JU uazh, Evergreen cypress.	نال nal, Karka reed,
نسا بهاك «U nasa b'haga, Double calyxed justicia.	

NATIVE AND ENGLISH

نځاڼوڼه U nankhooa'eh, Lo- vage.	نورد > nurd, Thick-leaved lavender, Spikenard.
ناهر * nahur, White grape vine.	نورکوت > nurkut, Karka reed.
ناهي U naee, Karka reed.	نوسترون > nusturun, Com- mon clover.
نوخنج nukhuj, Heath.	
نوکھل * nukhul, Taliera palm.	نوسترون > nusturun, White rose.
نوکھود * s ³ nukhood, Com- mon chick pe [^] .	نوسرين nusrcen, Polyan- thes narcissus.
نوع «* nu7thooa, Dwarf kidney bean,	نوسرين nusreen, Wild rose.
نور, Karka reed.	نوسونڊها *3 nusundha, Three- leaved chaste tree.
> nurbusee, Round zedoary.	نوسوت *J nusoot, Square stalked ipomea.
نوي fyji nurbushee, One- headed kyllinga.	نواع ^i nanaa, Common mint, Peppermint.
نوس ?yi nurjus, Polyan- thes narcissus.	نوکاسج du^umba, Glau- co us-leaved physic nut.
نورچا y nurcha, Bristly- leaved corchorus, Heart-leaved corcho- rus.	نوکچني L^> nukchuknee, Green-flowered hoya

VOCABULARY.

نک چانفي nuk chulnee,	ني* nee, Sweet flag*.
Ramoon tree.	نيٲا or ^J^ neetuha, or
نلر nulur, Square-stalk-	neeta, Sarmentose.
ed QJSSUS.	نيٲها JO neetuha, Toothed
نمچ i numuj, Bullrush.	primrose,
نمشك &UJ numshuk, Corian-	نيرفر ki neerufur, Water
der.	lily.
نواكوتي > n̄oakootee, Pani-	نيرمولى ^*j£ neermulee, Clear-
ciated eria.	ing nut.
نولتا)y nooaluta, Climb-	ني iiLujS neesundee,
ing dalbergia.	Quadrangular chaste
نولكا)y nooua mulka,	tree.
Woody jasmine.	نيكارني JO neekaree, Indian
نوج nooj, Long-leaved	chesnut.
pine,	نييل neel, East Indian
نوزيا > nooreea, Climbing	indigo.
achyranthes.	نييل كلمي 5 neel kulmee,
نوشٲ' noousht, Purple*	Blue ipomea, Purga-
stalked dragon plant.	tive pharbitis.
نوكا nooka, Sheathed	نييل كونه 4&&H neel kunt'h, Grey
pontederia.	turmeric.
نونيا nooneea, Small	نييل كونه ^ ^ neel kunt'h, Horse-
purslane,	radish tree.

NATIVE- AND ENGLISH

بجر <i>bj</i> neeloofur, Indian sacred bean, Water lily.	زئس <i>z</i> ootees, Tapering birch.
مب* or {& neem, or neemb, Margosa tree.	وج <i>ouuj</i> , Sweet flag. اسوا^ <i>oocha sooa</i> , Ovate gardneria.
و <i>xi</i> > or y^y' neemboo, or neebo, Lime.	ودارا <i>oudara</i> , - Man^ spined flacourtia.
امدا <i>neemda</i> , Indian buddlea.	زدرجاتي <i>oodoo jatee</i> , Long-spiked justi- cia.
واركار <i>ooarkar</i> , Most use- ful cucumber.	ورد <i>ourud</i> , Rose, ورگار <i>oorgar</i> , Common blackberry.
نک <i>J</i> <i>ooarunk</i> , Cucum- ber.	وريهتي <i>ooree'hutce</i> , In- dian nightshade,
الک <i>ooaluk'eh</i> , Thick- leaved lavender.	وزر <i>oo^ur</i> , Panicked jus- ticia.
الوا <i>ooalooa</i> , Saw-leaved ternstromia,	وشنه <i>ooshn'eh</i> , Bird cherry.
وامپيچ <i>ooampeech</i> , Chi- nese wampee tree.	وشيچ <i>oosheej</i> , Floribund ash.
چي <i>J</i> <i>ooaoochee</i> , Ha- zel-leaved psoralia.	شيرا <i>oousheera</i> , Useful scindapsus.

VOCABULARY .

هـ ⁰⁰ 9 ^{XI} ^ Slender dar- nel.	Afjooul'eh, Double stem- med phrynium.
ولايتي اغاتي oulaeetee a^atee, Broad-leaved cassia.	t*>j oond'eh, Common cress.
ولايتي املي oulaeetee umlee, Gamboge man- gosteen.	زياكول ooeekool, Indian nightshade.
انس | ^ i J j oulaeetee anunas, Gantula agave.	ش>j ooesh, Wild wolf's- bane.
زلايتي بيگن oulaeetee bé- gun, Tomato, or Love apple.	هاپر مائي hapurmalee, Two-stamened echites.
زلايتي چاو oulaeetee jaoo, Common oat.	هاتها جورى hat'ha jooree, Club moss,
زلايتي نور oulaeetee ka- foor, Bengal sage.	هاتھ پھول hat'h p'huJ, Useful scindapsus.
تي txU y^.^ oulaeetee mundee, Myrtle.	هاتي سورہ hatee sooreh, Indian turnsole.
تي H^j oolaetee moong, American earthnut.	كار v ^ ^ hatee kan, * Spear-leaved clero - dendrum.
	*> or J; ^; ^ harjoora, or har, Square-stalk- ed cissus.

NATIVE AND ENGLISH

هارجاره harchareh, Indian flagellaria.	ree, Long-leaved cicca, Cheramel phyllanthus.
هاريم هرا hareem hura, Rotuk amoor.	هرد hurd, Common turmeric.
هاقوچ ha/eooh, Hazel-leaved psoralia.	هر سنگار hur sungar; Square stalked nyc-tanthes.
هاسا \$ J^ hal k'hoosa, Cingalese phlomis.	هرف hurf, Chinese cress.
هالم halum, Common cress.	هرف البوري hurfaluoree, Long-leaved cicca.
هورا *ie* Utee sliora, Indian turnsole,	هر كوت hurkut, Holly-leaved acanthus.
هدس hudus, Myrtle.	هر كچلا hur kuchla, Axillary strychnos.
هجلي بادام hujlee badam, Common cashewnut.	هر كوچ كانتا hur kooch kanta, Holly-leaved acanthus.
هيني مينهدي is-* hujlee-mén'hdce, Bracteate eugenia.	هري هرا hurphareeoo-
هرا hura, Chebulic myrobolan.	هري هرا hurkee, Long-leaved echites.
هرف اير* hurbu'hree, Common chick pea,	هري هرا hurla, Chebulic myrobo Ian.

VOCABULARY,

- jibj* hiir bur, Viscid UijJs hul kusa, Cinga-
cleome. lese phlotnis.
- ^L^J^ hur'huft, Poly- JAJA hul hul, five-
anthes narcissus. leaved cleome.
- J <s\$ \jjA hureea kudoo, ^JU^AUIA huleeluj kar-
Bottle gourd. bulee, Chebulic my-
'&£\-tjSi hureea kee- robolan.
- kur, Oval-leaved coral J& tSAjb liuleel'eh ku-
tree. Ian, Chebulic myro-
bolan.
- <—^y*t_fr* hureemoonsr, •Ufc huleem, Chinese
Rayed-leaved kidney cress.
- *i)ii \jto huzaT dan'eh, yjijb huleeon, Com-
Daisy. mon asparagus.
- جXto liukutee, Large ^JUA bumar, **Bullrush.**
flowered coronella. ^j^*jb humsood, Lote
1JI& hulda, Chebulic tree, jujube.
- myrobolan, Myrobo- t-jujb Imudba, Wild suc-
lan plum. cory, Endive.
- sjj& huld'eh, Chebulic <*jjt\ia> hundooan'eh,
myrabolan. Water melon.
- ^yJbb bulsee, Greater LSXIH hung, Eastern
aegiceras. giant fennel.

ENGLISH AND NATIVE VOCABULARY.

UI&& hungtsha, Creep- ing enhydra.	[rtJ**> heel booa, Cardo- mum tr _{el}
1-fU UI&j> hungtsha- sag, Creep in gin eyera.	c ⁱ ^ JJ^> heel kulan, targi cardomum.
^A* hungun, Egypti- an ximenia.	^/>*»^ eeasmun, ArabiaiJ
^y& hoobur, Persian Iris.	jasmine. . t,y>)j>. eerameea, Com-
KÆ hoogla, Elepliant grass.	mon asparagus. SftS^yij eeshooee lam
i^-jjfc hooët, Water centrostachys.	gula, Superb glori- sa.)
^w> heeur, Hairy moon- seed.	^^kSj ue/^een, Bottle gourd.
yi-i* heeshury White poppy.	jyi eeo, Native bar- ley.