

Whatever benefit may now be accruing to the Potato crop is due to sunshine. That is Mr. Hibberd's panacea for the ills to which the Potato is heir, and a capital one it is, but unfortunately it is rarely at our disposal just as we could desire. In some previous years, when it was scarce, we got only diseased, watery crops. This year we and the Potatos could have done with a little less; still, it is such a good thing that it would be ungrateful to grumble. With reference to the non-appearance of the disease, however, it is well to remember that the general Potato crop is, owing to the exceeding dryness and coldness of the spring, quite a fortnight later, so that we are far from being out of the wood. If we could but get through one summer without a visitation from the fungus, or rather, if the heat and drought should hold it fully in check for the year, even if the Potato crop was smaller in consequence, it would be something to thank the sunshine for. The one season's check upon the fungus might be productive of important benefits in the ordinary seasons that may be expected to follow.

The season promises to be an excellent one for all the early American sorts, and Early Rose, Beauty of Hebron, Early Ohio, Climax, and similar sorts are, for their kind, exceptionally good. Still, as the song says, "We are not happy" in their possession, for whilst some will freely aver that the "Roses are splendid," others—and these the great mass of the Potato-eating public—will not have them, and swear by Ashleafs and Regents. If we want evidence of this, it is found in the prevailing prices of Potatos in the London market, for whilst the "Roses" are obtaining about 1s. 6d. per bushel, good Ashleafs will fetch from 3s. 6d. to 4s. per bushel. Last year, when Potatos were a much heavier crop than they promise now, Ashleafs fetched 4s. 6d., whilst Roses could only fetch 1s. 3d. I have but just seen probably one of the best pieces of Ashleaf market kidneys to be found in Middlesex. The grower, Mr. Woodward, of Hounslow, was, some ten or twelve years since, but a working mechanic at the village of Ankerton, near Malmesbury, Wilts, and even then grew fine Potatos. In that district working men have large allotment gardens, and the old Ashleaf is largely grown, and has been from long before the names of Myatt, Veitch, and Rivers, and others were associated with it. When Mr. Woodward came to Hounslow and commenced market gardening he brought with him some of the old Ashleaf strain, and this he has grown ever since, but generally having from his old home a fresh supply of seed every year, to the extent now of about 100 bushels. These are bought at a moderate price, and are very true. He planted this spring about 4 acres, giving the rows a width of 3 feet, and planting the last week in April and the first week in May. The Potato ground is an old meadow broken up some few years, and now in capital condition. It is well manured and deeply worked. This year the crop has been but little affected by the drought, as the soil is fairly holding, and is lifting on the average 450 bushels per acre. As Mr. Woodward puts it so laconically, "I get this crop ready in eleven or twelve weeks, and what else would give me such a profitable one in so short a time?" With 3 feet spaces between the rows there is ample room to get out Brussels Sprouts and Autumn Giant Cauliflowers before the Potatos are lifted. Regents will follow these, but the tubers are yet small, though the tops are very fresh and robust. Magnums here are spearing already, and so are Champions, so that it is beyond all knowledge to prognosticate the condition of these kinds two months hence, when they should in the ordinary course be ready for lifting.

Scab is somewhat common this year, indeed in some places exceedingly so; even Mr. McKinlay, whose samples this year promise to be exceptionally good, finds much more scab than is desirable. Scab is always most prominent in dry seasons and is found in all kinds of soils, and with all kinds of manures or without them. Many people have a strong *penchant* for scabbed Potatos, believing that they are of superior quality to those not scabbed. Probably they come into the same category with specked Apples and Cherries, but that is because the birds are such connoisseurs in fruit and always peck the sweetest. If the scab is the product of similar attentions on the part of the earthworms, perhaps they too can select the most mealy tubers. The origin of scab in the Potato, however, still remains an unsolved problem, but I still incline to the opinion that, driven by

drought in search of moisture, the earthworms to obtain it excavate the tender skins of the young tubers. The real cause of the improved quality of scabbed Potatos arises solely from the fact that they have been grown in a dry soil, though it is not impossible that, owing to the broken condition of the skin, the tubers may, in swelling, lose some moisture. Should the late Potatos produce now a fresh crop of tubers we may rest assured that in the now well moistened soil there will be no scab seen on them.

Potatos have not flowered so abundantly this year as last over the general crop. The attempt to do so has been universal, but drought provoked an almost universal failing on the later kinds ere it could expand. On the other hand, some kinds, such as Grampian, Garibaldi, and Woodstock Kidney have now, and always do carry far too much fruit—the latter specially needing that it should be cut off or else the root crop would suffer. I have found the Rose, Beauty of Hebron, and some other early American kinds, as also some of our English early sorts, to have bloomed freely, but of all the first none set a bloom unless artificially fertilised, and few of the latter. On the piece of market Ashleafs to which reference has been previously made fruit was most abundant, and many of unusual size. Mr. Woodward remarked that he had rarely ever seen the Ashleaf bloom so freely as it had done this year. What is worthy of remark is that this particular kind has been known for at least fifty years, and here it is under good culture and in a favourable season showing signs of recuperative

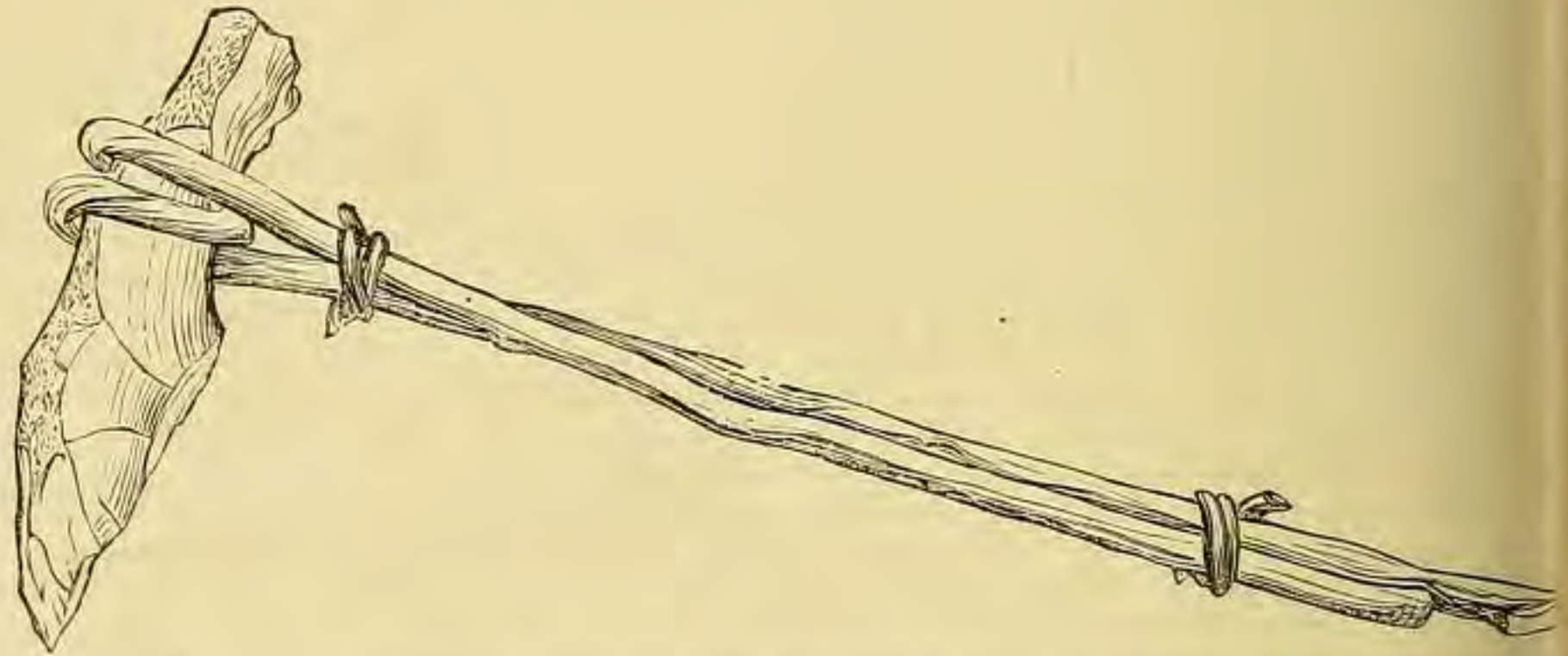


FIG. 41.—ANCIENT BRITISH HOE OF WORKED FLINT: QUARTER REAL SIZE.

vigour as prominent as may be found in any variety not more than five years old. A. D.

## A HOLIDAY IN SHROPSHIRE.

THE Cambrian Archæological Association held its thirty-sixth annual meeting at Church Stretton on Monday, August 1, and four following days, under the presidency of Professor C. C. Babington, of St. John's College, Cambridge.

The first public meeting was held in the Town Hall at 9 P.M. on Monday, when Professor Babington delivered his inaugural address. A more excellent President than Professor Babington it would be impossible to have, especially in such a county as Shropshire, where the Professor was born, and in which, as he said, he was so deeply interested both as a naturalist and an archæologist. Professor Babington described at length the different camps and earthworks of Wales and the Border counties; he referred to the different tribes who made them, and showed that although we have no written history of the different races yet their works speak for them. He showed that each succeeding tribe was more advanced in civilisation than its predecessor; he then referred to the weapons and implements used by the people, and their fictile vessels. He described the ancient people of the south of England as successful agriculturists before the first Roman invasion. Professor Babington then marked out in great detail and at considerable length the different earthworks, dykes, and ancient uncemented walls found in Wales. Mr. Ralph Benson, in a pleasant and humorous speech, welcomed the Cambrians to Shropshire, and this was seconded in an equally pleasant and humorous

manner by Sir Charles Rouse Boughton. The vote was taken by general acclamation. The Secretary read the report and gave the arrangements for the next day, and the meeting was closed.

Church Stretton has but one hotel, and one or two small inns. When the later members arrived (including the writer) on Monday afternoon all the places were quite full, and lodgings were at a discount. The pretty clean village or town is very small, and at night the single narrow street is very dark. One gentleman was in the street at 11.30 P.M., without quarters, but the writer fortunately got located at a picturesque cottage a quarter of a mile out of the village. Very clean and comfortable, very picturesque, plenty of roof, plenty of ceiling inside (though very low down) and very slanting, very picturesque fireplace, very small, with the flue carefully stopped up. One must open the small and picturesque window for ventilation; it could only be opened at the top, so that when one got fairly into bed one's feet peeped out of the top of the window. In bad weather this is only a slight inconvenience, and decidedly picturesque, if not truly æsthetic, for the indispensable Sunflowers were below, the magnificent mountainous hill named Caer Caradoc in front, and the Long Mynd mountain behind. About midnight the moths come in rather plentifully, and I could not help thinking of what a harvest my friend Professor Westwood had lost by his absence. Had he been in the cottage with me instead of the two clergymen he might have netted moths all night long. So

after 5 A.M. a hen came in through the open window (amidst a gallinaceous and porcine chorus outside) and began pecking the pattern of the counterpane at this incursion I rose, dressed, and made direct for the Long Mynd mountain close by.

## AGRICULTURE IN ANCIENT BRITISH TIMES.

The Long Mynd mountain is about 10 miles long and 3 or 4 miles broad; its greatest height is nearly 1700 feet above sea level. On one of the heights overlooking the south is the circular earthwork known as Bodbury Ring, an ancient British camp, placed as a refuge for men and cattle in time of danger or possibly a fortified residence of a British chief: the earthwork is of small size and was no doubt originally stockade. The local guide-book says that Bodbury Ring "is known to be Roman from the fact that it is circular, whereas those in other situations which are supposed to be the encampments of the Britons are, in shape, oblong." Few readers of the *Gardeners' Chronicle* need to be told that this statement in the guide-book to Church Stretton is the exact opposite of the fact, for British camps are round and it is the Roman camps that are square or oblong. It is, however, just worth mentioning that during the Church Stretton meeting the local guide-book was several times quoted by no archæological visitors as an unimpeachable authority compiled from the best sources. The ancient people of the hills near Church Stretton probably lived in more or less sheltered places on the hillside, and here they kept their herds and flocks. On the top of the hill the Britons cultivated corn, and the traces of ancient ploughing on the large flat expanses of the Long Mynd mountain are very frequent and perfect. In north-western Radnorshire many thousands of acres, always on elevated positions

arly show these curious traces of pre-historic ploughing. As an example of the nature of this work a diagram is here engraved (fig. 42) of twenty consecutive furrows, close to and north of Bodbury Ring: the diagram is carefully drawn to scale, and the furrows and butts were measured on the spot by myself. Each butt measured (reading from left to right) in feet—7, 8, 7½, 8, 8, 10, 8, 9, 9½, 9½, 11, 11, 12, 9, 9, 9, 10; the average of each butt therefore is a trifle over 9 feet. In Welsh and border districts the space between furrow and furrow is termed the butt, *selion*, or *grwn* (pronounced "groon"), whilst the top of the butt is termed the cop: a "selion" of land is a space of definite length between furrow and furrow (fig. 46). The Long Mynd mountain runs north and south, and the furrows here illustrated run east and west, and everywhere show great skill on the part of the ancient agriculturists, for the furrows are always so disposed to give perfect drainage to the cultivated ground; the minor or secondary furrows on these butts in which the grain was sown in rows are, of course, reiterated. In a more favourable position the old ploughmen could have done still better, as the slight irregularities of the furrows can often be traced to an outcrop of rock or to some other natural impediment. Cæsar, writing of the Britons, says "the inland people for the most part do not sow corn," but he probably referred to the people immediately north of the Thames, and his information was, of course, faulty. That corn was abundantly cultivated in Kent is proved by the fact of the Roman soldiers cutting and using the corn sown by the Britons, and still more so the fact that Julian, in his campaigns against the Germans,

(originally derived from Eastern nations) had made considerable advance in construction before Cæsar landed here. But there was a long anterior time when the Britons grew corn, and were unacquainted with metals. Now, although agricultural implements of wood and stone may have been used at and after Cæsar's time, yet there clearly was a far distant period when the primitive people of Britain used trimmed branches of trees either unmounted or mounted with

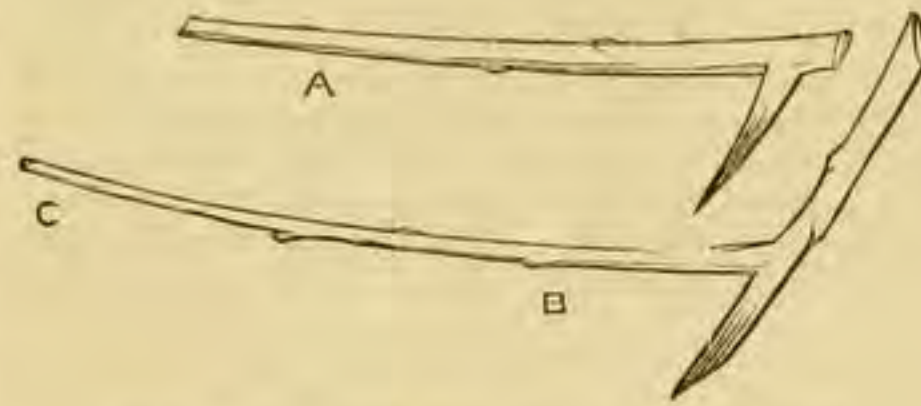


FIG. 43.—PRIMITIVE HOE AND PLOUGH OF WOOD.

stone. The hoe is generally believed to have foreshadowed the plough, and the most primitive form of hoe was (and still is in some places) nothing but a natural stick or branch trimmed to the shape shown at A (fig. 43), with the digging-point hardened by fire; this wooden hoe was used in front in the style of an adze, but when the man turned round, and first dragged the crooked stick in the earth, a plough was foreshadowed. A more suitable branch for dragging was then probably sought for, as at B, and to be used by two men instead of one, one man dragging in

front, at C, the other man guiding behind. A time next came when men thought that a large sharp stone, instead of the fire-hardened prong, would act as an improved tool for preparing the ground for corn. It is obvious that if certain ancient men formed their hoe-blades and plough-shares of such an almost imperishable stone as flint, that some of these objects must be still preserved in ancient British positions:—and such is indeed the fact. In my own collection I have several, nearly all found by myself. In fig. 41,

man used this implement for digging, he had thoroughly good hoe; if he pulled it along after him, he had a rude plough; if he attached two withies to it instead of one, in the style of fig. 45; he certainly had a fairly good plough to be used by two men, the man who followed behind in all probability manipulated and guided the stone share with his foot. At last, the thought dawned on some one (probably in the East at first), that some other animal than a man might be made to draw the primitive plough along. In Britain it was probably tied to the horns of the ox of the time (*Bos longifrons*). It was not until historic times that the coulter was thought of to cut the sod in advance of the share.

The corn of the period is well known, as I have shown at the beginning of this article. How and with what instruments, then, did these old fellows make the bread? After the corn had been harvested the women and children crushed or ground the corn with prepared roundish blocks of flint on slabs of stone named querns. The querns are seldom found now, for the simple reason that for many centuries all flat stones have been systematically removed from fields and smashed for road making. However, one is here illustrated (fig. 44) found in Norfolk (from my own collection). It is made from a large split boulder, the top surface is concave and covered with fine longitudinal striæ from the contact of the grain-rubber in ancient times. The grain-rubbers themselves are by no means uncommon about British camps, and I have found many. One is shown in the illustration placed on the quern. This rubber was originally rudely spherical, but its constant use as a grain-rubber or muller some thousands of years

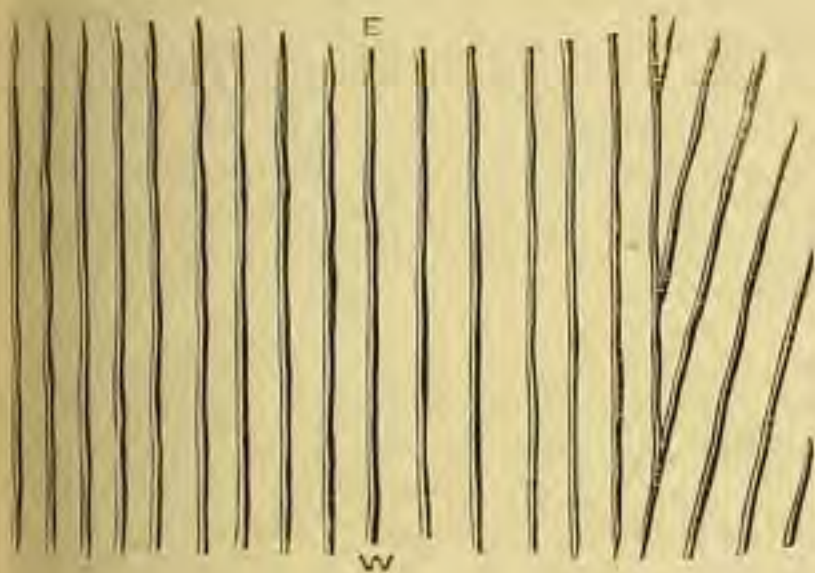


FIG. 42.—ANCIENT BRITISH PLOUGH FURROWS.

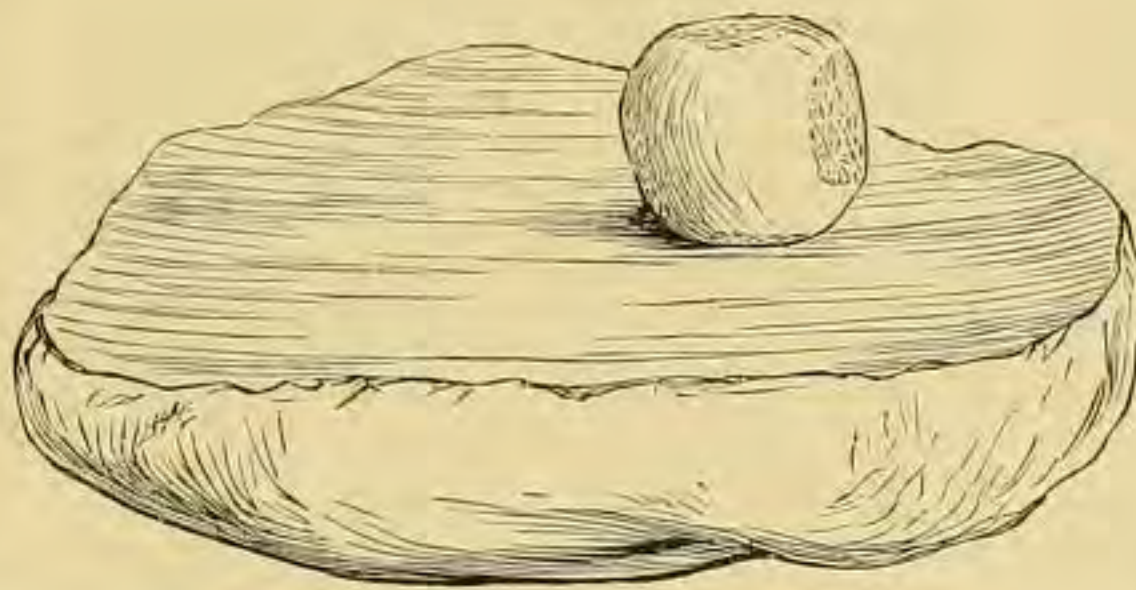


FIG. 44.—SMALL SADDLE-QUERN OR MILL AND CORN-RUBBER: ¼ ACTUAL SIZE.



FIG. 46.—SECTION OF ANCIENT BRITISH PLOUGH BUTT

plied his soldiery with corn grown in Britain, whilst he freed Gaul from the barbarians, and pursued them across the Rhine. Ancient British Wheat has several times been found in Britain; Dr. Blackmore, of Salisbury, found a cast of Wheat in clay, in a portion of an ancient British pit at Fisherton, together with two concave querns, or mills. Dr. Blackmore, in writing on this subject, says, the grain was very small, so that a farmer who was asked me when it was found asked me if it were wild oat." Mr. G. E. Robinson, architect, of Cardiff, also found Wheat in a tumulus at Bournemouth, one in an ancient pot, other Wheat carefully wrapped in a portion of rude fabric; the grains at Bournemouth are numerous, round, and very small, not half the size of the Wheat of to-day. At Uriconium (near Wellington, Shropshire) wheat was found in the excavations, and two bottles of this grain are exhibited in the Shrewsbury museum together with crania of *Bos longifrons* (showing pole-axe marks), and other relics. The grains found at Uriconium are oval, but two-thirds (or less) of the size of Wheat grains of the present day. The variety is probably the *Triticum vulgare antiquorum* of Heer. In the Swiss cave-dwellings three other species of Wheat have been found, together with two species of Barley, a Millet (*Panicum miliaceum*, L.), and one of the nick-grasses (*Setaria italica*, L.). The knowledge of agriculture was no doubt brought from Asia Minor through the continent of Europe many centuries before the Roman occupation.

The question is often asked—With what implements did these ancient races of men so skilfully till the ground? As the Britons were acquainted with metals at the time of Cæsar's occupation, notably such metals as iron, copper, bronze, gold, and tin, it may be assumed that the primitive field implements

found, at C, the other man guiding behind. A time next came when men thought that a large sharp stone, instead of the fire-hardened prong, would act as an improved tool for preparing the ground for corn.

It is obvious that if certain ancient men formed their hoe-blades and plough-shares of such an almost imperishable stone as flint, that some of these objects must be still preserved in ancient British positions:—and such is indeed the fact. In my own collection I have several, nearly all found by myself. In fig. 41,



FIG. 45.—PROBABLE MODE OF PRIMITIVE PLOUGHING, WITH STICKS AND A LARGE TRIMMED FLINT.

one of these flint blades, found in Kent (in my own collection), is shown mounted on a withy. The withy itself I bought with other things from a Welsh blacksmith in north Carmarthenshire: with the blacksmith it held a hammer-head of iron. I took the modern hammer-head out and slipped in the ancient stone hoe-head, and doubtless, as illustrated here, the object is in much the same condition as when originally used by the ancient Briton himself. One could not only easily dig furrows with this tool, but quite as easily fell a large animal. Now, if the

ago has more or less worn it away, and flattened it in five or six places.

I will give an account of the places visited and the things seen by the Association in a subsequent number. *W. G. Smith.*

### Florists' Flowers.

SEASONABLE NOTES: AURICULAS.—We are now (August 8) in the midst of our repotting. We would much rather have done this earlier, but time did not permit of it. The plants had started to make their autumn growth before we began to repot them, and of course the shaking all, or nearly all, the soil from the roots will give them a serious check. All the growers that I know of had repotted their plants many weeks ago. Small offsets put in during the month of February have now formed nice plants, which will flower well next year; they have been potted on carefully as they required it. The seeds have all ripened, and have been sown at once, using 4-inch pots or pans. Some persons keep the seeds until the spring, but nearly all the best growers sow at once; a portion of the young plants will appear in three weeks, but the largest proportion of the seeds will not vegetate until February. A small green maggot is very troublesome this year, eating the leaves on the undersides. Destroy them by hand-picking. Expose the plants as much as possible to the air, and do not give them more water than they really require.

### CARNATIONS AND PICOTEEES.

We finished the layering of all but a few selfs before beginning to repot the Auriculas. The old-fashioned florists were safe guides in the culture of

## A HOLIDAY IN SHROPSHIRE.

(Continued from p. 312.)

The first extension of the Cambrian Archaeological Association was held at Shrewsbury on August 2, the whole of the day being devoted to an examination of the town. Botany appeared in force in the person of the President, Professor C. C. Haskings, of Cambridge, accompanied as he was by several botanists and horticulturists. Among the members of the Club, of Shropshire, was strongly represented by the Rev. Perceval Davies, of Manx Court, and other members, including Mr. W. Phillips, of Shrewsbury, and the Rev. J. E. V. Von, of Foston; the latter gentleman, however, found greater attractions amongst leaf-fauna than old churches, and so left the party. At Shrewsbury railway station the company was strongly and nobly met by the presence of the Rev. W. Alport Leighton, the eminent theologian, so that taking the succession all at all there was quite as much botany (especially cryptogamic botany) as entomology represented in the members. Mr. Leighton, like my brother, is a perfect (apparently) of bromeliad specialist, and a still (apparently) an illuminated addition, so that some one called him if he proposed dilating on the Schwabenwälder hypothesis. Not he; he was one with Dr. Nylander, and did not believe the hypothesis had a leg to stand upon. Had he ever refuted the hypothesis? No, he had better employment for his time,—the hypothesis did not disturb him; it had been refuted and named inside out ever and over again. Did Mr. William Phillips give credence to the Schwabenwälder hypothesis? No, he did not believe a word of it; he was one with Mr. Leighton, with Dr. Nylander, the Rev. James Carter, and others. Among the other organic botanists at Shrewsbury there was not one with a favourable word for the Schwabenwälder hypothesis. [Was they familiar with the cultural evidence supplied by insects and others? Ent.] What is the Schwabenwälder hypothesis? It is that the small plants known as lichens are really small fungi parasitic upon Alga. Every one who has looked at old wooden staves by damp ditch sides, or at tree trunks in humid woods, must have noticed the bright green stains on the wood and bark; this green colour is caused by the presence of spores of small green-coloured plants termed Alga.

Lichens grow on old stumps and stones, and frequently resemble small black marks, and when these lichens are cut in two successive green orths (the Alga), called parasites, are seen within them. Schwabenwälder says these green orths are really Alga, and that the lichen which encloses them is a parasitic fungus. Parasites are generally very much smaller than the objects they prey upon, but here is a parasite a thousand times larger than its host! It is like an elephant being a parasite on a fly. Now, if a very big thing is parasitic upon a very little one, one would naturally expect the little one to be speedily extinguished, but in the case of the lichen-Alga hypothesis the little Alga thrives well under the attack of its huge enemies: it licks its attack, thoroughly enjoys it, and Schwabenwälder says, the parasites excite the Alga "to more rapid activity and more vigorous increase." The hypothesis is not universally accepted in this country at present; neither, for that matter, is the identity of *Ascidium herbicola* with the coral skeleton. Mr. Leighton is an excellent antiquary, and he brought with him to the railway station plates of ancient British, Roman, Saxon, Norman, and mediæval Shropshire. No more able and indefatigable guide than Mr. Leighton could have been found; he was with the party the whole of the day, increasing and explaining the town and its buildings from end to end. The first place visited in the County; of this nothing but moments of earth filled the ancient British and Saxon positions, of the Norman wall only a gateway and a tower being visible. After ascending to the highest point, on to a huge mound of earth, capped by a party like gate, an excellent view of Shropshire is obtained, and in the distance, on The Mount, Foukwell, may be clearly seen the silhouette of an immense conyretum, Charles Darwin. This house was pointed out as one of the sights of Shrewsbury, and in respectful remembrance of the great philosopher's attainable teaching a small sketch of the house was made on the mound with the names, and is here reproduced (fig. 47). Mr. Leighton, who was a schoolfellow with Charles Darwin, recalls very pleasant reminiscences of his school companion as a boy, and afterwards as a

man. One thrilling reminiscence it may be advisable to print. Darwin and Leighton as lads were fond of plants and gardening. One day Darwin brought a plant to Leighton, and told him that his mother had said if he wanted the little threads (pointing to the stem) inside the flower, he could find out its name. "But how can that be done?" said Leighton. "Ah!" replied his gardening companion, "I cannot remember that."

The school founded by Edward VI. was visited, and then St. Mary's Church, founded by King Edgar; Canon Lightfoot described the architecture and glass of this fine building. Architecture and glass, however, not being such specialities of the *Gardener's Chronicle* as gardens and gardening, a transcript of an inscription at the east end of the church may here suffice. It is in memory of a Mr. John Gardener, of Jamaica—a former master of Seaton, a planter of trees, and it all respects an excellent "gardener." The inscription runs—

"Gula sacca Diu te habet, vixi Johanne,

Et in nomine patris, hoc tibi vixi probo

Heri ceteri vixi; tibi cum soli, pollice

Parare optare solvere vixi tibi

stat.

It does not rhyme,—the author was perhaps not quite equal to it; but if a rhyming translation may be ventured upon, the following may serve—

"Dear John, a gift from God has done us you;

Your name, and truth I'm together, show it.

The garden well you tended, other plants grew.

To earth and heaven's glory.—Now all know it."



FIG. 47.—REMINISCENCE OF CHARLES DARWIN, AFTERWARDS.  
(FROM THE CHRONICLE.)

I cannot answer for the last four words, but if any reader of the *Gardener's Chronicle* can produce something more satisfactory, let him send it on to 47, Wellington Street for printing.

The abbey of SS. Peter and Paul was next visited, built partly in the eleventh century; it has a handsome choir pulpit, belonging to the former refectory, stands discoloured and overgrown with weeds in a railway cut-yard. An inscription in the building records a curious gift of coats in the following words:—"Richard Jones, Esq., left ten Coats, viz. five for Men and five for Women, to be given to ten Paupers of this Parish every fifth Day of November for ever." At the Dissolution a part of the abbey was pulled down and the structure known as Whitwell (Jamaica) is all that remains (see below) was built out of the ruins. The old abbey structure is divided into three to sell the last slice of architecture belonging to Whitwell.

At the latter place there is a magnificent Walnut tree, here illustrated (fig. 48); the circumference at 4 feet from the ground is 15 feet 7½ inches; the spread of the branches is over 24 yards; this tree probably dates from about 1550. Walnut trees seldom attain these dimensions; perhaps some readers of the *Gardener's Chronicle* may, however, be able to refer to other large specimens.

The last place visited was the "George Hotel," here the members of the Cambrian Archaeological Association, the Westchester, the numerous members of the Shropshire Archaeological and Natural History Society, together with many visitors, sat down to a good dinner. To the writer of these notes a large dish of hot Mushrooms was brought (as an unexpected present), on being himself somewhat liberally a Shropshire arctophagist came hurriedly forward and begged that the article's valuable life might not be risked before consulting with Mr.

William Phillips, a famous fungus authority, who at that time, said the arctophagist, was most fortunately in the room. W. G. SACK.

(To be continued.)

## BIRMINGHAM BOTANIC GARDENS.

A few days since I visited these attractive and well-kept gardens, when I saw many interestingly grown specimens both in and out-of-doors, together with an almost endless variety of seedlings and cuttings, and of which I was much pleased. Having first found Mr. Latham, the energetic Curator, who at once proceeded on our ramble through the numerous plant-houses and stores. In the first of these I selected *Glossa aspera* (Melastoma) was the first plant to attract my attention. This great greenhouse chamber is so seldom met with that one is apt to forget it altogether; although it was introduced nearly two centuries ago from the East Indies it still retains localities, and certainly is deserving of more extended culture. Here it grows in a way almost everywhere, and producing its lovely orange-coloured blossoms in profusion. This plant is worthy the notice of those who must have exhibition plants on tables or window-sills, for which purpose it is admirably adapted. Growing on a fine tree of *Ocotelea Krameri* was, as was to be seen in close proximity a fine pair of *Philopeltis* (*Arctostaphylos*) petals. Some few plants of *Thlaspi* were suspended in baskets and thriving admirably. Among these were *T. annulata*, *T. grandiflora*, *T. Lindheimeri*, and others. I also noted some very interesting specimens of *Thlaspi* growing in pots. Among other objects of interest in this house were fine plants of *Dioscorea* and *Canna*, of which latter *C. nejeptaria* was most noticeable, being highly coloured.

Leaving this we entered the Cuttings-house, where in was a variety of large well grown specimens, which occupied one side of the house, the other being devoted to choice Ferns. There were but few *Oxalis* in flower here, but among those flowering may be mentioned *Oxalis latifolia*, *Lactis peruviana*, *Stachys trifida*, and *Oxycoccus Schlegelii*. I also noted *Russelia javana*, which was producing abundantly its heads of sweet scented flowers, which, springing from a very long pedicel, were quite charming. Some fine plants of *Banana* (Dwarfed) in variety met our eye, and closely associated was the New Holland *Phacelia*, *Cephalanthus filifolius*. To some care and interesting Ferns I next turned attention, foremost among which was *Gymnocarpium Fendleri*, a neat and attractive plant, somewhat resembling in general structure *G. dissectum*, but differing from this in its more robust, and being in reproduction half with the freedom of the latter. A fine plant of *Thelypteris elegans* was a feature in rank, and may be safely said of a fine pair of *Nephrolepis* (*Vittaria*) *Lingua serpentina*. Some large plants of the giant water fern, *Ceratopteris thalictroides*, were seen in the most worthy occupants of this house. Next in turn came a small store, in which *Chromolaena fragrans* *Scorpioides* was flowering freely; here I also noted a nice bush of an old-fashioned plant—*Senecio* *Melastomaceae*, and which, when well managed, is one of the most of show-flowering plants; in large beds on large plants are most conspicuous. The larch in question were young plants, and promising well. Leaving this we came to some large open-roofed pits, in which were fine specimens *Glechiza*, *C. styriaca*, *Salsola*, *repens*, and *Salsola*, being represented in large handsome specimens. Here my attention was drawn to some large plants of the most curious of *Centrosema* plants, viz., *Trifolium* *admirabile*, the leaves or plumes of which are very slender at the base, widening all the way is reached, when they curve and form a hood, from which extend two leafy wing-like appendages.

My guide next led the way to the cool-house, which is set apart for a variety of plants which are considered hardy, so deemed too rare to be subjected to the conditions of the weather outside. The first to claim attention was *Fragaria indica*, from which numbers of its scarlet fruit were hanging; then came *Lilium plow*, a truly beautiful specimen with flowers; *Tuliparia* *viridiflora*, producing its delicate shaded flowers in great numbers, which have a most

## A HOLIDAY IN SHROPSHIRE.

(Continued from p. 213.)

THE first excursion of the Cambrian Archæological Association was held at Shrewsbury on August 2, the whole of the day being devoted to an examination of this town. Botany appeared in force in the person of the President, Professor C. C. Babington, of Cambridge, accompanied as he was by several botanical and horticultural friends: the Woolhope Club, of Herefordshire, was strongly represented by the Rev. Prebendary Davies, of Moor Court, and other members, including Mr. W. Phillips, of Shrewsbury, and the Rev. J. E. Vize, of Forden: the latter gentlemen, however, found greater attractions amongst leaf fungi than old churches, and so left the party. At Shrewsbury railway station the company was strongly and nobly reinforced by the presence of the Rev. W. Allport Leighton, the eminent lichenologist, so that taking the excursionists all in all there was quite as much botany (especially cryptogamic botany) as archæology represented in the members. Mr. Leighton, hale and hearty, carried a portfolio (apparently of botanical specimens), and a roll (apparently an illuminated address), so that some one asked him if he proposed dilating on the Schwendenerian hypothesis. Not he; he was one with Dr. Nylander, and did not believe the hypothesis had a leg to stand upon. Had he ever refuted the hypothesis? No, he had better employment for his time, the hypothesis did not disturb him; it had been refuted and turned inside out over and over again. Did Mr. William Phillips give credence to the Schwendenerian hypothesis? No, he did not believe a word of it; he was one with Mr. Leighton, with Dr. Nylander, the Rev. James Crombie, and Dr. Cooke. Among the other cryptogamic botanists at Shrewsbury there was not one with a favourable word for the Schwendenerian hypothesis. [Were they familiar with the cultural evidence supplied by Bornet and others? EDS.] What is the Schwendenerian hypothesis? It is that the small plants known as lichens are really small fungi parasitic upon Algæ. Every one who has looked at old wooden rails by damp ditch sides, or at tree trunks in humid woods, must have noticed the bright green stains on the wood and bark; this green colour is caused by the presence of myriads of small green unicellular plants termed Algæ. Lichens grow on old stumps and stones, and frequently resemble small black warts, and when these lichens are cut in two numerous green cells (like Algæ), named *gonidia*, are seen within them. Schwendener says these green cells are really Algæ, and that the lichen which encloses them is a parasitic fungus. Parasites are generally very much smaller than the objects they prey upon, but here is a parasite a thousand times larger than its host: it is like an elephant being a parasite on a fly. Now, if a very big thing is parasitic upon a very little one, one would naturally expect the little one to be speedily extinguished, but in the case of the lichen-Alga hypothesis the little Alga thrives well under the attack of its huge chimæra: it likes its attack, thoroughly enjoys it, and, as Schwendener himself says, the parasite excites the Alga "to more rapid activity and more vigorous increase." The hypothesis is not universally accepted in this country at present; neither, for that matter, is the identity of *Æcidium berberidis* with the corn mildew. Mr. Leighton is an excellent antiquary, and he brought with him to the railway station plans of ancient British, Roman, Saxon, Norman, and mediæval Shrewsbury. No more able and indefatigable guide than Mr. Leighton could have been secured; he was with the party the whole of the day, traversing and explaining the town and its buildings from end to end. The first place visited was the Castle; of this nothing but mounds of earth indicate the ancient British and Saxon positions, of the Norman work only a gateway and square keep remain. After mounting to the highest point, on to a huge mound of earth, capped by a pretty little garden, an excellent view of Shrewsbury is obtained, and in the distance, on The Mount, Frankwell, may be clearly seen the birthplace of our famous countryman, Charles Darwin. This house was pointed out as one of the sights of Shrewsbury, and in respectful remembrance of the great philosopher's admirable teaching a small sketch of the house was made on the mound with the camera, and is here reproduced (fig. 47). Mr. Leighton, who was a schoolfellow with Charles Darwin, retains many pleasant remembrances of his school companion as a boy, and afterwards as a

man. One trifling recollection it may be admissible to print. Darwin and Leighton as lads were fond of plants and gardening. One day Darwin brought a plant to Leighton, and told him that his mother had said if he counted the little threads (pointing to the stamens) inside the flower, he could find out its name. "But how can that be done?" said Leighton. "Ah!" replied his gardening companion, "I cannot remember that."

The school founded by Edward VI. was visited, and then St. Mary's Church, founded by King Edgar: Canon Lloyd described the architecture and glass of this fine building. Architecture and glass, however, not being such specialities of the *Gardeners' Chronicle* as gardeners and gardening, a transcript of an inscription at the east end of the church may here suffice. It is in memory of a Mr. John Gardener, of Sansaw—a former master of Sansaw, a planter of trees, and in all respects an excellent "gardener." The inscription runs—

"Gratia sancta Dei tibi fulsit, care Johannes,  
Ex re nomen habes, hoc tua vita probat  
Horti cultor eras: tibi cura solo, poloque  
Plantas egregias addere summa fuit.  
1628."

It does not rhyme—the author was perhaps not quite equal to it; but if a rhyming translation may be ventured upon, the following may answer:—

"Dear John, a gift from God has shone on you;  
Your name, and useful life together, show it.  
The garden well you tended, choice plants grew,  
To earth and heaven's glory.—Now all know it."



FIG. 47.—BIRTHPLACE OF CHARLES DARWIN, SHREWSBURY.  
(FROM THE CASTLE.)

I cannot answer for the last four words, but if any reader of the *Gardeners' Chronicle* can produce something more satisfactory, let him send it on to 41, Wellington Street for printing.

The abbey of SS. Peter and Paul was next visited, built partly in the eleventh century; here a handsome stone pulpit, belonging to the former refectory, stands dishonoured and overgrown with weeds in a railway coal-yard. An inscription in the building records a curious gift of coats in the following words:—"Methusalem Jones, Esq., left ten Coats, viz., five for Men and five for Women, to be given to ten Paupers of this Parish every fifth Day of November for ever." At the Dissolution a part of the abbey was pulled down and the structure known as Whitehall (because it is altogether brown) was built out of the ruins. The old abbey stonework is chiselled into form to suit the later style of architecture belonging to Whitehall.

At the latter place there is a magnificent Walnut tree, here illustrated (fig. 48); the circumference at 4 feet from the ground is 15 feet 7½ inches; the spread of the branches is over 40 yards. This tree probably dates from about 1550. Walnut trees seldom attain these dimensions; perhaps some readers of the *Gardeners' Chronicle* may, however, be able to refer to other large specimens.

The last place visited was the "George Hotel;" here the members of the Cambrian Archæological Association, the Woolhopeans, the numerous members of the Shropshire Archæological and Natural History Society, together with many visitors, sat down to a good dinner. To the writer of these notes a large dishful of hot Mushrooms was brought (truly an unexpected pleasure): on helping himself somewhat liberally a Shropshire archæologist came hurriedly forward and begged that the artist's valuable life might not be risked before consulting with Mr.

William Phillips, a famous fungus authority, who at that time, said the archæologist, was most fortunately in the room. *W. G. Smith.*

(To be continued.)

## BIRMINGHAM BOTANIC GARDENS.

A FEW days since I visited these attractive and well-kept gardens, where I saw many admirably-grown specimens both in and out-of-doors, together with an almost endless variety of novelties and rarities, with all of which I was much pleased. Having first found Mr. Latham, the energetic Curator, we at once proceeded on our ramble through the numerous plant-houses and stoves. In the first of those I entered *Gloriosa superba* (Methonica) was the first plant to attract my attention. This grand greenhouse climber is so seldom met with that one is apt to forget it altogether; although it was introduced nearly two centuries ago from the East Indies it still seems little known, and certainly is deserving of more extended cultivation. Here it is, winding its way along some wires fastened to the roof, and producing its lovely orange-coloured blossoms in profusion. This plant is worthy the notice of those who must have exhibition plants on trellises or suchlike, for which purpose it is admirably adapted. Passing on, a fine form of *Oncidium Kramerii* was noteworthy, as was also in close proximity a fine pan of *Rhipidopteris* (*Acrostichum*) *peltata*. Some fine pieces of *Phalænopsis* were suspended in baskets and thriving admirably. Among these were *P. amabilis*, *P. grandiflora*, *P. Lüddemanniana*, and others. I also noted some good *Nepenthes*, of which *N. Sedeni* was producing pitchers freely. Among other objects of interest in this house were fine plants of *Dracænas* and *Crotons*, of which latter *C. majesticus* was most noticeable, being highly coloured.

Leaving this we entered the *Cattleya*-house, wherein were a variety of large well grown specimens, which occupied one side of the house, the other being devoted to choice Ferns. There were but few Orchids in flower here, but among those flowering may be mentioned *Oncidium intermedium*, *Lælia purpurata*, *Stanhopea tigrina*, and *Odontoglossum Schlieperianum*. I also noted *Russelia juncea*, which was producing abundantly its heads of scarlet tubular flowers, which, springing from amidst its grassy foliage, were quite charming. Some fine plants of Sundews (*Droseras*) in variety next met my gaze, and closely associated was the New Holland Pitcher-plant, *Cephalotus follicularis*. To some rare and interesting Ferns I next turned attention, foremost among which was *Gymnogramma Pearcei*, a neat and attractive plant, somewhat resembling in general structure *G. decomposita*, but differing from this in its neater fronds, and failing to reproduce itself with the freedom of the latter. A fine plant of *Thyrsopteris elegans* was a feature in itself, and less may scarcely be said of a fine pan of *Niphobolus* (*Polypodium*) *Lingua corymbiferum*. Some large plants of the giant scaly Fern, *Cetarach aureum*, concludes a few of the most noteworthy occupants of this house. Next in turn came a small stove, in which *Clerodendron fragrans flore pleno*, was flowering freely; here I also noted a nice batch of an oft-neglected plant—*Scutellaria Mociniana*, and which, when well managed, is one of the cream of stove-flowering plants; its huge heads on large plants are most conspicuous. The batch in question were young plants, and promising well. Leaving this we came to some large span-roofed pits, in which were fine specimen *Gleichenias*, *G. dicarpa*, *flabellata*, *rupestris*, and *Speluncæ*, being represented in large handsome specimens. Here my attention was drawn to some large plants of that most curious of carnivorous plants, viz., *Darlingtonia californica*, the leaves or pitchers of which are very slender at the base, widening till the apex is reached, where they recurve and form a hood, from which extend two leafy wing-like appendages.

My guide next led the way to the cool-house, which is set apart for a variety of plants either not considered hardy, or deemed too rare to be subjected to the conditions of the weather outside. The first to claim attention was *Fragaria indica*, from which numbers of its scarlet fruits were hanging; then came *Linaria pilosa*, a pigmy Snapdragon smothered with flowers; *Tulbaghia violacea*, producing its delicate shaded flowers on stout stems, which have a most

pleasing effect; *Zephyranthes rosea*, with large Gladiolus-like flowers of a deep rose, not exceeding 6 inches in height; the ever-welcome *Gladiolus Saundersii* with a strong spike of flowers, which are of a bright rose flaked with white, and distinctly spotted. The value of this species it is simply impossible to over-estimate, and when seen to good advantage, as in the present case, one only wonders why it is not grown in almost all collections of choice plants. Passing on, a charming display was evident of the flowers of *Pratia littoralis*, a pigmy alpine, belonging to Lobeliaceæ which showed a mass of its snow-white blossoms. A number of small pans were filled with this lovely little plant and suspended to the roof, thus affording them abundance of light, which treatment suited it admirably. Next I noted other pans of *Campanula fragilis* flowering freely and overhanging the sides. *C. Raineri* (true) is here to be met with, and is a lovely species, still very uncommon in gardens, and much more so in nursery collections of alpine plants. Its erect bell-shaped deeply ribbed flowers are of a light blue, and are set on very short footstalks, so much so that when full grown it is scarcely more than 1½ inch in height; in many cases it is a difficult plant to winter, but in the present instance little or no difficulty seems to be experienced, they are simply planted in shallow pans, similar to those so largely used for *Phalænopsis* at the present time and suspended near to the glass. Under these conditions they seem to thrive ad-

mirably. In this way many a little alpine gem is treated with success. To those who love doing alpines justice I would urge their giving this method a trial; here they are, out of the reach of slugs, always under the eye, and in a great degree free from heavy rains which sodden the soil around, and ultimate decay is the result. In this house may also be found a variety of plants, including several varieties of *Masdevallias*, *Oncidium macranthum* with many developed flowers, and many more.

good. Many good specimens were here to be met with, and tree and other large Ferns in specimen form abound. Of these I noted *Cyathea medullaris*, *Dicksonia arborescens*, a rare Fern in specimen form, and which I believe does not exist in many collections of Ferns. In general habit it resembles *D. antarctica*, but the texture of the pinnæ is totally distinct from that species; the plant in question is a gigantic specimen, having fronds from 10 feet and upwards in length, and something over 100 of these form the specimen. Among others may be mentioned *D. Youngii* and *D. fibrosa*, *Cyathea spinulosa* (Moore), and *C. Smithii*, and *Cibotium regale* being also fine.

On the terrace outside, from which an extended view of the gardens and surrounding neighbourhood is obtainable, may be seen flowering specimens of the New Zealand Flax, *Phormium tenax variegatum*, and some beds of double-flowered *Pyrethrum*, *Anemone japonica alba*, *Chrysanthemum Etoile d'Or*, and other useful flowering bedding plants. From this point we wended our way into the herbaceous ground, where were many old associates. Here we paused to look at *Tropæolum speciosum*, which was endeavouring to regain a position it once held; owing to some diligent weeder it was some time since almost entirely eradicated, he having mistaken it for Bind-weed or some such pest. This pretty plant is shaded during the hottest part of the day by some overhanging limbs from a large Oak in close proximity. Though

tioned the large collection of *Rhododendrons*, which annually make a grand display. In common with the neighbourhood around, these gardens may be said to be picturesque, and indeed form themselves into a natural landscape, which with the aid of art may be rendered a still more attractive feature. 7.

## NOTES FROM PAULTONS PARK.

THE present month is of all others the time for gardeners to fill their note-books with useful memoranda for next season. Flower gardens are now at their best, and many hints which will be valuable next spring may be inserted in every note-book while the display of flowers is present to the eye and defective arrangement can be thoughtfully considered.

In the flower garden at Paultons, the seat of Hans Sloane-Stanley, Esq., in Hampshire, I recently noticed one or two beds very simply arranged, which were none the less effective. The garden is composed of five groups of beds, which admit of considerable variety being introduced in the arrangement of the colours. The central beds, raised in tiers, are very striking, having a healthy *Datura* for a centre, surrounded by scarlet and white *Pelargoniums* and a broad band of mixed single *Petunias* of various colours, very handsome indeed. Two beds of blue *Lobelias*, rich in colour and grandly flowered, planted alternately with *Pelargonium Crystal Palace Gem*, are very pleasing, especially towards sunset, and more striking still in the twilight of the evening.

People who can discern nothing but glare in a well-arranged flower garden must see very strangely indeed. Visit a garden in the early morning, and again at mid-day when the sun is brightest, and again later in the evening, and I venture to think that all who desire to see will be able to find fresh beauties at every visit. The reflection of light and shade has a very marked effect upon the look of a flower garden; that is, if you really wish to enjoy the many beauties of flowers and foliage, and know how to look for them.

In the kitchen garden the flower groups are also diversified and pleasing, the arrangement of flowering and foliage plants being very tastefully executed. No one can complain of want of variety. There are herbaceous plants of sorts—*Stocks* and *Asters* splendidly grown, the latter pegged down, and *Phlox Drummondii* with its great attractions of striking colours from brilliant scarlet to pale white, crimson and red. Two borders of mosaic bedding upon either side of the central walk are really attractive, but not so perfect as Mr. Macmillan hopes to have them another year, when his stock of plants is further augmented. The borders are narrow, and are separated from the vegetable quarters by two dense hedges of mixed *Sweet Peas*; then there is a line of *Phloxes*, fine sorts, with grand heads of their charming flowers, which, when tastefully blended in their various colours, no one can help admiring. A chain of diamonds formed of narrow bands of *Sedum glaucum* and another bronze-coloured sort (name not known) composes the centre of each border. There is a central plant in each diamond either of *Polemonium coeruleum variegatum* or *Centaurea ragusina* surrounded by Mrs. Pollock *Pelargonium* or some other suitable colour, such as *Iresine Lindenii* or *Coleus Verschaffeltii*. Two rows of *Lobelias* from cuttings hang over the stone edging of the walks, and the strip (triangles) upon either side the diamonds is filled with *Alternantheras* of sorts, *Mesembryanthemum cordifolium variegatum*, and a selection of other dwarf growing plants.

I noticed in a mixed border of some length *Marvel of Peru*, *Chrysanthemum frutescens*, *Salvia patens*, *Helichrysums*, *Lupins* from seed, and several patches of *Erythronium dens canis*, with leaves so brightly marked as to cause me to inquire into the history of its cultivation. It appears the plants were transplanted during the past spring, but whether their removal, together with the exceptional brightness of the weather, has anything to do with the rich markings of the leaves, I would not undertake to say. The situation in which they are growing is a north one. A large group of *Solidagos* coming into full flower struck me as being an improvement upon the usual plan of planting such plants singly in borders; there is nothing very striking about them, but they afford variety in a large garden,



FIG. 48.—LARGE WALNUT TREE AT WHITEHALL, SHREWSBURY. (SEE P. 232.)

not over 12 feet girth, this Oak may be termed a large one, considering it is only a little over a mile from the centre of such a town as Birmingham. Continuing our course, a large bed was all aglow with *Papaver umbrosum*, of which we have read so much of late. Then came a nice mass of *Linnaea borealis*; then in masses were *Primula rosea*, *P. japonica*, and *P. cashmiriana*, all of which had ceased flowering at the time of my visit. A stately plant was next seen in *Bupthalmum cordifolium*, with large conspicuous golden-yellow flowers, a good plant for the wild garden. Of *Campanulas* there are a large number of both species and varieties; *C. carpatica*, in large tufts, were one mass of flowers; *C. nobilis* and its white variety are probably among the finest of *Campanulas*, both of which are in good form. In almost any position here the *Edelweiss* grows luxuriantly in the ordinary soil of the garden. The double flowers of lilac and white, which are borne in great profusion on plants of *Calystegia pubescens flore-pleno*, are most telling, and it still may be said to be one of the best hardy climbing herbaceous plants.

A showy border of annuals was very gay, and among them I noted *Leptosiphon roseus* and *Mathiola bicornis*, which latter at night is most fragrant. A choice collection of *Iris barbata* in variety were just giving out its last flowers, and above these, on a large bank, were "Honesty," *Lunaria biennis*, *Oenothera biennis*, *Foxgloves*, &c., all lending their individual charms to beautify their immediate vicinity.

Among other features in the grounds may be men-

Besides these may be seen many choice, hardy, and other Ferns, of which too many here exist to be enumerated in detail, so it will suffice to say they were healthy and vigorous. Of the more rare I noted *Mohria achilleæfolia*, a plant seldom seen; *Nothochlæna canariensis*, and the Violet-scented Fern; *Lastrea (Aspidium) fragrans*. Passing on we came to the conservatory, a large and spacious building; immediately on entering another well-flowered specimen was dazzling to behold. This was "the flower of the gods," *Disa grandiflora*, of which a small group was resplendent with their gorgeous flowers; one spike alone had nine flowers upon it, some smaller spikes averaging three to five flowers. In all some twenty flowers were fully expanded, and as many more had still to develop themselves, so that there is good hope of their beauty being admired for some days. The great majority of other terrestrial Orchids were past, such as *O. foliosa* and many forms of *Lady's Slipper*, including *Cypripedium acaule* and *C. spectabile*, both of which had been very