NATURE NOTES

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THE SELBORNE SOCIETY'S MAGAZINE

EDITED BY

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F.L.S., F.G.S.,

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HE PRAYETH BEST WHO LOVETH BEST
ALL THINGS BOTH GREAT AND SMALL;
FOR THE DEAR GOD WHO LOVETH US,
HE MADE AND LOVETH ALL.

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(*The names of books reviewed are printed in italics.*)

* We are again indebted to Mrs. Percy Myles for the preparation of the Index.—Ed. *N.N.*

LIST OF ILLUSTRATIONS.

Nature Notes:

The Selborne Society's Magazine.

No. 169. JANUARY, 1904. Vol. XV.

EDITORIAL.

THE scope of the work of the Selborne Society is so wide, the space at our disposal in this magazine so limited, that there is a danger lest important directions for our efforts be overlooked. It may, therefore, be useful at the beginning of a new year to briefly enumerate some of the tasks which lie before us.

To promote the study of natural history we hope not only to continue the visits to museums during the winter and the country rambles of the Field Club in the summer, but also to assist in the organisation of future Nature-Study exhibitions, being convinced of the great value of those held during the last two years.

For the protection of wild animals we must keep a careful watch for opportunities to assist in legislative measures as to "big game," birds, or "unsizable" fish: it may be necessary to do something to protect some insects from reckless collectors; and we shall certainly welcome the establishment of any "earthly paradise" in which Nature may be permitted to maintain her own balance. Unfortunately, there can be no doubt that in pursuit of this object we shall still have to raise our voices in protest against the barbarities inflicted in the names of fashion and so-called "sport," and in the needless destruction of some much valued species for food. Here, again, many legislative proposals may be made which may demand our consideration, our support, or our opposition. In the pursuit of these and other objects our vigilance must not be limited to our own islands, or even to the British Empire; whilst we have the satisfaction of knowing that in none of our efforts shall we struggle alone. Not only have we in general the co-operation in this country of the Royal Society for the Prevention of Cruelty to Animals, of the Humanitarian League, and of the

Society for the Protection of Birds, of the Audubon Societies in the United States, and of other kindred bodies, but it is gratifying to know that we can almost always rely on the active sympathy of the larger and more influential section of the public press.

Ferns, primroses and rarer plants call for protection at home, and special legislation is under consideration for this end; whilst in other lands the beautiful flowers of Alpine heights are in danger of extermination. We shall watch with interest in the future, as in the past, all efforts for their preservation, whether by legislation, by the establishment of gardens for their cultivation on a large scale, or by the education of public opinion.

The preservation of the beauty-spots of the world, and especially of the landscape beauties of England, is bound to be fraught with great difficulties as population and its means of transit advance. Costly rights of private ownership will generally be involved, and we cannot do better in such matters than unite our efforts to those of the National Trust. Much has been done to preserve the view from Richmond Hill; but there are many picturesque eyots in the Thames exposed to every danger of deformation: the Cheddar gorge and that of the Bristol Avon should be rescued from the quarryman, and many other beautiful views have been taken from the public by enclosure, not to mention their frequent desecration by the litter and vandalism of the thoughtless "tripper," or the barbarous philistinism of the telephone company or the advertiser.

Of our prehistoric antiquities, earthworks are constantly in danger of obliteration by the plough, and megalithic remains may be blasted as obstructions, or looked upon merely as stone-quarries. The careful enumeration of all such antiquities, as well as of historic buildings of any archæological interest, whether in county histories or in distinct publications, may help towards their preservation, and here we may expect the co-operation not only of the National Trust, but also of the archæological societies which exist in almost every country. Our interest may be sentimental, rather than scientific, and for that reason is not restricted to objects of any necessarily great antiquity. A City church exemplifying the architecture of Sir Christopher Wren, or the birthplace of Charles Dickens or Richard Jefferies, no less than that of Shakespeare, may call for our protection. Unfortunately, too, in this matter the well-meant but ill-directed efforts of the "restorer" are sometimes almost more fatal than those of the deliberate destroyer, and demand, therefore, constant watchfulness on the part of our local representatives.

In these and in all our work, especially in the observation and record of periodic or exceptional natural phenomena, of the occurrence of rare migratory or other animals, and of the habits of animals and plants, whether rare or otherwise, we need the

help of numerous observers scattered over the entire country, or rather over the whole world. There is certainly no lack of work for us. Where are the workers?

SELBORNIANA.

Alleged Bird-Destruction off Achill.—The Council having drawn the attention of the Irish Office to a letter in the *Field* of July 18, have received the following reply:—

"Dublin Castle,

"*November* 20, 1903.

"Sir,—With reference to your letter of the 22nd ult., I am directed by the Lords Justices to inform you that the place called Bills Rock, off the coast of Achill, comes within the provisions of the Wild Birds Protection Act, 1880.

"Their Excellencies desire me to add there is no evidence to show that birds were killed in large numbers on the occasion of the Admiralty gun practice in May last, as suggested in the newspaper publication to which you refer. So far as the local police are aware no dead birds were found floating on the sea as stated, and on June 2 last, when a police constable visited the Rock, there were no dead birds to be seen.

"I am, Sir, your obedient Servant,

"The Secretary, "J. B. Dougherty.

"*The Selborne Society*."

Bird Protection in Ireland.—A correspondent kindly sends us the following from the *Waterford Standard* of December 9:—

"Eggs of Wild Birds. Action of Waterford County Council.—Last week's *Dublin Gazette* contained an order prohibiting the taking or destroying of the eggs of various species of wild birds throughout the County Waterford for five years, from January 1, 1904. This is made upon the application of the Waterford County Council, and the commoner birds included are teal, heron, woodcock, kingfisher, raven, sheldrake, black guillemot, and black-backed gull."

Bird Protection in Dorset.—The Council have received from the Home Office a copy of a new Wild Birds Protection Order, dated November 26, with reference to this county. By it no eggs may be taken or destroyed within two furlongs inland from high-water mark on any part of the coast of Chesil Bank or from thence to Little Sea, near Studland, during the next five years; the eggs of many of the rarer species are similarly protected throughout the county, this list including owls, hawks, woodpeckers, &c.; many additions are made to the schedule of the Act of 1880, the close time is extended, many rarer birds

are protected throughout the year; and the cormorant and shag are deprived of protection.

The School Nature-Study Union.—We have received a prospectus of this Union, whose Honorary Secretary is the Rev. C. Hinscliff, Bobbing, Sittingbourne, Kent, whilst its Treasurer is Miss Kate Hall, of the Stepney Museum, Whitechapel. Its subscription is two shillings, and its objects are stated as follows :—

The Union asks the support of all who are interested in Nature-Study—whether professionally or otherwise, and who recognise its great educational value—but who do not advocate it being added as another *subject* to the present Elementary or Secondary School time-tables.

The Union is not intended to supplant any existing organisation or agency; on the contrary, its aims is to utilise and make better known facilities which already exist, and to supplement them :—

A.—By the promotion of (1) addresses to children.—The Union will endeavour to assist, by supplying slides, specimens, or other requirements, all teachers who desire to give Nature-Study addresses, or Nature Knowledge lectures to their children; and also, where required, to provide qualified Lecturers (*a*) in Schools where outside help is absolutely welcome, (*b*) at Public Institutions, Children's Free Libraries, &c.

(2) School "Rambles" and "Journeys."—The Union will endeavour to furnish Teachers with information as to cost, organisation arrangements, and other details desired, with respect to Rambles and Journeys, and to conduct, and give personal aid where required.

(3) School Museums.—The Union will endeavour to assist School Museums which have a definite Nature-Study object in view, and, where existing institutions or agencies cannot meet the demand, will arrange for loan collections or provide natural objects and living specimens for demonstration and observation.

(4) Conferences on Nature-Study, and Natural History Field Days.—These will, from time to time, be arranged for the Members of the Union.

B.—By the establishment of (1) a Junior Department, to facilitate or provide inter-communication among children in town and country; to organise Junior Natural History Clubs, &c.

(2) Reading Circles and Circulating Libraries for Teachers, and, where advisable, for Children, so as to promote Nature Knowledge.

C.—By publishing an Official Organ, or officially recognising a Nature-Study journal, so as to provide a means of communication between Members, and in which reports on the work of the Union may be published.

Lord Leighton and the Beautiful.—There was a private view of a most interesting series of sketches and studies

by the late Lord Leighton, P.R.A., at Leighton House, on Sunday, December 13. To some who have only recently been studying Leonardo da Vinci's patient transcripts of all the spirals which he could observe in Nature, it was pleasing to compare the faithful pencil sketch by our modern Master of the flower of the Cyclamen. On the afternoon of Wednesday, December 16, in the studio at Leighton House, Lady Strachey read a paper, written by Mrs. Barrington Ward, entitled "Leighton and John Kyrle ('The Man of Ross')." This paper, which deals with some sympathetic letters written by Leighton at the time of the establishment of the Kyrle Society, is sold on behalf of the Leighton House Maintenance Fund by Mr. David Douglas, of Edinburgh, at 1s. There were nearly 200 persons present, mostly members of the National Trust or of the Kyrle Society.

Our Illustrations.—By the courtesy of Messrs. Hutchinson we are able to reproduce two illustrations from the first annual volume of *Animal Life*, which we reviewed in October last. Our member, Mr. Critchell, has also kindly sent us photographs, taken by himself, of Sam, the polar bear, who died at the "Zoo" on November 2, taken shortly before his death, and of the zebra presented to His Majesty the King by the Emperor Menelik.

Head of Okapi, from original drawing by Sir Harry Johnston. (From *Animal Life*, vol. i., by kind permission of Messrs. Hutchinson and Co. See Vol. xiv., p. 211.)

SEA HORSES, from a photograph by W. Saville Kent, Esq., F.Z.S. The fish on the right is the expectant father, who carries the eggs of his spouse in his pouch, and bears the baby brood until they are old enough to look after themselves. (From *Animal Life*, vol. i., by kind permission of Messrs. Hutchinson and Co. See Vol. xiv., p. 211.)

SAM, THE POLAR BEAR, who died recently at the Zoological Gardens.
(From a photograph taken shortly before his death.)

The King's ZEBRA at the Zoological Gardens

LETTER TO THE EDITOR.

Sir,—Could you not occasionally find room to commemorate some Selbornians who were not of Selborne, who were not, nevertheless, mute, inglorious Selbornians in their day? For example, Robert Marsham, F.R.S., the squire of Stratton Strawless, Norfolk, who died at the Hall in 1797, aged 90, and who employed some of those ninety years in observing the indications of Spring, which were embodied in a neatly arranged table which has been printed and published more than once.

These observations extended in most cases considerably over fifty, and in one case to sixty-two years. They consist of the earliest and latest appearances, in a course of years, of swallows, cuckoos and others of our summer visitors, the leafing of trees, &c.

Stratton Strawless, the manor of which had been held by the Marsham family since the time of Edward I., has now passed into other hands, but the trees around the Hall, notably a cedar of Lebanon, planted by Mr. Marsham in 1747, now some 80 feet high, with a trunk over 14 feet in girth, and also some magnificent beeches, with his "Observations," testify alike to his industry and to his love of Nature.

The table above-mentioned was originally published in large sheet form, and has of late years been re-issued by the Norfolk Natural History Society. There is also a copy in reduced size in the Introduction to Chambers' "History of Norfolk."

J. H.

A LIST OF THE BRITISH MAMMALS.

By W. R. Dawson.

[*The following list does not include domesticated animals.*]

Names in square brackets are those admitted to the British list on very slender evidence.

I.—The Bats (*Chiroptera*).

VESPERTILIONIDÆ.

Noctule (*Pterygistes noctula*).
Hairy-armed Bat (*B. leisleri*).
Pipistrelle (*Pipistrellus pipistrellus*).
Serotine (*Vespertilio serotinus*).
Long-eared Bat (*Plecotus auritus*).
Barbastelle (*Barbastella barbastellus*).
[Bechstein's Bat (*Myotis Bechsteini*).]
Natterer's Bat (*M. Nattereri*).
Daubenton's Bat (*M. Daubentoni*).
Whiskered Bat (*M. mystacinus*).

[Mouse-coloured Bat (*M. myotis*).]
[Parti-coloured Bat (*M. discolor*).]
[Rough-legged Bat (*M. dasycneme*).]

RHINOLOPHIDÆ.

Greater Horse-shoe Bat (*Rhinolophus ferrum-equinum*).
Lesser ,, ,, ,, (*R. hipposiderus*).

II.—The Insectivores (*Insectivora*).

ERINACEIDÆ.

Hedgehog (*Erinaceus europæus*).

TALPIDÆ.

Mole (*Talpa europæa*).

SORICIDÆ.

Common Shrew (*Sorex vulgaris*).
Lesser Shrew (*Sorex minutus*).
Water Shrew (*Crossopus fodiens*).

III.—Carnivora.

FELIDÆ.

Wild Cat (*Felis catus*).

CANIDÆ.

Fox (*Canis vulpes*).

MUSTELIDÆ.

Badger (*Meles taxus*).
Otter (*Lutra vulgaris*).
Pine Marten (*Martes sylvatica*).
Polecat (*Mustela putorius*).
Stoat (*M. erminea*).
Weasel (*M. vulgaris*).

PHOCIDÆ.

Common Seal (*Phoca vitulina*),
Harp Seal (*P. græulandica*).
Ringed Seal (*P. hispida*).
Hooded Seal (*Cystophora cristata*).
Grey Seal (*Halichœrus grypus*).

TRICHECHIDÆ.

Walrus (*Trichechus rosmarus*).

IV.—The Rodents (*Rodentia*).

SCIURIDÆ.

Squirrel (*Sciurus vulgaris*).

LEPORIDÆ.

Rabbit (*Lepus cuniculus*).
Hare (*L. europæus*).
Mountain Hare (*L. timidus*).

MYOXIDÆ.

Dormouse (*Muscardinus avellanarius*).

MURIDÆ.

Black Rat (*Mus rattus*).
Brown Rat (*M. decumanus*).
Common Mouse (*M. musculus*).
Harvest Mouse (*M. minutus*).
Wood-mouse (*M. sylvaticus*).
Yellow-necked Mouse (*M flavicollis*) [?].
Field Vole (*Evotomys agrestis*).
Bank Vole (*Evotomys glareolus*).
Water Vole (*E. amphibius*).

V.—The Deer (*Ungulata*).

CERVIDÆ.

Fallow Deer (*Cervus dama*).
Red deer (*C. elaphus*).
Roe deer (*Capreolus caprea*).

VI.—The Whales and Porpoises (*Cetacea*).

[As the whales and porpoises are comparatively seldom seen, it will be of no interest to enumerate the twenty odd species].

REVIEWS AND EXCHANGES.

Neolithic Man in North-East Surrey. By Walter Johnson and William Wright. With a Chapter on Flint by B. C. Polkinghorne. With numerous illustrations and maps by Sydney Harrowing and Frank Percy Smith. Elliot Stock.

As Selbornians we altogether dissent from the exclusiveness of the poet's dictum that "The proper study of mankind is man." At the same time, man as a component part of nature, claims the study of the naturalist, both from the anatomical and from the sociological points of view. The broad principles of prehistoric archæology have been laid down by the labours of our President, the late Sir Charles Lyell and Sir Joseph Prestwich, Sir John Evans and others; so that what is now wanted is detailed local investigations, such as Mr. Pengelly carried out at Kent's Cavern and Messrs. Lartet and Christy in Northern France, or such as Professor Flinders Petrie is still engaged upon in Egypt. It is a thorough local search of this character that the joint authors of this excellent little book have undertaken in the parallelogram lying mainly north and east of the River Mole, within the county of Surrey. Mr. Johnson is well known to our readers as a contributor to Nature Notes, and the whole work is so largely the outcome of the rambles of the Battersea Field Club that we feel that we may congratulate the Club as a whole on its completion. So keen are "the pleasures of 'flinting,'" as the authors term them, so engrossing the interest of discovering the implements, the home customs, the methods of cooking, the camps, burial-places and road-tracks of our earliest predecessors in the land, that we feel sure that many a general reader with no pretensions to scientific knowledge will, if not frightened by the word "Neolithic" in its title, derive entertainment as well as information from this work. It bristles with topics upon which, did space permit, we should like to dilate; but we must specially mention Mr. Polkinghorne's excellent, but all too brief, chapter on the chemistry of flint and flints. Bibliography and index leave nothing to be desired.

The Cyclists' Touring Club Gazette for December contains "A Selborne Pilgrimage," by Mildred Fletcher, prettily illustrated with views of the village, the Wakes, Waverley Abbey and Farnham Castle.

The Parents' Review for December contains the papers read at the Seventh Annual Conference of the Parents' Educational Union, including one on "How best to study Nature," by Mr. J. C. Medd.

Report of the Kent and Surrey Committee of the Commons and Footpaths Preservation Society for 1902-3.

This is the record of another busy and successful year, illustrated by some charming views of Merrow Downs and of the river at Richmond. The preservation of much of the view at the latter locality, the regulation of Merrow Downs and Oxshott Heath, and the assured prospect of the acquisition of the summit of Oak of Honor Hill, are the chief of many subjects for congratulation, to the achievement of which this invaluable Society has contributed.

Indirect Advantages of the Motor-Car to Horses generally. By the Hon. Chas. S. Rolls. A Paper read before the Church Society for the Promotion of Kindness to Animals.

If the horse is to be abandoned as a means of traction, we are not sure whether the species will benefit. Horses may then be fattened for food. Meanwhile, it hardly requires the somewhat interested advocacy of the motor-car manufacturer to tell us that there are many cases where we should welcome any motive power that would spare our valued and beautiful animal friends. In the precipitous streets of Rouen the electric tramway is undoubtedly a most humane improvement; but on the scarcely less steep inclines of St. Leonard's, the horse has still to drag the clumsy omnibus, whilst a motor-car plies along the sea-front.

Received:—*The South-Eastern Naturalist*, 1903; *Legislation for the Protection of Birds other than Game Birds; Digest of the Game Laws for* 1901, *and Information concerning Game, Seasons, Shipment, and Sale*, 1900, published by the U.S.A. Department of Agriculture; *The Irish Naturalist*, *The Animals' Friend*, *The Animal World*, *Our Animal Friends*, *The Humanitarian*, *The Agricultural Economist*, and *the Commonwealth* for December.

NATURAL HISTORY NOTES.

66. White Shrew.—While staying in Hampshire in August, I found among several dead "Lesser Shrews" (*Sorex minutus*) one pure white individual. Albino varieties of the common Shrew are occasionally recorded, though I have never before heard of a white Lesser Shrew.

November, 1903. F. Z. S.

67. Diving Birds (p. 234.)—In writing "How do they do it?" a year or two ago, it did not occur to me that it would be left to my brother and myself to thrash out the questions raised respecting diving birds.

In the presence of danger divers often vanish in a mysterious manner. They disappear so quietly as not to disturb the surface of the water, and either reappear at a distance or make for shelter. If there be no shelter, they at times remain with their heads only above the water until the danger is over. In many instances they take to their wings and fly away. Generally speaking, diving birds are, bulk for bulk, one-fourth the weight of water; and ordinary principles lead us to suppose that considerable force, exerted either by the bird or by the action of the water, is necessary to cause or maintain submergence; and that in absolutely still water muscular power must be used to prevent the bird rising to the surface. I put aside adventitious aids to submergence, such as clinging to weeds or stones, because if these are the explanation the question is not worth discussion.

So far my brother, Capt. Giles Daubenny, and I agree. But if it can be shown that a diving bird is able to remain absolutely still when submerged in water where there are no "eddies or currents," without holding on to anything

whatever, one is driven to the conclusion there is some mysterious power possessed by it that is not dreamt of in our philosophy.

The case of the fish cited by my brother is not parallel. "Floating" fish, such as trout or mackerel, bulk for bulk, are much the same weight as water, and can rise or sink without the aid of their fins by inflating or contracting the air-bladder. Birds have not this power. They cannot admit into their bodies a sufficient amount of water (three times their own weight) to redress the inequality; nor can they increase their specific gravity by reducing their size.

H. Gätke, the author of "Heligoland," is no ordinary observer. The cases he cites of the cormorant and the dabchick immersing themselves in a still pond, to which I referred in "How do they do it?" are hard to refute, and only to be got away from by denying his facts or questioning his accuracy. In confirmation of what Gätke says let me add some observations of my own.

For nineteen years I lived at the head of Langstone Harbour, where there were many cormorants. These birds may frequently be seen apparently motionless in the water, with their heads only above the surface. As, however, it was impossible to approach them sufficiently close in the open to be certain that they were quite motionless and that there was no current, nothing beyond a strong suspicion that they were capable of remaining still when immersed in still water could be entertained.

One spring I came across some young moorhens in a swamp where there was no cover. In the swamp there was a narrow gully with water a foot or eighteen inches deep. In trying to escape the birds dived into the clear water, which was without eddy or current. There were no weeds or stones, and I caught one or two of them as they lay motionless on the smooth muddy bottom with outstretched legs without disturbing the mud in any way. Had I killed them and placed them in the water no ingenuity short of using a weight or fixing them in the mud would have prevented their bodies from floating, as would the carcases of any other freshly-killed diving birds. This shows there is some strange power in the living bird which deserts it when dead.

On another occasion I surprised some moorhens in a deep pond in the middle of a field. To this pond there was neither outlet nor inlet; there could be no "eddies or currents," and there were no weeds; but there was a trunk of a fallen tree against which one of them, by way of escaping observation, took refuge with its head alone above the water. I was directly over the bird, and watched it critically with the set purpose of trying to discover how its position was maintained. The space round it could be clearly seen, and contact between the tree and its plumage was no more than that of two croquet balls, if, indeed, contact it could be called. The legs were still, there was no hugging the tree or attempt at holding on in any way. It seemed suspended in the water. The only motion was an occasional shake of the head, as if to free it from the water. Such were the circumstances. They puzzle me: I can offer no explanation. I merely notify what I saw and chronicle the facts. Those who know the ways of diving birds will corroborate what I say, and perhaps may be able to suggest a solution. The more we study birds the more they seem to baffle our science.

Buzzards have been seen to ascend 1,000 feet perpendicularly in a minute or so, in a dead calm, without visible motion of their outstretched wings. A condor searches for his food 40,000 feet, that is, between seven and eight miles, above sea-level, in a rarified atmosphere and degree of cold that destroy mammalian life. He spies a dead animal cast upon the seashore, shuts his wings, and in a few minutes is feasting on the carcase in the sweltering heat of the Tropics. A Virginian plover goes on his migratory flight, ascends to regions probably far higher than the condor, where there is a calm, no moisture, no cloud, no impenetrable darkness, and a rarified atmosphere that offers very little resistance to his rapid flight of between 600 and 700 miles an hour. He starts one evening from Labrador and arrives next morning in Brazil, doing the journey on an empty stomach without stopping on the way. Young birds go by themselves thousands of miles on a journey they have never been before, and without a guide. They arrive punctually each year at the very place where their parents will follow a month or two later.

These are a few of the puzzles which the study of birds presents to us. Well may we say "How do they do it?"

Market Weston, Thetford. EDMUND THOS. DAUBENY

68. Nest of Long-tailed Tit.—In a letter from a young friend I find this observation as to the amount of feathers collected by a long-tailed tit. It seems to me to be interesting, as showing the industry of the bird and the patience of a Nature student. ELIZA BRIGHTWEN.

"In the summer I found a long-tailed tits' nest, and when it was quite done with I counted the feathers with which it was lined, and found, to my surprise, they amounted to one thousand and fifteen.

EDITH M. VERINI."

69. Cornish Gull's Homing Instinct.—"Captain Knowles, a gentleman living at Treath, Helford, some months ago caught a young sea-gull, which he brought up as a pet in his own garden. About six weeks ago he took up his residence at St. Mawes, and the bird was carried thither confined in a box. About a fortnight since he missed the gull and gave it up for lost, but much to his surprise it has just turned up at its old home at Treath. As the gull's wings were cut to prevent its flying it must have swum the distance, which is about seven or eight miles."—*Western Morning News.*

70. About Tortoises.—We have kept tortoises, those strange "Winners in Life's Race," for many years, and at the present time we possess two of them as pets. One we have had for ten years, the other, a tiny baby about the size of a lady's belt buckle, we brought home with us from Morocco last February. The baby, wrapped in flannel, has gone to sleep for the winter; the older tortoise still perambulates our study, and at the moment of writing lies cuddled up with the cat in front of the fire. Pussy is quite content to let her strange companion lie thus, as long as he lies quiet; but as a rule the spirit of unrest seems in possession, and in trying to burrow deeper and deeper into pussy's fur, he succeeds in clambering over her back, to her great discomfiture. At last, unable to bear more, pussy rises indignantly, and generally precipitates the tortoise on to his back, when with stretched-out head, and feet beating the air frantically in his effort to right himself, he makes a most ludicrous figure.

Some years ago we allowed one of our tortoises to bury himself in the garden during the winter. Next spring we found him dead, and this experience has taught us to bring in our pets as soon as frost appears. It may be that in chalky or loamy soil the tortoise would be quite safe, but the chill London clay was the death of one tortoise, and we do not feel inclined to risk another. For such seemingly stupid creatures tortoises show an intelligence that surprises one. Our big tortoise we called "Jim," but as a new relation of that name entered the family circle, we thought it politic, as well as polite, to change "Jim" to "Yacob." But Yacob, who knows our voice, is somewhat conservative, and ignores his new name, and we must own that "Jim" comes readiest to our own lips. At the sound of the well-known "Jim, Jim," Yacob comes lumping towards us with amazing agility for a tortoise. When we sit down to read or work Yacob will come and rest himself on our feet, and frequently goes to sleep in this position. Sometimes he has a ranging fit, and walks round and round the room, always taking the same course, and as though practising for an obstacle race. The coal-scuttle against the wall incites him to get at the back of it, at any cost, with the result that he frequently gets wedged in, although it is wonderful the strength tortoises have to push aside quite heavy articles. Behind the bookcase is another favourite road, because to get into and out of this highway is a difficult feat. He diversifies his walk sometimes by going to the head of the stairs and peeping over. Once he tumbled to the bottom and learnt caution. Now he is satisfied to look down the staircase, his head tilted on one side like a bird. The baby tortoise learnt a similar lesson, when he tried to step from the table to thin air, and with like results.

A new cat we have just adopted cannot understand Yacob at all. She will sit and watch him for a long time, and when his head appears give it a sharp pat, and lo! the head has vanished, to her great astonishment. The feet of the tortoise are also a great mystery to her, and at the slightest movement she pounces upon them and seems quite nonplussed at their disappearance.

A young English terrier we had at one time used to sit, his forepaws well out before and his hind legs gathered up under his body, ready to spring, and bark frantically at Yacob. It was quite amusing to see the dog, with puzzled air, paw

the apparently lifeless creature (whose movements an instant before had excited his curiosity), as though trying to convince himself that there was more in it than at that present moment appeared. Once we came on the scene just as the dog had seized the tortoise by one leg and was dumping him down on the grass, with the evident intention of shaking out the head. A well-merited chastisement given there and then in no wise cured the dog's inquisitiveness, but time and a better acquaintance reconciled both creatures, until dog and tortoise would lie down together in the garden in quite a friendly way. A tortoise in the garden is somewhat of a trial. He is a vegetarian connoisseur, and above all things revels in a salad of young ten-week stocks when they are full of promise and from four to six inches high. To see a tortoise pat down one of these plants, hold the stem under his right front foot, while he deliberately, and without apparent haste, demolishes the tender leaves, is a revelation. Sunflower seedlings he also patronises, and it is most exasperating to find gaunt, spectre-like stalks where a few hours previously sturdy young plants had been. If the delinquent were a George Washington, or some other specimen of the small boy order, meritorious punishment could be meted out; but what can one do with a tortoise?

All kinds of fruit are agreeable to his palate: apples, tomatoes, bananas, oranges, are all grist when they come to *his* mill. Green gooseberries he is very fond of, but these being hard and round are difficult for him to bite, though if the berries be broken he can manage them quite well. Young peas he does not disdain, but prefers them boiled; and ripe strawberries he revels in. After a feed of strawberries it is quite amusing to watch him trying to clear his beak of juicy particles which have adhered. He objects to a soiled beak, and makes spasmodic thrusts at it, first with one front foot and then with the other, until one feels almost inclined obligingly to offer him a cambric pocket-handkerchief.

We found several thin scaly plates from the shell of the large tortoise lying about in the garden during the summer, so conclude that this is the way tortoises shed their skin—presuming that the outside of the shell is the hardened epidermis.

Early in the afternoons, during the summer, Yacob walks off to the same spot, year by year, a spot he hollowed out between the garden palings and a lilac bush, and retires for the night. Yacob's side of the garden faces the setting sun, while the baby tortoise seemingly prefers his nook among the ivy, to catch the first rays of the morning sun. One reads that tortoises can live a very long time without food. This is true, but from experience we find it a good plan to give them a little warm milk when they wake up, as they often do for days together during the winter months. The milk seems to help them to sleep again, and when they finally rouse themselves in the spring they are less feeble and less apt to succumb, as they often do during the month or two following hibernation.

People tell us they cannot get their tortoises to touch anything during the winter, while others affirm that they have kept a tortoise for such and such a time, but that it has never eaten anything and does not seem likely to begin. This means that at no very distant date the tortoise will die. This we know from our own experience. When we give our tortoises milk during hibernating time we gently press the head down into the liquid until the beak is covered. At first there is a splutter and splash, but a little patience, and a movement along the gullet may be noticed, followed by the disappearance of the milk. A little lukewarm milk with soaked bread should be given them when they leave their hibernacle in the spring and be continued day by day, until vegetation is sufficiently advanced to allow them to feed on it alone. Of course, in their natural habitat they can fend all the year long for themselves, but by February, in Morocco, for instance, the spring is well advanced and vegetation abundant, whereas winter often lingers with us till well on in April. One winter we kept our tortoise in a wicker basket under the kitchen table. The lid was well strapped down, but every time there happened to be a larger fire than usual the tortoise would force up the lid and poke out his head, as though anxious to know if the extra heat meant summer returned. We were often concerned lest he should decapitate himself. The repeated awakening and the long fast made him so weak that when the spring came he was barely able to crawl about.

We have heard of tortoises being allowed as pets to children in fever hospitals, because they carry no infection as a dog or cat would do. We also heard that a young doctor stood with all his weight on a tortoise, to show the little sick

children how strong the shell was—surely a superfluous and cruel proceeding. If one rubs the fore part of the shell ever so lightly out comes the head at once, showing (we presume) that the shell is sensitive. Tortoises love to have the under part of their neck stroked and will stretch out their necks to the fullest extent and blink, blink, with their queer little bead-like eyes, in a most self-satisfied way when they are thus caressed. Some time ago we bought a tortoise for a young friend. On placing the newcomer with Yacob, both tortoises stretched out their heads and with them rubbed each other alternately under the neck.

It is only fair to add that Yacob has had special educational advantages, and the baby tortoise seems likely to be similarly privileged. Yacob has frequently figured in criticism lessons given by lady students in a well-known teachers' training college. During the short sojourn of the baby tortoise in England, he has already figured twice before this august educative assembly, and the reports received of behaviour thereat have always been of the highest excellence. "We have a college tortoise," the young ladies say when they come to borrow our pets; "he lives in the college grounds, but, when we find him, he is generally covered with mud and dirty looking; and then he will not budge out of his shell, nor move at all, and the children do not feel interested, but your tortoises are so lively, and do not seem a bit afraid, so that the children are delighted." Of course this statement speaks for itself. Tortoises can be made tame and interesting quite as well as many other seemingly more intelligent animals.

S. W. W.

71. **Do Trout Hear?**—When staying at Dartmoor some years ago I had a practical answer to this question. At the side of a large pool in one of the streams there was a perpendicular bank about four feet above the water. In a hole underneath this bank there lived a large trout whose capture every member of our party had longed to bring about, and all of us had failed. When the fish were not rising I determined to spend one afternoon on this trout, and armed with all sorts of tempting baits, lay full length above the place which was his retreat. As I was watching him in the clear water underneath he suddenly took fright, and at the same moment all the other fish near hurried for safety to the shelter of the bank. Knowing I had not frightened them, I looked round to seek the cause of the stampede, and found a horse trotting in the field forty yards off. I drove the horse away and returned to the bank. After a short time the big trout again appeared. Once more there was a rush for safety similar to the one before, and on turning round I saw my brother walking towards me twenty yards away. The ground was peaty, and the vibrations caused by the footsteps of man and horse, neither of whom could possibly be seen by the fish, had been conveyed through the earth and the water, thus giving them warning of approaching danger. The sounds were quite beyond my powers of perception. Although the organ of hearing is "well developed" in all fishes, "no fish possesses a cochlea, or true tympanic membrane; but sometimes there is a connection between the labyrinth of the ear and the air-bladder, made by a chain of small bones." Fishes are known to make various noises, some of which are musical, and audible to the human ear. The drumming of the Umbrinas can be heard from a depth of twenty fathoms, and the fishermen of Rochelle assert that "the males alone make the noise during the spawning time, and that it is possible by imitating it to take them without bait." From this we may conclude not only that earth and water are conductors of sound, but also that the sense of hearing in fish is highly developed.

Market Weston, Thetford, September, 1903. EDMUND THOS. DAUBENY.

72. **Autumn Butterflies.**—Perhaps some of your entomological readers may be interested to know of the frequency of the Painted Lady Butterfly (*Cynthia cardui*) here this autumn. In Dulwich Park the pink flowers of *Sedum spectabile* seem very attractive to all kinds of insects, and on one sunny afternoon last week I noticed that nearly every clump of that plant, which when I last saw it had been covered with bees, had a *Cynthia* seated on the blossom. On one plant I observed as many as five of these butterflies, and on others they were in

company with Red Admirals (*Vanessa atalanta*), which, however, more commonly affect the Michaelmas Daisies.

Dulwich, October 1, 1903. M. J. T.

[Whilst in the summer there were accounts of the scarcity of certain speciesof butterflies, the two autumn species to which our correspondent refers have certainly been abundant in the London area during the past year. *V. atalanta* usually appears on the windfall autumn pears; but this year, just about the same date as that of our correspondent's letter, some one wrote to the *Daily Mail* to record these two species in Hyde Park; we ourselves saw them at the Horticultural Society's Garden at Chiswick, on September 29, on *Rudbeckia* and *Sedum spectabile*, and in October we saw *C. cardui* on Ditton Marsh, and a day or two before *V. atalanta* in Powis Square, Bayswater.—*Ed. N.N.*].

73. Butterflies at Electric Light.—On September 19 I captured two Painted Lady Butterflies, one at half-past nine o'clock and one at a quarter past eleven the same night, at electric lamps in the High Road, Kilburn; also another one on September 24, at nine o'clock in the evening. There were several others which I could not capture. Is this not very unusual? I have the Peacock and the Red Admiral not yet emerged from the pupa. This is very late. This season seems to have quite led even the insect world astray. Have any of your other readers noticed such curious phenomena?

31, *Kilburn Priory, N.W.*, W. Wakerley.
October 9, 1903.

74. How the Sea Aster Travels.—Natural history in our colonies seems to be of a very simple character but none the less interesting, as the following paragraph will illustrate. From the *Barbados Daily News* I quote the following: "The species of Sea Aster (*Asteroidea*) oftenest found on the coast of New Jersey and northward, though not among the most attractive is nevertheless a very interesting specimen. Generally he is described of a dingy or creamy white, striped and dotted with red-brown and above all crowned with an abundant spread of pink and white feathery tentacles. Unlike most of his race, he does not delight in solitary and local position, and so seems to have caught the spirit of his native land. He seeks new scenes, and not to be behind his biped neighbours he prefers that others should feed him. Consequently, the sea aster glues himself to the shell of some crab or periwinkle and takes a gratuitous ride to any place where it may feel disposed to take him.

Carlyle Lodge, Canonbury Place, N., Chas. E. J. Hannett.
October 2.

75. Beech Disease.—I am glad not to share in the fear recently mentioned in the *Journal of the Royal Horticultural Society*, and quoted by Mr. Milne-Redhead, respecting the approaching doom of the beech owing to the ravages of *Cryptococcus fagi*. All the beech trees on my premises are infested by this insect more or less, and have been so for many years. I find they attack the small branches, and especially the leaves more than the stem. A beautiful fern-leaved beech in front of my hall door is attacked year after year in such a manner that I am careful to keep the garden seat at a little distance. Contact with the foliage produces a quantity of these very tender aphides, and their sticky, woolly bodies leave a mark on a black coat not to be removed by mere brushing. Tiny showers of honey-dew are frequently to be observed falling from these insects, which render it undesirable for those who value their clothes to remain under a tree where the *Cryptococcus* is installed. In spite of them my beeches are in apparently vigorous health. One certainly died two years ago, but I attributed its death to drought, and it was not more attacked by the aphis than the others. This remark applies, as far as I can ascertain, to the dead beeches round Thetford. Our box trees are frequently covered with a woolly aphis. Judging by the deposit of honey-dew, lime trees are more infested by aphis than beeches, and yet they show no signs of being killed. My plum trees are by far the greatest sufferers from the attacks of aphis of an ashy hue, but not woolly.

October, 1903. Edmund Thos. Daubeny.

76. Late Flowering Plants.—When walking in my garden on one of the few fine days we have had lately, I was surprised to see so many plants still

in flower. I collected specimens of each kind and found they amounted to seventy-two species. I subjoin a list and amongst the names are many which we scarcely expect to find flowering in the first week in November.

ELIZA BRIGHTWEN.

Roses, Hybrids, Monthly and Teas.
Primula, *Primula japonica.*
Polyanthus.
Double Daisy, *Bellis perennis* fl. pl.
Wallflower, *Cheiranthus Cheiri.*
Scarlet Salvia, *Salvia coccinea.*
Veronica, *Veronica decussata.*
Astrantia, *Astrantia major.*
Chrysanthemum, *Chrysanthemum indica* (vars.)
Polygonum, *Polygonum Sieboldii*
Dwarf Polygonum, *Polygonum molle.*
Foxglove, *Digitalis purpurea.*
Forget-me-not, *Myosotis dissitiflora.*
Leycesteria formosa.
Abelia rupestris.
St. John's Wort, *Hypericum calycinum.*
Japanese St. John's Wort, *Hypericum patulum.*
Tutsan, *Hypericum Androsæmum* (vars.)
Michaelmas Daisy, *Aster Novæ-Angliæ.*
Stock, *Matthiola annua.*
Japanese Anemone, *Anemone japonica.*
Calceolaria, *Calceolaria rugosa.*
Globeflower, *Echinops Ritro.*
Fuchsia, *Fuchsia gracilis.*
Stork's Bill, *Erodium Manescavi.*
Chili Nettle, *Loasa Vulcanica.*
Crane's Bill, *Geranium Endressi.*
Monkshood, *Aconitum Napellus.*
Cosmos, *Cosmos bipinnatus.*
Yellow Iceland Poppy, *Papaver nudicaule.*
Orange Poppy, *Papaver pilosum.*
Yellow Welsh Poppy, *Meconopsis cambrica.*
Pentstemon pulchellus (vars.)
Scarlet Lobelia, *Lobelia cardinalis.*
Cornflower, *Rudbeckia speciosa.*
Sneeze-weed, *Helenium autumnale.*
White Loosestrife, *Lysimachia clethroides.*
White Jasmin, *Jasminum officinale.*
Yellow Jasmin, *Jasminum nudiflorum.*
Strawberry Tree, *Arbutus Unedo.*
Osmanthus Aquifolium.
Heath, *Erica purpurea* (var. of *cinerea*).
Silene odontopetala.
Heartsease, *Viola tricolor.*
Rock Rose, *Cistus laurifolius.*
Sedum Maximowiczii.
Sedum spectabile.
Canterbury Bells, *Campanula medium.*
Campanula persicifolia.
Campanula pusilla.
Rocket, *Hesperis matronalis.*
Elder, *Sambucus nigra.*
Snapdragon, *Antirrhinum majus.*
Periwinkle, *Vinca minor.*
Valerian, *Centranthus ruber.*
Violet, *Viola odorata.*
Belladonna Lily, *Amaryllis Belladonna.*
Plumbago Larpentæ.
German Lily, *Crinum latifolium.*
Red Avens, *Genm coccineum.*
Allium odoratum.
Ivy-leaved Toad-Flax, *Linaria Cymbalaria.*
Saxifraga Fortunei.
Spiderwort, *Tradescantia virginica.*
Eucomis punctata.
Rosa indica.
Rubus rosæfolius.
Strawberry, *Fragaria vesca.*
Ionopsidium acaule.
Larkspur, *Delphinium formosum.*
Phlox decussata.
Indian Pink, *Dianthus sinensis.*

NATURAL HISTORY QUERIES.

16. Humming in the Air.—A few summers ago, before I had read White's "Natural History of Selborne," I was walking, after a hot day, over a grassy upland, when I became conscious of a humming noise coming from all directions and without any apparent cause. Scarcely an insect was to be seen, and no bees were near where bees would congregate for honey, or for other cause. It was with much interest that I read Gilbert White's note on this same phenomenon, which he describes as "amusing him much," without giving him any satisfaction "with respect to the cause of it." It would be very interesting to know if this question has ever been solved. Is it due to the earth acting as a sort of diaphragm, owing to the surface being warmed more than the deeper parts, and so

setting up some sort of vibration; or, possibly, different densities of air causing a similar disturbance, that acts on the ear in the same way as sound waves? It is to me an interesting topic and I should like to know if other readers of NATURE NOTES have had experience of this curious phenomenon.

Stourbridge. FRANCIS GIBBONS.

17. Four Bloomings in One Year.—At the present time, violets, roses and primroses are to be seen in full bloom in the Sutton Bridge district of Lincolnshire. A bay tree is now putting forth its buds in the same locality, and at the neighbouring town of Long Sutton an apple-tree, which has already blossomed and fruited three times, is now in bloom for a fourth time this year.

The above appears in the *Standard* of 23rd ult. Is the statement with regard to the apple-tree a possible occurrence?—W.

SELBORNE SOCIETY NOTICES.

Council Meetings.—At the Council Meeting held on November 23, the Executive had under consideration the reply from the Irish Office with reference to the alleged destruction of sea birds, which is given in another column. Extracts from the press, of matters of interest to the Society, classified under several headings, were placed in the hands of seven members of the Council for examination and report. The Council would be pleased if members would send any such notices to the Secretary.

The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Monday, January 25, at 5.30 p.m.; and the Publications Committee on Tuesday, January 12, 5.30 p.m.

New Members.—Miss E. S. Bryant, Higher Broughton; Edward Greenly, Esq., Achnashean; B. V. G. Copp, Esq., Wimbledon; Miss Robertson, Edgbaston; Miss B. H. Franklin, Bedford; Nathanial Shaw, Esq., Howden; Miss Constance Pearce and Miss Fanny Pearce, Camden Road, N.W.; Rev. H. Gow, B.A., Hampstead; Arthur T. Cummings, Esq., Sherborne Lane, E.C.; D. B. Morris, Esq., Stirling; Jas. Walker, Esq., and Mrs. Walker, Hampstead; Cecil A. Momber, Esq., East Finchley; Frank Podmore, Esq., M.A., Hampstead; Miss Edith Nicols, Hampstead; Miss Mildred Fletcher, Walton-on-Hill.

Subscriptions.—The Council beg to acknowledge the following subscriptions over 5s. H. Chipperfield, Esq., 10s.; Harry Sirr, Esq., 12s. (2 years); E. Kay Robinson, Esq., 10s.; Arthur T. Cummings, Esq., 21s.

Donations.—Rev. A. R. Miles, 2s. 6d.

NEWS FROM THE BRANCHES.

Clapton.—The November meeting of the Branch was held on Saturday, 23, at Sigdon Road Board School, Hackney Downs, when Miss A. S. Philpott read a paper entitled "A Homely and Unscientific Chat on Shells." The paper, which was illustrated by a large and beautiful exhibit of various English and foreign shells, was greatly enjoyed by those present, and a hearty vote of thanks was accorded to Miss Philpott for her interesting and instructive contribution.

East Riding.—At the Nature Study Exhibition, held at Beverley, November 21, the Rev. W. D. Wood Rees, Hon. Sec., was kindly allowed to give an address on the aims and objects of the Selborne Society.

Hampstead.—On December 16, Mr. Oliver G. Pike, the well-known ornithologist, delivered a lecture to Branch members and their friends at the Subscription Library, Prince Arthur Road, N.W. The title of Mr. Pike's address was "Pictures from Bird-land," and the 100 or so of lantern slides with which he accompanied his remarks commanded general admiration and elicited frequent applause. For about an hour and a quarter Mr. Pike held the undivided attention of his audience as he took them with his slides to different parts of the

United Kingdom, there to view the often rare birds which, under the most varied conditions, came, with their nests, within the range of his camera. Mr. Pike seasoned his lecture with humorous anecdotes from time to time, and on its conclusion received a most hearty vote of thanks from his hearers. Mr. Geo. A. B. Dewar, B.A., occupied the Chair.

SELBORNE SATURDAY AFTERNOONS.

November 28.—Notwithstanding an inclement afternoon, about fifty Selbornians met at Ashley Gardens, Westminster, to view the new Cathedral, the foundation stone of which was laid by the late Cardinal Vaughan on June 29, 1895. The party were met at the porch by Mr. Griffiths, who with much courtesy and lucidity explained the various features of interest. Upon entering the building one is impressed by the grand and noble proportions of the Nave, roofed by four enormous domes, intended when complete to to be resplendent with gorgeous mosaics. Marble columns of great beauty, obtained from Grecce, Italy, Norway and Switzerland, and quarried, cut and polished, in one solid block by the respective native workmen, attracted immediate attention by their height and variety. Each column is surmounted by a marble capital, no two being alike in design.

The High Altar is a conspicuous object, one solid block of unpolished grey granite from Cornwall, 12 feet in length and 4 feet wide, weighing 12 tons. It was considered a privilege to ascend the steps and admire its rugged beauty. Attention is drawn to the great wooden Cross, 30 feet in height, with the figure of Christ painted thereon, to be suspended over the Altar. Our courteous guide led the party through dark passages and stairways to the Crypt, dedicated to St. Peter, where the remains of the deceased Cardinals will shortly be laid. The Crypt is supported by six red Norwegian granite columns capped with grey marble of varied pattern.

The ascent of the Campanile (St. Edward's Tower) was granted as a special favour to the Selborne Society, a privilege that gave rise to disappointment in respect to non-members present. There were 340 steps to climb ere the belfry was reached; but as the bells are not yet in position, we contented ourselves with a walk on the outside gallery, examining the superb red brickwork, united with hard cement capable of resisting the elements for ages. We stood 260 feet above street level, the total height of tower being 297 feet. Carefully descending in single file, we next visited the Chapter House, now being used as a provisional Chapel, and retired to the unfinished Baptistry, in the centre of which stands the huge marble font, having eight sides 3 feet each, or 24 feet in the octagon, these large proportions being necessary to correspond with surrounding dimensions. Here, with grateful acknowledgements, we bade adieu to our obliging guide.

The construction of the building is early Christian Byzantine, its external length being 360 feet, width 156 feet, and area 54,000 square feet. It was planned, designed and carried out by the late John F. Bentley, a fitting and enduring monument of his genius.

December 12.—Professor Boulger gave his deferred demonstration at the Natural History Museum. Confining his remarks to Flowering Plants, he first directed the attention of the party to structural characters distinguishing Monocotyledons and Dicotyledons as shown in the Index Museum in two bays of the Central Hall; and then, in the Botanical Gallery, described the adaptational characters of parasitic plants, climbing plants, aquatic plants, xerophytes and plant-defences.

December 19.—It is well known that the old City Companies possess some fine buildings, erected when land in the City of London was not so valuable as it is now. These are generally hidden away behind shops and warehouses, and the quiet peace of their rooms is a sharp contrast to the bustle and noise outside their doors. These old buildings are of great historical interest and often contain ancient records, charters, &c., and very valuable old plate; consequently it is not very easy to obtain permission to see them. However, Mr. George Avenell arranged for the Hampstead Branch to visit the Brewers' and the Barber Surgeons' Halls.

and kindly extending the invitation to any member of the Selborne Society, a company of about fifty ladies and gentlemen took advantage of this opportunity on December 19. Brewers' Hall, in Addle Street, Wood Street, proved to be a fine building, enriched with a quantity of old oak panelling and carved oak furniture. The Hall in comparison with its fellows is of comparatively modern date, viz., 1673, being erected on the site of an older building. Mr. Avenell gave some details of the "Mystery" or Company of the Brewers, pointing out the portraits of the benefactors on the walls, the fine carved screen, with the musicians' gallery, the curious iron brackets projecting from the walls for suspending lanterns, the Charter of Henry VI. to the Company, an old table brought from the Company's Barge, and other items of interest. Mr. Plowman supplemented Mr. Avenell's remarks by giving a bill of fare of one of the Company's dinners. At the Barber Surgeons' Hall there was truly an *embarras de richesse*. The beautiful old plate, including three royal gifts—a gold cup from Henry VIII., a silver one from Charles I., and a soup tureen from Queen Anne, besides six or seven loving cups, tankards, salvers, the barge badge, mace heads, salt cellars and many other smaller objects, all of solid silver, the original Charter of 1308, with its seal, other Charters of Philip and Mary and other sovereigns, old parchments, one with Sir Thomas More's signature as Chancellor, old account books, and illuminated records, were all spread out on the table round which the Selbornians were seated. Mr. Sidney Young, author of the *Annals of the Barber Surgeons*, was in the chair, and gave the company a most interesting and graphic *resumé* of the history of his Company, with quotations from his book. After his remarks some time was spent in examining the old plate, the great leather and gilt embossed screen and the pictures, among which was the great Holbein of Henry VIII., handing the Charter of the Company to its then Master, Mr. Vicary, and also other pictures by Vandyke, Lely and Gainsborough. Seldom has a more enjoyable Saturday afternoon been spent by the Selbornians, and hearty votes of thanks were given, both to Mr. Avenell for arranging the meeting, and to Mr. Young for his valuable and entertaining lecture.

January 16.— Natural History Museum, S.W. (Geological Department). Meet Mrs. Percy Myles in the Central Hall, 2.15 to 2.30; Dr. A. Smith Woodward, F.R.S., keeper of the department, has kindly undertaken to give a demonstration on "Fossil Reptiles."

January 30.—St. Paul's Cathedral. Meet Mrs. Percy Myles at the west door (inside) at 2.15 p.m., *sharp*. The Rev. Canon Scott Holland has kindly consented to act as guide to the Selbornians.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine

No. 170. FEBRUARY, 1904. Vol. XV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

Saving the Purley Beeches.—The latest spot of interest to be threatened by the builder is that lovely stretch of open down and woodland known as the Purley Downs. Many of our readers have taken part in rambles over these downs, before they were closed against all comers, except the golfers. Croydon still goes on lengthening out southward, and passing by Croham Hurst, roads have been laid out south of the latter place, and have reached Sanderstead, and, skipping across the valley, they are now beginning to traverse Purley Downs. Besides the juniper trees for which the locality is famous, it contains those famous oaks and beeches which are seen from the railway when travelling by the Oxted line. A gallant effort is being made to save a portion from destruction. The parish of Sanderstead is nobly to the fore in the matter, and it is hoped that it may be able to lease the space containing the beeches, and possibly later on to raise sufficient money to purchase it. Needless to say the Croydon Branch of the Selborne Society is intensely interested in the project, which is being ably engineered by Mr. Malcolm Sharpe, Mr. Samuel Bowman, Capt. Carpenter, R.N., and other gentlemen.

PURLEY BEECHES.

The Avon Gorge, Bristol.—One of the most urgent matters at present is the preservation of the lovely line of wooded river-cliff below Bristol from complete ruin at the hands of the Corporation of that city. That body has, it appears, been removing 40,000 tons of Carboniferous Limestone a year from the quarries, of which five have been made within half a mile. One local paper speaks of this stone as admirably adapted for road-making; but it is so only when the traffic on such roads is light; as otherwise it is soon reduced to an unpleasant, impalpable chalky powder. We do not hesitate to state confidently that, though with this cheap but unsuitable material at their doors, the Bristol folk would do better to import basalt from the Clee Hills. Fortunately for all lovers of the picturesque a most practical suggestion has been put forward by Mrs. Barnett, who is taking a leading part in a local committee for the rescue of this lovely spot. It is that a narrow working should be continued at right angles to the gorge, possibly along Lily Valley and that quarries may then be opened behind the river-cliffs, out of sight. We would venture to invite the many local bodies that have passed resolutions regretting the quarrying at Cheddar, to consider whether a similar course cannot be adopted there. The existing wide gash on the western slopes of the gorge might be narrowed by soiling and some planting, and be made a slightly curved approach to quarries that might at a short distance be wholly out of sight.

Pwllycrochan Woods.—We are glad to learn that the Colwyn Bay District Council have determined to purchase the narrow belt of woodland that shelters and beautifies this attractive North Wales watering-place and so preserve it from the builder who would kill the goose that lays the golden eggs.

Protection of Animals in Uganda.—We have received Ordinances No. 9 and No. 13 of the Uganda Protectorate for 1903, modifying the Game Regulations of 1900. By the latter of these a native chief may, for a £10 fee, be licensed to kill two bull elephants, or may kill one or two elephants damaging shambas, without such a license.

Nature-Study Lectures.—The London County Council have arranged for ten free lectures on the Natural History of plants, especially those of early spring, to be given by Professor Geddes at the Horniman Museum, Forest Hill, on Saturday mornings, from January 23 to March 26. They will be followed after Easter by a course of five on the Geographical Distribution of Man, by Professor Haddon.

A Remarkable Book.—Mr. Sherman F. Denton has transferred the scales of Lepidoptera to a prepared paper and so produced fifty-six plates showing both the upper and under

side of the wings of moths and butterflies from the United States, east of the Rocky Mountains. These plates, with four hundred photographs, appear in his book "Moths and Butterflies of the United States," of which fifty copies only are for sale in the United Kingdom, the agents being Messrs. T. C. and E. C. Jack, of 34, Henrietta Street, W.C., and the price of the two morocco bound octavo volumes is £24 net.

LETTER TO THE EDITOR.

ROBERT MARSHAM, F.R.S.

SIR,—It will interest your correspondent, J. H. (see NATURE NOTES for January, p. 8), and I doubt not all your readers, to know that the remarkable series of "Indications of Spring" to which he refers, and which was commenced by Robert Marsham in the year 1736, is still continued by his descendant, Major Marsham; and that although the estate of Stratton Strawless has unfortunately passed out of the family, the records are taken annually in the adjoining parish of Rippon Hall, where the present representative of the family resides.

The "Indications" were originally communicated to the Royal Society in 1789, and the printed sheet to which J. H. refers was compiled by the first Lord Suffield; no date is given, but I believe from internal evidence that the table was brought down to the year 1810. This has frequently been reproduced with varying degrees of accuracy. In 1875 the late Rev. H. P. Marsham kindly placed the original documents in my hands, and I communicated to the Norfolk and Norwich Naturalists' Society a Summary of the Observations to the Spring of 1874; later on I contributed a second paper to the same Society, bringing the summary of the records down to the year 1900. This remarkable series of observations has been carried on continuously, with the exception of the period intervening between 1810 and 1836, by members of the same family and virtually on the same spot. In my table I give the earliest, latest, and difference between these extremes, also the number of observations and mean date of twenty-seven phenomena; the smallest number of observations of any individual occurrence is sixty and the largest 127. I think I am justified in saying that no such series of records is anywhere else in existence.

This Robert Marsham was a very remarkable man, and has the additional claim upon the members of the Selborne Society that he was a valued correspondent of Gilbert White. In the year 1875 the Rev. H. P. Marsham, great-grandson of the above-mentioned Robert Marsham, entrusted me with a series of letters from White to Marsham, and through the kindness of the late Professor Bell, who held the corresponding letters

from Marsham to White, I was enabled to publish in the *Transactions of the Norfolk and Norwich Naturalists* the complete series, consisting of twenty letters extending over the years 1790-1793 with the addition of some valuable notes by Professor Newton. These letters were reprinted by Professor Bell in his edition of the "Natural History of Selborne" (1877), ii., pp. 243-303, where they may be read by your members, and they will amply repay perusal.

How highly White valued his correspondent may be judged by the expression, "O, that I had known you forty years ago," and the closing letter of the correspondence dated June 15, 1793, is probably the last this worthy man ever wrote, for he died on June 26, only eleven days after.

Marsham died on September 4, 1797.

Norwich, THOMAS SOUTHWELL.
January 18, 1904.

AN OLD APPRECIATION OF GILBERT WHITE.

A CONTRIBUTOR kindly sends the following extract from *The Mirror* of 1840 :—

Blackwood's Magazine, No. ccxcix., September, 1840.

[The memory of Gilbert White has long hallowed the spot on which "the days of the years of his pilgrimage" were holily passed ; and no traveller to Selborne but is filled with chaste delight on visiting the haunts of the reverend philosopher. Blackwood has a most pleasing paper this month upon the subject, entitled, "A Visit to Selborne," thoroughly imbued with good and gentle sentiments.]

Harmony of Souls.

I know not how, sitting on a stile, calmly gazing upon a quiet little village, and listening to the murmuring of an insignificant brook, in the twilight of an April evening, can fill the heart of man even to overflowing with a soft and balmy dreaminess—a gentle ecstacy—a passive pleasure, which one cannot refer to any exercise of the imagination, for the imagination is not at work—nor to reflection, for in such cases there is no turning of the mind inward upon itself. Whether it is the realisation of the dreams of our fancy in the contemplation of a spot whose ideal picture long had occupied our mind, or whether some long-forgotten remembrance of the scenes—scenes, perchance, like this—of our early boyhood, or of our youthful loves, comes welling up in the breast, filling the eyes with not unpleasurable tears ; or whether, which is, perhaps, as likely as anything else, in the beholding a place where peace itself might dwell, the peace of Nature descends like dew, and fills the heart of the beholder with that peace which the world cannot give. The analysis of these delicious sensations I leave to the masters of the human heart, Sterne or Mackenzie. It is sufficient for me to be enabled to enjoy them.

Venerable Oak at the Plestor.

In the centre of the village (Selborne) and near the church, is a square piece of ground surrounded by houses, and vulgarly called the Plestor. In the midst of this spot stood, in old times, a vast oak, with a short squat body and huge horizontal arms, extending almost to the extremity of the area. This venerable tree, surrounded with stone steps and seats above them, was the delight of old and young, and a place of much resort in summer evenings ; where the former

sat in grave debate, while the latter frolicked and danced before them. Long might it have stood had not the amazing tempest of 1703 overturned it at once, to the infinite regret of the inhabitants and the vicar, who bestowed several pounds in setting it in its place again, but all his care could not avail; the tree sprouted for a time, then withered and died.

One can readily conceive the "infinite regret" of the inhabitants at its destruction. Their fathers had many a time and oft, sported round its bulging root, as did their children yesternight; and for their children's children did they still expect it would have spread its hospitable shade. It was a brave old oak—a link connecting time past with time to come—generation with generation. It was to them an old familiar friend—associated with the sports of their youth; for they gambolled beneath its spreading boughs—with the loves of their manhood—with the garrulities of age—nay, with their very griefs; for the ashes of their fathers rest awhile beneath its shade ere they finally repose in peace beneath the undistinguished turf.

Sanctified Spots.

Of the hermitage wherein Gilbert White often studied and contemplated nothing remains but the site. There is, it appears to me, a degree of criminality in the neglect that suffers anything that has been sanctified by genius to be lost or forgotten. It is not merely an injustice to the memory of the man who makes classic the very ground whereon he treads, but it is a sad privation to those who hold in veneration the place he inhabited, and the haunts of his footsteps; where one lingers fondly and long, as if to catch from the inspiration of the place something of the inspiration of the man who gave to the place much of its interest, much of its beauty, and when we consider how greatly natural beauty is assisted by association; when we reflect that the pleasure we derive from the contemplation of magnificent scenery is as nothing where nothing of genius is associated; and that no place is tame, no place barren, no place unlovely, that genius has consecrated to fame, we cannot help feeling an indignant sorrow that the spot which genius loved to inhabit should be suffered to be forgotten, or the print of his footsteps to be effaced from the earth. The bleak and naked waste, enriched by classical associations, has more attraction for us than the exuberant prairie of the desert—the stream by whose banks the poet sat and sang, flows to a music sweeter than its own, and the valleys and hills, peopled with the embodied "creations of fancy," live in remembrance and look green in song. These associations make the best riches, the true glory of a nation—robe Nature in a perpetual spring; they give to barrenness fertility and beauty; they endear to us our country, and by fostering the growth of national pride—that vanity which is akin to virtue—nerve the soul to deeds of noble daring, and stimulate us to study to be thought worthy of the classic soil we boast to call our own. Therefore, I say again, let no haunt of genius be desecrated by neglect or injury; let every memorial of its whereabout be studiously and lovingly preserved and cherished, till time and memory shall be no more.

Selborne seen from afar.

The prospect of the village from the Hanger is surpassingly beautiful. It is a picture, and that picture the picture of peace. The cottages, surrounded each by its shrubby enclosure—some built of yellow stone—some of red brick—others of lath and plaster—but all of picturesque and fanciful forms; the intervening trees shading and softening down the tone of the landscape; the unpretending, though tasteful tower of the venerable church; the shadowy contemporary yew, that for so many centuries have borne the old church tower company; the surrounding habitations of the silent dead; the modest vicarage, with its magnificent hedge, or rather wall, of yew; the moss-grown and, alas! neglected garden of Gilbert White, where delighted to disport Timothy the tortoise, and where, at this moment, you may see the blackbirds hopping familiarly about the walks; the vale winding on towards Oakhanger, parted in the centre by a strip of brighter green, where runs concealed the babbling little brook, the pale peat-reek, or rather vapour, ascending from the cottage chimneys, hardly dimming where it rises, the lucid transparency of the air. . . . Our stroll was delightful, and we returned by moonlight, serenaded by the nightingale, to our inn, when we retired to rest after a day of unmixed pleasure; in which, despite

the length of our excursion, fatigue had no share, full of thankful gratitude to that great Being, Who has, in His measureless goodness, poured out into the lap of Nature so much of luxury for the mind of meditative man, and made medicine for the wounded spirit in the groves, and hills, and fields, and harmony of universal Nature.

Grave of Gilbert White.

From the place where White drew his first breath, and where, with short and unfrequent interrruptions, he spent a long and happy life, a few paces brought us to his grave.

He lies undistinguished in the village churchyard. There are, in the south side of the chancel, five lowly tenements of the dead, the fifth from the chancel is that of Gilbert White; his grave is, like his life, lowly and peaceful. I was glad that he was laid here; nor could I help thinking that the grass was more green, and the moss more richly verdant on that grave. He lies tranquilly in the lap of his mother earth; and even in death within the influences of that Nature, he, living, loved so well. He lies nobly—the world is his tomb, the heavens his canopy, the dew of evening scatters with diamonds the spot where his ashes repose, his requiem is chanted by the warbling choristers of spring, and starry lamps that never die illumine his sepulchre.

The Writer's Peroration.

Our pilgrimage was done—we had traversed the classic ground of the philosopher, we had wandered in his footsteps, and we had calmed and soothed our spirits into tranquillity in the contemplation of his peaceful grave.

Why did we come here—why leave our homes and families to wander over spots which make no part of our world, which have no connection with our hopes, of fears, or interests or prejudices, or passions? Why did we come here?

I will answer for myself that I came here to pay my humble homage to a peaceful spirit—a meek possessor of the earth—a man without gall or bitterness in his nature, one who gained fame without making an enemy, and bequeathed to posterity a reputation as unenvied as extensive.

Appreciate him as a naturalist I cannot, for I am not qualified. No one save an observer of Nature can sufficiently appreciate the fidelity of his descriptions, the accuracy of his observations, the clear lucidity of his delineations of natural phenomena—but I can sufficiently appreciate the *man*—the ease, grace and simplicity of his style have an indescribable charm for the general reader; the holiness of his pursuit; his unaffected, serene and cheerful piety; the tendency of every line he wrote to advance the interests of religion, humanity and goodness; the tranquillising influence of his writings on the mind of man.

Surely if the memory of the illustrious dead is to derive honour from a pilgrimage to the scenes he has familiarised to every one—and what fitter homage can the illustrious dead receive?—you will forgive me, reader, that I stole from business, and turbulence, and care, the few tranquil hours I dissipated in my pilgrimage to happy, peaceful and classic Selborne.

A WINTER VIGNETTE.

WINTER is so near us now that in the mornings and evenings we seem to feel his cold wings ushering in the Frost Spirit. All Nature resents his approach: the sun hides his splendour behind fog-laden clouds: the leafless trees stretch out their bare arms deprecatingly: flowers die, and the bird world is silent. On all sides Winter's coronation day is disputed, and again and again Queen Autumn tries to resume her sway; but once Winter becomes settled on his throne, his masterful personality forces us to admire him.

He is a terrible despot at times: his courtiers know this,

and bow to his every whim. He breathes a wish, and the snow-flakes fall lightly and daintily, to cover, transform and beautify this grim old world with Nature's soft ermine. The large feathery flakes drape the nude branches with loving tenderness, leaving the dark boles to stand out in relief against a pure white landscape. Sometimes, indeed, when Winter is in one of his gentler moods, the flakes of silently falling snow become tears before reaching the ground; but his temper is capricious, and may be, ere the tear has had time to fall, he signals to the bitter spirit of the north wind, and in an instant the snowy tear is whirled away madly, and, transformed into powdered ice, hurls stings and lances at all it meets. The very clouds hurry and scurry along before the cruel breath of the keen north wind, leaving behind some shreds of themselves, to remain as final transparent veils, or to be whisked away and lost.

In his crisp moods Winter is charming. The moon rises, and glides along the sky in solitary grandeur, fringing the edges of dense snowpacks with silver, and transforming the small white scattered clouds into diaphanous drapery. The stars are dimmed at the approach of the Night Queen; but, out of the range of her light, they sparkle and glow in unveiled glory, and peep down on the earth with eyes like burnished steel. In Winter's crisp moods the giant Frost displays his unique powers as an artist and a poet. Over the window-panes he pencils delicate landscapes, traces forest scenery, and writes wordless poems on every available space. He fixes the streamlets of the hillside by his icy breath, and, chained in his fetters, these lace the slopes with silvery threads. Sometimes, while the moon is still shining, but palely, sunrise peeps timidly above the horizon, anxious to catch the first glimpse of the world in its new adornings, and then blushes a rosy crimson at its own audacity. On the roadway, and on the ivy of the wall, the frosty spangles catch the rosy tint, and a filigree of fern and lacework shows up in each corner and crevice, while iridescent aglets droop from every eave.

Spring, we are all agreed, is a coy damsel, seldom knowing her own mind for any length of time, but Winter does not always show us the sturdy stability for which he is credited. In his own land he is ever the fierce, cruel, unrelenting despot; but in our softer clime he can be odious in his sleet and fogs and cutting winds. Further south, where the sun holds sway, he loses his arrogance and cruelty, and his fierce grip becomes soft and pleasant.

Yet we prefer him in his brusque moods, when he makes the blood course through our veins, and brings the tint of health to our cheeks, as with lightsome heart and swinging step we tread the hardened roadways, crisp with snow, or skate over the pond whose surface is under his thraldom.

And the snow, winter's own nursling, how soft and fleecy its flakes are, how symbolical of all that is tender and beautiful and pure! But how cruel the pure white snow can be! It can conquer armies, destroy ships by its icebergs, blot out villages; and yet this self-same snow can spread itself on the great bosom of mother earth as a blanket, giving warmth and protection to that hidden life which, later on, crowns the year with a rich harvest of flowers, fruit and seed.

S. D. W.

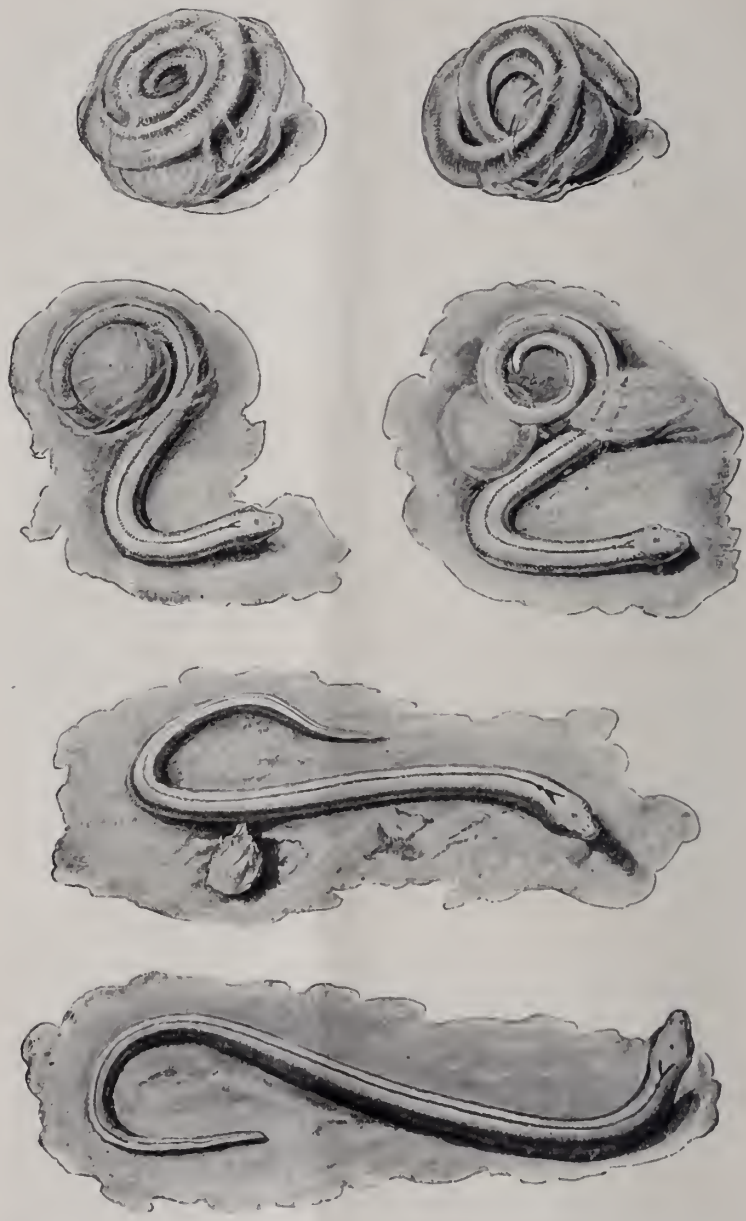
REVIEWS AND EXCHANGES.

Upper Coquetdale, Northumberland; its History, Traditions, Folk-lore and Scenery. By D. D. Dixon. With illustrations by J. T. Dixon. R. Redpath, Newcastle-upon-Tyne.

The author of this goodly volume of local history somewhat disarms the critic of his work by announcing it to be "the leisure-hour employment of two village tradesmen"; but he has indeed but little need to plead for mercy. Were we captiously inclined we might insist on the absence of any map of the district dealt with, and of any table of contents; or the very completeness of the work, dealing as it does with the fauna and flora and the prehistoric as well as the historic records of the area, might make us ask for more and demand some geology. We confess we do not comprehend the relation which the list of plants given on pp. 106-9 bears to that on pp. 493-8; but it is interesting to find some local names cited. Among these we note the application of "Wolfclaw" to *Lycopodium alpinum*, "Craacrook" for *Empetrum nigrum*, and "Bee Heather" for *Calluna*. This last is probably a corruption of "He Heather." A few mosses are recorded, and the names are exceptionally accurate as to spelling. With a catholicity of taste befitting a thorough-going Selbornian, the author gives us many interesting notes on the birds and higher animals; but he does not touch on the fish or mention many of the insects. The main purpose of his work, however, is undoubtedly antiquarian. Camps, stone-circles, early pottery, flint arrow-heads, bronze celts and swords, and various methods of burial represent the prehistoric ages in the district; whilst, of the relics of later times, Rothbury Church, and especially the beautiful base of a Saxon cross, now the pedestal of the font, richly sculptured with figures and knot-work, is undoubtedly the most interesting. Even those who have never visited the bleak hills of Northumberland will find much to interest them in Mr. Dixon's careful pages.

Eton Nature-Study and Observational Lessons. By M. Davenport Hill and W. M. Webb. Part I. Duckworth and Co. Price 3s. 6d. net.

Messrs. Hill and Webb have accomplished the very difficult task of producing a valuable text-book for a study one of the leading characteristics of which is that it is independent of books. This book is in fact a laboratory guide for the open-air laboratory, having for its prototype, perhaps, that pioneer work of the heuristic method, Huxley and Martin's *Elementary Biology*. Its object is not to give information but to direct enquiry, and in many respects it is a book more essential to the teacher than to the student. Sixteen observational lessons are outlined, which it is suggested may occupy an hour a week from the end of September to the end of February, the subjects being such as can be studied at this season, but being otherwise mixed, the dispersal of seeds, the migration of birds, the sun, a sun-dial, the clouds and a sea-anemone being taken in succession. A full index obviates any difficulty this plan might cause. Many most practical suggestions are given as to obtaining material or further information, and as to methods of study, and we are glad to see the caution that "the indiscriminate killing and hoarding of creatures, or the taking of scarce specimens just because they are rare, is to be avoided and condemned." Though we are not sure that illustrations can be justified in such a manual, those that are present, and they are



THE HATCHING OF A BLINDWORM. (From "Eton Nature-Study and Observational Lessons.")

numerous, are such beautiful fruits of observation that we should be loth to be without them. After all, every school may not have the good fortune to witness the hatching from its membranous egg of that lovely little chain of animated silver, a young blind-worm, such as is represented in the figure which we are allowed to reproduce here. Recognising as we do that this book occupies a unique position among school manuals, we anxiously await its completion.

Wee Tim'rous Beasties. By Douglas English. With 150 illustrations from his Photographs of Living Creatures. Bousfield and Co. Price 5s. net.

This is a remarkably cheap book; but that is its least recommendation. It also achieves originality amid the host of volumes published of late on Nature-photography; for Mr. English chooses as subjects for his most skilful camera "rats and mice and such small deer," the Purple Emperor and other butterflies, newts, squirrels, moles and hedgehogs. In the nine stories he tells he includes one specially devoted to the tiny Harvest Mouse that Gilbert White added to our British fauna, and an "apology of the House-Sparrow." We notice also that he makes the Grass Snake say, "I can swing back my head and flatten the nape of my neck,

THE HARVEST-MOUSE. (From "Wee Tim'rous Beasties," by kind permission of Messrs. Bousfield and Co.)

as well as any deadly adder," while Messrs. Davenport Hill and Webb, in the volume noticed above, call attention to the same habit also in the Smooth Snake. Speaking of the eyes of the dormouse, Mr. English writes, "Nor pen nor camera can present them. Imagine a black pearl imprisoning a diamond; imagine a dewdrop trembling on polished jet; add to these beauties *life*, and you will have the dormouse eye"; and yet, so far as it can be done, his camera has in this accomplished the impossible.

Wild Nature's Ways. By R. Kearton. With 200 illustrations from Photographs taken direct from Nature, by Cherry and Richard Kearton. Cassell and Co. Price 10s. 6d.

Nothing could better illustrate the service which the Messrs. Kearton and their followers have done to science in the matter of the faithful representation of

GANNET ON NEST. (From "Wild Nature's Ways," by kind permission of Messrs. Cassell and Co.)

the animals described than the three figures of a robin on p. xiii. of the Introduction to this volume, showing that bird as drawn in the eighteenth and nineteenth, and as photographed in the twentieth century. Few more exquisite photographs from Nature have ever been obtained than that of butterflies covered with dew-drops, which forms the frontispiece of the volume; whilst, if any need now remained for Mr. Kearton to prove the pains taken by him in his work, the pictures of his imitation ox and sheep, his various huts and his wooden mask must satisfy it. We notice with interest that Mr. Kearton eschews the telephoto lens from his wish to gather information as well as pictures and owing to the restlessness of his subjects. Every volume by Mr. Kearton is a treat to which a multitude of readers now look forward, and in this somewhat more costly one, though, as usual, birds occupy about nine-tenths of the space, insects, fish, and other animals, and even plants, receive recognition.

The Arcadian Calendar. By E. D. Cuming and J. A. Shepherd. George Newnes, Limited. Price 6s. net.

Dr. Dryasdust and those of his kidney are, as a rule, as intolerant of humour in others as they are destitute of it in themselves. They may, therefore, very probably resent Mr. Shepherd's illustrations, which seem to be the chief *raison d'être* of this volume, as beneath the dignity of natural history. With such a view we cannot agree; for we find his keen eye for the comic aspect of animal life as refreshing in this world of sober fact as is an occasional touch of optimism

"I'm not the Blue-Bottle I was."

in the weary waste of pessimism that characterises most of the modern criticism of human affairs. It is difficult to detect the exact method of collaboration which the authors have adopted, Mr. Cuming frequently alluding to Mr. Shepherd's drawings, while the latter seem often admirably chosen to illustrate the seasonal phenomena of natural history. The owl asleep over a chimney exclaiming "This must be summer," the portraits of the unpopular pike and the cod in his prime, the young prawns requiring new shell-jackets every twelve days, and the impossible meeting of the butterfly mother and her caterpillar offspring, entitled "Mamma," are inimitable. Mr. Cuming's letterpress embodies much careful

observation of animals, arranged under the months, in the manner which has, of late, become so familiar; and though suggesting his colleague's sallies, never exhibits any obvious straining after comic remarks. By the courtesy of the publishers we are able to give two small examples of Mr. Shepherd's drawings.

THE BLUE-BOTTLE IN SUMMER.

The Naturalist's Directory, 1904-5. L. Upcott Gill. Price 1s. 6d. net.

This valuable reference-book has now reached its eighth issue, and has had to omit its small list of foreign and colonial names, which in no degree lessens its usefulness. Mistakes are inevitable, especially as changes of address are too often not intimated to the publishers, and perhaps deaths might be more promptly recognised or even an annual obituary added; but the general accuracy of the work is remarkable. The lists of societies, dealers and journals is of the greatest use.

The Gardener's Chronicle for December 26 contains an article on "The Home of Gilbert White," by the Editor of NATURE NOTES, illustrated with views of the Wakes and the Sundial.

The *Humane Review* for January contains an article on "Nature Lessons from George Meredith."

Received: *Board of Agriculture and Fisheries Leaflets*, No. 97, *Farmers' Co-operative Societies*, and No. 91, *Grading and Packing Fruit and Vegetables*; *The American Botanist* for October; *The Victorian Naturalist* for November; *Bird-Lore* for November—December; *The Teacher's Times* (organ of the School Nature-Study Union) for December 18, 1903; *The Naturalist*, *The Irish Naturalist*, *The Animals' Friend*, *Our Animal Friends*, *The Animal World*, *The Humanitarian*, *The Parents' Review*, *The Agricultural Economist* and *The Commonwealth* for January, 1904.

NATURAL HISTORY NOTES.

77. A Remarkable Cat Story.—The following incident came to my hearing lately. A miserable, half-starved cat appeared one day at the doorstep of a house in Birmingham, where the man and woman lived from whom I heard this story. The creature felt no inclination to leave the house, and after being adopted as one of the family, took a great liking to the baby of the house. One day the parents were both out and no one in the house but the baby and the cat. The mother, on returning, heard the most frantic "mewing" proceeding from the cat upstairs, and rushing up found the baby on the top of the stairs almost falling over, but prevented from doing so by the cat, who was supporting its weight with its front paws, thus saving it from falling downstairs. The cat had evidently realised the danger, and it held the child up till the mother came to the rescue.

Tibberton Court, near Gloucester. M. P. PRICE.

78. Diving Birds.—In your last issue Mr. Daubeny cited some interesting examples on the diving power of birds and other phenomena. I should like to be allowed to record a few experiences. Off the west coast of Ireland I noticed the cormorants always swimming with body submerged and head and neck appeared above water. At the approach of danger they never tried to fly but always dived. On the other hand, when they were seated on a rock by the water's edge they never dived into the water, but always flew off with their heavy flight. It seems then that the cormorant can, at will, lower his body in the water till only his head and neck are above, and in this position they are safer and can dive under more easily when danger approaches. This was what struck me as being the probable cause.

From observing divers I have generally noticed that they dive and reappear some distance off, and that the device of keeping still under water is not often resorted to. Far more often have I observed this in birds flying in the air. I have seen house-martins soaring for immense spaces of time without a single flap of their outstretched wings, raising and lowering themselves at will, the atmosphere being practically still. Perhaps a vacuum could be formed in a part of a bird's body at will. This would be the most effective way of raising themselves in the air. Any way, it must be some mechanical means of making their bodies lighter or heavier than the pressure of their existing surroundings, whether it be air or water. I once caught a moorhen easily in my hand, after following it up and down a stream in which it had been swimming under water. The feathers of the wings were all saturated with moisture, so that the creature could not fly when I threw it into the air, but simply flopped to the ground and ran back to the stream. Its wings had evidently absorbed a lot of moisture, and it had done so, I conclude, to keep its body heavy and underneath the water.

Mr. Daubeny's remarks on the feats of buzzards and Virginian plovers are most extraordinary, but I think that a lot of unnecessary mystery is attached to migration. Mr. Charles Dixon's book on the "Migration of Birds" tries to establish a law for all the movements of birds, and one of the facts he tries to prove is that the migration is accomplished, in all probability, quite slowly, birds taking several days to compass overland routes, resting during the day-time, and travelling high in the air at a reasonable speed over the seas.

As for young birds preceding the old ones, there is very little foundation for this theory, and it is quite probable that the vast army of young is piloted to its destination by an advanced guard of a few old birds. This is far more probable, and has been in many cases almost proved to be true. Great as the wonders of the study of natural history are, we are apt, I think, to rather overrate them at times, and cause unnecessary mystery. The fact remains, however, that the diving and flight of birds contains the most extraordinary puzzles, as Mr. Daubeny has pointed out.

Tibberton Court, near Gloucester. M. P. PRICE.

79. Waxwing.—A waxwing appeared recently in this neighbourhood. Of course it shared the regrettable fate common to all interesting visitors, and was promptly shot. I can find no mention of this bird in Bewick's "British Birds," nor in White's "Selborne"; but Yarrell ("British Birds," vol. i., p. 356) has a

full and interesting description of it, with the usual engraving. He calls it "The Bohemian Waxwing," but says that it is as common in the North of England as in Bohemia; that it is "one of the most beautiful of the birds that visit this country, but is only a winter visitor, and that, too, at most uncertain intervals. It would be interesting to know whether other instances have been observed this winter so far south as this. If so, I trust they have not been, and will not be, killed.

Buxted, Sussex, December 8, 1903. A. L. H.

80. **The Speed of Birds and Motor-Cars.**—We have become accustomed to seeing every week widely differing estimates of the speeds of motor-cars: what the prosecuting policeman calls twenty-five miles an hour the defendant owner and his driver put at ten or eleven. But these discrepancies are slight compared with the figures put before us by different writers as to the flight of birds, *e.g.*, of swallows. Gilbert White writes (Letter 57), "they exert a rapidity almost too quick for the eye to follow"; and of swifts (Letter 62) that they "dash through the air almost with the inconceivable swiftness of a meteor." Mr. Hudson also says "It would be within the mark to say that the swift, in a sense, 'puts a girdle round the earth' two or three times a month." Taking the mean of two girdles and a half, this makes 60,000 miles say in thirty days; or 2,000 a day, or (at sixteen hours a day) 125 miles an hour. And even this is barely a quarter of the speed ascribed by your indefatigable correspondent, Mr. Daubeny, in his interesting paper on diving birds, to the Virginian plover. Contrast with these figures the subjoined paragraph, taken originally, I believe, from the *Field*, which has never accepted Herr Gätke's estimates. "Some timing experiments, conducted by Mr. Alfred Walker, seem to indicate that appearances are exceedingly deceptive so far as the speed of a bird's flight is concerned. Swallows, Mr. Walker tells us, in their lightning-like evolutions, only fly from fifteen to twenty-five miles an hour, which is much slower than the ordinary flight of a rook. Starlings, when going to their roosting-place, attain a speed of forty-five miles an hour, which is equal to that of the best homing pigeons; but they fly during the day at a slower rate. A wild duck was found to attain a speed of thirty-six miles an hour in a short flight. Homing pigeons have been recorded to fly at a rate of thirty-three miles an hour on a twelve-hour journey, thirty-six miles an hour on a four-hour journey, forty miles an hour on a one-hour journey, forty-eight on a ten minutes' journey, and fifty-two on a one-minute journey." I admit, of course, that there is no reference here to the Virginian plover; but it would be interesting to have the data on which the several writers have based their conclusions. It is suggested that birds can fly faster at great heights, through a less dense medium; well, as counsel for the defence, I should like to ask Herr Gätke, as the policeman, how in that case he was able to satisfy himself that his measured mile was traversed in less than six seconds. I should also like to suggest an experiment of this kind: let a toy steamboat be adjusted to steam the length of a 10-foot tank of water in five seconds. Then substitute for the water oil of half its specific gravity, and start the steamer again. If thought proper, remove ballast so as to secure equal immersion in both trials, although I do not know by what means a bird can reduce its own specific gravity in the air. The oil will, I suppose, offer less resistance to the bows of the boat, but also give less grip to the paddles. What will be the net result to the boat in the oil, and to the bird in the thinner air?

Otham Parsonage, Maidstone. F. M. Millard.

81. **Avocet.**—A specimen of this Egyptian wader, which is sometimes seen in this country between March and September, but very seldom at this time of year, is recorded from Yarmouth. Its stretch of wing was 2 ft. 3½ in., but its weight only 11½ oz. It was of course shot, the perpetrator of its death being a Mr. E. A. H. Pownall.

82. **Humming in the Air.**—With reference to note on page 17, I may say that when walking over Selsley Common, near Stroud, Glos., a "humming in the air" may often be heard on still, hot days. For some time I was in doubt as to the cause of it, as apparently no bees were to be seen; but one day when walking on the common with two companions, after keeping a sharp look out, we

traced the noise to a number of small bumble bees, which were continually passing in all directions. They flew mostly at heights varying from eight to twenty feet above the ground, but occasionally a bee was observed flying about three or four feet from the earth. Is it possible that this will explain Mr. Gibbons' case? R. H. ROGERS.

Cainscross, near Stroud, Glos.

83. Autumn Insects.—(Copy of note) *September* 11, 1893. At Trewhitt Hall, the shooting box of Lord Armstrong, on a plant of *Sedum Telephium*, in the bright sunshine in front of the house, William Brown, the gardener, and myself, counted the following insects settling and fluttering about the flowers of the plant—one moth, five bumble bees ("bummellers"), thirteen bees, twenty tortoise-shell butterflies, and eight peacock butterflies." D. D. DIXON.

Rothbury, Northumberland.

84. Gossamer.—One day last autumn I passed a ploughed field covered with the webs of gossamer spiders; and the oblique rays of the sun reflected from the webs caused the surface of the field to look as if it were covered with a light transparent glaze. It is impossible to compute the vast number of these tiny spiders required to cause an effect like this upon a single acre. The field was merely a sample of the country round.

Market Weston, Thetford, December, 1903. EDMUND THOS. DAUBENY.

85. Late Flowering Plants.—I see that Mrs. Brightwen's list of 72 species in flower was made in the first week in November.

It may be of interest to some to see the list of flowers (57) which were in bloom in a friend's garden in West Kirby, about six weeks later, on December 15, 1897. It seemed curious, I remember, to find so many flowering just ten days before Christmas. This year, on November 23, I noticed in another friend's drawing-room, primroses, Christmas roses and hollyhocks, while on the same day I had a quantity of monthly roses and pansies in my own garden. Christmas roses and monthly roses do not often bloom at the same time!

Achillea.
Alyssum.
Antirrhinum, Annual.
Auricula.
Canariensis.
Candytuft.
Canterbury Bell.
Carnation.
Christmas Rose.
Chrysanthemum.
Coreopsis, Annual.
,, Herbaceous.
Corn Marigold.
Crocus.
Dianthus barbatus.
,, Heddeweggi.
Daisy (large white).
,, (Michaelmas).
,, (small white).
,, (yellow).
Dahlia.
Eschscholtzia.
Fuchsia.
Gaillardia.
Geranium.
Geum.
Golden Feather.
Hollyhock.
Larkspur.
Laurustinus.
Lobelia (blue).
,, (scarlet).
,, (white).
Marigold.
Mignonette.
Nasturtium.
Pansy.
Pentstemon.
Phlox Drummondii.
Polyanthus.
Poppy (Iceland).
,, (Oriental).
,, (Shirley).
Potentilla.
Primrose.
Rose.
Scabious (Annual).
,, (Perennial).
Snapdragon.
St. John's Wort.
Stock.
Sunflower.
Sweet Sultan.
Sweet Pea.
Viola.
Violet.
Wallflower.

Dunrowan, West Kirby, Thursday, January 7, 1904. M. SYBILLA DALGLISH.

NATURAL HISTORY QUERY.

18. Holly leaves.—I should be much obliged if you could tell me the reason why holly leaves fall off the stem when placed in water, leaving the berries only on the bare stalk. Most evergreens keep fresh for some weeks in water.

M. C. B.

SELBORNE SOCIETY NOTICES.

Special General Meeting.—A Special General Meeting of Members is hereby convened for Monday, February 22, at 20, Hanover Square, at 6.30 p.m., to pass the Rules which have been recently revised by the Council.

Council Meetings.—At the Council Meeting held on December 30, the suggestion of Sir H. H. Johnston to form a preserve of British Fauna in Achill Island was discussed and his object found general sympathy. The Council had their attention called to the Game Regulations in Uganda, of which notice appears elsewhere. The Council had under consideration the revision of the Society's rules, and a special meeting of members is called to pass them.

The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Monday, February 22, at 5.30 p.m.; and the Publications Committee on Tuesday, February 9, 5.30 p.m.

New Members.—Warren H. Manning, Esq., Boston, U.S.A.; Bruce Anderson, Esq., Streatham; Miss H. G. Woodhouse, Ealing; Mrs. G. A. Horne, Streatham; Mrs. Graham, Buckhurst Hill; R. C. Henderson, Esq., Sutton; F. Walton Rowe, Esq., Hampstead; Miss Alderson and Miss R. Alderson, Worksop; Geo. Pearce, Esq., Hampstead; Shirley Wainwright, Esq., Hampstead; J. Arrow, Esq., Clapham; Geo. Watts, Esq., L.D.S.Eng., Haverstock Hill; Richd. Rowlands, Esq., Birmingham; Miss M. Snart, Hampstead; C. D. Davis, Esq., and Mrs. Davis, Streatham.

Subscriptions.—The Council beg to acknowledge the following subscriptions over 5s.: W. H. Warner, Esq., 21s.; Lady Farrer, 20s.; Geo. A. Musgrave, Esq., F.Z.S., F.R.G.S., 21s.; Mrs. Musgrave, 21s.; W. Whitwell, Esq., 21s.; C. W. Ware, Esq., 10s.; John U. Powell, Esq., 10s.; Mrs. Hubbard, 10s; Miss Walker, 10s.; Richardson Evans, Esq., 10s.; J. S. Budgett, Esq., 21s.; Mrs. Annie Jones, 21s.; Mrs. Lomer, 20s.; Miss Lomer, 40s.; Mrs. Brightwen, £5 5s.; Miss M. W. Ranken, 7s. 6d.: Mrs. Turle, 10s.; Sir Jas. Colquhoun, 10s.; W. J. Carver, Esq.; 20s.; Miss Cheetham, 10s. 6d.; Cosmo Blore, Esq., 10s.; A. J. Hall, Esq., 10s.; Mrs. E. Frank, 6s.; C. Leatham, Esq., 10s.; Mrs. Hogg, 10s.; Mrs. G. S. Kempson, 10s.; Honble. L. Walter Rothschild, M.P., B.Sc., 21s.; W. W. Maw, Esq., 10s.; Mrs. Picton Turberville, 10s. 6d.; Mrs. W. E. Price, 10s.; Mrs. Silkenstadt, 10s.; Alf. Culshaw, Esq., 7s. 6d.; Miss L. Marshall, 20s.; Miss H. G. Woodhouse, 5s. 6d.; Mrs. Litchfield, 10s.; Miss Brodrick, 10s.; Mrs. Robinson, 10s. 6d.; Clifton H. Regnart, Esq., 7s. 6d.; Miss E. Nicholl, 21s.; Rev. F. M. Millard, 10s.; Alfred Deed, Esq., F.R.G.S., F.R.Met. Soc., 10s.; W. E. Milne-Redhead, Esq., 7s. 6d.; Lady Simeon, 10s.; Miss Shadwell, 10s.; H. J. Evelegh, 10s.; Mrs. Lowther, 20s.; Mrs. Broomhead-Colton-Fox, 10s. 6d.; Miss Broomhead-Colton-Fox, 10s. 6d.; Andrew J. Lloyd, Esq., 21s.; C. D. Davis, Esq., 10s. 6d.; Mrs. C. D. Davis, 10s. 6d.

Donations.—C. Surgey, Esq., 21s.

The Librarian reports that Professor Boulger has very kindly presented the following books to the Library:—

"Neolithic Man in North-East Surrey," by Walter Johnson and William Wright.

"Sweet Hampstead and its Associations," by Mrs. Caroline A. White.

The Animals' Friend, volume ix. Edited by Ernest Bell.

NEWS FROM THE BRANCHES.

Birmingham and Midland.—At a meeting of the Committee held recently, the notice of the death of Mr. A. Winkler Wills was received with

deep regret, and a resolution was passed, and forwarded to Mrs. Wills, expressing the great loss the Society would sustain by the death of Mr. Wills, and the desire to place on record the invaluable work he had done in connection with the Society, first in the formation of the Branch, and afterwards in fulfilling the duties of President, and later on, of Vice-President, for so many years, only relinquishing the latter post a few weeks before his death.

Clapton (Lower Lea Valley).—At the meeting of this Branch on December 19, Mr. C. E. Allnutt read a paper entitled "Snap-shots in Belgium and Brittany," which was accompanied with lantern-slides illustrating places visited during summer holidays, attention being particularly drawn to the stone monuments of Carnac.

The paper, on January 16, was read by Mr. J. F. H. Gilbard, F.I.C., F.C.S., the subject being "The Cause and Prevention of Decomposition." The paper was of great interest and of practical value, demonstrating, amongst other facts, the beneficial action of sunlight in destroying harmful bacteria.

February 20. A paper entitled "Stones of English History," by Mr. R. Marshman Watson, with lantern illustrations. Sigdon Road Board School (opposite Hackney Downs Station, S.E.R.), 7.30.

Hampstead.—February 29, lecture by Mr. F. P. Smith, entitled "Spiders, their Structure and Habits," with lantern illustrations, Subscription Library, Prince Arthur Road, Hampstead, 8.15.

SELBORNE SATURDAY AFTERNOONS.

January 16, 1904.—Over thirty members had a thoroughly delightful and intellectual treat in the demonstration given at the Natural History Museum, by Dr. C. W. Andrews, in the unavoidable absence of Dr. Smith Woodward, on "Fossil Reptiles." Dr Andrews first called attention to the specimens of Amphibia, which differ from true reptiles, in that they undergo metamorphoses after leaving the egg. The Amphibia, comparatively speaking, are all small creatures nowadays, but in past ages, many of them were not at all insignificant. *Mastodonsaurus giganteus*, from the Lower Keuper of Wirtemberg, one of the *Labyrinthodonts*, has a skull a yard in length and proportionately broad. But in those far off times, it was among the true reptiles that size asserted itself. The fossil skeletons of the Plesiosaurs, Ichthyosaurs, Dinosaurs and Pterosaurs, in the Reptile Gallery of the Museum, make the Sea-serpent almost a possibility. The Plesiosaurs were air-breathing, carnivorous, marine animals, with the head of a lizard, teeth of a crocodile, neck serpent-like, paddles like those of a turtle, the trunk and tail resembling those of a quadruped. A young Plesiosaur, measuring six feet in his immature growth, looks quite small beside some of his full-grown brethren ranged around him. The Ichthyosaurs (fish-lizards) were so-named from their fish-like shape. Lyme Regis, in Dorsetshire, has produced the largest entire fish-lizard known at present. It measures over seven yards long and nearly three yards across the expanded paddles. The typical Ichthyosaur had a large head with long tapering snout, short neck, and trunk ending in a long slender tail. Its vertebræ were much better adapted for swimming movements than those of its contemporary, the Plesiossaur. A dislocation near the end of the vertebræ suggests the presence of a tail fin: the upper and lower arm bones are very short and the finger bones numerous. These form paddles, resembling the front flippers of the whale. The Dinosaurs possessed limbs well adapted for walking on land, but it is believed that many of them were amphibious in their habits. *Compsognathus longipes* was a small dinosaur that walked erect, or semi-erect, like a bird. The Sauropodous Dinosaurs, from their huge size and weight, suggest extremely laboured movements on land. Remains of them have been discovered in marine deposits, which makes it probable that they lived like the recently extinct Sea Cow, close to the shore, and browsed on the sea-weed just below low-water mark. A sketch of one of these huge reptiles, restored, explains how it might have been possible for the animal to live in deep water and yet reach the surface to breathe without swimming. A colossal *Iguanodon* shows in the hind feet a marked resemblance to the feet of an extinct bird—the moa. The fore limbs of the Iguanodon are very short, so short that it seems hardly possible that the reptile could have made use of them in walking, and the massive tail almost precludes

the idea of its being able to leap like a kangaroo. It has been suggested that the Iguanodon made progression across the ground after the manner of the Frilled Lizard (*Chlamydosaurus*), and a stuffed specimen of this little creature in the act of running, gives some weight to the idea.

The Pterosaurs, or winged lizards, show a great elongation in one of the fingers of each hand, and upon this long finger a membrane was supported, somewhat like the wing-membrane of the bat. The hard casing of the bones of the Pterosaur was filled with air cavities, thus combining strength with lightness. Some of the winged lizards had long tails, others short; some had large teeth fixed in sockets and some were toothless. *Pteranodon* had sharp-edged, pointed jaws a yard long and wings measuring 18 feet from tip to tip.

Fossil serpents are scarce, but a few have been found in the Tertiary formations, one (*Palæophis typhæus*) measuring twenty feet in length.

A hearty vote of thanks was offered to Dr. Andrews for his able and interesting demonstration. Before leaving the Selbornians to their own devices Dr. Andrews very kindly offered to show them his latest important discovery, the skull and mandibles (now in the Central Hall) of a huge extinct mammal, found by him a few months ago in the Upper Eocene of the Fayum. This new acquisition is named *Arsinoïtherium zitteli*.

FORTHCOMING SELBORNE SATURDAY AFTERNOONS.

February 13.—To view the Temple Church and Halls: Meet Mrs. Percy Myles in the cloisters near the church in the Temple (entrance opposite Chancery Lane, in Fleet Street), at 2.30 for 2.45. Mr. F. Downing will be the guide.

February 20 (Hampstead Branch).—Ancient Halls of the City Guilds. At 2 p.m. Merchant Taylors' Hall, Threadneedle Street, E.C. At 3.15 p.m. Skinners' Hall, Dowgate Hill, Cannon Street, E.C.

N.B.—Any member of the Selborne Society may join the party.

February 27.—Meet Mrs. Percy Myles in the Central Hall, Natural History Museum, 2.30 sharp (Ornithological Department). Mr. W. P. Pycraft has kindly undertaken to give a demonstration on "Birds" or "Mammals," according to the vote of the members present.

ANSWERS TO CORRESPONDENTS.

E. P.—Leonardo's MSS. are somewhat scattered and the drawings have not all, I believe, been published, even in Dr. Richter's great monograph, but the reference was to Mr. Theodore Cook's "Spirals in Nature and Art," which we recently reviewed and which reproduces many of those sketches.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 171. MARCH, 1904. Vol. XV.

OBJECTS OF THE SOCIETY.

To preserve from unnecessary destruction such wild birds, animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of birds and their plumage, except when the birds are killed for food or reared for their plumage. To protect places and objects of antiquarian interest or natural beauty from ill-treatment or destruction. To promote the study of natural history.

SELBORNIANA.

Achill Sanctuary.—"Sir Harry Johnston, in a letter to the *Times*, has recently propounded a scheme for reserving the Island of Achill, the largest of the islands off the coast of Ireland, for the purpose of preserving all kinds of wild creatures in their natural state. The island is about two-thirds of the size of the Isle of Wight, and seems in many ways very suitable for the purpose. The re-introduction of the red deer and the reindeer, who were once inhabitants of the island, is a part of the plan. The sportsman will, of course, be wholly banished, and the seals and seabirds, who frequent the coast, no less than the wild creatures who live on the island, will be left to live out their lives in peace. May the plan find favour and be carried out soon."—*The Animals' Friend*, February, 1904.

Bird-Protection Orders in Montgomery and West Bromwich.—We have received from the Home Office copies of orders just issued prohibiting the killing or capture of the buzzard, goldfinch, heron, kestrel, kingfisher, kite, owl, redpole or siskin, in Montgomeryshire, and the taking of the eggs of buzzard, kestrel, kingfisher, kite or owl; but excluding the house sparrow from the operation of the Act of 1880 within

that county; and extending the close time in the County Borough of West Bromwich from the last day of February till August 13, adding the blackbird, tree creeper, pied flycatcher, spotted flycatcher, house martin, sand martin, starling, swallow, swift, thrush, tit and wagtail, to the schedule of the Act of 1880, protecting a number of species, including dabchick, hoopoe, kingfisher, lark, house and sand martin, nightingale, nightjar, nuthatch and robin throughout the year, and protecting the eggs of hobby kestrel, and most of the species just-mentioned, within that borough.

Bird-Protection in St. Louis.—A fine of $10 is imposed in this city on any woman seen in any public place with a bird in her hat. Meanwhile a West-end shop in London exhibits a quantity of gulls ticketed "Guaranteed real birds, reduced to 2s. 6¾d."

The Care of Trees by the Commissioners of Woods and Forests.—We have been so often struck by the neglect of the trees in Richmond Park, that we were not surprised when a letter from Mr. W. Tindal King, of Hampton, to the *Referee* of January 18, called our attention to similar neglect in Bushey Park. His Majesty, it appears, allowed the London United Electric Tramway Company to replace the oak fence between Hampton Court and Hampton by an open iron fence, the work being directed to be done under the supervision of the Department of Woods and Forests. There are along this margin of Bushey Park some twenty-five old elms, some of them as much as 18 feet in circumference, which have already lost not only most of their dangerous horizontal limbs, but in many cases their tops, and have suffered from the negative injury of neglect. Between them are some thrifty young horse-chestnuts. A dwarf brick wall with concrete foundations three feet down has now been built to carry the iron-railing, within a few inches of the stems of these trees, the roots of which have in many cases been simply hacked off by the builders. The roots on the other side, *i.e.*, towards the Thames, were cut through some years ago to make way for some water-mains. The soil has also been lowered round the base of the trees, in some cases as much as two feet, so as to expose some of their maimed roots. Mr. King sent us a piece some three feet long and four inches thick which he had picked up on the spot, and our own inspection showed that the fine old wrecks and the young trees alike had been so needlessly ill-treated as to certainly check their growth and not improbably kill some of them. We should like to know what supervision the department exercised.

The Kearton Nature Photograph Exhibition.—From January 2, to February 13, the Messrs. Kearton had on view at the Modern Gallery, Bond Street, some 150 enlargements of Nature photographs taken by them. Being only able to visit

this interesting exhibition shortly before it closed, we were able to take a census of the popularity of these excellent pictures by the number of replicas of each then sold. The well-known "My turn, Brother Billy," two great tits on a cocoanut, the young cuckoo being fed by sedge warblers and the white butterflies with dewdrops on their wings, which formed the frontispiece to their last volume, proved most successful, as judged by this criterion. We were struck by the fact that when by enlargement the pictures approach life-size the illusion is more perfect than in the illustrations published in the photographer's various books, while such is the technical perfection of the originals that they have not suffered in the process. We can imagine no more suitable adornment for the walls of a country house than these neatly framed, and by no means expensive, transcripts of wild nature.

AN OLD APPRECIATION OF GILBERT WHITE.

PERHAPS the most interesting portion of the account, in *Blackwood's Magazine*, of a visit to Selborne made on April 13, 1840, seems to have been omitted in *The Mirror*. The occurrence of this notice reminds me that I had intended to have sent you the following quotation from the article in question, because it refers (*inter alia*) to no less a matter than a "likeness" of Gilbert White, of whom, as is well known, no kind of portrait was ever taken.

I must remind your readers that after the naturalist's death, his house, "The Wakes," and its contents became the property of his brother Benjamin, who left it to his unmarried daughters. The survivor of these, Mary White, died on August 26, 1839; and, as will be seen, the house was found by the writer of the article in *Blackwood* empty, and in a neglected condition.

Wandering about the quiet village we found a gate invitingly open, so that entrance could hardly there be termed intrusion. Entering accordingly, we passed a thatched cottage of recent erection (belonging to one of the members of the White family),[1] and passing through a flower-plot, found ourselves, on opening a little wicket, in the garden of the philosopher of Selborne. There was no mistaking it. We had never seen it before, it is true, but there was about it an air of philosophic seclusion—a meditative repose—a rich and quiet harmony, that left no doubt on our minds of its identity with that same garden wherein long flourished the sloping laurel hedge—where marched about in a stately manner the exotic hoopoes, until persecuted and driven away by idle boys, who would never let them be at rest—and where Timotheus, that most celebrated of tortoises, used to spend the sultry hours under the umbrageous shadow of a cabbage leaf, or catch the failing warmth of an autumnal sun by tilting his shell against that very wall. Here is the walk paved with brick against damp weather, close by the

[1] This cottage *ornée* (as such houses were then called) was built by John White, who, at first in partnership with his eldest brother, Benjamin, continued the publishing business after his father's (Benjamin the elder) retirement. It stood well out in the little park and rather to the west of The Wakes.

sloping strawberry bank ; there the philosopher's arbour, protected from the heat of the mid-day sun by an over-branching yew ; on the opposite side his sunny seat, now occupied by a venerable tortoise-shell cat ; and at the foot of the garden is the mossy terrace, adorned in the centre with a dial, supported on a tastefully sculptured pedestal, and divided by a ha-ha from a truly park-like spot of about twenty acres, tastefully wooded, which intervenes between the foot of the Hanger and the place where we now stand. Everyhody who has read the "Natural History of Selborne"—and who has not?—is familiar with the frequent allusion made by the philosopher to his garden. Judge then with what subdued delight we gazed upon it, finding it even more sweetly secluded, more enchantingly lovely, than our warmest imagination could have painted. But our delight was not altogether unalloyed—neglect was everywhere but too perceptible; and what may justify even severe censure, a great portion of the noble wall, which gave support and shelter to the fruit trees of the philosopher, has been mercilessly pulled down to let in a view of the stucco cottage before mentioned, at the suggestion, it is said, of a London attorney, destroying utterly the seclusion and isolation which makes the chiefest charm of this ever-charming spot. This is one of the desecrations which, as has been observed before, approaches to criminality ; and as the estate is, we were informed, about to be offered for sale, it is to be hoped that, out of respect to the memory of the philosopher, as well as for his own sake, the fortunate purchaser of this classic spot will rebuild the front [? fruit] wall, and study to preserve or restore all the associations connected with the philosopher of Selborne.

We were politely admitted to visit the interior of the house formerly occupied by Gilbert White, now empty and deserted, a member of the family having died a few months before, and all the effects, the armchair of the philosopher alone excepted, removed or sold. The table on which he was accustomed to write, and where probably his "Natural History" and "Naturalist's Calendar" were penned, is, we were informed, in the possession of a member of Mr. White's family, now resident in London.[1] It has been stated, I know not on what authority, that no portrait of Mr. White was ever taken; be this as it may, however, the housekeeper pointed out to us the place where hung, what she called, a likeness of Mr. White, and which also, she informed us, remains in possession of the family in London. If this be so, it may be hoped that one day or other the world may be favoured with an engraving of the face of that man, with whose delightful mind the world has long been familiar. In the house, which is commodious, though irregularly built, there are many good rooms and ample accommodation for the family of a gentleman, but the only one that had interest for us was the bedchamber of the philosopher, an humble room overlooking the garden, and commanding from the casements views of the Hanger and surrounding scenery; here the philosopher lived, and here he died. An aged man who attended us at our inn, and who recollected Mr. White perfectly well, described him as a man of pleasing countenance, of ordinary stature,[2] of affable and unobtrusive manners and of a retiring disposition, much attached to his native village, and seldom missed from it for any great length of time, his establishment consisting of but three servants, and his mode of living strictly economical and gentlemanlike. The only detail we could extract from our old man, who, though sufficiently garrulous, was far from being lucid or satisfactory in his description of the philosopher, was that Mr. White had a remarkably handsome foot and leg. Upon this trait of manly beauty in the philosopher our village Nestor dwelt with peculiar complacency and satisfaction.

I am sure that your readers will want to know what became of this so-called "likeness" of Gilbert White, and I think I

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[1] Presumably Georgiana White, a daughter of John White, who built the cottage at Selborne, above-mentioned. She resided with her Aunt Mary at The Wakes, until the latter's death. Her daughter, Miss Christopher, has given the table and chair to Oriel College, where they have been placed in the Common Room.

[2] I have always doubted the story of his exceptionally short stature. His brothers were men of fair ordinary height.

can, at least partially, satisfy their curiosity. There is in my possession a list of "Portraits at Selborne," in the handwriting of Glyd White, who was the only (surviving) child of Gilbert White's niece Mary—the "Molly" of the letters from her uncle to her, printed in my "Life" of the naturalist. This list was apparently not made at Selborne by Glyd White himself, since after one entry—that of a portrait of James White—he has written in pencil "Who can this mean"; and it is not quite complete, I am sure. Obviously portraits of females in the list may be disregarded. There remain the following pictures: (1) "Mr. Hyde (father of Benjamin)"; (2) "Benjamin Hyde"; (3) "James White (grandson of Sir Samson[1])"; (4) "Rev. Mr. Whitby (grandfather of Oliver)"; (5) "Rev. Mr. Whitby (father of Oliver)"; (6) "Oliver Whitby."[2] To the above list must be added two portraits of gentlemen which were certainly "at Selborne"; (7) the Rev. Gilbert White (grandfather of the naturalist); and (8) the Rev. Thomas Holt (father of the naturalist's mother).

When Mary White died in 1839, her niece Georgiana, who had for some years resided with her aunt, stayed on at The Wakes for a little time; but she soon left Selborne, and there was a sale of furniture, &c., from The Wakes, at Alton. I have seen the catalogue of this sale and no family pictures occur in it, nor was this at all likely to have been the case. But in the case of another member of the family, John White, the publisher, who built the thatched cottage in the grounds of The Wakes, where he resided for some years, from 1809, there certainly was a sale of his effects when he left Selborne, some time before 1830, in poor circumstances, in consequence of some "agricultural speculations," which "had ended ruinously," according to the writer of an article in a periodical of 1830, describing a visit to Selborne.

This sale of John White's effects almost certainly accounts for the fact that the late Mr. Bell was able to purchase certain of the above-mentioned portraits from persons in the neighbourhood of Selborne, after he bought the house and settled there in 1842. These pictures, which were all repurchased by members of my family at Mr. Bell's sale in, or about, 1880, were the portraits of Benjamin Hyde the younger, the three Whitby portraits, that of Gilbert White, Vicar of Selborne, and of James White. Now it is clear that none of these portraits can have been the "likeness of Mr. White," since this picture is expressly stated by the "housekeeper" (probably an old

[1] This is probably James White, son of Benjamin, the publisher, who died an Officer in the Army of fever in the West Indies, and to whom there is a monument in the Chancel of Selborne Church.

[2] These Whitby portraits came into the family through the second marriage of Gilbert White's greatgrandmother, Mrs. Benjamin Hyde, junr., to Mr. Whitby, by whom she became the father of Oliver Whitby, who founded the Whitby School at Chichester.

servant who was caretaker) to have remained in "the possession of the family in London."

There remain, then, two portraits of gentlemen: that of Benjamin Hyde the elder, and that of the Rev. Thomas Holt, the naturalist's maternal grandfather. The former picture became the property of Glyd White, who was in 1839 living at Ewelme, Oxfordshire; and it may have gone from Selborne to London. But it cannot be the "likeness" picture, since it represents a bearded and moustachiod layman, who wears the costume of a period long anterior to Gilbert White, with a wide lace collar and a sword; his right hand rests upon a globe, no doubt in signification of his profession as a Russia merchant and navigator.

One portrait only, then, remains, that of the Rev. Thomas Holt. This picture, with three others of ladies, Mrs. Holt, her daughter, Anne Holt (not mentioned in Glyd White's list), and her mother, Anne Ford (Mrs. Hyde), were sent in 1839, through Georgiana White's brother, the Rev. John White, then living in London,[1] to my grandfather, Thomas Holt-White, in Essex, as more especially representing the Holt family; and this picture, I think, must be the one which the housekeeper called a "likeness" of the naturalist of Selborne.

The picture, a well-painted one, portrays a clergyman in the prime of life, robed in a gown, and with a clerical "bob" wig, and bands. The features are a little heavy, and the forehead is not that of a philosopher, nor can I see any resemblance—except that the eyes are brown—to the existing portraits of Gilbert White's brothers, Thomas, Benjamin, and Henry; but there is, I think, a distinct likeness to the portrait of Mr. Holt's daughter and only child, the naturalist's mother, which is also in my possession, and it may be that Gilbert White favoured his mother's family more than was the case with his brothers. Here the matter must be left, since I do not think any further light is ever likely now to be shed upon it.

February 14, 1904. RASHLEIGH HOLT-WHITE.

BIRD MOVEMENTS IN SPRING.

With Special Reference to Nidification of Indigenous and Migration Movements of Migratory British Birds.

NOW that March is well advanced, it may not be out of place to draw attention to some of the features of bird-life in spring and early summer.

None of these, perhaps, are more interesting to the majority of the devotees to Natural History than the times of

[1] As far as I am aware, he was the only member of the family living in London at this time.

nesting of our indigenous birds, and the times of arrival in this country of our summer migrants.

Of the former, the earliest to commence nesting preparations are always the rooks, which, when the spring is mild, begin to clean out their old nests early in February, and even, it has been recorded, in January, whilst by the first week in March we find rookeries everywhere in progress.

Simultaneously with the appearance of the young shoots of the hawthorn, usually in evidence by the middle of March, the common song thrush, the missel thrush, and the blackbird commence to turn their attention to suitable sites for their nests. All of these, to which may be added the robin, which nests soon after, are very conservative, and once a choice has been made nest after nest, year after year, built by the same bird, may be looked for in the favoured nook.

Soon after we may look for nests of the hedge accentor, wren, starling, and house sparrow; and though there are tales anent the breeding of both of the latter in February and even in January "down south," it may be taken as a general rule that after the rook, the earliest birds to commence breeding operations, are the song thrush, missel thrush and blackbird. Following these come in varying order, more or less according to position inland or on the sea-board, latitude north or south, and altitude, the chaffinch, the tits, the red or water wagtail, the lapwing, the duck—instances of the breeding of which in mid-winter have been recorded on various occasions—the owls, hawks, carrion crow, magpie, jackdaw, jay, moorhen, game-birds and so forth.

Owing to various reasons the dates of nidification of our indigenous birds are less liable to vary than the dates both of arrival and nidification of our summer visitors, and they therefore call for less attention in this article, which is admittedly only of a very general character. With the nesting of the thrush and the blackbird, however, we begin to feel that some change is coming over the face of Nature. The sounds in the wood are more varied, and we recognise that they come from the throats of songsters that have deserted us for warmer climes for quite half a year, since the autumn, in fact. Fresh interest is aroused in us, and we sally forth with a much lighter step than perhaps has been our wont for some long time past. Anticipation holds us spell-bound for awhile, and then with recollections of former cycles of the same kind in the round of Nature's year, we press on with eager expectation. What, for instance, is that not unpleasing monotone from the top of yon lofty tree? It is the chiff-chaff, we remember, and on referring to a mental calendar we remark that it is unusually early, for previously we had not heard it before the 18th or 19th, and this is the 13th of March. With this first record of migratory bird-life in our minds and some such thoughts as the above, we may

associate many other pleasant observations, be they phenological, zoological, meteorological, or otherwise, and the first find or record of the year awakens in us the necessity for renewed accuracy of observation.

The yellow wagtail may be said to come next in order of arrival, though it is not always very regular in its appearance and in some years it may not be seen until the middle of April. It is not to be mistaken, however, for it is a very striking and beautiful bird, and the white tail feathers exhibited by it in flight at once betray it. The wryneck, for which tradition, and its hissing habit when disturbed on the nest, have obtained the name of snake-bird, seldom seen far north or west of the Severn, makes its appearance in the south about March 20, and in the Midlands it may be seen about during the first week in April. The wheatear, "the sea-blue bird of March," may be said to be the next arrival, coming to us about the 28th. Many record it as the earliest arrival, but this is open to question. The sand martin, a bird which confines its stay with us principally to the neighbourhood of lakes, rivers, and the sea-coast, is generally to be seen before the 30th or the 31st.

Following it a day or two later, which brings us to April 1, or "All Fools' Day," comes the tree pipit, a bird not often seen and when seen often confused with others, but which is readily recognised by its peculiarly charming babbling song. The house martin, which invades the eaves of our houses and church porches for the purpose of nesting, is usually to be seen by April 5, and may at once be distinguished from the swallows by the patch of white on its breast. The willow-wren, a bird which is more often than not confused with the so-called "wood-wren," may be heard giving utterance to its soft little warble by April 9, but it is very often not recorded until much later—the 17th being a much more general date for its arrival. The whinchat comes next, appearing on or about the 10th. The cuckoo, "harbinger of spring," appears about the 15th, then the wood-wren. The swallow is seen from the 17th onwards, though it was recorded last year in the Midlands on the 13th, and this is by no means the earliest date for it to be recorded, judging from records from other quarters. The blackcap, garden warbler, greater and lesser whitethroats, all appear between the 20th and the 25th, whilst a few days later the redstart is to be seen, though this brightly coloured and striking bird may often be recorded in the south much earlier.

The grasshopper warbler, always a shy bird, and usually described as of "skulking habits," is very seldom seen, and its first appearance may not be noticed for some time after arrival, but April 22 usually sees it as far north as the Midlands.

The landrail, were it not for its "crake, crake," would seldom find recorders, and so it is that we do not find its arrivals noted until much before the 25th. By this time many of the

earlier arrivals as well as the majority of our indigenous birds —we have only one, the red grouse, that is endemic—have long commenced and in many cases completed, preparations for nesting, whilst it is not unusual to find by the end of April or beginning of May, several nests of the chiffchaff, willow-wren, greater white-throat, tree pipit and blackcap, containing one or more eggs, and in very early seasons even a full clutch partly incubated.

Somewhat irregular in their arrival are the reed warbler and the common sand piper, both of which arrive between the last week in April and the first in May. The sedge-warbler is to be heard singing its merry little song from May 5 onward, along most of our roads or along the margin of lakes, ponds and rivers, and in fact almost everywhere. The nest of this bird may truly be said to be the most beautifully constructed nest of all those built by our summer migrants.

The swift, so-called from its quick, dashing flight and readily distinguished at sight by its slender shape and black plumage, from the swallow, martin and sand-martin, appears during the next week, *i.e.*, from the 6th to the 12th. Then after that comes sweet Philomel, the nightingale, which may be heard singing either at night or by day, in the Midlands before the 10th or 12th, in the south in the first week in May. It is seldom seen far north of Derbyshire or west of the Severn, and has about the same range as the wryneck.

The nightjar begins to disturb our rest at night by its jarring note—hence the name—by the 13th or 14th, and though very local in its distribution, it is to be found on most of the heaths and commons of England and on Scotch moors throughout the summer.

The red-backed shrike, which is a lover of the southern downs and commons, may be seen in the Midlands about the same time.

The latest birds to appear, perhaps, are the pied flycatcher or "beam-bird," and the turtle-dove, which are seldom seen before the 20th, at least in the Midlands. Nests of the spotted flycatcher containing eggs may be found by June 8, however, which shows what little time this busy little bird loses before devoting itself to the serious task of rearing a family.

This disposes of most of the regular summer migrants. The Kentish plover, the quail, the hobby and the ring ouzel, though not rare, are very local in their distribution, the two former arriving in May, the two latter at the end of March or the beginning of April. As for the other migratory birds, such as the hoopoe, great grey shrike, golden oriole, waxwing, &c., their occurrence is so rare that though from this very fact it might seem contradictory, yet no adequate idea can be obtained as to their periods of migration to these shores, more or less haphazard

as their chance of straggling here always is, without more extensive observations.

As will be seen, the above few remarks have been made with more especial reference to the Midland counties, and even in cases of these no very definite ideas as to dates of nidification and arrival have so far been obtained.

In offering the above general idea of the nature of the subject and its possibilities when linked with many other data of an interesting nature, such as periods of moulting and roosting, to the general run of readers, many of whom may not be particularly interested in birds, the writer has done so with the object of kindling some interest in their minds in the branch of science called ornithology, so that even the most careless observers might add their quota to its history, or some addition to our present knowledge of it, even be it in the most trifling details, *e.g.*, measurements of birds, their eggs, or nests, details as to colour, structure, and so on.

It is to solicit the help of these undergraduates in the science of bird-life, as well as that of "old hands" of course, that this paper has been written.

Briefly then, will those who have the time and opportunity —which the writer, with present work of an entirely different nature, cannot spare—to devote to the elucidation of these points, kindly help by sending such notes as they may think are interesting? This will considerably advance a project the writer has in view of obtaining enough material for a more comprehensive work on the migration and nidification of our British birds than, owing to the lack of data and want of co-operation, it has as yet been found possible to attempt. Such communications should be addressed to the writer as under.

A. R. Horwood,

Leicester Corporation Museum. *Sub-Curator.*

NOTES ON A TRIP TO MOUNT ARTHUR.

ONE day early in April last, a small but select party of three, all lovers of birds in their bush haunts, left Launceston by an early train for Lilydale, on the way east. The morning was clear and frosty, the air exhilarating in the extreme, betokening a glorious day.

Leaving Lilydale station about ten o'clock, we took the road winding through the little township, and then began to ascend the foot-hills of the mountain. At this preliminary stage the sun began to put forth his strength, and we were compelled to call an occasional halt to rest upon a convenient log by the

wayside, and put down our burden. Some juicy pears with which one of the party had filled his pockets before starting, came in very well at this juncture.

Among the scrub which bordered the roadside we noticed a thickhead (*Pachycephala*) in grey plumage, probably a female of the Yellow-breasted: later on a *Sericornis* or scrub-wren, was seen among the tangle low down, the bird being very tame and allowing close observation. We were very fortunate in meeting with all four of our native robins during the day, the rarest and perhaps most pleasing of all being the Pink-breasted Robin (*Petræca rhodinogaster*), small, soft and velvety-looking, the black throat being sharply defined from the beautiful rose-pink breast.

As we turned off from these foot-hills into the Arthur track proper, we passed into real forest, and went through some fine bush during the climb, the timber including very tall straight Stringy-barks (*Eucalyptus obliqua*), Musk-tree, Dogwood (*Pomaderris apetala*), Myrtle, Sassafras, and tree-ferns. The "Myrtle" just mentioned is really a very fine leaved Beech (*Fagus Cunninghami*), which is one of the characteristic features of our western forests.

The ascent in parts was fairly steep, and rendered troublesome by the number of small trees blown across the track by a recent cyclone. Many plants were noticed identical with those seen on Mount Roland during a previous trip, such as the Native Hickory (*Eriostemon squameus*), a tough supple wood, (*Notelæa ligustrina*) belonging to the Olive order, and a Wirewood bearing its beautiful tapering berries, some white, others pink.

After mounting a long rocky rise, we entered an extensive Beech plateau, numbers of stems shooting from one butt, the original trunks having been consumed in a bush fire. Interspersed with these were Tea-tree, Native Pepper (*Drimys aromatica*), and Waratah (*Telopea truncata*), this latter a small mountain tree which bears in its season a large, red, very handsome flower. The generic name Telopea conveys the same meaning as the native epithet waratah—"seen from afar," on account of the size and conspicuous colouring of the bloom.

We halted at an open space on this plateau where a creek crossed the track, and collecting dry sticks and bark, of which there was abundance, we boiled the billy and made tea, after which we stretched out in various picturesque attitudes on the ground to enjoy lunch. A Thickhead, similar in plumage to the one already noted, played about in the trees near the camp while we ate, and was presently observed to catch a large Wood-moth, detach the wings while on the ground, and then swallow the body with great relish.

After leaving the forest we entered upon a rocky, heathy expanse, and taking a turn to the left we scrambled over boulders to a cairn on the summit, 3,895 feet above the sea,

whence we had a fine view of Launceston, the Tamar River, and Bass's Straits. Around us pools of water were plentiful, mountain-artichokes (composites modified by climate to form close, compact, rounded masses) grew here and there, and a cat-head fern (*Aspidium aculeatum*), was noted among the rocks near the cairn.

On the homeward way a Pink-breasted Robin sat on a small tree close to the track for our inspection, while a Thickhead flew rapidly across the bush road; several male Yellow-breasted Thickheads in grand plumage, were dotted about the stumps in a paddock, while the Wood-swallow (*Artamus sordidus*), with smooth sailing flight, was plentiful among the timbered foot-hills.

Many roadside shrubs were beautified by masses of the climbing Purple-berry (*Billardiera scandens*), which sends forth in the flowering season long, greenish-yellow bells, succeeded in autumn by large oblong berries of a purplish blue.

West Devonport,
Tasmania.

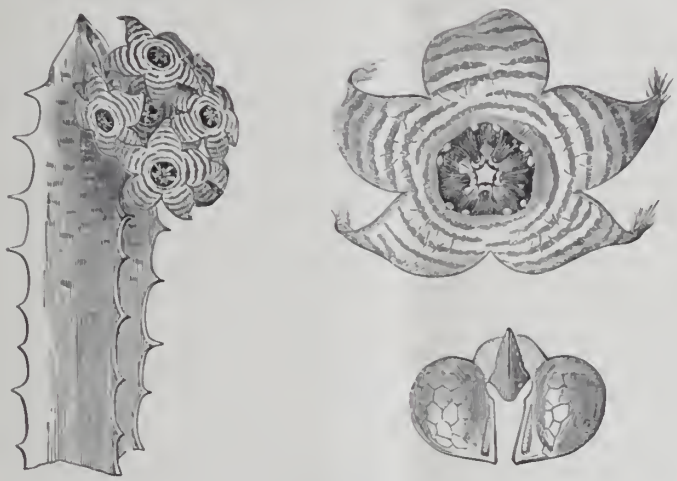
H. STUART DOVE.

REVIEWS AND EXCHANGES.

South African Flowering Plants for the Use of Beginners, Students and Teachers. By Rev. Professor G. Henslow, M.A., F.L.S. Longmans. Price 5s.

It is now a good many years ago since Professor Daniel Oliver drew up from the manuscripts of Professor J. S. Henslow those "Lessons in Elementary Botany" which have provided several generations of English beginners with one of the best possible introductions to the study of flowering plants. Professor Oliver subsequently adapted the work for students in India, and now Professor G. Henslow has done for South Africa what his father and Professor Oliver did for England and India. Professor Henslow is well known to our Members as a Vice-President and as a contributor to NATURE NOTES, and to the botanical world in general as the author of several most suggestive if controversial works; but his charmingly simple description of a few types in *Botany for Beginners*, and his lucid directions in *How to Study Wild Flowers*, have already shown him a master in the difficult art of elementary exposition. Five-sixths of the present work is devoted to the systematic description of the chief Natural Orders of South African flowering plants, in which the only point to which we can take exception is the placing the Gymnospermæ, the Pine and Yellow-wood and the Kaffir-bread families, between the Dicotyledons and Monocotyledons. The whole work is so excellently adapted to its purpose that we cannot doubt its speedy and general acceptance in the schools of South Africa, so that we do not hesitate to express our gratitude to the author by asking for favours to come in the shape of an expansion in the next edition of the excellent chapters on the stems and foliage of plants characteristic of dry regions, and on the origin of the Veld and Karroo plants. As it is, floral characters seem rather too prominent, and we should like to hear more of the ecology of the South African flora. The book has the

great advantage of a number of Decaisne's unsurpassed illustrations, and by the courtesy of Messrs. Longmans we are able to reproduce those



STAPELIA.

of one of the most characteristic of South African types, the Stapelias or Carrion-flowers.

The New Forestry, or the Continental System adapted to British Woodlands and Game Preservation. By John Simpson. Second Edition. Pawson and Brailsford, Sheffield.

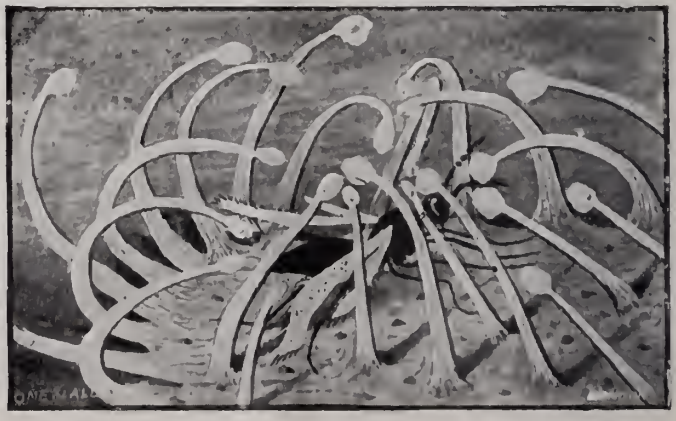
The fact that within three years a second edition of Mr. Simpson's book has been called for is a testimony to the appreciation by English landowners of his common-sense suggestions as to improved sylvicultural methods. While fully adopting the modern German principle of dense planting and light thinning, he does not think it necessary that the State should own all our woodlands, that we should cut them all down and replant on more scientific principles, or that we should abolish all game preservation. Underplanting, less heavy thinning, and denser planting in the future are all that is necessary; but the rabbit, if required for "sport," must be confined to warrens. The result of following Mr. Simpson's advice will, no doubt, be more and better timber and, therefore, better estate returns, though the dense tall poles he advocates may not be as beautiful as some of our now ill-managed woods.

One and All Gardening, 1904. Edited by E. O. Greening. Agricultural and Horticultural Association. Price 2d.

This wonderful twopennyworth has reached its ninth issue, and its contents, appreciations, practical suggestions, miscellaneous articles, and pictures, are as varied and as excellent as ever. By the courtesy of the Editor we are able to reproduce here two most characteristically English winter landscapes, and one of the magnified diagrams which illustrate some popular papers on botanical topics. The humblest horticulturist can afford a copy of this handbook and cannot fail to profit by his purchase.

Received: *Scheme for Recording Ancient Defensive Earthworks*, revised issue; *Guide to the Horniman Museum and Library*; *The American Botanist* for November; *The Victorian Naturalist* for December; *Nature Study* (Manchester, New Hampshire) for January; *Nature-Study* (Hud-

WINTER. From "One and All Gardening."



"THE MURDER PLANT." From "One and All Gardening."

THE TRACK OF THE STORM. From "One and All Gardening."

dersfield) for January and February; *The Naturalist, The Irish Naturalist, The Animal World, Our Animal Friends, The Parents Review, The Agricultural Economist, The Commonwealth,* and *The Estate Magazine* for February.

NATURAL HISTORY NOTES.

86. A Remarkable Cat Story.—I am able to supply an interesting parallel to the remarkable cat story from Birmingham; it came to my hearing several years ago. Some of the Fellows of my College were assembled in the Common-room when they suddenly heard cries as of alarm and distress proceeding apparently from a cat. They could not at first account for them, but in a short time they perceived that the Senior Fellow (whom I will call Mr. E.) was evidently in distress, and unable to explain his need of help. The cat (having the same instinctive knowledge of medicine as the Birmingham cat of the laws of gravitation) was loudly calling attention to the fact, and the grateful Dons hastened to assist Mr. E. from his chair. I have the more pleasure in sending this because I had formerly believed—as had others—that Mr. E. was unwittingly sitting on the cat and that this caused her outcry. F. M. M.

M.A. of Magdalen Coll., Oxford.

87. Bird-notes from Highgate.—On Sunday morning last I had the pleasure of seeing a spotted woodpecker in my garden. My attention was first called to it by a brilliant patch of colour moving about in a large lilac bush. It stayed in the bush for a couple of minutes and then flew to a small silver birch, from whence, unfortunately, it was frightened by a neighbour's dog. It is not so much that the bird is a rarity (though it is the first I have ever seen), that makes it worthy of note, as the fact of meeting with it in a small suburban garden so near town, and only a few minutes from the railway station and high road. Highgate, owing to the woods and open spaces round about is, of course, favourable to bird-life generally, and during the past year, amongst most of the commoner kinds of birds, I have had the fortune to see all within a mile of my house, Redstarts (a pair), Nuthatches (a pair), Long-tailed Tits (party of ten in my garden), Whinchats, Redwing, Goldcrest, Owl, Blackcaps (a pair), Wagtails, Nightjars and Creepers frequently, and also at the end of my garden a young Cuckoo being fed by a Hedge-sparrow. On Christmas Day afternoon, whilst walking in Hampstead Lane I saw a small bat hawking for flies. Last year I noticed very frequently what, to me, was rather unusual, viz., Song-thrushes and Skylarks singing their full song for minutes together whilst quite stationary on the ground, and the former bird singing from the roof of a house. I mentioned this latter to a "bird" friend of mine, who told me he also had observed the same thing for the first time. Is it at all unusual?

40, *Southwood Lane, Highgate, N.* CHARLES S. PARSONS.
January 23, 1904.

88. Waxwing (p. 35, NATURE NOTES, 1904).—"A. L. H." will find the Waxwing mentioned in Bewick's "British Birds" under the name of "The Chatterer"; and Gilbert White mentions the bird twice in his "Natural History of Selborne," viz., (1) in Letter xii. to Pennant, where it is referred to as the "German silk-tail"; and (2) in Letter i., to Barrington, where it occurs as No. 17 in the List of the Winter Birds of Passage. "Silk-tail, *Garrulus bohemicus*." The name Waxwing appears to have been first used by Stephens in 1817.

Crooke Aldersey, near Chester. G. B. MILNE-REDHEAD.
February 8, 1904.

89. Humming in the Air, mentioned in the "Natural History of Selborne," and referred to by your correspondents in pages 17 and 36 of NATURE NOTES, is locally known as the "Midsummer Hum." It is heard here on still sunny afternoons between the middle of June and the middle of July; the humming is exactly like that of bees and is apparently high in the air. I was told many years ago that if a stone was thrown high in the air, that large insects could be seen flying after it. I have often thrown stones in the air since, on hearing the "humming" and have always seen two or three insects like bees come down after the stone, but never sufficiently near to see whether they were bees. I have never heard a satisfactory explanation of this phenomenon, or why *bees* should fly in this manner.

90. Gossamer.—As an instance of the enormous number of these spiders and the rapidity with which they spin their webs, I have seen a field of sixteen acres freshly harrowed in the morning and in the afternoon, four or five hours after, completely covered with a network of webs, which must have been spun after the harrows had passed.

Weston, Lambourne, Berks. R. OSMOND.
February 10, 1904.

91. Trees Struck by Lightning.—There have been two or three of these in this neighbourhood of late. One is an elm standing in a fence running roughly north and south. On either side of it the fence is made of "spiles" (as we say in Kent), with a twisted wire cord interlacing them near the top, fixed to the elm at each side of it. It seems certain that this wire cord has acted as a conductor either to the elm or from it. There is a gash on each side of the tree extending down just past the point where the wires are fixed, but not reaching the ground. It was suggested to me that the current had passed upwards from some damp ground to the wire, which conducted it to the tree, up which it passed, generating steam in the damp wood, and so blowing off narrow strips of

bark. I do not quite see that this explains the gashes or slashes on both sides of the tree. It seems to me equally possible that a double flash of lightning descending the tree might have been conducted away in both directions by the wire cord. Another case is that of an oak on my glebe, struck like the elm, last May. In this case there is one slash, extending from near the top of the tree to within a few inches of the ground. The interesting point here seems to be that small splinters in this gash are broken *upwards*, in a way that seems to show that this was the direction of the current. Such splinters could not be made by a tool except by working upwards. The gash extends a good bit higher than those on the elm. On September 10, 1902, a tall Scotch fir just above my garden was struck and much split. The carpenter who has the wood tells me it is almost useless; and that when cut up it smelt strongly of brimstone. I do not know whether this is commonly found to be the case, or if so, how it is accounted for.

F. M. MILLARD.

SELBORNE SOCIETY NOTICES.

Council Meetings.—At the Council Meeting held on January 25, the Council agreed to the recommendation of the Publications Committee, that an inset be placed in the front of NATURE NOTES, monthly, outlining the coming events of the Society. The Secretaryship of the Markwick Branch (Horsham) was under consideration. In view of the Annual Meeting the Council appointed a Conversazione Committee.

The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Monday, March 28, at 5.30 p.m.; and the Publications Committee on Tuesday, March 8, 5.30 p.m.

New Members.—Miss Margaret Kew, Bromley; Ernest Mannering, Esq., Oxford; P. G. Lane, Esq., Wimbledon; Mrs. Thompson, Hampstead; Mrs. E. Watson, Brighton; B. J. Hull, Esq., Haverstock Hill; Max H. Chandler, Esq., Hampstead; Montague F. Hopson, Esq., Hampstead; Edward D. Brown, Esq., Hampstead; Miss Barter, Gospel Oak; Miss Jones, Hampstead; Miss Thompson, Hampstead; Miss Smith, Hampstead; Miss Peabody, Sudbury; Miss Jay, Upper Holloway; Walter Short, Esq., Kensington; Herbert J. Rodgers, Esq., Pinner; Norman P. Cummings, Esq., West Dulwich; Jas. Shaw Crompton, Esq., R.I., Haverstock Hill; Mrs. Duncan, Edgbaston; J. Cartwright Firth, Esq., Birmingham; A. S. Grew, Esq., Stechford; J. Humphreys, Esq., Edgbaston; Mrs. Richards, Edgbaston.

Subscriptions.—The Council beg to acknowledge the following subscriptions over 5s.: Mrs. R. F. Sturge, 10s.; T. G. Timbrell, Esq., 10s.; Miss E. B. Brand, 10s.; Miss J. Brand, 10s.; Jph. Rawlins, Esq., 10s.; Miss Garrett, 21s.; Geo. Turvill, Esq., 10s.; Mrs. Minet, 10s.; R. Harpur Crewe, Esq., 12s. 6d.; G. B. Milne-Redhead, Esq., 10s.; Mrs. W. Greenwood, 21s.; Ernest D. Vaisey, Esq., 10s.; Rev. A. L. Hussey, 21s.; Jas. Troubridge Critchell, Esq., 10s.; Mrs. M. L. Cooke-Yarborough, sen., 10s.; Peter Hastie, Esq., 10s

Donation.—Mrs. Hyde-Clarke, 10s. 6d.

NEWS FROM THE BRANCHES.

Birmingham and Midland.—The Annual Meeting was held on Friday, February 12, in the Council House. The Right Hon. Wm. Kenrick presided, and there was a good attendance. The Report and Statement of Accounts were approved and ordered to be printed. The Branch has made considerable progress, the number of Members has increased, and there is a balance of about £15, which will enable the Branch to further the objects of the Society by means of Lectures, &c.

On January 22, Mrs. and Miss Benson Rathbone kindly invited the Members to an "At Home" at their house in Edgbaston. Microscopes and Natural History exhibits were lent by several Members, and all present spent a most enjoyable evening.

Hampstead.—On January 25 a lecture entitled "The Milky Way and New Stars," was delivered by Mr. A. C. D. Crommelin, B.A., F.R.A.S., of Greenwich Observatory. The desire to hear so great an authority on a subject of such

absorbing interest, led to a full attendance, the Selbornians being reinforced by members of the Astronomical Section of the Hampstead Scientific Society. During the course of his masterly address Mr. Crommelin explained the chief method of measuring astronomical distances ; alluded to the passage of light, and then passed on to deal more especially with the Milky Way and with its position in the stellar universe. The new stars in Auriga and Perseus, the first of which appeared twelve, and the second three, years ago, received special consideration, and Mr. Crommelin explained that those sudden and gigantic flares were believed to be due to collisions, the cause and nature of which were not yet understood. Anyhow, it was astounding what must be the extent of the celestial world when they realised that the disturbances, of which they had lately received visual evidences, occurred, according to the best computations, two or three centuries ago. Hearty thanks were accorded to Mr. Crommelin for the intellectual treat he had given. The chair was occupied by Mr. P. E. Vizard, one of the founders of the Hampstead Branch, in 1888.

SELBORNE SATURDAY AFTERNOONS.

January 30.—Notwithstanding the incessant rain, over seventy Selbornians met at St. Paul's Cathedral, through which they were conducted by a substitute kindly sent by the Rev. Canon Scott Holland who, we regret to say, was too ill to be present.

Of all the ancient monuments, one alone remains uninjured from the Great Fire of 1666—the strange figure in white marble, set in a niche in the wall, of the Poet Donne, Dean of the Cathedral, who died in 1631. Dressed in his grave clothes, he rises from a cinerary urn, the white marble of which bears marks of the Fire.

The afternoon light was too subdued to allow one to inspect the mosaic decorations in progress, or to judge the different merits of the historic memorials; but one could not fail to admire the beautiful monument by Stevens to the Duke of Wellington, which in its new position adds greatly to the general beauty of the Cathedral.

In the Crypt, Nelson's sarcophagus, the Duke of Wellington's tomb and funeral car received due attention, but there was a general lingering round the "Painters' Corner," among well-known names, where is also to be noticed the modest tomb of the great artist and architect of the Cathedral. Later, a passing glance was given to the Library, after which Wren's original model was examined with considerable interest.

Towards the close of the afternoon, when looking over the Cathedral from the Whispering Gallery, the beautiful effects of light and shade, the magnificent proportions, and the unity of design harmonised in such a manner that, however much one may regret that Wren was not allowed an entirely free hand, one cannot but admit that the blending of the Classic and the Gothic is so perfect that there is no jarring line in the whole Cathedral.

February 13.—Under the very able guidance of Mr. F. Downing, member of Council, between fifty and sixty Selbornians had the pleasure of being conducted over the Temple Church and Halls, reminiscent of so much that is historical and literary in the past. After a look at Goldsmith's tomb and the two stone coffins discovered in 1861, the members passed on to the gardens, the scene, according to Shakespeare, of the plucking of the rival roses of York and Lancaster, and thence on to the Church and the Halls.

The Round Church, said to have had its prototype in the Temple near to the Holy Sepulchre at Jerusalem, was completed by the Knights Templars in 1185, and dedicated the same year to the Blessed Virgin, by Heraclius, Patriarch of Jerusalem. The rectangular part was added later and consecrated in the presence of Henry III., in 1240. The style of the combined church is "Transitional Norman" in the round and "Early English" in the oblong portions. The church has passed through many vicissitudes of fortune, and perhaps fire and mob have done less damage than that deadly foe to architecture, the so-called "restorer." Accordingly, the interior calls up conflicting feelings, for while there is much to be admired, there is also much to be deplored. Hidden away in the south-east corner, made dark by the stalls, are an ancient Aumbry and double Piscina, and in a recess adjoining lies a mitred recumbent figure of the fourteenth

century, supposed to be that of the Bishop of Carlisle. At the west end of the south aisle is a marble bust of "the judicious Hooker," Master of the Temple from 1585-1595.

Disposed in two groups on the floor of the Round Church lie the effigies of armed knights in Purbeck and Sussex marble. Up to 1840 these were in a very dilapidated condition, but under the able hands of Richardson they were most skilfully restored. A winding staircase, containing a small cell for unruly knights, leads to the Triforium, which, besides containing some interesting monuments with quaint coats and quarterings, forms the lumber room for what was once the most interesting series of monuments in England. Many of the monuments are in fragments, but among them may be seen some very beautiful carvings. The apparent vandalism makes one glad to get out into the open air to breathe freely. St. Mary's belongs equally to both the Inner and Middle Temples, and on one side of the Church may be seen the Pegasus emblem of the Inner, and on the other the Lamb, ensign of the Middle Temple.

The Hall of the Inner Temple was built in 1868, on the site of the old hall, which dated back to the reign of Edward III. The walls and windows of this fine spacious building are decorated with the arms of Treasurers from 1450. Some of the nooks and corners of the Hall are very picturesque. Part of the old buttery, from whence was dispensed hospitality in olden days, still remains. In the Old Parliament Chambers are some interesting pictures and some fine carving by Grinling Gibbons.

The Hall of the Middle Temple was completed in 1571. It has a richly carved screen and the roof with its hammer-beams is unique, as the best Elizabethan roof in England. The windows are studded with shields, the oldest in the two bays which flank the dais. This dais is said to be the identical one upon which Shakespeare acted "Twelfth Night" before Elizabeth in 1601. The table, by which students stand when "called to the Bar" rests upon the dais, and was made from an oak tree from the Royal Forest of Windsor. On the wall, between the two bay windows, is Vandyke's Charles I. on horseback, and beneath is a marble bust of Edward VII. Referring to the ensigns of the two Temples, an old writer ironically remarks :—

> "The Lamb sets forth their innocence,
> The Horse their expedition."

February 20.—The great debt that Londoners owe to the munificence and wisdom of busy merchants and traders of past centuries was fully brought home on Saturday, February 20, to a large party of Selbornians who, under the guidance of Mr. George Avenell, Chairman of Council, enjoyed an inspection of the two fine old halls of the Merchant Taylors and of the Skinners. Meeting at the Hall of the first named, the din of Threadneedle Street was lost in the lofty corridors, hall and rooms so courteously and fully discoursed upon by Mr. Edwin Nash, M.A. The first charter of the Merchant Taylors and Linen Armourers, as was their ancient designation, dates from 1336, and portions of the present Hall certainly go back to 1450. The present fabric was designed by Wren, who had the assistance of Grinling Gibbons in some of the exquisite woodwork and carving to be seen on the great screen and round the hall. Leaving the lofty hall with its stained glass windows and the corridor with its windows illustrating scenes in the Company's history, the party came to the library. The old chained Bible was brought out for inspection, and the quiet and repose of the room was emphasised by the shelves of books, the absence of noise, and the cosy depths of the red morocco chairs. Leading from the library was the Court-room, hung round with pictures, its windows, like those of the library, looking out on to a stone-paved garden with flower-beds. A broad carved oak staircase with a large tapestry panel and equestrian portraits on the walls led to the ladies' gallery and the drawing room. Here were more specimens of ancient tapestries and portraits of bygone worthies.

The party then proceeded to inspect the kitchen with its fragments of old masonry and its huge cooking apparatus, and then to the crypt, where the groining and general character of the stonework indicated a date of the late fourteenth or early fifteenth century. A vote of thanks to Mr. Nash for his kindness was then unanimously accorded and the party left to make their way to

the Skinners' Hall on Dowgate Hill. In ancient times these two companies were belligerents, but as a result of the arbitration by the Lord Mayor, to whom the dispute was submitted, the two companies dine together twice a year. Here the party had the advantage of the great knowledge and courtesy of Mr. Draper. By his direction, and after an inspection of the Hall, and a few words on the past history of the Company, the party divided, and while half were able to leisurely inspect the magnificent display of plate specially laid out for the occasion, the rest admired the fine cedar-panelled drawing room and the oak parlour upstairs. The plate comprised the five famous Cockayne Cups, dated 1610, fashioned in the form of a cock, used on Election day (the Feast of Corpus Christi), various flagons and tankards, bowls, rose-water dishes, loving cups, two silver snuff-boxes, the one in the form of a wolf, the other in that of a leopard, dated 1680, and a varied form of the crest of the company, candelabra, and many other interesting articles. On a side table were the old watermen's caps, worn when the Company had its barge on the Thames. A welcome tea provided by the hospitality of the Company added greatly to the enjoyment of the party. Mr. Draper's kindness under the running fire of questions, and his active interest in the large gathering, were then warmly acknowledged. Both companies, it was stated, devote the major part of their income to the cause of education, the Merchant Taylors having their well-known school in Charterhouse Square, while that of the Skinners is at Tonbridge. Both also support other schools and many charities in different parts of the United Kingdom.

FORTHCOMING SELBORNE SATURDAY AFTERNOONS.

March 12.—Natural History Museum, Cromwell Road. Mr. L. Fletcher, F.R.S., Keeper of the Department of Minerals, will kindly give a Demonstration on Minerals. Assemble in the Central Hall at 2.30 p.m.

March 26.—Lincoln's Inn (in conjunction with the Archæological Cycling Club). Selbornians to assemble outside Hall at 2.30 (Lincoln's Inn is situated just behind the New Law Courts). Mr. Wm. Paley Baildon, F.S.A., has kindly undertaken to act as guide.

ANSWERS TO CORRESPONDENTS.

Kenelm.—(1) "Pond-life," by E. A. Butler, price 1s. (Swan Sonnenschein); "Life in Ponds and Streams," by W. Furneaux, price 6s. (Longmans); "Ponds and Ditches," by M. C. Cooke, price 2s. 6d. (S.P.C.K.). (2) "Book of Aquaria," by Bateman and Bennett, price 5s. 6d. (Upcott Gill). (3) Dr. Dallinger's edition of Carpenter's "Microscope," somewhat expensive; "A Thousand Objects for the Microscope," by M. C. Cooke, price 2s. 6d. (Warne).

J. Town.—Johns' "Forest Trees," price 5s. (S.P.C.K.), somewhat out of date, more especially in its illustrations. The next work in price is Boulger's "Familiar Trees," 2 vols. (Cassell and Co.), at present out of print.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

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OBJECTS OF THE SOCIETY.

To promote the study of Natural History. To preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of: (1) The skins and furs of such animals as are in danger of being exterminated; (2) birds and their plumage, except when the birds are killed for food, reared for their plumage, or are known to be injurious. To protect places and objects of natural beauty or antiquarian interest from ill-treatment or destruction. To afford facilities for combined effort in promoting any of the above or kindred objects.

SELBORNIANA.

Annual Meeting and Conversazione. — Members will notice that May 27 has been fixed as the date for this year's Annual Meeting and Conversazione, and that the Council have been able to secure for that occasion the use of the spacious theatre and rooms of the Civil Service Commission at Burlington House, formerly the University of London, which many will associate with the recent Nature-Study Exhibition and with the meetings of the Royal Geographical Society. Attention is also directed to the Council's request for the offer of objects for exhibition.

Beddgelert Tramway Scheme.—The Light Railway Commission have submitted to the Board of Trade a scheme for an electric railway from Bettws y Coed to Beddgelert. The Commission have, we believe, promised to submit the scheme to the National Trust; but it appears to many lovers of this beautiful district that the scheme is incapable of improvement and should

be entirely negatived. As is explained by Professor W. P. Ker, in a letter to the *Times* of March 17, the scheme "will not make it easier to get from other parts of the country to Beddgelert or Bettws," whilst most of the scenery in those valleys is on a small scale, so that such a line would destroy some of the favourite short walks out of Bettws. A memorial to the Board of Trade against the scheme has already been signed by over 250 persons, including the Vice-Chancellor of Oxford, the Dean of Christ Church, the Right Hon. James Bryce, Principal Reichel, of Bangor, Principal Roberts of Aberystwith, Mr. Douglas Freshfield, Sir Martin Conway, B. W. Leader, R.A., and Alfred East, A.R.A. Copies may be had for signature from Professor Ker, of 95, Gower Street, W.C.

Purley Beeches.—We are glad to hear that a two-years' lease of the land occupied by these picturesque trees, of which an illustration appeared in our February number, has been obtained, and it is hoped that within this time-limit the sum necessary to purchase and so secure the spot may be raised.

A Lost Opportunity.—We are very sorry to hear that lack of the small financial support needed has compelled Mr. Cochrane to close the interesting little Wild-Flower Garden which he had established at Perry Hill. His was an excellent idea, tending at once to render our beautiful wild flowers better known, and to protect them from extermination. Mr. Cochrane devoted himself ungrudgingly to his self-imposed task; and if the scheme is finally abandoned for the want of a few pounds per annum, it will be the loss of a unique opportunity.

Liverpool Kyrle Society, Flower Branch.—From a report which we have received it appears that this very practical branch of a truly philanthropic society continues to do excellent work in providing poor town schools with flowers for Nature lessons. A box is sent once a fortnight—except, of course, during holiday times. The number of schools on the Society's book is, however, in excess of the number of regular country contributors of flowers, so that the Secretary, Miss Jessie Bird, 4, Riversdale Road, Aigburth, Liverpool, will be glad to hear from additional volunteers.

Anti-Bearing Rein Association.—A brief report has just been issued chronicling the work done during the six months ending December 31, 1903, and giving other information about the Association. It should be useful for distribution, in order to make the Association better known, and a copy will be sent free to anyone on application to the Hon. Sec., *Animals' Friend*, 6, York Street, Covent Garden, London, W.C.

Wild Birds Protection Orders.—An Order has been issued from the Home Office for the County Borough of Hastings, replacing that of February 24, 1903; protecting all birds on

Sundays; prohibiting all taking or destroying of eggs along the cliffs and in the Alexandra Park; protecting certain species and their eggs all the year round throughout the County Borough; adding a number of species to the Schedule of the Act of 1880, and extending the close time from the last day of February to September 1.

For the County of Salop an Order has been issued repealing that of August 4, 1897; protecting the Goldfinch, Kingfisher, Owls, Redpole, Siskin and Woodpeckers from July 31 to March 2; prohibiting the taking of the eggs of most of these and of some other species, and adding Flycatchers, Swallows, Wagtails, &c., to the schedule of the Act of 1880.

An Order has also been issued for the County of Chester, repealing that of March 29, 1901; protecting all birds and their eggs throughout the year in the greater part of the low-lying hundred of Wirral, between the Dee and the Mersey, except in market-gardens; extending the close time from March 1 to August 13; adding the Heron and the Kestrel to the Schedule of the Act of 1880; prohibiting the killing of birds on the Dee and the Mersey within the County, and the killing of Gulls and Terns in certain parishes, and protecting the Goldfinch, Kingfisher, Bittern, Shoveller Duck, Grebes, Nightjar, Owls, Brown Linnet, Lesser Redpole, Siskin, Twite and Woodpeckers throughout the County during the whole year.

THE POLLINATION OF THE PRIMROSE.

By A Field Naturalist, M.A.

DR. WEISS, of Manchester, last year (1903) published a pamphlet on the "Pollination of the Primrose." As the pamphlet did not appear until June I thought it better to defer any notice of it until the primrose season had again returned, so that any one interested in the relation of insects to the primrose might have the opportunity of observing it and judging of it themselves.

This pamphlet was written by Dr. Weiss for the purpose of elucidating "the manner in which the pollination of the primrose is effected," and when published was distributed. Dr. Weiss kindly forwarded a copy to myself, as in it he specially refers to "a more recent publication, entitled 'The Primrose and Darwinism,' by A Field Naturalist" (Grant Richards).

After extended and minute examination of the flowers during some years, I concluded as the result of my investigations that the primrose convincingly disproves certain theories of Darwin about heterostyled flowers. Two of these theories of Darwin, out of six which are mentioned in the above book, only need be

mentioned here. One is that "every known heterostyled plant depends on insects for fertilisation and not on the wind"; the other, that "heterostyled flowers stand in the reciprocal relation of different sexes to each other."

Dr. Weiss' observations were made during eight days in the middle of April (1903), near Church Stretton in Shropshire. His conclusions were drawn from the examination "of two large patches of primroses" adjoining each other, and "of large primrose-covered areas at the foot of Caer Caradoc." The former adjoining situations were "sheltered"; "the large primrose-covered areas were exposed to the cold west winds of the season." The results which Dr. Weiss arrived at from these eight days' observations are told us in the final paragraph of the pamphlet. "From the observations I have made on the primrose, I feel convinced that it is both *regularly visited and cross-pollinated by insects* under favourable climatic conditions, but that like most flowers *adapted* to the visits of insects, it is provided with efficient means of self-pollination" (italics ours).

In this result it is evident that Dr. Weiss' observations and conclusions do not furnish any support to Darwin's theory as to "heterostylism." It was our special purpose in that portion of the "Primrose and Darwinism" which relates to the primrose to controvert by actual evidence these theories of Darwin. Dr. Weiss merely maintains that in positions "where favourable climatic conditions" existed the primrose "is regularly visited and cross-pollinated by insects"; but in the "large primrose-covered areas" he owns, as we shall see below, that "insects were markedly absent." Our remarks here will consequently solely refer to an examination, whether the insects he enumerates as seen by him visiting the primrose under favourable climatic conditions could be, even under such conditions, sufficiently efficient agents for the cross-pollination "of two large patches of primroses."

Before, however, the matter of the regularity of insect visits to the primrose is discussed, we must primarily state that we cannot agree with Dr. Weiss' statement that the primrose "is like most flowers *adapted* to the visits of insects."

The tube of the corolla of the primrose averages 12 to 14 mm. in length (25 mm. being the equivalent of an inch), and in favourable situations it is very frequently 16 mm. long. This length excludes the vast majority of insects, and even the majority of what are called the "long-tongued insects, as the humble-bees, from reaching the nectar. The humble-bees consequently are not accustomed to visit it. Only one humble-bee, *Bombus hortorum*, could reach the nectar with any facility. Its proboscis averages from 12 to 17 mm. The proboscis of the remaining humble-bees rarely exceeds 11 mm., their average length being 7 to 9 mm. (Müller). The hive bee could not reach its nectar, as its tongue is only 6½ mm. Only two other genera of insects, *Anthophora* and *Bombylius* (a Diptera), have a proboscis

sufficiently long to reach the nectar. Butterflies are comparatively so rarely to be seen at that early spring season—only hibernated specimens being then upon the wing—that their influence would be almost *nil*. So these long-tubed flowers, naturally excluding all but a few insects, must assuredly be very *ill-adapted* for insect visitors.

We now pass to the insect visitors seen by Dr. Weiss in the "two large patches of primroses" in the "sheltered" position.

In this situation Prof. Weiss saw five species of insects visiting the primroses: *Andrena Gwynana*, the hive bee (*Apis mellifica*), *Bombus terrestris* (proboscis 7 to 9 mm., H. Müller); *Anthophora furcata*, and *Bombylius major*. The three first mentioned must be set aside at once as effecting pollination in these flowers. The proboscis of all three is too short to reach the nectar. Prof. Weiss says of *Andrena Gwynana*, whose proboscis is only 2½ mm., that "they are very active agents of cross-pollination of the primrose." This opinion is completely at variance with its observed habits. Darwin, following Müller, says: "Bees possess acute powers of vision and discrimination, for those engaged in collecting pollen" (as *A. Gwynana* with its very short tongue would alone do) from *Primula elatior* invariably passed by the flowers of the long-styled form. This exactly agrees with our own observation of *A. Gwynana's* visit to the cowslip. (We have never met with it upon the primrose: this rarer occurrence in the primrose arises from the earlier appearance of the primrose; but even on the cowslip their appearance is very exceptional.) We have caught it on the short-styled cowslip, but have never seen it upon the long-styled. It would consequently, even if numerous, not be an agent of cross-pollination at all. The same would apply to the one *hive bee* which Dr. Weiss saw upon the flowers, and the three specimens of *Bombus terrestris*. There is thus left one, *Anthophora furcata*.[1]

Bombylius major. Dr. Weiss saw on an average one Anthophora a day (seven in eight days). Only one such visitor seen daily is conclusive evidence that no measurable pollination could be effected by Anthophora "in two large patches of primroses," even supposing such a visitor deposited a grain or two on each visit to a flower, and that it alternately visited the different forms of the flower; whereas, usually it would visit every flower on each root before it passed to another plant. It would thus rather, if anything at all, be an agent of self-fertilisation. Moreover, it would not be likely to convey much, if any, pollen on its head, even if it touched with it the anthers of the short-styled, as its anthers burst inwardly and only

[1] Dr. Weiss, we think, must have mistaken *A. pilipes* for *A. furcata* as *furcata* does not fly until July (Saunders' "*Hymenoptera aculeata*," p. 350; Fred Smith's "*Hym. acul.*," vol. ii. 193). The specimens which I have captured of *furcata* have been always in July and August.

present their hard backs to any visiting insect. The visits of the Bombylii (of which Dr. Weiss saw an average of two a day), if effecting anything at all, would naturally do less than even that of the Anthophora, as the Bombylii have the slenderest form of proboscis; they usually, too, though not always, hover (like the day-flying humming-bird hawk-moth) over the flowers they visit; and it would be the same with them as with the Anthophora if they touched the anthers of the short-styled. So the only two sets of insects which effect pollination at all could not possibly by the numbers seen measurably affect, for pollination, "the large patches of primroses."

Dr. Weiss says in reference to the other position, "the large primrose-covered areas at the foot of Caer Caradoc—I looked in vain for insect visitors;" and again "the absence of insects was very marked."

Dr. Weiss also makes the circumstance of his meeting with an occasional specimen of the "so-called oxlip, the hybrid between *P. acaulis* (primrose) and *P. officinalis* (cowslip)" an argument that "cross-pollination in this district must be a pretty general phenomenon." "There can, I think," Dr. Weiss continues, "be no doubt that these hybrids owe their origin to the cross-pollination by insects" and "the occurrence of a fair number of hybrids argues a considerable frequency of insect-visitors to the parents." But Dr. Weiss' own experience showed that there was no such considerable frequency; but this argument is based on the supposition that the common oxlip is a hybrid. Of this there is no positive proof. It is probably only a variety as is the Bardfield oxlip (*P. elatior*). Linnæus, with whom Bentham agrees, treats them all—primrose, cowslip, Bardfield oxlip, as mere varieties of one another, Bentham saying ("Eng. Bot.," p. 353), "some since Linnæus have considered them as distinct and constant species, but more recent investigation has shown that Linnæus' views are correct." Even if the oxlip were a hybrid, it is quite as probable,—or in my opinion—from the rarity of insect-visitors to both cowslip and primrose—more probable, that the wind would in such a case be the agency.

Dr. Weiss, in his pamphlet, cites my own observations from "The Primrose and Darwinism," in reference to insect-visitors. "Only four long-tongued insect-visitors were observed by "Field Naturalist," after seeing and examining thousands and thousands, we might say millions, of primroses." These four were *Anthophora pilipes*, *Bombylius discolor*, the Brimstone butterfly (*Gonepteryx rhamni*), and the cabbage butterfly (*Pieris brassicæ*). These also were only seen on one occasion each. Since, however, we have seen one humble bee (*B. lapidarius*). This made only a momentary visit to a flower, though there were many primroses immediately near, and after trying the flower flew away.

Mr. T. A. Briggs, who gives his observations made in the neighbourhood of Plymouth as to the fertilisation of the prim-

rose, seems to have had almost an exactly similar experience to my own. He met with an *Anthophora*, a *Bombylius*, a Brimstone butterfly and *Andræna Gwynana* (*Jour. of Bot.*, vol. iii., 190, "Devon and Corn. Nat. Hist. Soc." vol. iv.).

Mr. J. H. Burkill says, "The fertilisation of the primrose is still unexplained"—if cross-fertilisation alone can explain it, it is, and will remain, unexplained!—"None of the insects seen on it through many hours of watching are sufficient for its fertilisation." He continues "The doubt does not end with our own shores. Knuth at Kiel has failed to observe insect-visitors, and Cobelli in the Tyrol can, besides four beetles and *Thrips*, only name one butterfly (*Gonepteryx rhamni*) as a visitor capable of cross-fertilising the plant. He especially notes the fact that bees avoid it. My night observations have been few and not conducted with best conditions and without results."[1]

Hermann Müller omits all mention of it in his book—"The Fertilisation of Flowers." This is the more noticeable as the book was written in the special advocacy of the cross-fertilisation of flowers. Darwin also says "the primrose is never visited—and I speak after many years of observation—by the larger humble bees, and only rarely by the smaller ones." The smaller humble bees have with one exception (*B. hortorum*) only an average length of proboscis of 7-9 mm.; nor do any of these smaller bees, *e.g.*, the "worker" or "neuter" bees, come out hatched from the nest till May at the earliest, when the primrose season is almost past. Darwin was consequently driven under his theory about "heterostylism" to suppose that the primrose was fertilised by night-flying Lepidoptera. In support of this opinion Darwin had not, and there is not, a shred of evidence.

Mr. Scott Elliott, in the "Flora of Dumfriesshire," says, "*Bombus hortorum*, regular and sufficient." What evidence he had to substantiate such an absolute dictum we are not informed. The above sentence is all that he says in his book about it. We confess grave doubts as to the value of such a brief and summary testimony, as it stands in direct contradiction to Darwin's, Burkill's, Knuth's, Corbelli's and Müller's negative evidence. It is a far too common practice for mere casual observers when they see an insect on a flower to assume positively that such a flower is generally cross-fertilised by such insect; they come to this conclusion at once without any special or extended observation. They are too apt to forget the adage—which applies particularly to this relation between flowers and insects—"One swallow does not make a summer."

Evidently the testimony of the different observers mentioned above affords no evidence, but the contrary, in support of Darwin's theories about "heterostylism," viz., that "one form of *Primula* must unite with the other form in order to produce full

[1] *Journal of Botany*, May, 1897.

fertility," much less does it support the theory that "the two forms stand in the reciprocal relation of different sexes to each other." Even Dr. Weiss allows that the primrose "is provided with efficient means for self-pollination."

At this season, when the primrose is in bloom, every one interested in the relation of flowers and insects to each other, may, by his own observation, judge whether the few insects which he sees—and most frequently none at all—amongst "large masses of primroses," can effect any measurable cross-fertilisation of the flowers. If efficient cross-fertilisation did not take place, and self-fertilisation were impossible—according to the latter of the two theories of Darwin mentioned above—then the result must be—as H. Müller well observes in such cases—that the primrose would gradually but inevitably disappear.

[We are sorry to have to announce that, shortly after this article reached us, the writer's life came to its close. The Rev. Edward Bell was born at Uppingham, January 26, 1829, and was educated at Uppingham School and Trinity College, Cambridge. He acted as curate of Gainford, Durham, and perpetual curate of Upper Armley, Leeds, and from 1868 to 1890 was vicar of St. John's, Wakefield. Here his health broke down from overwork and he retired, devoting all his time to Natural History pursuits, and occasionally contributing to magazines. Having, after a few years' rest, recovered much of his health, he became a great walker, being particularly fond of Surrey commons. He was a keen and accurate observer, specially devoting his attention to flowers and bees, and well earning the title he gave himself of "A Field Naturalist." Under this *nom de guerre* he published "The Primrose and Darwinism" in 1902, in reviewing which work we differed from some of its conclusions. In sending us the above paper on February 17, he expressed a wish to preserve his anonymity on account of his indifferent health which rendered him indisposed for controversy; but only a few days later he met with a shocking accident, upsetting an oil lamp, was dreadfully burnt and only survived a fortnight. He died at Poole on March 5, before the proof of his article could reach him. He was anxious it should appear in this number so that other observers might check it during the present primrose season. We have obtained the consent of the writer's family to this posthumous revelation of his identity, and shall reserve our own comments on his observations and inferences until our next number.—Ed. N.N.]

NATURE NOTES FROM MABLETHORPE.

By W. Percival Westell, F.R.H.S., M.B.O.U.

TO those people who nowadays sojourn at this rapidly rising Lincolnshire seaside resort, and who, like the writer, may perchance be interested in the fauna and flora of the district, there is a good deal of wild life which, to the casual observer, or the lay man, might easily pass unnoticed. Indeed, it is a remarkable fact that, however barren and desolate any neighbourhood may *at a casual glance* appear to be, when one comes to note down the various birds, wild flowers and other forms of wild life to be heard or seen, one's lists rapidly total up, and even a few days' stay may result in quite a batch of interesting and useful Nature notes being gathered together.

Residing, as does the writer, in an extremely well-wooded part of quiet, homely Hertfordshire, beloved by dear old Izaak Walton and Charles Lamb, the sudden transformation to treeless Lincolnshire is, to say the least, striking, and the country around presents quite a barren aspect. On immediate arrival the field naturalist, or the general lover of Nature and country life, thinks of the curlews of Locksley Hall with

> "The dreary, dreary moorland and
> The barren, barren shore."

As regards the bird life of the neighbourhood, it is only fair to state that the month of August is not an ideal one in which to observe birds to any extent. By that time parental cares and affections are mostly concluded; most birds have lost their voices and will not tune their lutes until the dawn of another spring-time; several species have by August quitted our shores for their sojourn under sunnier skies, and with the resident birds the moulting season is rapidly approaching, and many species hie away to some convenient solitude, there to don new dresses with which to court their lady loves another season. Yet, in spite of this, the birds which I was enabled to identify were very few indeed, and the chief branch of Nature study to which the field naturalist should devote attention is the flora.

To deal with the bird life, one should perhaps in the first instance give pride of place to the cosmopolitan sparrow; that cheeky, impudent, and so universally despised bird about whose depredations so much has been said and written during the last few years, and as to which the Board of Agriculture itself has recently issued a mandamus advocating the formation of sparrow clubs throughout the country! The advocacy of this is open to question, but this does not come within our province here.

One notices with pleasure the number of swallows, house-martins and swifts, and, moreover, the way in which the residents protect and encourage the martins to nest under the eaves. Another feature of the bird life hereabouts was the number

of stonechats and meadow-pipits; the former uttering their curious and somewhat monotonous notes likened unto knocking two stones or pebbles together—hence its name—and it is also interesting to notice the restless habits of both species mentioned.

The only species of sea birds which I was able to discern was the lesser black-backed gull, and of these I counted perhaps a couple of score or so on the wing at one time, gracefully skimming over the surface of the oftentimes murky waters of the German Ocean!

The skylark—that scorner of the ground as Shelley has so ably described it—rarely sings his beautiful lays during August; howbeit, it is one of the most continuous song birds in the British Isles; and so it came to pass that its tuneful song was not to be heard, but a careful look out through the fields towards Sutton-on-Sea revealed quite a nice company of these joyous birds.

Starlings in flocks were seen, and also others whistling and chattering their quite indescribable pandemonium of notes upon the chimney stacks: the greenfinch in his gorgeous green livery and the yellow bunting in his truly handsome dress of yellow and green, the sable rook and the grey wagtail complete my aves list.

Coming to the flora, one is at once struck by the plentifulness of the sea buckthorn and the beautiful marram grass upon the sand dunes, as well as the tea tree, with its delicate pink blossoms.

Amongst the seventy species of trees and plants upon my list, I may perhaps mention that the ragwort appears to be the commonest of them all: its fine starry heads of golden flowers made quite a brave floral sight in the autumn sunshine and the larvæ of the beautiful little cinnabar moth were having a right royal feast upon the leaves thereof. The hounds-tongue and the hemlock stork's bill are both common, too, whilst this unpretentious essay would be incomplete without reference to the wild asparagus, horse radish, wild celery and wild leek.

Near the shore one notices the pale blossoms of the sea stock, or rocket, and the curious prickly saltwort; whilst amongst the sand dunes the pale yellow of the yellow rattle and the delicious blue of the milkwort, the red heads of the sparingly-leafed betony, and near the ditches the pleasing smell of the water mint and the stately motherwort, the fine golden of the corn sow thistle (far away from any corn fields it is true) and the greyish-coloured leaves of the fleabane did not escape attention.

In concluding these notes I may perhaps give a list of commoner trees and plants identified, which only require passing reference, namely, sow thistle, goat's beard, yellow bedstraw, hawkweed, yarrow, broad-leaved plantain, daisy, hedge mustard, long-rooted cat's-ear, dandelion, lamb's-tongue, chickweed, nipplewort, groundsel, scarlet poppy, hop trefoil, common mallow, silver weed, shepherd's purse, dock, bramble, white and

red clovers, elder, cinquefoil, scentless mayweed, field and milk thistles, toadflax, goosegrass, comfrey, white goosefoot, tufted vetch, common vetch, bird's foot trefoil, cow parsnip, wild carrot, smaller knapweed, purple medick (called Lucerne at Mablethorpe), knot grass, privet, field convolvulus, dove's foot crane's bill, charlock, germander speedwell, burdock, stonecrop, upright meadow crowfoot, field scorpion grass, self heal and wart cress.

My notes are quite unpretentious and to some may be considered prolix observations, but common things have quite as wonderful and interesting life-stories to unfold as their rarer neighbours. Indeed, there are many common things, of which we know but little, and which deserve close study. Hugh Miller has rightly and eloquently written that :—"Nature will be reported ; all things are engaged in writing its history. The plant, the pebble, goes attended by its shadow. The rolling rock leaves its scratches on the mountain, the river its channel in the soil, the animal its bones in the stratum, the fern and leaf their modest epitaph in the soil. The air is full of sounds, the sky of tokens, the ground of memoranda and signatures ; and every object is covered over with hints, which speak to the intelligent."

I wish to express my indebtedness to my friend, Mr. S. C. Carter, of Louth, for kindly identifying some of the plants above enumerated.

REVIEWS AND EXCHANGES.

The Great North-west and the Great Lake Region of North America. By Paul Fountain. Longmans. Price 10s 6d. net.

Like his two previous volumes this is a simply-told narrative of Mr. Fountain's experiences in America nearly forty years ago. He writes professedly as a sportsman rather than as a naturalist ; but he has, we are glad to see, as little sympathy with the wholesale slaughterer of animals as with the reckless destroyer of timber-forests. "There is," he writes, "a great fascination in tracking and shooting big game, a fascination that wants a certain amount of checking, or the sportsman degenerates into a common butcher. Excessive slaughter is, in my opinion, one of the most selfish of crimes ; for though man has an hereditary interest in the wild creatures of the world, it is an entailed, not an absolute, interest, and it is his bounden duty to remember and guard the interests of his successors. He who exterminates all the game on an estate deprives his descendants of one of the chief pleasures of possession. On a private estate the mischief may not be irreparable ; on a public one (the waste places of the world at large), it certainly is. Therefore, the man who would not be considered a public enemy ought to shoot, however remote the hunting-ground, with moderation. There are others to come after him ; and a world denuded of wild creatures would be a spoiled world."

The author is, we think, needlessly insistent in his diatribes against museum naturalists mainly on the ground of their discriminating between European and

American forms as distinct species. The sportsman is too apt to look merely at plumage or other external characters, disregarding anatomy and still more ignoring development; and we cannot but think that, in the majority of the cases to which Mr. Fountain alludes, a thorough investigation would show that mere geographical isolation, if nothing else, has produced differences of structure which entitle the representative geographical forms to specific rank.

It is melancholy to think how far less wild is the North-west of to-day than that described in this volume, and that if we had a similar account of South Africa fifty or sixty years ago it would show the same rapid extermination of big game.

The American Botanist for December, 1903, though it makes one inference to which we most strongly demur, viz., that *Corallorhiza innata* "is parasitic upon the roots of trees can be at once seen by its lack of chlorophyll," is an interesting number. The following passages refer to the gathering of fern fronds for bouquets in the hills of Berkshire, Massachusetts. "An extensive traffic in fronds of our native ferns . . . is beginning to threaten their existence in the regions from which the supply comes. To prevent the total extinction of the ferns in the Berkshires, a measure has been introduced into the Massachusetts Legislature requiring that each fern-gatherer in that State have a license, and making other regulations for restricting the collecting. This, of course, has aroused the strong opposition of the dealers. . . . It is estimated that more than 100,000,000 ferns are gathered each year and put in cold storage at Springfield to be sent broadcast over the country. From all over the country come in the farmers with their great loads of ferns, some of which bring as high a price as 2 dols. 50 c. a load. For the past twenty years dealers in Hinsdale have been in the fern business, and they say there has not been the slightest diminution in the supply. All the year up to the time of frost in the autumn, farmers have their entire families out getting ferns; ferns of all descriptions from the delicate maidenhair to the austere brakes. The roots are always saved, and in many cases land that is of no value for other purposes brings in a good revenue from the ferns. The bill provides that the pickers must have a license to conduct their business, and that a certificate must follow each lot of ferns from the time they are gathered in the woods of Berkshire until they reach the final purchaser in some large city. This red tape would kill the business entirely, the dealers say. . . . A man interested in fern gathering said . . . that at least one-fourth of the people of Berkshire are directly interested in the fern business. When a man owning a piece of land chooses to market the ferns upon it, or to allow others to do so, no one can object, for a man may do as he will with his own. . . But the gathering of ferns from the lands of another without permission is quite another matter, and the sooner the people of Massachusetts and other New England States put a stop to such practices the better. It is a mistake to think that removing the fronds, even in autumn, does no harm to the plants. Gathering the fronds late in the year injures the plants less than at other seasons, but it may be safely assumed that so long as the fronds are green the plant has use for them. Here seems to be a good opportunity for the Plant Protection Societies to do some missionary work. Any person willing to exterminate our ferns at 2 dols. 50 c. a wagon load ought to be converted."

The Naturalist for March contains its usually varied assortment of papers and notes of local interest, among which we would specially notice the continuation of "Notes on the Bluebell," by T. W. Woodhead, of the Huddersfield Technical College, an admirable and fully illustrated study.

The Field Naturalist's Quarterly for March begins a new volume, with new features as well as interesting articles on its former lines. Mr. R. Hedger Wallace gives the second part of his account of "The Place of 'Nature Study' in Education," and is henceforth in charge of a Nature Study section of the Magazine, the first part of which is devoted to lists of "Things that might be looked for" during the spring months. Selbornians will also be specially interested in a paper by Mr. W. Heneage Legge on "The Natural History of

Ringmer: a Sussex Haunt of Gilbert White." Mr. Legge points out that not only did White visit Ringmer yearly, but that this locality at a later date furnished Dr. Mantell with much of the material for his "Geology of Sussex," and is almost as interesting a locality to the naturalist of to-day. By the courtesy of the writer we are able to reproduce a view of Delves House, the home of White's aunt, Mrs. Snooke, whence at her death he brought to Selborne the tortoise Timothy, which she had had for forty years. The view represents the house as it was in 1783.

"DELVES HOUSE, RINGMER, IN 1783." (By kind permission of Messrs. Bemrose & Sons.)

The Pax Popular Packet. Cooper Bros., Cliff Town Road, Southend, Essex. Price 5s.

This is a very neatly finished little cabinet, measuring 10 inches by 6 by 7, containing on card mounts or in trays a varied assortment of sponges, sea-mats, zoophytes, whelks'-eggs, barnacles, and such like "common objects of the sea-shore," with a magnifying glass with which to examine them. The specimens are carefully named: there is room in the cabinet for the young collector's own additions, and "Pax" issues with his "Packet" a charming little poem by Miss Emily Read. The whole makes a truly educational and attractive present for a child before going to the sea-side.

Received: *Haileybury Natural Science Society Report for* 1903; *Report of the Felsted School Scientific Society for* 1902 *and* 1903; *Thirty-eighth Annual Report of the American Society for the Prevention of Cruelty to Animals*; *The University of Colorado Studies, No.* 4; *The Quarterly Record of the Royal Botanic Society* for October, November, and December, 1903; *Board of Agriculture and Fisheries Leaflets*, 99; Relationship of Woods to Domestic Water Supply, and 100, Pig Breeding and Feeding; *The Victorian Naturalist* for January and February; *Nature Study* (Manchester, New Hampshire) for February; *Nature-Study* (Huddersfield), *The Irish Naturalist*, *The Animal World*, *The Animals' Friend*, *The Agricultural Economist*, and *The Commonwealth* for March.

NATURAL HISTORY NOTES.

92. Migration and Speed of Birds.—In his criticism of my paper on "Diving Birds" Mr. Price tells us that in their migrations "young birds are piloted by an advance guard of a few old birds," and that this has "almost been proved to be true." Can he give us any authority and instances? In the case of something like 300 different kinds, with the exception of a single one, the autumn migration is begun by young birds from six to eight weeks after leaving their nests. The parents do not follow till one or two months later. Cuckoos, which are so singular in their habits, are the solitary exception. It is well known that as soon as the egg is laid in another bird's nest the parents go off to other climes. Young cuckoos then have to find their way across the seas without the guidance of their parents, like almost all other young birds.

Towards the end of June young starlings begin to migrate, and continue their migration till the end of September, when the old ones commence to go, and do so till December. There is no mistaking a young starling for an old one in the summer months; and it has been ascertained over and over again that these flocks of young starlings have not a single old bird amongst them when going on their summer journey. Starlings, when migrating, keep low. I have frequently seen them leave our coasts flying close to the surface of the water. Their observation, therefore, is not a difficult matter.

I must differ from Mr. Dixon's "Migration of Birds," cited by Mr. Price, which holds the opinion that birds migrate "quite slowly." In their autumn flight some birds do occasionally stop for a short time on their journey, but they go in spring to their breeding stations, if possible, in one uninterrupted flight. Several kinds of American birds cross the Atlantic to Ireland and the Continent. Where can they stop on the way?

Mr. Millard, in writing about the "speed of birds" on p. 36, seems perfectly flabbergasted at what I have said about the Virginian plover going at the rate of from 600 to 700 miles an hour, and wants to know how this could possibly be calculated. H. Gätke, who is my authority, arrives at it in this way. He ascertains that the bird does not stop in its migratory flight. He knows where it starts from, and where it goes; and that, like most day birds, it migrates by night; and he considers that no migratory bird that sets out in the evening and flies all night continues its flight more than fifteen or sixteen hours at a stretch at the very most. The distance between its summer and winter quarters, divided by sixteen, or probably much less, gives the rate of flight per hour.

I cannot follow Mr. Millard in his proposed experiment of a toy steamer in a tank of water, or oil. It is far too complicated an affair to throw any certain light on the effect of a rarefied atmosphere on the speed of a bird's flight. There would be questions of specific gravities, different displacements and adjustments of weights, which would land us in calculations involving the ten-thousandth part of a second and addle the brains of ordinary folk like

Southacre, Swaffham, Norfolk. EDMUND THOS. DAUBENY.
March, 1904.

93. Birds singing on the Ground.—With regard to Mr. Parsons' question, "Is it at all unusual?" I am constantly observing birds and it does not seem to me a very common occurrence. A few springs ago I was much puzzled by the joyous loud singing of a thrush, very early in the morning close to my bedroom window. As there was no tree near, I very quietly crept to the window and saw the bird on the ground in the middle of the lawn, in full song. This went on morning after morning. I have seen the same thing in the daytime, but moving things prevent a long song.

Last spring a thrush sang its evening hymn regularly on the point of the gable of our house, or from the same position on the church, at the east end, which is close by, and one evening I surprised it singing at the foot of the stone cross over the church porch: its nest was somewhere in the churchyard. I heard a skylark singing on the ground for a short time, only a few days ago, and once when walking near a field of beans I saw some sitting singing on the top of bean stems. I know that the hedge accentor sings on the ground, and have often seen and heard it close to my window. M. S. YOUNG.

94. Birds singing on the Ground.—In reply to a query of a correspondent, I have several times noticed skylarks, thrushes, &c., singing on the ground, and also a woodpigeon "cooing." Can any of your readers give me any instances of common partridges perching on a bush or tree. A naturalist friend of mine tells me that he once saw one fly into a hazel-bush and settle; and last spring I saw one sitting on a gate-post. The red-legged partridge perches on ricks, &c., as is well known.

Northants Nat. Hist. Soc. W. A. SHAW.

95. Maternal Love.—Last spring, after a gorse patch had been fired at Yelvertoft, a hen blackbird was found dead with the feathers burnt off her back, having refused to leave her helpless offspring.

W. A. SHAW.

96. Waxwings.—With regard to A. L. H.'s enquiry *re* waxwings, I may also state that I noticed one on January 7, on the bough of a tree in a park, on the outskirts of Gt. Yarmouth, and not being more than ten feet distant, there was no mistake as to its identity.

Mr. A. Patterson, in his catalogue of the birds of Gt. Yarmouth, says, "It is an uncertain winter visitor, in some years it arrives in most unexpected numbers; in others few, if any, are recorded. Early in 1893 several were obtained in the neighbourhood." It is also mentioned in Hudson's "British Birds," and Wood's "Natural History." A local game dealer had a dead specimen on his stall on February 13, and several others were noted during January and February. Whether the one I saw shared the fate of those observed by A. L. H. I am unable to say. It is such a charmingly pretty bird that the man with the gun ought to think twice before killing it.

103, *Lichfield Road, Southtown, Gt. Yarmouth,* ROY A. PIKE.
February 17, 1904.

97. Tufted Duck.—A number of wild duck of the tufted kind have been visiting St. Margaret's Loch at the foot of Arthur's Seat, lately. I counted there to-day eighteen drakes and two ducks swimming lazily about and occasionally diving for the weeds at the bottom of the loch. The upper part of the body is black, as are also the head and rump; the speculum, flanks and belly, are white. They are very tame, coming within twelve yards of anyone standing on the shore. Is this unusual?

19, *Dalziel Place,* AUGUSTUS H. DUVALL.
Abbey Hill, Edinburgh, March 11, 1904.

98. Humming in the Air.—Mr. R. H. Rogers' answer, in the February number of NATURE NOTES to my query, *re* this subject, is very interesting, and is worthy of closer investigation; but, unlike Mr. Rogers' experience of this curious phenomenon, I saw no bumble-bees or other insects to cause the sound. Can it be that they were very high up in the air, out of sight? On dry summer evenings most flying insects rise very high, but it seems scarcely feasible that such insects as bees should rise so high as to be out of sight, seeing that they would have no apparent inducement, their food being entirely on the ground. Were there only a few bumble-bees about one would naturally expect the humming sound to be more or less intermittent as the individual came near to hand; but such was not the case when I heard it. The sound was regular, much like that proceeding from a grove of lime trees in blossom, when surrounded with thousands of bees. I cannot help thinking that the origin of the sound must be much more obscure than the insect theory, or Gilbert White, who frequently heard this humming, would have determined its origin, for he was an extremely shrewd and quick observer. F. GIBBONS.

99. Humming in the Air.—I see there has been another letter on this subject, but I believe the right explanation of it will be found in this. Let me give my description of the case. I was staying at Minehead, Somerset, in summer, and going for a walk one day up one of the grassy slopes near the sea, I experienced a peculiar sensation of sound. I had walked, as it were, into the midst of a humming noise, the origin of which was invisible and which surrounded me on every side. I looked up, then down, to the right, then to the

left, behind; the humming kept on never altering or wavering, a high pitched indescribable note far beyond the top C of the piano, and nearing those harmonics which the ear is unfitted to transmit properly, and which bring into use a mid-sense—a sense between hearing and feeling.

I continued my walk. Bees were busy on the thistle flowers, hover flies and others were flashing here and there, large bumbles would swing into sight and sway off again in long heavy curves, but the mysterious humming continued through all. Now it seemed to come from the ground! At the top I lay down to enjoy the view and get a rest, as the sun was beating down fiercely and it was very close. I laid my ear against the earth out of curiosity. It certainly was not coming from there. I felt disgusted and laying back gazed vacantly into the blue. At once I saw the cause of it all. Right above me about three or four feet from the ground a line of tiny black gnats were playing in a long vertical line. As I rose up they rose also and followed me wherever I went, keeping the same vertical line and the same distance, viz., a little behind the back of the head and about a foot or more above it, a most difficult position for discovering them, and also a position where their sound would not be well located by the ear. I sprang into the air trying to upset their line and disperse them, but they perseveringly reformed and continued playing. At the bottom of the fields I had to pass through a wood, here they vanished, the sound gradually dying away. It was quite a relief. I believe I am right in saying gnats and their allies play in short vertical lines, while alder-flies, &c., play in long horizontal lines. The former they play by dropping straight and returning to the same point again in zigzags to dodge those on their way down. The latter, generally playing over pools, do the same, only horizontally. I believe this will explain Mr. Gibbons' note.

F. J. PARTRIDGE.

SELBORNE SOCIETY NOTICES.

Special General Meeting.—At a well attended Meeting of Members, the new rules, as presented by the Council, were discussed and adopted; a copy of these rules has now been forwarded to each Member of the Society.

Annual Meeting and Conversazione.—This has been arranged for Friday, May 27, and will be held in the Theatre and Halls in Burlington Gardens (formerly the University of London), by the kind permission of the Civil Service Commissioners. Any Member desirous of exhibiting objects of Selbornian interest is requested to send particulars to the Secretary so that he may place them before the Committee.

Council Meetings.—The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Monday, April 25, at 5.30 p.m.; and the Publications Committee on Tuesday, April 12, 5.30 p.m.

New Members.—Edward Collett, Esq., Tilford; Chas. Mitchell Hall, Esq., Bowes Park; T. Ernest Waltham, Esq., Upper Tulse Hill; Samuel Gardner, Esq., Harrow; Miss Mary Smith, Fritton Long; Miss Madeline Kohn, Queen's Gate; J. Fraser Spencer, Esq., Streatham Hill; Mrs. Percival Park, Primrose Hill; Thos. Greenhill, Esq., and Mrs. Greenhill, Hampstead; Miss Dunford and Miss E. M. Dunford, South Hampstead; Chas. J. Ashton, Esq., Catford; E. J. Burr, Esq., Hampstead; Walter P. Harrison, Esq., Brighton; Earl of Munsfield, Hampstead; W. P. Pycraft, Esq., A.L.S., F.Z.S., &c., Kensington; Miss Kate Webb, Highgate; Mrs. M. L. Cooke, Highgate; Fred Clayton, Esq., Hampstead; Richard Burbidge, Esq., Hans Mansions, S.W.; C. Field, Esq., Muswell Hill; Mrs. Chas. Johnston, Hampstead.

Subscriptions.—The Council beg to acknowledge the following subscriptions over 5s.: Chas. Mitchell Hall, Esq., 6s.; R. C. Lowther, Esq., 7s. 6d.; F. C. Stewart, Esq., 10s.; Miss E. Stevenson, 10s.; Samuel Gardner, Esq., 21s.; Rev. W. A. Shaw, M.A., 10s.; E. J. Burr, Esq., 21s.; Mrs. Arthur Hill, 21s.; Richard Burbidge, Esq., 21s.

Donation.—Lady Joyce, 5s.

NEWS FROM THE BRANCHES.

Birmingham and Midland.—On March 24 a lecture, entitled "How Fishes Talk," was delivered in the Birmingham University by Professor T. W. Bridge, F.R.S. There was a good attendance of members and friends. The lecture was illustrated by numerous diagrams, lantern slides, and specimens. Mr. T. H. Russell presided, and, at the close, accorded the Lecturer a hearty vote of thanks.

Clapton (Lower Lea Valley).—A meeting of this Branch was held at Sigdon Road Board School, Hackney Downs, on Saturday, February 20, when Mr. R. Marshman Wattson delivered a lecture on "Stones of English History." After a brief glance at pre-historic and Saxon architecture, Mr. Wattson devoted the principal part of his lecture to the study of Norman work in England, illustrating his remarks with photographic slides of buildings, interspersed with pictures showing the various costumes (Ecclesiastical, military, &c.), of the different periods.

Croydon.—On February 5 a Museum Evening was held at the North Park Ladies' College, by kind permission of Miss Sturton. A large number of specimens of all kinds were lent for exhibition, including a large number from the College Museum. These were suitably arranged in the iron hall attached to the College. After a few words of welcome from Miss Sturton to the children and friends who were present, the collection was formally opened by Mr. Edward A. Martin, F.G.S., who, after a few preliminary remarks, conducted the children and others around the exhibits, explaining the characteristics of some of the specimens. Amongst the various loan objects which were exhibited were fossils and minerals sent by Mr. Martin, some interesting century-old newspapers and other curios by Mr. Feist, an old Roman coin found in Croydon shown by Norah Feist, a fine collection of teeth and bones from caves in Devonshire by Miss Phillips, and many others. The fine collection of shells which is in the Museum was the object of much admiration.

The usual monthly meeting of the Branch took place on March 4 at North Park Ladies' College, when a most interesting lecture was given by Mr. Keatley Moore, B.A., B.Mus. The subject of the lecture was "The Starry Firmament." Mr. Moore exposed certain popular errors which are constantly occurring both in art and literature, and also showed how to recognise easily the principal constellations of the Northern Hemisphere. A vote of thanks was carried to the lecturer, on the proposition of Mr. E. A. Martin, seconded by Mr. Matthew Hunt. It was announced that the exhibition of prints belonging to the Surrey Photographic Survey, which would be on view at the Library on March 12 and succeeding days, would be open to Members of the Society.

Hampstead.—At the Subscription Library, Prince Arthur Road, N.W., on February 29 last, Mr. Frank P. Smith delivered a lecture entitled "Spiders—their Structure and Habits," to a full and appreciative audience of members and their friends. He showed how in some instances the female, when she had no longer any use for him, devoured the male, who would reappear in the shape of eggs or web. Mr. Smith said he would be merciful to his auditors and not pelt them with the forbidding names that are used in spider-study, though to give an idea of what they were like he had some of them thrown upon the screen. The slides used were superb, and were all of Mr. Smith's own preparation. The thanks accorded to him at the end of his fascinating talk were exceedingly hearty. Mr. L. Douglas Wilson occupied the chair.

The last lecture of the session was given at the Town Hall, Haverstock Hill, N.W., on the 19th ult. The lecturer was Mr. J. B. Butler Burke, M.A., of Trinity College, Cambridge, and the subject of his discussion was the all engrossing one of Radium. Mr. Burke had been good enough to bring with him his own operator and lantern, and, as may be supposed, the slides which he showed and the experiments which he conducted added greatly to the attractions of the occasion. Warm was the vote of thanks accorded to Mr. Burke for his valuable services to the Society. Mr. R. Hedger Wallace, Member of the Council, occupied the chair.

SELBORNE SATURDAY AFTERNOONS.

February 27, 1904.—On this date Mr. W. P. Pycraft once more placed his knowledge and services at the Society's disposal by giving the members a demonstration on Birds at the Natural History Museum, South Kensington. Mr. Pycraft at the outset alluded to the difference between birds and reptiles. It, he explained, was greatest in the highest and least in the lowest birds. There were some birds which, having no enemies, had lost the power of flight and were endowed with legs of great size. These birds had but rudimentary wings and lacked the keel to the breast-bone. Then they came to game birds, which emerged from the egg fully clothed, the downy stage having been passed in the shell. They had next before them, in the case, the ancestor of all our domestic poultry, which was of extreme importance as showing descent from a common stock. Mr. Pycraft pointed out the old English pheasant, which no longer existed as a pure breed, because it had crossed with other introduced kinds. There, too, was the capercailzie, once nearly exterminated, but now doing fairly well. The sand grouse, it was pointed out, sometimes came to this country in thousands and afterwards did not come again for years. In the penguins the wing had been transformed into a paddle, which organ, and not the legs, the birds used for swimming through the water. Attention was directed to the petrel tribe, while Mr. Pycraft dilated upon the flying powers of the albatross, which could soar for an hour without moving wing. Puffins, razorbills and gulls were passed in review. To terns Mr. Pycraft specially adverted and denounced the fashion that should place them in mangled and distorted form upon hats as things of beauty. The species could not stand the drain upon it. To game preservers and milliners was due the wiping out of whole crowds of birds. Some of the plover tribe were in danger of extermination, as eggs were taken year after year to satisfy epicures, but inasmuch as the birds lived on wire-worms and noxious insects they should enjoy protection by farmers.

In scathing words Mr. Pycraft, when before the egret, denounced the trade in ospreys, which were torn from the birds while living and the young were left to starve. Milliners stated the feathers to be artificial, which was quite untrue, for they could not be imitated. Environment was next touched upon and the accuracy of presentation now in vogue at the Museum was contrasted with the old practice when specimens were practically stuck upon a stick or twig and then left to speak for themselves. The eagle still held its own; but, in the interests of game-preserving, buzzards, kites, and harriers had been obliterated. There was, Mr. Pycraft affirmed, no more ignorant man than the game-keeper. Some land-owners had been converted, but generally speaking the persecution continued. For instance, the hobby lived almost entirely on beetles and dragon-flies and the kestrel on the first, yet the process of obliteration went on.

On *Saturday*, *March* 12, the members of the Selborne Society had the good fortune to have Mr. L. Fletcher, M.A., F.R.S., Keeper of the Mineral Department, as an expositor and demonstrator. During his demonstration Mr. Fletcher confined his remarks to what are generally known as "precious metals" and "precious stones."

Of the precious metals gold perhaps commands the greatest universal respect, and it is interesting to know that gold seems ever anxious to claim silver as a twin sister, for it is never found without this companion. The silver gives an artistic touch, and helps to weave the gold into beautiful forms. The pale gold from Transylvania is the most beautifully woven of all gold, and its crystals are more sharply defined because it contains a great amount of silver, sometimes reaching 38 per cent. When the silver alloy reaches 20 per cent. the gold is known as *electrum*.

The diamond, queen of precious stones, keeps herself in unsullied purity from all combinations, and at the same time holds the secret of her birth and education locked securely within her own breast, so that the cleverest of our scientists cannot tell us how or when she was formed; neither can they explain why pure carbon in one part of the world should appear as a sparkling gem, and in another should present itself as the very useful but hardly ornamental plumbago or black lead. The Colenso diamond uncut, presented by Ruskin, is exhibited in the gallery. It weighs 130 carats and cost £1,000.

Ranking next the diamond in value comes corundum, which seems able to assume any colour. It may be quite clear and resemble the diamond except in a lesser degree of hardness; or yellow when it is known as topaz. Originally "topaz" meant a yellow stone, but as yellow stones are numerous the word "oriental" is prefixed to show its superiority to every other kind of yellow stone. Again, corundum may take a blue tint and produce a sapphire; or red and become a ruby; green and rank as an emerald; or purple and be known as an amethyst; but to distinguish the corundum gems from all other precious stones of similar colours the word "oriental" is again used—oriental emerald, oriental sapphire, &c. Corundum with the tint of "pigeon's blood" is the rarest and most treasured. Crystallisation in these stones brings out the structure, and in a strong light a silvery six-rayed star may be seen, which gives the name "star stones" to these gems.

All precious stones, except the diamond, are formed of compounds of different elements, and yet one stone may be identical with another in composition, but entirely different in appearance and structure. The alexandrite and oriental chrysolite, for example, have the same chemical composition and yet they are totally unlike each other to look at, for the former is very dark-green by daylight and red by artificial light, while the latter is simply a greenish-yellow by both lights.

Spinel is softer than corundum, but it ranges through an iris of colouring. Its red and rose-tinted varieties are the spinel and balas rubies, used as pivots for the wheels of watches.

Quartz, when clear, is the Brazilian pebble of the spectacle-maker. Some quartz crystals seem of a very friendly disposition, and take into their hearts fine needles of other minerals. One quartz crystal exhibited has its "ghost" always on view. After the crystal was formed another started to grow in its interior and the result is truly ghostly.

Other quartz crystals hold in their stony thraldom water and bubbles of air, and this, together with the fact that casts of shells are found consisting of pure quartz and chalcedony, tells that the mineral matter must have been deposited at first in liquid form.

From the smoky varieties of quartz we get the cairngorm and occidental topaz, whilst the violet amethyst is distinguished from all other varieties of quartz by its rippled fracture. Opal is formed from a combination of silica and water. Sometimes, however, these two substances refuse to crystallize, and it would seem that in the struggle to depart from the ordinary routine fractures occur, which in the end give that delightful play of colour for which opals are so famous, for opals are merely an amorphous form of silica combined with water. The fire opal from Mexico is especially beautiful in its caprice of colours, which range from honey-yellow to flaming hyacinth-red.

One of the most valued of precious stones is the emerald, a bright-green variety of beryl. Emeralds are full of flaws and cracks, so that a large and perfect specimen is very rare. When the stone is colourless it retains the name of beryl, when bluish-green it is known as aquamarine.

A variety of precious stone, emerald-green in colour, to which the name "Hiddenite" has been given, was discovered in rather a strange way. An emerald mine in North Carolina yielded but *one* emerald. However, during the working another kind of stone was found, almost identical in colour, but entirely different in composition, which has never before or since been found anywhere else. Specimens of artificially-coloured agate exhibited are very interesting. For many years the agate industry was carried on at Oberstein, on the banks of the Rhine. In time all the available material became exhausted, and to fill its place agate was brought from America as ballast. Some layers of agate, it appears, are porous and some are not. The stones are boiled in colours, and the porous bands take in the stain while the denser ones refuse it. The result shows tinted bands alternating with white, as in the natural specimens.

Tourmalines are of almost every conceivable colour, and among them is found the interesting occurrence of a green outer crystal enclosing a red one. Tourmaline reminds one of some of Culpepper's herbal prescriptions, where a little of everything comes in. Indeed, it seems almost easier to say what elements tourmaline does not consist of than what it does. Black tourmaline is in great request for mourning jewellery.

FORTHCOMING SELBORNE SATURDAY AFTERNOONS.

April 9.—By kind permission of the Duke of Sutherland, Selbornians will be permitted to view Stafford House, St. James's, S.W., at 3 p.m. Members to assemble at the main door in Stable Yard, St. James's Palace, at 2.30. The visit will be for *Members only*.

FIELD CLUB RAMBLES.

April 16.—Short forest ramble near Chingford. Train leaves Liverpool Street 2.34 p.m.; take cheap day return tickets, 1s. Guide, Mr. R. Marshman Wattson.

April 23.—Chipstead to Woodmansterne by fields, returning from Coulsdon. Take return tickets to Chipstead, S.E.R., Charing Cross, 2.6, London Bridge, 2.15; change at Purley. Guide, Mr. Matthew Hunt.

April 30.—Northwood, Middlesex. Trains leave Baker Street (Metropolitan Railway) at 2.10 and 2.20, Swiss Cottage 2.6, and Finchley Road 2.16. (Please note if alterations in April.) Take return tickets to Northwood. Tea at Ye Olde Greene Manne, Batchworth Heath. Guide, Mr. James E. Whiting.

May 7.—Farthing Down, Olive Lane, Broadmoor Green, Coulsdon Common. Tea at The Fox. Return by Kenley Common and Caterham Valley to Purley. Take return tickets to Coulsdon—Cannon Street 2.16, London Bridge (S.E.R.) 2.20, East Croydon 2.43, Victoria (L.B.S.C.R.) 1.33, Stoats Nest 2.31. Walk thence to Coulsdon Station, where meet at 3. Guide, Mr. E. A. Martin.

ANSWERS TO CORRESPONDENTS.

J. K. B.—*Nectria cinnabarina*, one of the Pyrenomycetes.

Sylvia Stevenson.—Put some sand and pebbles at the bottom of your aquarium and plant in it some water starwort, the green rosettes of leaves of which you will find on most ponds and pools. Float a little duckweed on the surface; it makes a useful screen for the animals. If you can, get a plant of *Vallisneria*, which is not British, from a dealer and plant it in the sand before filling your aquarium. By all means get a few water-snails, a small piece of frog's spawn, not as large as an egg, and some stickle-backs. If you have some newts—or even with snails—it is better to have a piece of perforated zinc over the aquarium, and it should not have a strong light shining through its sides. If you keep water-plants, snails, tadpoles and stickle-backs, you will not require to provide much food besides, though I believe gold-fish like a few crumbs of bread occasionally. Some books which would help you were mentioned on p. 60 in our last number.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

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OBJECTS OF THE SOCIETY.

To promote the study of Natural History. To preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of: (1) The skins and furs of such animals as are in danger of being exterminated; (2) birds and their plumage, except when the birds are killed for food, reared for their plumage, or are known to be injurious. To protect places and objects of natural beauty or antiquarian interest from ill-treatment or destruction. To afford facilities for combined effort in promoting any of the above or kindred objects.

SELBORNIANA.

Annual Meeting and Conversazione.—The arrangements for the evening of Friday, 27th inst., so far as they are yet completed, are as follows: Annual Meeting, for Members only, at 7.30 p.m., in the Small Hall of the Offices of the Civil Service Commission, Burlington Gardens, New Bond Street. Address by the President, the Right Hon. Lord Avebury, at 8 p.m., in the Theatre. Lecture, with lantern illustrations, on "Flowers and their Insect Visitors," by Professor Bentley, at 8.30, in the Theatre. A second Lecture, not yet finally arranged, at 9.30, also in the Theatre. During the evening, microscopes and various other objects of interest will be on exhibition in the Large Hall. We are indebted to the Civil Service Commissioners for their kind permission to use the Theatre and Halls.

Preserving Natural Beauty.—France, the home of the Arts, is going to set us an example in regard to the preservation

of beautiful scenery which may be imperilled by railway engineers, jerry builders, or other foes of Nature. The Society "Pour la Protection des Paysages de France" has only been in existence for about three years, but it has stretched out a strong hand to save the Forest of Fontainebleau from disfigurement, and it has rescued two waterfalls from the dismal fate of the Falls of Foyers, which we allowed to succumb to sordid uses. It has also prevented the quarrying of a picturesque rock in Brittany. Why is not our National Trust equally successful? Public opinion is on its side. The ordinary man, if he is asked whether the Cheddar Cliffs are to be destroyed, or the gorge of the Avon defaced, replies without any hesitation, No. Probably, if a vote could be taken, the project of intruding a railway into the Capel Curig district would be emphatically rejected. Townsfolk do not leave home in the summer to see railway tracks. They can study the beauties of a railway train any day of the year, and one object of the summer vacation is to get away from tramcars, telephones and railway stations. Yet the National Trust will, probably, be unable to save Capel Curig or the Cheddar Cliffs. The inevitable inference is that it ought to be armed with greater powers of prohibition and of compulsory purchase. If a railway which aims at robbing the public of the beauty of a favourite bit of scenery can safely be invested with coercive rights, why not a Society which seeks to protect the public enjoyment against depredators?—*Liverpool Mercury.*

Richmond Park.—His Majesty having decided that game preservation is to be abandoned in Richmond Park and that the plantations are to be thrown open, we hope that proper precautions will be taken in effecting the change of management. The rabbits require to be largely reduced in numbers for the protection of the trees and turf. The deer are, in our opinion, too numerous, but will certainly require as much care as ever in the winter and protection from hooligans on horseback who think it sport to drive these tame and graceful creatures. The trees have not for years had sufficient attention paid to them. There is, therefore, plenty of work for even more park-keepers than have been hitherto employed. The plague of motor cars makes it unfortunately necessary to construct paths for pedestrians alongside all the roads in the Park.

Death of Miss Frances Power Cobbe.—On Easter Tuesday, April 5, at the age of eighty-one, Miss Cobbe passed away at her beautiful home at Hengwrt, Dolgelly. Her long life was not only, as she herself described it in her autobiography, so "pleasant and interesting" that she would have been willing to have it over again, but it was a life devoted to the defence of the suffering and oppressed and to philanthropic and humanitarian work. Her later years were mainly occupied with a

passionate crusade against vivisection, and it is not, perhaps, so well remembered that she was the first to plead for better treatment for the unhappy incurable inmates of the workhouses, and that it was largely owing to her vigorous advocacy that the Bill enabling women to obtain separation from brutal husbands was passed into law.

She was not more than thirty when she published her "Essay on the Theory of Intuitive Morals," and among other works in which she set forth the Theistic faith, so strongly held, was "The Peak in Darien," emphasising the natural reasons for a belief in the immortality of the soul.

Her philanthropic work began in 1858, when she became a helpmate to Mary Carpenter in her ragged school work at Bristol. Later, she undertook the task of investigating the conditions of workhouse life, and was successful in drawing public attention to many much-needed reforms. Miss Cobbe was also a strong advocate of the franchise for women, writing many articles and pamphlets in support of the cause.

It was in 1863 that she first took up the vivisection question in an article published in *Fraser's Magazine*, then edited by Froude, entitled "The Rights of Men and the Claims of Brutes." From that date onward she was the soul of the anti-vivisection crusade in this country. She founded the Victoria Street Society for the Abolition of Vivisection, and for many years acted as its honorary secretary, and in her devotion to the cause she gave up a lucrative position on a newspaper which defended the contrary view.

On retiring from the Hon. Secretaryship of the Victoria Street Society, she received from and through it a subscribed testimonial of £1,000 and an annuity of £100, to compensate her for the sacrifices which she had made on "the altar of conscience" and duty, and this annuity she subsequently presented to the Society itself when Mrs. Yates, of Liverpool, left her a large fortune in recognition of her noble efforts in the cause to which she had devoted her life.

Among her personal friends and correspondents were a large number of the leading writers and thinkers of the day, and on her eightieth birthday she was presented with an address, signed by many of the greatest names in England and America, in recognition of the "strenuous philanthropic activity and the high moral purpose" which had pervaded the whole of her long life.

Mr. Grant Duff gives an amusingly characteristic anecdote of Miss Cobbe in the recently issued volume of his Diary. Mr. Kegan Paul told the narrator that he had fallen in deep disgrace with the lady for alluding to "the lower animals." "Lower animals," she exclaimed, "I don't admit such a term, unless, indeed, you refer to married men." For most of this notice of our esteemed contributor we are indebted to *The Daily Chronicle*.

Illinois Audubon Society.—This seems a most energetic society. We have received from it a card stating its aims and principles as follows: (1) To encourage the study of birds, particularly in the schools, and to disseminate literature relating to them. (2) To work for the betterment and enforcement of State and Federal laws relating to birds. (3) To discourage the wearing of any feathers except those of the ostrich and domestic fowls. (4) To discourage, in every possible way, the wanton destruction of wild birds and their eggs. With this was sent a copy of the Game and Fish Laws of Illinois; a circular from the Superintendent of Public Instruction, containing full suggestions, with numerous poetical recitations, for the celebration of Arbor and Bird Day, which has been established as a State holiday in Illinois since 1887; a skeleton Sunday-school lesson on birds, which we shall reproduce shortly; a leaflet on Nature Study and Bird Protection; a lecture on Birds in Horticulture; a leaflet on "How the Aigrette is procured"; and one entitled "Save the Birds!"

Wild Birds Protection Orders.—We have received from the Home Office an Order, dated April 2, for Cambridgeshire, protecting the Great Bustard and the Goldfinch throughout the year, and prohibiting for three years the taking of any eggs in Wicken Sedge Fen. We have also received an Order, dated April 18, for the West Riding of Yorkshire, extending close time from the last day of February to August 12, excluding the House Sparrow from protection, and protecting a large number of species and the eggs of a large number of species throughout the year.

THE POLLINATION OF THE PRIMROSE.

By the Editor.

"SPEECH," it has been said, though not by Talleyrand, "was given to man to disguise his thoughts"; and probably all who have ever endeavoured to express any new idea in written or spoken words have felt that, with the best intentions in the world, the speech of which they have the command is inadequate for their purpose. Darwin confessedly suffered much from such a difficulty, and again and again he apologises for having been led to use figurative expressions. The endeavour to generalise or emphasise by the use of epigrammatic forms is an obvious pitfall, as, for example, in the phrase, "Nature abhors self-fertilisation." It was, I think, a pity to choose the terms "legitimate" and "illegitimate," for pollination of dissimilar and similar forms of primrose. Some such terms as "heterogonous" and "homogonous," might have answered better, as not implying any notion of inferiority or superiority.

So, too, assuming Darwin to have demonstrated the prepotency of foreign pollen, it would hardly justify the statement that "heterostyled flowers stand in the reciprocal relation of different sexes to each other," and still less Hermann Müller's sweeping generalisation—which is not Darwin's—that it was "proved that in heterostyled plants the regular crossing of separate individuals was absolutely essential for the maintenance of the species."

At the same time I cannot help thinking that Mr. Bell was guilty of an equally exaggerated phraseology when he entitled his book "The Primrose and Darwinism," for the exact functions of heterostyled flowers has but little decisive bearing upon what is ordinarily understood by the term "Darwinism." Darwinism does not ordinarily signify the views that Darwin held on this or that particular question in biology, but the distinctive view of the origin of species by natural selection. This theory will remain where it was, whether the Primrose be demonstrated to be self-pollinated, wind-pollinated, insect-pollinated, or sometimes one and sometimes the other.

Even to the pre-Darwinian special creationist or altruistic teleologist, if any biologist survives who can be so classified, structure has a definite relation to function. Darwin merely modified this belief, the elementary result of all anatomical and physiological study, by bringing abundant and varied evidence and inference to show that the adaptation is selfish not altruistic, that every structure is of use to its possessor or was of use to its ancestors. This general biological principle, the new teleology, as it has been termed, is now so universally recognised as demonstrated truth that biologists see no danger in assuming it as a starting point for deductive reasoning. We may, then, probably assert with confidence that the almost universal—it is not universal—occurrence of a definite reciprocal dimorphism in the position of anthers and stigma in *Primula acaulis* corresponds to some definite physiological adaptation. Even if the prepotency of foreign pollen were not demonstrated, we should infer that reciprocal cross-pollination by insects (parts of whose bodies would, on visiting the two forms in succession, come in contact at one time with anther and at another with stigma) is at least favoured. On the other hand, if prepotency be demonstrated it does not prove universal cross-pollination, it does not exclude occasional, possibly frequent, "illegitimate," or, as I would call them, "homogonous," pollinations. We may, in fact, carry our deductive reasoning still farther in the direction of admitting such pollinations. Though the eye appears a clearly entomophilous adaptation, the primrose is otherwise self-coloured, very pale, and somewhat more scented, I think, at dusk or by night. Self-coloured flowers, such as *Malva rotundifolia*, though their coloured corollas suggest at least occasional entomophilous pollination, are generally either synacmic, or in other ways self-fertile and perhaps self-fertilising. Whether there are, or are not,

nocturnal lepidoptera that pollinate the primrose, it is certainly difficult to trace any causal relationship between its heterostylism and wind-pollination. I do not believe that the method of fertilisation in any one species is necessarily the same in all parts of its distributional area; in other words, it is not improbable that an insect-fertilised species may extend beyond the limits of its insect fertilisers. The careful observations of Professor Weiss and others have shown that, even in the cold and often sunless season when the primrose flowers in England, there are insects of several species that do visit its blossoms. It is, however, a question whether these are sufficiently numerous to account for a large proportion of the seed set.

Mr. Bell objects that the exclusion of all but a few insects is an ill adaptation for insect visitors; but, on the contrary, I would urge, from the analogy of other cases, such as orchids, that this represents a specially high order of adaptation, more specialised than that of such a flower as the buttercup, whose honey is accessible to any chance visitor. The matter is now pre-eminently one for observation and not for mere speculation. I do not for a moment believe that Darwin ever meant to affirm that "illegitimate" or even self-pollination was altogether excluded.

It is important that the question should not be confused by any errors in mere nomenclature; so that I much regret Mr. Bell's citation of Linnæus and Bentham as to specific identity between *P. veris*, *acaulis*, and *elatior*. Such a view makes the word species absolutely meaningless. Three forms, constant under cultivation, differing in foliage, perfume, colour, floral markings and habitat are assuredly as well entitled to rank as species as any forms belonging to one genus can be. The hybrids, which it is a pity to call oxlips, are markedly distinct from *P. elatior* and have all those intermediate characters which generally pertain to hybrids.

RAIN.

From the Danish Jacobsen's "Siren Voices."

EVERYTHING gleamed, sparkled, sprouted. Leaves, branches, trunks, everything glistened with wet; every little drop that fell on the earth, on the grass, on the stile, or wherever it might be, was spluttered and sparkled about in thousands of fine pearls. Small drops hung a little while, then became large drops, dropped down here, joined other drops, became small streams, were lost in small furrows, ran into large and out of small holes, sailed away with dust, with splinters and bits of leaves, ran them aground, set them afloat, whirled them round and set them

aground. Leaves which had not met together since they lay in the same bud, met again in the dampness; moss that had turned to nothing with dryness swelled up, and became soft, crisp, green and juicy; and grey lichen that had almost turned dry as snuff spread itself out in graceful folds stiffening like silk. The convolvuluses let their white cups be filled to the brim, clinked together and poured the water at the feet of the nettles; the black snails crawled amiably along and looked appreciatively up at the sky. F. M. M. P.

A ROUNDEL OF RAIN.

Out of the night of Heavens beetle-browed
In sheets of silver does the rain take flight!
A crash of waters hurled from inky cloud
Out of the night!

Anon the stars steal slowly into sight,
The midnight skies have doffed their sable shroud,
And Dian steeps a sleeping world in light.

In its strange beauty stands the earth avowed,
Transfigured by the rain! And then will plight
Sweet Philomel his troth, and call aloud
Out of the night!

Karsfield, Torquay. F. B. Doveton.

NOTES ON LONDON BIRDS IN 1903.

IN last year's volume of Nature Notes (p. 89) I referred to the nesting of the black swans in Hyde Park. In April, 1903, another brood was hatched. The first intimation I received was the discovery of a young bird in down, evidently but a few days old, lying dead in Hyde Park on the path by the Serpentine, on April 4. On the following day I saw two more cygnets swimming about with their parents and a keeper told me that four birds had been hatched on April 2, but that only two had survived. Of the three survivors from the brood hatched in October, 1902, all but one were killed by dogs.

In June, 1903, a black swan was sitting on a clutch of five more eggs near to the fountains in Kensington Gardens; the nest was in a terribly conspicuous position, and had it not been constantly protected, the contents would have been broken by boys at once. One of the five eggs very soon disappeared. On

July 28 I found the nest abandoned. There was one egg and one dead cygnet in it. I was told by a keeper that two other young birds had been hatched, but had mysteriously disappeared. It was suggested that they had been killed by rats. At this date—the end of July, there were in addition to three old black swans, one survivor of the brood hatched in October, 1902, and one survivor of the April (1903) brood. Of the two young birds, that of the previous October, ten months old, was very like its mother, but smaller. It had some brown edgings to its white flight feathers, the bill was of a dull pink, instead of the bright pink of maturity; and the band across the bill was pale pink, instead of white. The irides, too, were of a duller red than those of an old bird. The April bird, nearly four months old, was almost as big as the bird of ten months, but was much browner on the back and had more brown on the flight feathers of the wing, the bill was a duller muddy pink, and the light band across it brownish white—the sides were reddish brown.

On August 18 a black swan was again sitting on the nest by the fountains, but on only one egg. A week later she had left the nest and the egg was gone too.

On September 29 this nest was again occupied and there were six eggs in it. On October 27 I saw three young birds swimming about which could not have been more than a day or two old. On December 31 there were seven black swans on the Serpentine, namely, these three cygnets, the two young birds above described, and two old birds. I do not know what had become of the third. At least sixteen eggs had been laid during the year.

Turning to the wild birds, my notes for 1903 refer to some rather interesting occurrences. On January 1 two greenfinches were observed in Hyde Park close to the bridge, and on the morning of January 6, a beautiful day, a blackbird in Kensington Gardens was in full song. On January 9 I observed an almost white blackbird fly from the island in the Serpentine, and this bird was frequently to be seen throughout the year either near the island or in the dell at the east end of the water. January was very warm and some hawthorns in Kensington Gardens were quite brightly tinged with green by the middle of the month.

My sister saw a wheatear in Kensington Gardens on March 25, and I observed a pair there on the following day. Early in April I inspected the rooks' nests in Connaught Square, of which I counted eleven; eight appeared to be inhabited. During this month, when spring migrants may be expected in the London Parks, the winds were unusually cold. I observed a willow wren in Kensington Gardens on April 20, my sister saw a redstart on the 28th, and two sand martins were flying over the Serpentine on the 30th; but by far the most interesting occurrence in April was that of a yellow-hammer in Hyde Park on the 24th. My eldest brother and I were

attracted by the song, which is very rarely heard in London. I got fairly close to the bird before it flew away. This is only the third occasion upon which I have met with this species in town; the previous occasions being on April 1, 1889, in New Square, Lincoln's Inn, and on June 5, 1895, close to where the bird above mentioned was heard. (See NATURE NOTES, 1891, p. 124, and 1896, p. 33.)

On May 5 I saw my first London swallow in Pimlico, and when walking home that evening through Kensington Gardens a cuckoo flew over my head and alighted on a tree close to the Long Water, and at once began to utter its well-known cry. It soon left this tree and flew off towards Lancaster Gate. Though I have at various times seen the cuckoo in London, I had never before experienced the good fortune of hearing its call, though others have occasionally done so.

A lesser whitethroat was singing in Kensington Gardens close to the bridge over the Serpentine on May 15, and on the following day the spotted flycatcher appeared. On May 19 a greater whitethroat was in full song in the dell at the end of the Serpentine, and on the 21st I again heard the lesser whitethroat singing.

A dead crow was floating in the Serpentine on May 22; I believe it had been shot. No doubt these very interesting birds are apt to do a great deal of damage to eggs and young birds, but it is a great shame to shoot them; it is no excuse to say that they destroy the duck eggs and carry off ducklings, for the ducks apparently increase so much faster than the authorities deem desirable, that considerable numbers of them are shot every winter.

An escaped canary was feeding on the ground near the Speke Monument in Kensington Gardens on June 5, and seemed to enjoy its freedom.

On June 9 I was surprised at finding a pied wagtail by the Serpentine Bridge feeding two quite young birds. For some time past I had seen pied wagtails near the bridge, and expect they must have nested close by, though they must have been exposed to great risk in doing so.

On June 13 there commenced a terrific downpour of rain which lasted without cessation for over sixty hours. I had intended to bicycle to Bath, starting at midnight, but the ride was wisely postponed. When the rain stopped a good many swifts appeared over the Serpentine. I observed this species in London again on July 4 and 26.

As usual, in August several willow wrens were to be seen and heard; they were noticed in Hyde Park on the 11th, 21st and 29th.

Probably very few spotted flycatchers bred in Hyde Park or Kensington Gardens last summer, in fact I only saw two young birds; this was on August 11, near Hyde Park Corner. They were being fed by their parents. *The Field* of August 29,

contained a notice from an observer saying that three young redstarts had been seen near Hyde Park Corner; but I respectfully suggest that the birds in question were spotted flycatchers. I have never known the redstart to nest in Hyde Park, nor even seen it in London during the summer months, though it appears regularly passing through town on migration in April.

The last interesting ornithological event which I have to record occurred on November 14, when a whole family of long-tailed tits, seven or eight in number, flew across my path as I entered Kensington Gardens from Lancaster Gate, and this was a sight that I had never before seen in London.

51, *Gloucester Terrace,* A. HOLTE MACPHERSON.
Hyde Park, W. February 20, 1904.

REVIEWS AND EXCHANGES.

Quiet Hours with Nature. By Mrs. Brightwen, F.Z.S., F.E.S. T. Fisher Unwin. Price 5s.

We feel that our Vice-President, the authoress of this volume, has been very generous to the public. The possessor of a charming estate, with a beautiful garden, rich not only in flowers which any gardener can get together in a year or two, but in fine trees, the legacy of her predecessors, owning, moreover, many animal friends tamed by her kindness, she has shared her garden and her pets with all who will read her volumes. Following the lead of our President, Mrs. Brightwen gives us a study of seedlings—those of trees, and she also devotes several chapters to individual species of trees when fully grown, including the Elm, the Scots Fir, the Cedar, the Wellingtonia, and the Tulip tree. Such "eccentric" flowers of the greenhouse as the Aroids, Aristolochias, Masdevallia and Gloriosa are interestingly described, and the description of a gourd-pergola will assuredly excite the envy if not the emulation of many a gardener. Squirrels, voles, jerboas, ortolans, a stag-beetle and a spider, figure among the pets of whom the authoress lovingly discourses. The book is fully illustrated, mostly with views of The Grove, Stanmore, and its many living treasures. One picture gives us a pleasing miniature of Mrs. Brightwen herself. We rather wish that none but these local pictures had been included, Californian giant Sequoias and Wigwams from American wilds suggesting somewhat the Sunday-school raree-show. The two or three pages so occupied might well be replaced by an index. Mostly reprinted, as it is, from *The Girls' Own Paper*, the volume will form a most acceptable present to any of our younger Selbornians.

A Text-book of Geology. By W. Jerome Harrison, F.G.S. Fifth Edition. Blackie and Son. Price 3s. 6d.

That this text-book has reached a fifth edition proves that it has "met a want." It is admirably adapted for the elementary stage of the Board of Education Examinations, but not in our opinion quite adequate for the advanced stage. It would, in fact, be difficult to produce within such a compass a book that would be so. The present edition differs from that of 1897 mainly in an excellent six-page table of the ranges in time of the principal genera of invertebrates. One slight addition is, we think, unfortunate, viz., the citation on p. 206 of "Deutozoic" as a synonym for Upper Palæozoic. Surely it should be "Deuterozoic." Advantage might have been taken of the re-issue to correct one or two archaisms, such as "endogens" and "acotyledons" on pp. 176 and 177, the explanations of these terms containing statements not in accord with our present knowledge. There are, however, but few of such blemishes. A most interesting frontispiece from a photograph of Scarborough Castle Rock has been prefixed to this edition.

The History of Village Improvement in the United States. By Warren H. Manning. Reprinted from *The Craftsman*, February, 1904.

This pamphlet deals in an historical manner with the question of parks, forests and open spaces, referring chiefly to the last half century. "During this same period," writes the author, "a broader and deeper interest in forestry and tree-planting was stimulated, especially in the Middle West, by such men as John A. Warder, of Ohio, and Governor J. Sterling Morton, of Nebraska, at whose suggestion Arbor Day was first observed in his State, and there officially recognised in 1872. By the observance of this day a multitude of school children and their parents have become interested in tree-planting on home and school grounds. . . . Little do we appreciate to what Dr. Warder's forestry movement has led in the West. It has, by its encouragement of homestead plantations, greatly modified the landscape of the vast central prairie region of our continent. What was an endless and monotonous sea of grass is now a great procession of ever-changing vistas between groups of trees. It has resulted in our Governments establishing fifty-three reservations containing sixty-two million acres of public forests managed by an efficient department, in establishing State forest commissions and reservations, in the formation of national, State and local forestry associations, many of which give quite as much attention to the forest as an element of beauty in landscape and to the preservation of roadside growth and encouragement of public and private tree-planting for beauty alone, as they do to the economic problems."

Society for the Protection of Birds: Report for 1903.

In *The Western Daily Press* for March 28, a correspondent asks, "Why cannot we have an Arbor Day in England?" The pioneer work in this direction, undertaken by the Society for the Protection of Birds, is thus not yet as widely known as it should be. The annual report shows steady work at the endless millinery question and in other matters, and includes a list of all subscriptions from Associates. We should hardly think that the Society gains much from those who subscribe a shilling and receive the Annual Report with their names printed in it and notices of all General Meetings. The Report also contains an address on Bird and Tree Day, by Canon Rawnsley. We note with interest that the Society is applying for a Royal Charter; and with regret that the Watchers' Fund has not met with the support desirable for extended efficiency.

Report of the Rugby School Natural History Society for 1903.

This report shows that the Society continues, after thirty-seven years, to do good work. An excellent paper entitled "Notes on British Thrushes," by the Curator, J. C. F. Fryer, illustrated by three plates, from sketches by the author, is included in the Report. We would suggest that the members of the Photographic Section should place their cameras at the disposal of the members of other sections, photographing the geological exposures, or even rare fossils, the birds' nests, the growing plants, or the architectural relics that interest them, some of which may then be usefully reproduced in the Report.

Epsom College Natural History Society: Report for 1903. *No.* 15. Messrs. Andrews, Epsom. Price 1s. 6d.

Truly a model report! Lists of plants observed, with dates of first blooms seen; of birds, with dates when first seen or heard, when nest was built, egg laid, or young hatched; of lepidoptera, with dates of observation; and of local mosses; with a full weather report, omitting wind, perhaps as too continuous, and sunshine, perhaps because too rare, at least in 1903; and the weights and measures of 234 boys, give it a permanent value for reference. It is, moreover, illustrated with ten excellent photographs, six of which are local.

Report of the Hampstead Scientific Society for 1903. Price 3d.

Though the Society undoubtedly sustained a serious loss in Mr. Basil Martin's departure from London, we are glad to see from the present annual report, containing abstracts of a varied series of lectures and a record of the Proceedings of the Astronomical, Natural History and Photographic Sections, that its scientific work shows no falling off. Though this has been accomplished at a financial loss, the deficit on the year's accounts is less than in 1902.

The Parents' Review for April contains several papers likely to interest our readers, including continuations of the Rev. H. H. Moore's account of "A Forgotten Pioneer of a Rational Education and his Experiment," Mr. Dawes, that is, and his school at King's Somborne, fifty years ago; and of Mrs. Maxwell F. Maxwell's lantern-lecture on Hampstead Birds and Buildings, and a museum lecture, by E. C. Allen, on British Falcons and Hawks.

Received: *East Herts Archæological Society, Annual Report for* 1903; *The American Botanist* for January; *The Wilson Bulletin* (Oberlin, Ohio), *The Victorian Naturalist* and *The Plant World*, for March; *The Naturalist, The Irish Naturalist, The Animals' Friend, Our Animal Friends, The Animal World, The Humanitarian, The Agricultural Economist, The Estate Magazine*, and *The Commonwealth* for April.

NATURAL HISTORY NOTES.

100. The Quagga.—It does not appear to be clearly understood by every one that the Quagga (*Equus quagga*) of South Africa is now completely extinct. The extinction of this species took place comparatively recently, and it is much to be regretted that the Mountain Zebra (*E. zebra*) also threatens to disappear. There still remain a few herds which are rigorously protected in Africa, and we may congratulate the Zoological Society that they still possess one living example of the Mountain Zebra.

March, 1904. W. R.-D.

101. Migration and Speed of Birds.—The authority which I can give respecting the supposed piloting of young birds by old ones on migration is Mr. Dixon, in his book, "Migration of Birds." He holds that it is quite probable that the old birds who have failed to rear broods that season, or have not paired, or have lost their mates by accident, migrate about the same time that the young birds do, and hence show them the way. Whether this be correct or not, I think it far more natural and probable than another theory. Hence, I do not feel able to accept Mr. Daubeny's theory, for it seems to me utterly impossible that young birds should traverse vast distances, which they have never been over before, without some guide or clue to where they are going. If one looks on animals as mere machines, doing everything by blind instinct, and never reasoning or observing anything, perhaps this may be so. I would sooner accept Mr. Dixon's theory, difficult as it may be of rigid and positive proof, than I would accept the other. I feel sure that birds, with their wonderful senses of sight and observation, guide themselves on migration by landmarks. Thus, for example, a migration host, passing a range of hills or a river valley, note them and remember them on their return journey, and thus keep their course straight. How, then, could young birds who have never seen the country before accomplish this without some guide? If they get some piloting on their first journey, they note the way, and after that they remember the identical spots they passed, when on future migrations. Migration, I suppose, is simply a habit, which birds have acquired through thousands of years, a relic, probably, of the southward movement of all life in the Glacial Epoch, when the destructive ice swept everything before it. Now I cannot think that this habit, handed down through generations of birds, has degenerated into blind instinct, and that birds follow, subject to their instinct, year after year. Again, one must remember that many young birds are not fledged till almost the end of July, or beginning of August; this I have often found the case.

Mr. Daubeny says: "There is no mistaking a young starling for an old one in the summer months." Quite so. But I think that only holds good till the young have had their first moult. Now, if the young migrate after moulting, as they certainly do, surely it is not an unlikely thing to mistake an old bird for a young one, since the latter, after moulting, resembles the former identically.

Then, as regards the speed of birds on migration, I think observers must have noticed how summer migrants, when they reach these shores, after touching the

south coast, work their way up country slowly and do not appear in Scotland till some weeks later. There is no doubt that when the birds cross over large expanses of sea they have to go in one long uninterrupted flight till they reach the next land, and in all probability they migrate at a great height, for astronomers have seen them through their telescopes, and have calculated the height to be several miles. There is, of course, no reason why, for instance, a flock of birds which is travelling over England on migration, not intending to stop there, should fly right over, high in the air, without descending low. In fact it is impossible to set down a hard and fast rule, since birds on migration differ so widely according to the different species.

Then, as to the supposed high speed of certain birds, Mr. Daubeny's instance of Herr Gätke's appears to me to be far too hypothetical. He says: He knows where it starts and where it goes." This seems to be rather stretching a point, for surely it is impossible to tell accurately where birds are bound for. Thus, for instance, starting from Heligoland they might fly to England, but they might not rest as soon as they got to shore, but might go right on to Ireland; and what is more, birds over land follow a rather circuitous route, at least it appears so from certain authentic maps which I have seen, so that I do not see how it is possible to determine the speed even approximately. Then, as to the statement "that no migratory bird which sets out in the evening and flies all night continues its flight more than fifteen or sixteen hours at a stretch." I do not see, again, how this can be proved. It may vary so with different birds. In the days of the glaciers the migration of birds southwards before the ice took place slowly, for the glaciers, I suppose, did not move with any great speed. Hence it is surely improbable that the relic of this movement should take place at most abnormal speeds.

In conclusion, I should like to say, that although I have taken Mr. Dixon's theories in most cases and tried to corroborate them, still, I do not agree with that author in all his arguments on the migration of birds. For instance, I do not agree with his theory on the cause of migration and other minor details. But the general trend of his arguments are to "reduce the avine season-flight to law," and to show that it is a perfectly natural phenomenon, and that it is accomplished in a perfectly natural way, with no extraordinary and wonderful characteristics.

Pen Moel, Chepstow. M. P. PRICE.

102. Migration and Speed of Birds.—Respecting the various notes from Mr. E. T. Daubeny and others which have appeared herein, I should like to mention that whereas it is generally supposed that birds when migrating fly very swiftly and at a very high altitude (Mr. Daubeny mentions that the Virginian Plover when on its migratory flight "ascends to regions probably far higher than the Condor." This latter species, he states, searches for food 40,000 feet above sea-level), Mr. W. Eagle Clarke, in the *Ibis* (vol. iv., No. 13, p. 132), practically disproves this. Mr. Clarke, in the course of his most valuable observations, carried out at the Kentish Knock Lightship, the Eddystone Lighthouse, and elsewhere, states from actual observation as under: "That some birds do fly at great heights, and that under certain conditions (which are at present unknown to us) it may be an advantage to them to do so, I will not for a moment deny, *but I am convinced* that it is not a necessity as a means of finding their way." Mr. Clarke further states that "during all these movements, great and small, *the migrants of every species flew close to the surface of the water under all conditions of weather*. On certain occasions, notably on October 11, the state of the atmosphere was such that it must have been quite impossible for them to see more than one, or at most two hundred, yards ahead; and yet under these conditions, when it might possibly have been an advantage to fly high, they sped onwards just skimming the crest of the waves, and never departing from a true east to west course. On fine clear days, with a light wind, these flights were performed in a precisely similar manner."

Mr. Clarke further touches upon the speed at which birds fly when on migration, and states that, "speaking generally, the migrants pursued their way at the steady rate characteristic of their respective species. *There was no hurry*, but at the same time there was a business-like manner about them, which was in

keeping with the important event on hand." Skylarks, Mr. Clarke has proved (that is, as far as it is possible to estimate), migrate at the rate of "about twenty-eight miles an hour, but certainly not more," and as regards the starling, "thirty-five to forty miles an hour."

In my humble opinion the rate of flight of birds on migration and the altitudes they reach have been much exaggerated. Mr. Eagle Clarke's most valuable observations conclusively prove this statement.

St. Albans, Herts, W. Percival Westell, F.R.H.S., M.B.O.U.
April 12, 1904.

103. Bird Movements in Spring.—With reference to Mr. A. R. Horwood's notes hereon (No. 171, vol. xv., pp. 46, 50), I should like to make the following comments.

Tree pipit: Mr. Horwood states that the tree pipit is "a bird not often seen." I can only add that in this part of well-wooded Hertfordshire this species can be seen and heard on any country ramble from the middle of April onwards. When one gets into the country purposely to look and listen for wild life it is wonderful what can be seen and heard. My contention, therefore, is that this species may *frequently* be seen when looked or listened for. Mr. Horwood gives April 1 as the date of its appearance; I am of the opinion that April 10 to 15 is nearer the mark.

Sedge Warbler: I can hardly agree that this bird can be observed "along *most of our roads*," "and in fact almost everywhere." It is, in my experience, a species which is rarely found far away from the neighbourhood of water, and loves aquatic herbage and osier beds. The remark, too, anent the nest of the sedge warbler being "the most beautifully constructed of all those built by our summer migrants" is, I think, a matter of opinion.

Nightingale: Mr. Horwood states that this species may be heard "in the south in the first week in May." It is rare, indeed, that I do not chronicle its arrival here by April 15, at latest, every year!

Turtle dove: Although this bird may not be recorded in the Midlands before May 20, the first week in May always sees the species hereabouts.

I hope Mr. Horwood will receive these notes in the spirit in which they are written. The explanation as to variation in dates of arrival may, of course, be that, whereas he is writing of the Midlands district, my observations are conducted in Hertfordshire.[1]

W. Percival Westell, F.R.H.S., M.B.O.U.

104. Birds Singing on the Ground.—With further reference to the notes hereon (Notes, Nos. 87, 93 and 94), I may say that I have *very frequently*

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[1] During the spring of 1901 I received some hundreds of letters giving me the dates of arrival of summer migrants throughout the country, and these records have been duly published *in extenso* in *The Field Naturalist's Quarterly* (see vol. i., No. 3, pp. 189 to 196), but the following list shows the *earliest dates* of arrival of summer migrants during the year 1901, as recorded by my correspondents, and may perhaps interest your readers:—

Blackcap. April 10. Somerset, Clevedon.
Chiff Chaff. March 30. Suffolk, Elveden.
Corncrake. April 21. Staffs, Stoke-on-Trent.
Cuckoo. April 7. Cumberland, Kirkoswald.
Cuckoo. April 7. Essex, Colchester.
Cuckoo. April 7. Kent, Bidborough.
Stone Curlew. April 9. Suffolk, Elveden.
Turtle Dove. April 19. Worcs, Redditch.
Spotted Flycatcher. April 25. Staffs, Longton.
House Martin. April 14. Kent, Canterbury.
Sand Martin. March 31. Berks, Reading.
Nightingale. April 5. Essex, Stanford-le-Hope.
Nightingale. April 5. Kent, Dartford.
Nightjar. April 23. Somerset, Wrington.
Ring Ouzel. March 17. Sussex, Lewes.
Tree Pipit. April 9. Surrey, Upper Tooting.
Redstart. April 9. Surrey, Upper Tooting.
Common Sandpiper. April 15. Northants, Northampton.
Common Sandpiper. April 15. Shrops, Ludlow.
Red-backed Shrike. May 8. Worcs, Redditch.
Swallow. March 31. Hants, Fordingbridge.
Swift. April 19. Worcs, Redditch.
Yellow Wagtail. March 20. Midlothian, Pentland Hills.
Garden Warbler. March 23. Northants, Northampton.
Garden Warbler. March 23. Sussex, Burwash.
Grasshopper Warbler. April 19. Somerset, Clevedon.
Reed Warbler. May 2. Sussex, Lewes.
Sedge Warbler. May 9 Oxon, Bicester.
Willow Warbler. March 6. Berks, Crowthorne.
Wood Warbler. April 14. Herts, St. Albans.
Wheatear. March 17. Sussex, Lewes.
Whinchat. April 20. Surrey, Upper Tooting.
Greater Whitethroat. April 8. Sussex, St. Leonards.
Lesser Whitethroat. April 10. Somerset, Clevedon.
Wryneck. April 1. Essex, Dedham
Wryneck. April 1. Herts, St. Albans.

observed the skylark singing whilst on the ground, and particularly when it has been standing upon a little clod of earth. Only to-day, too (April 12), I had the pleasure of seeing such a tree-loving species as the tree pipit upon the ground, *uttering its welcome song the while*. I had previously noted its arrival here at 6 a.m. on the morning of April 11. I do not remember ever having observed the song-thrush or blackbird singing whilst on the ground, but when at Bournemouth I was struck by observing both species singing whilst perched on the chimney pots of houses, forcibly reminding one of the soot- and smoke-loving starling! I have often noticed the hedge sparrow singing whilst upon the ground.

W. Percival Westell, F.R.H.S., M.B.O.U.

105. Starlings.—Every winter and early spring we have immense congregations of starlings in the trees in front of this house. They assemble towards evening, coming in small detachments from different quarters and becoming thicker and thicker in the leafless branches, till some of the old elms are black with them. After much hissing and fizzing amongst themselves they descend in numbers to the grass, where they feed, moving along the ground like a black carpet, and now and then rising in a body a yard or two, and settling in a new spot. Having had their supper they return to the trees, where they remain talking at a great rate, now and then changing trees and circling round for half an hour or so. Then, as if at a given signal, up they rise in clouds, darkening the air, and away they go, always in the same direction, to the south-west, and we see no more of them till the next evening, when they again assemble and the same proceedings are gone through. The numbers vary, however; on some nights there are not nearly so many as on others. We see nothing of them by day. The house starlings bustle about feeding on the lawn in pairs, and seem to have no connection with the evening flocks.

I do not remember noticing these assemblages in former days. Is it a new thing? I have heard it said that they are all bachelors from Germany and of quite recent importation. But whatever they are, I should much like to know their history. Where do they sleep? Where are they during the day? What becomes of them in summer and before Christmas? For the great flocks only seem at their largest in February and March. One thing I observe which I never notice in ordinary starlings, and that is their wonderful quickness when they fly downwards, whether into the trees or to the grass; a sort of zig-zag flight, but looking as if they *fell* with closed wings—pouring down.

Botley, Hants. L. Pasley.

106. Robins.—I have been much puzzled lately about the conduct of a couple of robins. They have come to my dressing-room window every morning now during the winter, but lately one has been feeding the other. At first I thought one must be a young one, but it had a red breast, and young robins have not a redbreast when they are fed by the parents, so I conclude it is the cock feeding the hen, during the time of courtship, the honeymoon, but I have never seen it done before by English birds; foreign birds I know feed each other thus. The hen feeds just like a young one, waving its wings and uttering a little peevish cry, but if the cock is not near it can help itself to the food—cheese crumbs. I have been photographed with a robin on my hand. I find chaffinches very tame, they fly about my head when I cycle from my gate, and follow me for some distance in the road. A thrush also last year followed me about like a dog, hopping at my heels till I got to the place where I gave it food, if we had time to spare. I believe most birds could be tamed.

Chanwood Forest, W. R. T.
Easter Eve.

107. Waxwing?—On Sunday morning, about nine o'clock, I caught sight of a strange bird in the orchard, about the size of a missel-thrush. I knew by its restless way that it was a stranger and I saw the bands of white in each wing, which seemed to be an inch broad, and the wings seemed to be deep pink in colour. It did not give me time to study it, for it flew from tree to tree, not quickly, however, until it disappeared. I have no idea what it can be and can find nothing answering to it nearer than the waxwing, although I did not notice any crest. Although it seems almost useless writing about it, yet I cannot let it

pass, as possibly some light may be thrown upon it by your readers. The bands on the wings were too decided, I think, to be a variety of blackbird.

Moorcroft, Hillingdon, Middlesex, G. T. MAURICE.
March 2, 1904.

108. A Sea Gull as a Companion.—In 1875 a herring gull came into my possession, from his plumage evidently a young bird, most probably of that year, but possibly of the year before. Instead of the usual three years, he took about six to mature the hues of his plumage, eye, bill and legs. I believe it was a male bird. His weight was 20½ oz. and his length 20 in.; both under the average. To prevent his escaping, and so coming to harm, I pinioned him; and he remained in my garden until 1904, vigorous and healthy, and preferring no other shelter from the weather than a lee wall, until a few months before his death, when I brought him under cover at night, so that his last winter was passed without discomfort. His end came with a gradual loss of power and activity, and seemed painless.

He proved a most sensible, useful companion, hailing me whenever I appeared, and then remaining by me, and trying to express himself to me. And, when dying, he craved and welcomed my company even more than ever before. Were ever man and bird such close, long friends before?

I am my own gardener, and he would follow up my spade, or other tool, with unerring rapidity, for worms, wire-worms, beetles, earwigs, grubs, woodlice, or snails, &c.; and in the twilights he patrolled the whole place for his morning and evening meals. At certain seasons I caught him a good many birds, and he would swallow a sparrow, or even a thrush, whole and head foremost, after well shaking it, returning the feathers and bones in a clean, neat pellet, after digestion was completed. Occasionally he caught them for himself, and constantly he robbed the sparrows of the scraps they flew down with. When not otherwise sufficiently supplied, I fed him at midday with a piece of meat as large as my top finger joint and a little bread and vegetable or fruit. No one else was ever allowed to do so. A shallow tank supplied his drink, bath and swim.

Bognor, 1904. C. C. E.

109. Humming in the Air.—Most persons living in the country must have noticed this humming in the air referred to more than once in your pages; and as it occurs so close above our heads, I have frequently strained my eyes in every direction in vain attempt to ascertain the kind of insect that produces the sound. That it is caused by bees I do not believe. When it takes place it is ubiquitous, and at a season of the year when bees are far too busy to spend their time amusing themselves by merely buzzing. Their harvest is too short for play; and there are not a sufficient number of them, at all events in the locality in which I have lived for the last twenty years, to produce the humming noise that may be noticed mile after mile during a walk or a ride. In June and July there is a great profusion of insect life, which rises above the earth beyond our sight; though where it is and how high it goes we have only to watch the swallow tribe to ascertain. It seems to me that insects, little and big, sport and play in the air. During the height of summer flocks of starlings may be seen cutting ridiculous figures in their attempts at fly-catching, 200 or 300 feet above the ground; and, being bad performers, must be in quest of large and feebly flying insects; while swallows, swifts and martins take toll of all, whatever their powers of flight may be, and irrespective of their size. I look upon this humming in the air as the annual jubilee of insect life in which the busy bee does not participate.

Southacre, Swaffham, Norfolk. EDMUND THOS. DAUBENY.
March, 1904.

110. Primrose Beetle.—The connection between old maids and clover through cats, field mice and humble bees has ofttimes been quoted in natural history periodicals, and I think I have elsewhere suggested in print the mediation of sparrows in the pollination of the primrose. Nothing happens without a cause. Sparrows pluck off primrose blooms—why? For mere mischief? Certainly not; but in order to gain possession of and feast upon, at a season when insect food is scarce, the special and abundant primrose beetle (*Eusphalerum primulæ*), which, but for the sparrow and other finches, would carry the fertilis-

ing dust from flower to flower, irrespective of the length of pistils. Not having seen Dr. Weiss's pamphlet, I know not whether he refers to the work of this small and therefore perhaps overlooked insect which has called forth these lines.

MAURICE C. H. BIRD.

SELBORNE SOCIETY NOTICES.

Council Meetings.—At the Council Meeting held on March 28, the Officers of the Council (under Rule X.), were elected for the ensuing year. Mr. W. P. Pycraft, A.L.S., F.Z.S., &c., was elected to fill the vacancy on the Council caused by the resignation of Mr. W. S. Durrant. The sum of £10 10s., as commutation money representing life-memberships, was placed on deposit under Rule V.

It was agreed to again ask Mr. Alfred T. Craig to act as Honorary Auditor.

The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Friday, May 13, at 5.30 p.m.; and the Publications Committee on Wednesday, May 11, at 5.30 p.m.

New Members.—Sambrook, Esq., Anerley; Bristowe Wilkinson, Esq., Tulse Hill; Caradoc Mills, Esq., Llanrwst; Percy S. Neave, Esq., Nottingham Place; J. Arrow, Esq., Clapham; Mrs. Yeatman Woolf, St. John's Wood; T. G. Raleigh, Esq., Liverpool; F. H. Steeds, Esq., Edgbaston; Jas. Musselwhite, Esq., Wandsworth; C. Rumbold, Esq., Hampstead; Miss Hiscock, West Hampstead; R. H. Dixon, Esq., Highgate; Albert Dawson, Esq., East Finchley; Miss Anderson, Hampstead; A. H. Adams, Esq., St. John's Wood; Mrs. Douglas Wilson, Brondesbury; J. Wilkinson, Esq., Croydon; Mrs. Chater Fawsitt, Brighton.

Donations and Subscriptions.—The Council beg to acknowledge the following Subscriptions over 5s.: O. V. Aplin, Esq., F.L.S., 7s. 6d.; Chas. Burt, Esq., J.P., 10s.; Mrs. J. V. Eden, 10s.; F. S. Clayton, Esq., 10s.; Dudley W. Buxton, Esq., M.D., D.Sc., &c., 10s. 6d.; H. Campion, Esq., 10s.; Frank J. Brewer, Esq., F.R.I.B.A., 7s. 6d.; J. H. Masters, Esq., 10s.; Fredk. Crowley, Esq., 21s.

The Hon. Librarian has pleasure in announcing the gift of the following books, which Professor Boulger, F.L.S., has kindly made to the library of the Society:—

"The Great North West and Great Lake Region of North America," by Paul Fountain.

"The Cloud World," by Samuel Barber.

"Notes from a Lincolnshire Garden," by A. L. H. A.

"Wee Tim'rous Beasties," by Douglas English.

"South African Flowering Plants," by the Rev. Professor Henslow.

"Nature's Riddles," by H. W. Shepheard-Walwyn.

"Nature Curious and Beautiful," by Richard Kerr, and "Wild Nature's Ways," by Richard Kearton.

SELBORNE SATURDAY AFTERNOONS.

On *March* 26, under the able guidance of Mr. W. Paley Baildon, F.S.A., a visit was made to Lincoln's Inn. On this occasion the Archæological Cycling Club joined the Selbornians, with the result that the visitors in all were a hundred strong.

The Library was first inspected, but the stay was brief, as at the moment it was in use for study. Subsequently Mr. Baildon mentioned that while the date of its starting was unknown, as long ago as 1497 one of the Benchers had left 40 marks for its benefit. The present building was opened in 1845, the same year as the Great Hall, next visited. The architect of the latter was Philip Hardwick, who reproduced a Tudor chamber of harmony and good design. It is here that is seen the large fresco by G. F. Watts, representing the world's law-givers from

Moses downwards. In the bay is old glass, all heraldic, while the rest is modern, the work of Wilmot, in his time a well-known glass painter.

A brief period was devoted to the Council Chamber and the Benchers' Drawing Room. The last is an extremely pleasant apartment, overlooking Lincoln's Inn Fields. Here are portraits of Pitt and Sir John Skinner, both by Gainsborough, and in a frame is preserved Hogarth's receipt for £200, the sum paid him for his painting, "Paul before Felix," which hangs in the adjacent corridor.

The chapel was consecrated in 1623. It was built from the designs of Inigo Jones, and is remarkable for its fine stained-glass windows. Who made these is not known. There is some rather noteworthy carving on the pews, the doors of which in the reign of Queen Anne were widened in order to admit ladies with large hoop skirts. Buried in the cloisters beneath the chapel are Prynne, the pamphleteer, who was first of all pilloried and then had his ears removed; and Thurloe, Secretary to Oliver Cromwell and collector of the State Papers named after him. Lincoln's Inn was at one time a rabbit warren known as "Coney-Garth," where the students shot the animals with bow and arrow. In the garden was a bed of clay, and as this was needed, leave was given to the students to kill off the rabbits.

In the Old Hall, finished in 1491, Mr Baildon delivered an address full of interest and instruction to his listeners. This hall, he explained, was provided with four bays, quite an unique equipment. On the demolition of the previous hall in 1489, the students got out one night, piled up the timbers and had a bonfire.

As to the origin of the title "Lincoln's Inn," Mr. Baildon remarked, as the result of investigations which he had conducted, that the Earl of Lincoln had had nothing to do with the property at Lincoln's Inn. When the Society came to the present site in 1422, it brought its old name, and the suggestion was that it had started in Thavies Inn, which was exactly opposite the Earl of Lincoln's house in Shoe Lane, under the patronage of the Earl. The old Gate House, fronting Chancery Lane, was erected in 1518. Its demolition was contemplated a few years ago, but happily the idea was abandoned. The timber used in its construction was supplied by Sir Thomas Lovell, and for that reason his arms were placed over the archway.

Gladstone and Disraeli were members of the Inn, which was able to count among its legal lights Sir Thomas More, Sir Matthew Hale and Lords Mansfield and Hardwicke. Literature was represented by two great names—Macaulay and Kingsley. Oliver Cromwell was never, as some supposed, a member of the Inn, though two of his relations, his uncle Oliver and his son Richard, "Tumble Down Dick," as he was called, were both connected with it.

Some eighty Selbornians assembled on *April* 9, to visit Stafford House, no mean conclusion to the series of Selborne Saturday Afternoons arranged during the past winter. A fly in the ointment was the holland which covered much of the furniture, decorations, and a large part of the walls and ceilings. During what is known as the "season" the wraps are removed, and then is the time to view the rooms at their best.

The house dates from 1825, having been built by the then Duke of York. Its site, however, is also that of an older mansion named Cleveland House, the home in its time of that Duchess of Cleveland who was mistress of Charles II. The four fronts of the house are cased with stone. The party entered by the north or principal front, which has a portico supported by eight Corinthian pillars. Through a small corridor, adorned with prints, bronzes, and other works of art, access is given to the grand hall, which is decorated with well-executed copies of large pictures by Paolo Veronese. In the hall is the famous staircase, leading to the first floor, where are the state apartments. The first entered is the banqueting hall, a magnificent chamber, with a ceiling done out in white and gold. Then comes the noble picture gallery containing "Christ Bearing the Cross," ascribed to Raphael; "A Magdalen's Head," by Guido; three portraits by Titian, as well as his "Mercury Giving Cupid a Reading Lesson"; Murillo's "Prodigal Son" and "Abraham and the Three Angels"; Van Dyck's portrait of the Earl of Arundel; and Delaroche's "Lord Strafford On His Way to the Scaffold Blessed by Archbishop Laud." Velasquez, Lawrence, Landseer, and

others, are represented, while on no account to be missed is Honthorst's realistic painting, "Christ Before Caiphas."

The private rooms downstairs overlook the Mall and St. James's Park. These rooms, too, contain noteworthy pictures. In the far room, under glass shades, are some beautiful Sèvres cups, hand-painted with portraits of notable or beautiful women, such as Joan of Arc and various beauties of the French Courts, while on the walls are some family pictures by Lawrence, Reynolds, and others. Over the doorway of the morning room is a white marble medallion with a bust of Garibaldi in *alto relievo*. He was a guest here on the occasion of his visit to England. It is said that his host wished to present him with some memento of his stay at Stafford House, but the old patriot refused to take anything of value. In the end he was persuaded to accept some spades and garden tools, as they would be useful in the rural life at Caprera, to which he had retired after his strenuous exertions in the cause of Italian independence.

NEWS FROM THE BRANCHES.

Bath.—The following is the summer rota of excursions:—

April 28.—Botanic Gardens. Conducted by Mr. Milburn,

May 14.—Natural History Sections. Excursion to Wick Rocks. Conducted by Rev. H. H. Winwood, M.A., F.G.S.

May 28.—Lacock Abbey. Conducted by Mr. M. H. Scott.

June 11.—Caerwent. Conducted by Mr. A. Trice Martin, M.A., F.S.A.

June 23.—Annual Meeting, at Warleigh Manor, by kind invitation of Col. and Lady Mary Skrine.

July 16.—Cheddar.

September 3.—Camerton Court, by kind invitation of Miss Jarrett.

September 10.—Stanton Drew and Sutton Court, by kind permission of Sir Edward Strachey, M.P., D.L.

Birmingham and Midland.—The Annual Meeting was held on February 12, when the Lord Mayor was elected President and a very satisfactory Report was presented. It showed a large increase in the number of members, and a balance in hand of over £15, and recorded the distribution of 1,300 copies of the leaflet, "Spare the Birds and the Flowers," in connection with the Children's Country Holiday Society, a Selbornian walk with some of the girl holiday-makers of that Society, a lecture by Mr. Kearton to 1,400 children, and the first of a series for members. The loss, by death, of Mr. Winkler Wills, a former President, has already been recorded in the Magazine.

Brighton.—In response to an invitation by the Brighton Branch, over two hundred persons assembled at Steine House on April 16 to hear a lecture by Mr. Enock. Amongst the audience were some masters and mistresses of elementary schools with some selected pupils. The Chair was taken by Mr. J. L. Otter. The Chairman, before introducing Mr. Enock, explained the reasons for the choice of Gilbert White as the exemplar of the Society. White was a close observer of Nature with a sense, perceptible throughout his writings, of fellowship with all forms of created life. The purpose of his walks was not to gather spoils, but to gain knowledge of the modes of life of animal and plant. It is also worthy of remark that he cannot be accused of sentimentality in the depreciatory sense of the word. He intended when he had the opportunity to dissect a hen cuckoo in the breeding season for a specific scientific purpose. The boys present would perhaps learn that evening for the first time that insects have their own objects in life, and their own proper business to transact in this world as well as men. We often hear some insects called horrid, ugly, nasty, or odious, but the Chairman wished the boys to understand that the Selborne Society does not recognise such epithets as applicable to any natural species. They should be reserved for the corrupted tastes of the human race.

Mr. Enock then delivered his lecture. His subject was the life-histories of ome well-known insects, the green fly, the wasp fly, the saw fly and the devil's coach-horse. Some of the illustrative lantern-slides, which were plainly the the result of extraordinary patience and skill, were loudly applauded, and the whole lecture was listened to with the attentive interest which Mr. Enock always engages.

FIELD CLUB RAMBLES.

April 16.—A most successful ramble around Chingford and the outskirts of Epping Forest opened the new series of Field Club Meetings for this year. Mr. Marshman Wattson, the energetic Secretary of the Society, was the leader on this occasion. With a lovely afternoon and the country looking its best in the new Spring greenery, the party made its way into Bury Wood, where great clumps of the wood sorrel (*Oxalis Acetosella*) with its sensitive pale green leaflets and delicate white bells pushed up from the brown mould. The air was soft and pleasant and walking was no difficulty. Blackthorn and whitethorn had their early leaflets quite unfolded, but ash and oak, pollard beech and hornbeam had not responded so freely. From Bury Wood the highest point of the plateau was reached, marked by a granite obelisk, the "referring point for Greenwich Observatory due north," as our guide informed us. Here, indeed, was a fine stretch of country around—the Lea Valley, Chingford and its church nestling in trees, High Beach, Loughton, Epping, pleasantly mapped out in green with houses and farms in warm red, all bounded by the distant hills of Hertfordshire and Middlesex. Then through the pleasant forest footpath, the route lay up Yardley Hill to Sewardstone. The hedges yielded plenty of the wild garlic (*Allium ursinum*), and wood violets, white and blue, showed their blossoms. A few branches of whitethorn in bloom were seen, cowslips and buttercups and daisies, but the season was not far enough advanced to yield many botanical treasures. The blackbird and the robin cheered the party with their pleasant chirrup, and along the green lane from Sewardstone a sturdy bullfinch piped from a tree-top.

FORTHCOMING FIELD CLUB RAMBLES.

May 7.—Farthing Down, Olive Lane, Broadmoor Green, Coulsdon Common. Tea at The Fox. Return by Kenley Common and Caterham Valley to Purley. Take return tickets to Coulsdon—Cannon Street, 2.16; London Bridge (S.E.R.), 2.20; East Croydon, 2.43; Victoria (L.B.S.C.R.), 1.33; Steats Nest, 2.31. Walk thence to Coulsdon Station, where meet at 3. Guide, Mr. E. A. Martin.

May 14.—Waltham Abbey; after tea walking to Chingford through Forest. Liverpool Street, 2.15 (slip carriage). Return ticket, Waltham Cross, 1s. 7d.; single, 1s. 1d.; single from Chingford, 10d. Guide, Mr. H. Plowman, F.S.A.

May 21. No ramble; Whit Saturday.

May 28.—Pinner, Eastcote, Ruislip. Tea at Ruislip; then Ruislip Lake and Common to Northwood. Trains (Met.) Baker Street, 2.10, 2.20; Swiss Cottage, 2.6; Finchley Road, 2.16. Take return tickets to Pinner. Guide, Mr. James E. Whiting.

June 4.—Woldingham to Chelsham. Tea at The Bull, Chelsham. Take cheap return tickets to Woldingham. London Bridge (L.B.S.C.R.), 2.25; Victoria (L.B.S.C.R.), 2.30. London Bridge passengers change at East Croydon. Guide, Mr. Matthew Hunt.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 174. JUNE, 1904. Vol. XV.

OBJECTS OF THE SOCIETY.

To promote the study of Natural History. To preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of: (1) The skins and furs of such animals as are in danger of being exterminated; (2) birds and their plumage, except when the birds are killed for food, reared for their plumage, or are known to be injurious. To protect places and objects of natural beauty or antiquarian interest from ill-treatment or destruction. To afford facilities for combined effort in promoting any of the above or kindred objects.

SELBORNIANA.

Annual Meeting and Conversazione.—As this meeting will have taken place on May 27, after we have gone to press, our report must be deferred until our July issue.

Our Illustrations.—The two illustrations in the present number, which we owe to the courtesy of T. Fisher Unwin, Esq., are from Mrs. Brightwen's "Quiet Hours with Nature," which we reviewed last month. They did not reach us in time for insertion in our last number.

The Aigrette and the Press.—We are glad to notice that the *Daily Chronicle* of May 17 has an illustrated article on "Wearing the Aigrette," in which the trade tricks are exposed by which real birds and feathers are sold as "artificial." The wide-spread circulation of daily papers, such as the *Daily Chronicle*, reaching, as it does, thousands of persons who may never see a copy of Nature Notes, cannot fail to advance the causes they espouse, and we have in general every reason to be satisfied with the attitude of the daily press towards the objects of the Selborne Society.

Bird-Protection Order.—We have received from the Home Office a copy of a Wild Birds Protection Order for the county of Somerset, dated April 30, with a duration of five years. By it all birds are protected on the six and a half miles of coast from East Quantoxhead to the Grey Rock, Blue Anchor Point, Old Cleeve; and all eggs for fifty yards inland from Sparkhayes Lane, Luccombe, to Shurton Bars, Stogursey; the Sheldrake is protected throughout the county from the end of February to the first of September; and a number of other species are added to the schedule of the Act of 1880.

Prickly-Pear Blossoms Park.—Mr. W. H. C. Nation, of Rockbeare, Devonshire, has presented to the National Trust land, to the extent of about twenty-one acres, on the top of Rockbeare Hill, a few miles east of Exeter. The land is, in part, covered by a wood, in part by open heath, and, by the wish of the donor, it is to be called "Prickly-Pear Blossoms Park," after Mr. Nation's book of poems. The summit commands extensive and beautiful views over the valley of the Exe.

Avon Gorge.—In spite of all remonstrances the Corporation of Bristol are, we understand, continuing their policy of vandalism as regards the quarrying at Leigh Woods. As the argument, from a fancied economy, is always a strong one with many ratepayers, whose souls—or apologies for want of soul—are in their pockets, we would again urge that far more durable road-metal can be obtained elsewhere, whilst the destruction of the beauties of Clifton, if penny wise, is pound foolish.

Seedling Cedar.

THE WORLD IN THE OPEN AIR.

[The Rev. Edward J. Taylor, F.S.A., obligingly communicates to us the following poem by John Keble, taken from his "Commonplace Book," but not included in any of the printed collections of his poetical works.

Come, while in freshness and dew it lies,
To the world that is under the free blue skies,
Leave ye man's home and forget his care;
There breathes no sigh on the dayspring's air.

Come to the woods, in whose mossy dells
A light all made for the poet dwells;
A light colour'd softly by tender leaves,
Whence the primrose a mellower glow receives.

The stock-dove is there on the beechen tree,
And the lulling tone of the honey-bee:
And the voice of cool waters 'mid feathery fern
Shedding sweet sounds from some hidden urn.

There is life, there is youth, there is tameless mirth,
Where the streams with the flowers they wear have birth,
There's peace where the Alders are whispering low:
Come from man's dwellings with all their woe.

Yes—we will come—we will leave behind
The homes and the sorrows of human kind.
It is well to rove where the river leads
It's bright blue vein along sunny meads.

THE POLLINATION OF THE PRIMROSE.

By F. E. Weiss, D.Sc.

IT was with feelings of profound regret that I read the announcement of the death of the late Rev. Edward Bell, in the April number of this journal, at the end of an article on the Pollination of the Primrose. In his article he criticises some observations and remarks which I made upon this subject in the *New Phytologist* (June, 1903). A good many points in this criticism had been previously communicated to me by Mr. Bell, in the course of a friendly correspondence, in which he was good enough to lift the veil of anonymity assumed by him on account of ill-health, which made him disinclined to enter personally into the controversy, which he was fully aware his somewhat heterodox view on the subject of cross-fertilisation of flowers would arouse. If I venture in the present number of Nature Notes to reply to some of his criticisms, I

would do so in the most friendly manner, though I hope the tone of my remarks would have been equally devoid of personal feeling if we had not to lament the fatal accident which has removed from our midst a real lover of Nature. For I have gathered, both from his publications and also from his private letters, that what Mr. Bell had most at heart was to arrive at the real explanation of the occurrence of heterostyly in the primrose and its allies, and the sole object of his publications was to rectify what he believed to be an error of method and of judgment on the part of Darwin.

The first criticism of Mr. Bell's to which I should like to refer is the exception he takes to my remark, made, I admit, on general grounds, that the primrose is adapted to the visits of insects. I still believe we can hardly go wrong, when we see flowers which strike the eye at a distance by a bright and conspicuous corolla, to infer in our climate, where we have no humming-birds, that the purpose of these bright flowers is to attract insects in search of honey. It is indeed difficult to imagine what other purpose they might serve. The same may be said of the scent, however delicate, of the primrose. The nectar, too, which they secrete, and Mr. Bell admits (p. 64) that they produce nectar, cannot be of any use to the flower except to attract insect visitors. The statement, then, that the flower is adapted to the visits of insects is, I think, borne out by the appearance and structure of the flower. I did not, of course, intend to convey the idea that it was adapted to the visits of all insects, or even to a large number of them. If, as Mr. Bell rightly shows, the vast majority of insects cannot obtain the nectar on account of the length of the corolla-tube, that does not make the statement incorrect, for the honeysuckle, with a still deeper tube-like corolla, must also be considered adapted to the visits of insects, though only a few moths will be able to gratify their appetites with the honey which this flower secretes.

Many other instances might be cited of flowers which are adapted to the visits of a restricted number of insects, occasionally even to a single species.

With regard to the insects which I did observe visiting primrose flowers, I am greatly indebted to Mr. Bell for drawing my attention to what was obviously a wrong identification of one of their number. The *Anthophora* which I observed was, as Mr. Bell rightly surmised, *Anthophora pilipes*, and not *A. furcata*.

Much as I regret this wrong identification, it does not, however, invalidate my observations nor the conclusions I drew from them. Leaving out of consideration the very numerous *Andrenæ*, which from careful observation I feel sure did cross-pollinate the long-styled forms, let us consider the two insects which Mr. Bell admitted could obtain the honey of the primrose and might therefore be attracted to them. In the first place, Mr. Bell considered that they would not be able to get any pollen dusted on to their heads, as the anthers burst inwardly. But a little experimenting

with a blunt object pushed against the anthers, or better still a small paint-brush, suffices to show that the anthers are readily pushed aside, and some pollen, at all events, is readily dusted and carried away. The introrse dehiscence of the anthers is without doubt a wise provision to prevent the pollen from being injured by drops of water, which after a shower collect at the mouth of the flower tube. But the short filament of the stamens is mobile and allows the visiting insect to push the stamens apart. Even without any pressure some pollen is found at the tip of the little tube formed by the anthers. Secondly, Mr. Bell considered that even if these insects did visit the flowers they would not effect a cross-pollination, as they would search all the flowers of one plant before passing on to another. That, however, was not my experience: I found that they rarely visited even two flowers on the same plant, but usually flitted rapidly from plant to plant, and thus had ample opportunity for cross-pollination.

But Mr. Bell probably considered the most damaging fact to be the comparatively small number of these insects, contrasted with the hundreds of primroses which I observed. As Mr. Bell says, I limited my observations to two large patches of primroses. Within the hour and a half which I usually spent among the primroses, I noted on the average only one *Anthophora* and two *Bombylii*. In considering these numbers, however, we must also take account of the conditions under which the observations were made. The weather was by no means favourable to insect life. On most days very few insects were flying owing to the cold winds, which, as I stated in my article, prevailed during the time I was able to watch the primroses. Mr. Bell cited the absence of insects which I noted on the large primrose-covered areas at the foot of Caer Caradoc, but I attributed the absence solely to the strong north-westerly winds, for at the same time the sheltered areas selected by me were visited by *Bombylii* and *Anthophora*, though of course not in very large numbers. I believe that had I been able to stay longer in the district, until the conditions had become more favourable to insect life, I should have found the two genera mentioned far more frequent visitors of the primrose. Unfortunately, I had to return to Manchester, and this spring have been more unfortunate still, as with an earlier Easter vacation and a later season I had still less opportunity of seeing the primroses at their best.

I trust that other readers of NATURE NOTES may have been more fortunately situated, and that they will record their observations. Only on three mornings early in April had I the opportunity of closely examining primrose plants. The areas chosen were fairly sheltered banks in North Staffordshire, and on two of them I was able to note *Bombylii* settling and steadily sucking honey from the flowers, as I had seen them doing at Church Stretton. The mornings were cold, and on one of them I saw no other insect flying except the two *Bombylii*. I feel sure that, given better conditions, the number of insects visiting the primroses would be greatly increased.

It is obvious that a plant flowering as early as does the primrose, when but few insects are flying, and especially when it is only adapted to the visits of a few of these, must necessarily often escape cross-fertilisation. It becomes, therefore, important that provision should be made for self-pollination, in case cross-pollination should not be effected. Hence, as I stated in the end of my remarks last year also, the primrose, while adapted to the visits of insects, is also provided with efficient means of self-pollination. Mr. Bell was certainly right in drawing attention to the shaking of the flowers by the wind, and besides this, we have the gradual downward movement of the flowers from the erect to the almost pendant condition, which gives both the short-styled and also the long-styled forms the opportunity of having the pollen shaken on to the stigmas. In some localities, too, the flowers of very many primroses are inhabited by that little insect, *Thrips*, and also by a small beetle (*Euphalerum primulæ*), both of which, by creeping about within the flowers, become completely dusted over with pollen, and must be powerful agents in the self-pollination, more particularly of the short-styled forms. It is true that they may occasionally effect cross-pollination, but from their mode of life within the flower must be more often the cause of self-pollination.

It is a pity, as the Editor said last month, that some persons should make such sweeping generalisations as that "Nature abhors self-fertilisation," when so many plants are provided with methods of self-pollination in the absence of the probably more efficient and therefore desirable cross-pollination. But it seems, too, equally extreme to assume that, because the primroses are fertile with their own pollen and often self-pollinated, the heterostyled flowers have no functional significance. If, as I believe we have evidence, the flowers of the primrose are visited by insects, the importance of dimorphic flowers as ensuring cross-pollination is obvious, and a detailed examination of the structure of the stigma and the pollen-grain, as well as Darwin's experiments, strongly support this view.

A MAY-TIDE FESTIVAL AT THE ENGLISH LAKES.

MAY-TIDE comes to no part of the British Isles more gloriously than to our English Lakeland. There is such swift moving into change upon the fells, that they seem to be veritably alive from the dead. The heather patches, last week dark as jet, are this week seen to take on a delicate lilac hue. Indeed, so red are the heather buds that from a distance at sunset time one could believe that August with its heather bloom was here. The rich umber of the bracken on the mountain breast melts day by day into the

ground as the young grass feels the sun and pushes upward, and while the flanks of the hills burn beneath the level sun like topaz laid on chrysolite, the whole vale, in springtide emerald drest, gleams with more vivid green because of the blue cobalt of the hill backgrounds, whilst these stand out in more wondrous blue and purple by reason of the delicate light green or golden leafage of the budding sycamore. The daffodil is not yet overblown. The blackthorn in the hedgerow is in full beauty of sweet-scented foam, and in the gardens shine the rhododendrons' mass of welcome colour. But the feature of woodland beauty is the golden spray of the birch that seems to spring and fall like a fountain in the valley, and the dainty feathering of the fragrant larch upon the fells. In a pastoral country, whose chief hope lies with mountain flocks, the vales in May are dappled with lambs and filled with the voices of the future rangers of the hills. The "wandering voice" of the cuckoo finds an echo that is unknown in the level midlands, the curlew's pipe is heard early and late, and all day long the chiff-chaff "pours forth his song in gushes" and the green linnet wheezes and "zees"—there is no other word to express his note—from the budding apple tree. But the joy of May is, as Wordsworth knew and told us, the promise of May. All the life and loveliness we see is prelude of more to come; enough is here to make us wish for more:—

"Season of fancy and of hope
Permit not for one hour
A blossom from thy crown to drop,
Nor add to it one flower.
Keep, lovely May, as if by touch
Of self-restraining art,
This modest charm of not too much
Part seen, imagined part."

One does not wonder that the old neolithic woodmen who, to judge by the stone axes we find in this district, dwelt in a thickly-forested country, lit their Beltain fires on the fell-tops in honour of the God who gave back drapery to the rich woodland. It was not the luxury of green light poured through tender leafage that appealed to them, rather it was that the veil of the May-tide coverts gave security. It would be easier to hide from the foe, easier to hunt for meat, and the coming of the leaf meant for them, as it means to-day for the nesting birds, surcease of care. But their joy in the leaf-time has not died out of our blood. Rather our very mingling of Teuton with Celt has given us a love of the coming of the leaf in double strength of heritage, so that in Dan Chaucer's time it was not considered beneath the dignity of king and noble to go forth with their people "to bringen home the Maie." The old poet of this English feeling for May tells us in his "Court of Love":—

"And forth goeth al the courte both moste and beste
To feche the floures fresh and brannch and blome."

The days of king and court going forth, as they did as late as the time of bluff King Hal, into the May-tide fields to break the

green hawthorn bushes and gather the blackthorn flower are numbered, but in many of our towns and villages the sovran charm of May is felt to need expression, and the May Queen still holds her court. It is a pity that these May-tide festivals are not more cared for as a children's holiday. It is not difficult to make these gatherings of the young people at which both music and recitation, and needlework and athletic sports, if competitions are arranged for, can all be helped by the presiding genius of the day, the little May-tide Queen; and at which also the cause of temperance and kindness to animals, and observation of Nature and bird-life, can be most surely encouraged by making the May Queen's Festival an opportunity of bringing together the Bands of Hope of all the churches for the occasion and awarding prizes, or a challenge shield, not only for glee competition and temperance songs, but for essays on the observation of bird-life or flower-life, and kindness to animals, as well as on the use and abuse of alcohol.

These are subjects that during the year can be made part of the Band of Hope teaching, and if the May Day is looked on as a recitation competition, it is easy to arrange for the afternoon to be spent in a May Day Procession which finishes up with sports and tea, while the evening concert gives an opportunity for the crowning of the Queen, and for her presentation of the prizes in an interval of the evening's programme.

At Keswick for some years past such a children's May-tide Festival has been held with success and at the same time with simplicity. And nothing, surely, could have been more in keeping with the perfect May Day, than to see on last Wednesday, May 4, the various Bands of Hope with their banners and garlands and floral devices passing through the quiet little town and converging for the Musical Competition at the pavilion near the river Greta.

"Eh barn," I heard an old man say, "but what, it's amaist fit to bring tears to yan's eyes; they dunnet seem to kna what care is. Poor things! poor things!"

The old fellow was not commiserating the happy garlanded children in their simple white frocks, or the little lads with flowers in their caps or button-holes, waving their flags as they walked, but he was looking forward to the time when instead of spring garlands they should wear the chain of winter weakness, or the weight of care, and feel the thorns of sorrow a poor exchange for the flowers of gladness.

But the most heart-stirring sight was surely the coming of the Queen in royal progress through the acclaiming streets. Riding on a white pony, whose frontlet was a bunch of purple "violas," about whose neck was a garland, whose reins were woven with flowers, whose saddle cloth of green cloth was broidered with daffodils, while brave music went before her and attendant maids of honour carried garlands slung between white staves on either side, came the Queen of the

May, and behind her with banners and flowers streamed the Bands of Hope from town and hamlets near.

The Queen, chosen by her village Band of Hope not for beauty only, but for goodness and kindness, was a child whose red golden hair fell over her white frock with sunny contrast. On her head was a crown tiara shaped of daffodil and narcissus, and in her hand a white sceptre, whose top was composed of three "arum" blooms and from whose staff white ribands fluttered free.

It was no marvel that heads appeared at every window and doorway to see so fair an embodiment of Spring pass on her snow-white palfrey down the street, down the town and back again; and so to the Fitz Park beside the shining Greta came the Queen. Dismounting, she took her seat beneath a canopy, which last year was held above the head of a daughter of a real Queen, on the occasion of the opening of Brandelhow Park by H.R.H. Princess Louise. A trolley was drawn up in front and thereon the competitors for the skipping competition were soon busy with their humming skipping-ropes; whilst hard by the lists were set for the races, and the ring was formed for the youthful wrestlers.

Tea, of course, followed, and by seven o'clock the whole concourse met to see the crowning of the May Queen. And gladder sight could scarce be imagined than the bank of happy faces and flowers clustered round the Queen upon her uplifted throne. Nay of the two queens; for Queen Evelyn of last year sat in state with her attendant maidens on the one side of the platform and at a signal Queen Sarah left her throne on the opposite side, and kneeling in mid-platform, received from the retiring Queen the May crown and sceptre, and so returned to her throne amid the cheers of her happy subjects. Then the chairman at her command read out Her Most Gracious Majesty's Proclamation, which enjoined on all her faithful subjects love of the beauty of wood and field and all gentle life and kindness to all animals.

The light was still lingering in the west as I saw the white-frocked children passing through the valley to their fell-side homes, and heard the singing of snatches of the glee and cheering of the little lads as they went through the dewy lanes to bedland and dreamland, the loyal subjects of their new May Queen.

H. D. Rawnsley.

IN A DANISH FIR FOREST.

A WALK along a hot dusty high road brings me to this forest, almost untrodden by the foot of man. As I enter it from the glare of the sun, the darkness, stillness and coolness are delightful. It takes a few minutes to get accustomed to the shade, but gradually one begins to see trunks, green and lichen-covered, as far as eye can reach, leafless,

except at the top, where there is a canopy of green, tall, straight and close together; and yet from the very bareness it would be impossible to hide here, for one can see everywhere. How still it seems at first, until one has been in some time! Then one begins to see and hear a little of the life that goes on in a forest almost in the heart of Denmark. Kra-kra comes from the grey-hooded crow, who is at home here.

The smaller birds have not stopped their song yet, and as I sit down I can see many different kinds, principally the beautiful little wren, flitting and singing amongst the branches of the younger firs. Quite a concert of woodland songsters is going on. Magpies chime in as they fly through. The ground is covered with moss and dead pine-needles, so soft to the feet. Every now and then comes a thud—a fresh cone has fallen. Picking some up, I find they are green and purple, deliciously sweet but sticky, from the resinous juice on them. The whole air is ladened by their perfume this hot July afternoon.

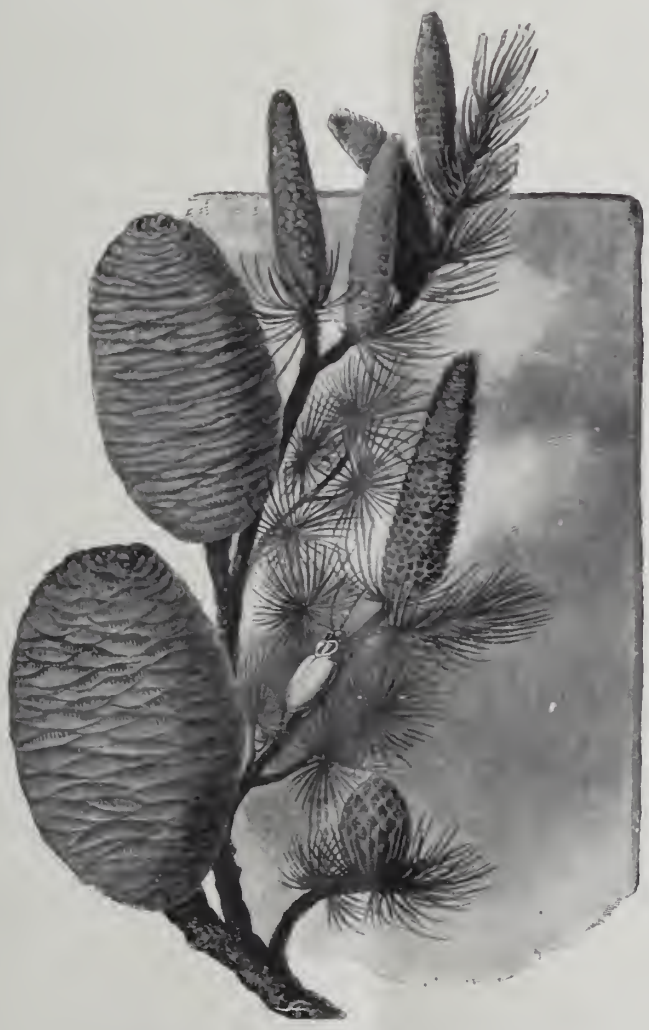
Only a few flowers grow here—a few pansies, hairbells, and occasionally a little ling is seen. There is not much variety perhaps, but still its own beauty has this forest, for are not these reddish trunks beautiful, covered with green and grey lichens, feathery masses of small leafless twigs standing out at right angles to the trees, breaking the otherwise upright lines; and the purple red ground, with patches of emerald-green moss here and there, all warmed and coloured by the sunlight flickering across all and warming the whole air. But for the sunlight and bird-life these forests would be almost unbearable, so tall and vast and lonely they are.

By sitting still, how much one sees, if only for an hour! The apparently silent wood becomes full of life: large green and brown dragon-flies sway backwards and forwards, so close I can hear the clicking of the wings as they come near me: butterflies flit about higher up, giving a bright colour to the dark firs: the hum of wild bees is everywhere, buzzing along the ground in search of food. Suddenly they dart out of sight: one would like to follow them to see what wondrous little homes they have made for themselves. Large holes suggest foxes. A few mosquitoes come about to annoy one in this otherwise perfectly peaceful spot. Kra-kra-kra echoes again and again: always a troubled cry, and yet one would not like not to hear it: it belongs to the woods, and I am only an intruder.

Walking farther on I come to an opening through which one sees masses of dark woods in the distance, cornfields and the rich purple earth of the ploughed fields. Entering again and going deeper and deeper into the forest, I come across a silent, clear pool, dark from reflections of the firs. What an ideal bathing and drinking place for the denizens of the forest! Next month the ground will be covered with fungi, yellow-brown, and the white edible mushroom—already a few have appeared. The sun is setting and casts rich purple shadows across the scene,

but warming it up with its deep rich glow; and the stillness is increasing as evening approaches. A few storks alight on the topmost branches on their way homewards from marauding in the fields. The endless kra-kra echoes again from the crows keeping watch over the sleeping wood, and bid me good-night as I wend my way homewards.

Dianalund, Denmark. F. M. M. P.



CEDAR SPRAY WITH CALOSOMA SYCOPHANTA

REVIEWS AND EXCHANGES.

Nature's Story of the Year. By Charles A. Witchell. Illustrated. T. Fisher Unwin. Price 5s.

Mr. Witchell is well known as a careful observer of bird-life; and though reptiles, insects and field-mice come in for some notice in these pleasantly written pages, birds furnish their main topic. Many of the illustrations are very pretty, especially Miss Witchell's frontispiece of a kestrel; but we cannot help thinking that of "A Wind-twisted Tree," on p. 16, is somewhat misleading, since, though the one-sided growth of its branches may have been due to wind, the spiral twist of its bark—it is, we presume, a Spanish Chestnut—is not so caused. Though there is nothing particularly startling or novel in Mr. Witchell's work, it affords a pleasant series of chapters to read month by month.

The Field Naturalist's Handbook. By the late Rev. J. G. Wood and the Rev. Theodore Wood. Cassell and Co. Price 1s. in paper covers, 1s. 6d. cloth.

The title of this manual is somewhat too comprehensive. It consists of lists of the flowering plants, ferns and Lepidoptera to be found in Britain in each month of the year with their scientific names, and in the case of the former their "localities" (*i.e.*, general habitat) and duration, and in that of the latter their food-plants and the month in which ova, larvæ, or pupa, may be found. To these lists are added a general list of Lepidoptera, with hints on their capture and preservation when caught, and a list of British birds, with their stay in England and the average number of their eggs. There is not, of course, space for any descriptions, the nomenclature is somewhat old-fashioned, and in what is necessarily a compilation some misstatements—such as that *Thlaspi perfoliatum* occurs in pastures or in Oxfordshire—naturally occur; but the collector will certainly find the book useful as a suggestion of what to look for. There are, unfortunately, not a few misprints among the botanical names.

Eyes and No Eyes. By Arabella B. Buckley (Mrs. Fisher). With 48 coloured plates and other illustrations. Cassell and Co. Price 3s. 6d.

The six little books here bound together, but retaining their original paginations, though with a general table of contents prefixed, are admirably adapted to their purpose, viz., to interest children in country life. "They are written," says the authoress, "in the simplest language, so as to be fit for each class to read aloud. But the information given in them requires explanation and illustration by the teacher." Wide as is her range of subjects, Mrs. Fisher has the rare faculty of being at once lucid and accurate. Spiders, squirrels, ants, frogs, sticklebacks, common plants, trees, birds and insects, are all discussed in turn, so that a country school has here ample material for at least eighty lessons so varied that they are not likely to pall. If we have any fault to find with the method it is that it is, if anything, too informing, *i.e.*, not sufficiently heuristic. The illustrations are useful and accurate, though personally we should have preferred Mr. Muckley's plates uncoloured; but the monochromatic plant on the cover is quite outside our botanical knowledge.

The Frank Buckland Reader: Selected Readings from the "Curiosities of Natural History." By Francis T. Buckland. With 74 illustrations. Routledge and Sons. Price 1s. 6d.

It was a good idea to make a selection from Frank Buckland's "Curiosities" into a "Reader." Boys are sure to like his genial accounts of the animals with which he associated on such intimate terms. A hunt in a horse-pond, rats, snakes, fish and fishing, his monkey Jacko, and the gamekeeper's museum are among the topics selected. The illustrations are mostly old stagers; but the book is well printed and strongly bound, and the notes are usefully explanatory. Why, however, perpetuate the calumny on Queen Eleanor as to her poisoning Fair Rosamund?

Ludgate Nature-Study Readers. In three books. Edited by John C. Medd, M.A. Routledge and Sons. Price 1s. and 1s. 3d.

In print and binding these three "Readers" are uniform with the one just noticed, and many of the illustrations are no newer: but they have been more

carefully selected and are accompanied by an excellent coloured frontispiece to each volume. Mr. Medd, as the Honorary Secretary of the Nature-Study Exhibition of 1902, has naturally formed a clear idea in his own mind as to how the child's interest is to be aroused and his enquiries directed; but he has then called to his aid nearly eighty writers, mostly those actively engaged in teaching, to draw up the 122 lessons which the volumes contain. Such writers as the late Miss Ormerod, Mrs. Visger, Professors Lloyd Morgan, Geddes and Grenville Cole, Mr. Beddard, Mr. Hedger Wallace, Mr. Wilfred Mark Webb and Mr. W. J. Lucas secure fresh and adequate treatment of all the varied topics of animate and inanimate Nature with which they deal.

The Selborne Nature Notebook. With Calendar of the Month. George Philip and Son. Price 1s. net.

This is an ordinary exercise book with its pages alternately ruled and plain, and some twenty pages of preliminary matter, comprising short lists of flowers, trees, birds and insects for each month, weather notes, hints to teachers, &c. Accuracy is one of the first lessons in science; but here, out of thirty-four "typical British ferns" enumerated, five have their names misspelt, while four *Lycopodiae* appear as "Typical Mosses," and we are referred to as "Selborne Society's Monthly Notes, 2d. *Simpkin.*" This seems dear at a shilling.

Philip's Nature-Story Studies. George Philip and Son. Price 6d.

This is a packet of sixteen charming outline drawings illustrative, it is stated, of stories in "In Nature's Storyland," by Edith Hirons. The artist's name is not given, and in the absence of the stories it is impossible to say how far these studies of fairies have anything to do with Nature; but they are very pretty.

Home Counties Rambles. The West Herts Series, First Part, comprising Routes to Hatfield, St. Albans, Elstree, &c. By Alf. Holliday. With 18 illustrations. R. E. Taylor and Son. Price 1s. net.

We have constantly urged Mr. Walker Miles not to confine his useful Field-Path Rambles to Kent, Surrey and Sussex, and now he has gratified us by breaking new ground, by deputy, in Hertfordshire. Save in venue this first of the Home Counties Rambles is identical in plan with our well-tried friends of the south-eastern counties. St. Albans and Hatfield give a somewhat less rural tone than usual to the excellent photographic illustrations; but our critical scalpel cannot detect any blemish in these useful little books.

Horniman Museum. Handbook to the Collection arranged as an Introduction to the Study of Animal Life. Price 1d.

The London County Council seem to be following the educational policy of the Trustees of the British Museum, in providing admirable guide-books at less than cost price. Some forty well-printed pages on good paper can hardly be produced for a penny. The handbook, for which we imagine Professor Haddon, the Advisory Curator, to be mainly responsible, is professedly based on Mr. G. H. Carpenter's paper in the Report of the Museums Association for 1894. It is written in a tongue understanded of the people, but contains explanations of such difficult terms as species, genus, variation, albinism, melanism, natural selection, commensalism, warning colours, mimicry, degeneration and homology. A classified bibliography of books and papers in the Horniman Library which deal with the subject is also given. We should much like to see a guide to the Index Museum at Cromwell Road on similar lines.

The British Weather Chart, 1904. By B. G. Jenkins, F.R.A.S. R. Morgan, Upper Norwood. Price 6d.

This scientific-seeming forecast of temperature, pressure and rainfall, professedly based on a curve representing the combined influence of sun, moon and planets upon the atmosphere, is now issued for the eighteenth year in succession. Mr. Jenkins's method seems to give results a year in advance almost as accurate as those issued by the Meteorological Office twenty-four hours ahead, though that is not saying much.

Knowledge for May contains an interesting illustrated article by Mrs. Dukinfield H. Scott, on "Animated Photographs of Plants." The photographs are taken by the Kammatograph at a cost of only seven shillings a plate. Mrs. Scott's examples include *Sparmannia africana*, *Abrus precatorius*, the "Weather Plant,"

and the Sensitive Plant. We have long thought that the Patriarch Job has been seriously rivalled in the matter of patience by Messrs. Dallinger, Drysdale, Kearton and Enoch, but those gentlemen of this galaxy of endurance who are still alive must now look to their laurels.

Yorkshire Notes and Queries. No. 1, vol. i. April, 1904. Elliot Stock. Price 3d.

This is certainly an excellent start. Forty quarto pages illustrated with several portraits and other blocks mostly of antiquarian interest, and with a stout wrapper, is assuredly cheap for threepence. The new venture is edited by Dr. Charles F. Forshaw. This first number contains the design of the county memorial to be erected in York in memory of the Yorkshiremen who died in the South African War, 1,369 in number, with a list of their names. Our copy did not include the portrait of Sir Albert Rollit, stated on the cover to be the frontispiece. We confess we are puzzled by the editor's claim that Yorkshire has given a Pope to Rome. We were under the impression that Nicholas Breakspear, the only English-born pontiff, was a native of Langley in Hertfordshire.

The Agricultural Economist for May contains a small portrait and notice of our President.

The Naturalist for May, an exceptionally strong number, contains a valuable paper suggesting a "Committee of Suggestions for Research," and a comprehensive paper on the "Hawthorn," by Dr. P. Q. Keegan.

The Plant World for April contains a paper by Miss Jean Broadhurst, of the New Jersey Normal Schools, on "Nature Study as a Training for Life," describing how a class of boys were trained to draw up an analytical key to familiar trees.

Received: *The American Botanist* for February and March; *Nature Study* (Manchester, New Hampshire) for March; *Bird-Lore* for March and April; *The Victorian Naturalist* for April; *The Irish Naturalist*, *Nature Study* (Huddersfield), *The Animal World*, *The Animals' Friend*, *The Humanitarian*, and *The Commonwealth* for May.

NATURAL HISTORY NOTES.

111. Young Rats.—The question as to which eye (if either) opens first in young mammals, has again arisen, and a note to this effect is to be found in the May issue of *Knowledge*, where the badger is said to open the right eye first. Out of a litter of eight white rats, which were born of one of my pet rats, no less than seven opened the right eye before the left. I think this case may be taken as representative of the rodents. W. R. D.

112. Migration and Speed of Birds.—When doctors disagree what are ordinary mortals to do? The opinions held by Mr. Price, on the authority of Dixon's "Migration of Birds," are in many respects in direct conflict with H. Gätke, the writer of "Heligoland," whom as an observer and authority I should not care to tackle. Dixon supposes young birds may be piloted by their parents in their migrations. Gätke says they are not.

It is easy to explain away an animal's actions we do not understand by ascribing them to blind instinct; but this explanation, which covers all difficulties, leaves us none the wiser, and gives us a low idea of the animal itself, making us look on it as an automaton and mere machine. Why not take a more lofty view and give it credit for possessing powers of intellect?

Part of a bird's education consists in its being taught how to find its way to other lands, and this learning, which has become a habit of the race, is thoroughly, and it would seem easily, acquired in the first few weeks of its existence. Shortly after this it migrates without further parental guidance. Of all creatures birds are the "most garrulous." Why should we conclude that the voices they use so much are almost meaningless, and devoid of learning or instruction?

Yarrell informs us that "young starlings of the year, before their first autumnal moult, are of a uniform greyish brown colour"; and that "its first moult occurs in its first autumn." Gätke says that young starlings in their brown plumage begin migrating by themselves towards the end of June; and consequently, before the autumn, and before they moult. Mr. Price's assertion therefore that "young birds certainly do migrate *after* moulting," seems to be rather too confident.

Most of us know where many migratory birds go in summer, and where they spend the winter. Mr. Price considers this knowledge "hypothetical," and "stretching a point." In migrating, birds are uninfluenced by the conformation of the land. A migratory column advances in a broad extended line. That of the gold-crested wren, a few years ago, was found to be 1,900 miles broad.

Mr. Westell gathers from the *Ibis* that the "migrants of every species fly close to the surface of the water under all conditions of weather." Gätke says many birds are high-fliers. Which are we to believe?

Some birds that migrate but a short distance, such as rooks, crows, starlings and larks, which go backwards and forwards to us from the Continent, are low-fliers, never going up above 1,000 feet, and generally keeping close to the water. The dangers of so short a flight as this are small. Those kinds, however, that do long distances up to 8,000 or 10,000 miles at a stretch, ascend to great heights above the region of storms, clouds, and thick darkness, and thus avoid many dangers they would otherwise encounter.

Southacre, Swaffham, Norfolk. EDMUND THOS. DAUBENY.
May, 1904.

113. Birds Singing on the Ground.—I have not unfrequently noticed blackbirds singing whilst on the ground, and a day or two ago (May 8) I observed a robin doing so. This is the only occasion that I can recall noticing this habit in the robin.

The Gables, Wirksworth. C. E. MEADE WALDO.

114. Birds Singing on the Ground.—Twice, in the early summer of 1895, I saw and heard birds sing on the ground. This was in the garden of my cottage in Penn, S. Bucks. A thrush sang standing on the grass, and at another time a blackbird, standing on the earth of a small flower-bed among the plants. In both cases the song was short. Both birds stood within six yards of the drawing-room window.

May 8, 1904. ELEANOR GROVE.

115. Waxwing?—It seems not improbable that the strange bird seen by your correspondent, C. J. Maurice, at Hillingdon, was a hawfinch. There have been several notices lately of visits from this bird to localities near London, and on April 14 I had the pleasure of seeing one in my small garden. It was in fine plumage, and its warm russet colouring, together with the conspicuous white bands on the wings, made the description given by your correspondent agree very closely with the appearance of the bird as I saw it.

Kew. E. HUBBARD.

116. Some Notes on Birds.—One evening in April this year a jackdaw and a wood pigeon were seen fighting, and the next morning both were found lying dead on the grass about four feet apart, their beaks covered with blood, and both much injured by pecks, the jackdaw about the head and the pigeon on the back.

A hen blue-tit, quite an old favourite, seemed to go out of her mind for about three weeks this spring, constantly fluttering against the windows outside and pecking vehemently at her own reflection in the glass. She began at five every morning, and the incessant tapping was quite disturbing. She would hardly stay away long enough to get her food, and attacked all the windows in turn, never coming into the house but only going for the shut panes. During this time she deserted her nest, which was half built; but now (May 8) she has settled down again with her mate, and there are two eggs in the nesting box.

A few days ago a blackcap fell on the ground when I came near its nest, and fluttered along pretending to be hurt. Is this usual for blackcaps? There were only eggs in the nest.

Botley, Hants. M. S. JENKYNS.

117. Notes from Yarmouth.— Living as I do within a few minutes' walk of the country, the extensive sands, and the wide expanse of mud and water known as Breydon, I have exceptional opportunities of studying wild life in its various forms and seasons. The following comprises a list of occurrences which have come to my notice during the month of April:—

Commencing with the morning of the 1st, I surprised three wimbrel feeding on the flats, and they being too occupied in their search for food to notice me, I enjoyed a prolonged stare at them through my glasses. I heard the hooting of an owl at Burgh Castle that night, where the Vicar protects their nests in the church steeple.

On the 2nd I got within twenty feet of a curlew, which was standing thigh deep in the fairly rough water of Breydon, and watched him for some time through my glasses. Every now and again he would give vent to a peculiar call, without apparently opening his long curved bill, a call that by reason of its weirdness had directed me to him. The curlew is a sharp flyer, as was evidenced when he unexpectedly caught sight of me. There were also six Brent geese feeding on the mud flats. These birds had dropped in during open weather—a rather unusual occurrence—soon after the shooting season, and they remained several weeks. A few ringed plover, hooded crows and rooks, completed the list on this date.

Early on the morning of the 7th I noticed five herons, one curlew, only one pair of hooded crows, several black-backed, black-headed, common and herring gulls, scores of rooks and starlings, besides a few meadow pipits and skylarks. The herons were surrounded by gulls of various species, but the Brent geese which were still there, not having been disturbed, were feeding alone. In the afternoon of the same date I saw an almost white sparrow; and two swallows on Breydon on the 14th.

Mr. Patterson saw a spoonbill on Breydon on the 19th, and also informs me that a pair of jackdaws have nested in the steeple of St. Nicholas' Church this spring.

For the past week a missel-thrush has been delighting street audiences about town with his impromptu concerts from the vanes above St. George's Church, the Town Hall, and the Baptist Chapel. These buildings stand in the centre of Yarmouth.

On the 26th I purchased a crab with one of the "nippers" much smaller than the other, though perfect. Mr. Patterson is of opinion that the crab lost the original claw and the small one is a new growth. This is a rather unusual but not uncommon occurrence, as I have seen three other similar examples since. A very rare fish was sent to Mr. Patterson on the 28th by some unknown person in Wales, called the bellows fish, a full account of which appeared in the *Daily Graphic* for the 30th.

103, *Lichfield Road, Southtown, Great Yarmouth.* ROY A. PIKE.

118. Sparrows at Covent Garden.—One would hardly think of calling Covent Garden a sylvan retreat—far from it. Yet a little after five o'clock one morning, quite recently, I was reminded of the fact that if one did not regard it as so, the sparrows could have a different opinion? On entering the Flower Market a gay chorus of chirruping coming from the sparrows in the vicinity of the glass-covered roof greeted me. Quite a host of the little birds could be seen flying from one iron girder to another, to all appearances totally unconscious of their busy surroundings. What a sweet-smelling haven they had for their nests above the brilliant hues of the beautiful flowers beneath!

Carlyle Lodge, Canonbury Place, London, N. CHAS. E. J. HANNETT.
May 2.

119. Gold Crests and Eggs.—On May 13 I found a gold crest's nest sadly despoiled—the lining of feathers had been torn out, and five eggs at least lay broken on the ground, the shells in most cases being more or less complete, whilst the contents had been sucked dry: one egg had been "spitted," in its fall, on a fir-needle on a lower branch, and it was the unusual sight of an egg suspended in mid-air which first attracted my attention to the nest: the white had, of course,

congealed, and now the egg is quite firmly glued on and presents a most curious appearance as it lies before me.

I found a gold-crest's nest—carefully concealed under a thick fir-branch—similarly treated last spring. At whose door do these crimes lie? There are a few jays and numberless squirrels in these extensive woods: the latter, I shrewdly suspect, are the authors of the mischief. Which of these two would *primâ facie* be in the better position to discover such artfully-concealed nests at the end of a thick fir-branch?

Those who have leisure would do a great service to lovers of our small birds—warblers and the like—if they could keep a systematic eye on the daily menu of *Sciurus vulgaris*: it might enable us to decide whether or no the squirrel is a luxury only to be enjoyed at the sacrifice of the lives of many of our woodland eggs and fledgelings.

A. C. MACKIE.

120. Long-eared Owls.—On March 26 I found three eggs of this bird placed in a deserted squirrel's "drey"; I took one egg, and on a later visit found that one of the remainder was "chipped" and the other addled; the birds subsequently deserted the eggs, and when I finally visited the nest, the originally "chipped" egg was gone and the addled one remained. What was the explanation of this? Did the owls themselves eat the sound egg or was it the work of jays or squirrels? In any case it would seem that the bird or beast was able to differentiate between an egg with a chick in it and one which was addled. Is this borne out by other instances?

North Walsham, Norfolk. A. C. MACKIE.

121. Herons Swimming.—Some think that these birds do occasionally swim. My observations lead me to think that they do not. I used to see them almost daily when living close to Langstone Harbour, where they often permitted the tide to rise up round their bodies. When in this position they moved about, walking it seemed to me, but not actually floating. If the water rose too high they took to their wings and sought another spot. Herons never settle down on water beyond their depth, which they would do if they were in the habit of swimming.

Southacre, Swaffham, Norfolk. EDMUND THOS. DAUBENY.
April, 1904.

122. Humming in the Air.—I have been much interested in the correspondence in your pages on this subject, but I am still inclined to think that the humming is caused by bees.

(1) Because the note appears to me to be exactly the same as that produced by bees, either when they are visiting a grove of lime-trees in blossom, as mentioned by Mr. Gibbons, or when swarming near their hives.

(2) The insects seen following a stone thrown in the air, when the humming is heard, are about the size of bees and fly like them, although I have never had them come near enough to me to be sure that they were bees.

May I suggest to your readers that they should make careful observations during the coming summer and send reports of the result to NATURE NOTES? I would ask them especially to throw stones high in the air when they hear the humming; perhaps some one may devise some means of discovering the identity of the insects which follow the stones.

Weston, Lambourne, Berks, R. OSMOND.
May 10, 1904.

123. Glow-worms.—Is there not a prevalent idea that it is unlucky to disturb these beautiful insects? If so, it is much to be encouraged. In warm summers, and in the month of August, they are common in this neighbourhood, and their "tiny spark" may often be seen after dark close to the roadside. I have observed them night after night in exactly, or almost exactly, the same spot, unmolested by the frequent passers-by, though very conspicuous; and I noticed just the same thing some years ago near a country town in Brittany.

Fern Bank, near Buxted, A. L. H.
May, 1904.

NATURAL HISTORY QUERIES.

19. **Hedgehog.**—Can any of your readers tell me whether it is the practice of hedgehogs to throw themselves inverted upon apples lying on the ground, so as to impale them with their spines, and then to rise and carry them off on their backs? I think Pliny alludes to this habit, but I fancy it is not credited by modern naturalists? However, my gardener declares that he has *seen* the feat performed in an orchard hard by!

Karsfield, Torquay. F. B. DOVETON.

20. **Avian Mania?**—A hen chaffinch has been pecking at my windows for the last two or three weeks. It pecks at all the lower windows on both sides of the house, sometimes going on for three or four hours at a time most violently. It is supplied with food and water, and does not want to come in if the windows are open. It does not come for insects as it does not stop, only dashes its bill so hard against the middle of a pane of glass, that one can hear it all over the house. What can it want?

[See Note 116 on p. 115 *supra*, ED. *N.N.*]

Shere, Guildford, May 9. A. WARREN.

21. **Retention of Foliage.**—Will you kindly explain through NATURE NOTES how it is that some trees, I refer to oaks and beeches, retain their leaves all winter? Of course I refer to shrivelled, lifeless leaves. This is very common with young trees, but this past winter I noticed a full-grown oak that retained its foliage up to the middle of April; it now has buds in a very forward condition.

Rhyl, N. Wales. F. L. RAWLINS.

May 1, 1904.

[The fall of the leaf in deciduous trees depends largely on the formation in late summer of a layer of cork across the cellular tissues of the leaf-base, pressing upon the vessels of the leaf-stalk. Thus cut off from communication with the root the leaf withers, and when its compressed veins are broken by the wind it falls. If a leaf-bearing branch be partially broken through in summer its leaves will wither at once, from the interruption of the food-supply from the root, but this interruption taking place prematurely before the development of the "absciss-layer" the cork is not formed, and the leaves, though the first to wither, remain attached to the bough through the winter. When a Beech or Hornbeam hedge is clipped, or when Oak or other trees are pollarded or coppiced, it would seem that the large demand made on the formation of cuticularised tissue in the form of "callus" at the cut surfaces prevents the formation of the cork across the bases of the leaves. If young uninjured "spear" trees retain their withered leaves it is probably a similar economy of nutrition, owing to the larger demands upon all their plastic material made by their rapid growth. This would seem to be an instance of the law, stated by the late Sir James Paget in his Surgical Pathology, that in highly complex organisms every part may be looked upon as an excretion to every other, which is but a restatement of Geoffroy St. Hilaire's law of "balancement of growth," which, again, is as old as Aristotle's "ἅμα δὲ τὴν αὐτὴν ὑπεροχὴν εἰς πολλοὺς τόπους ἀδυνατεῖ διανέμειν ἡ φύσις."—ED. *N.N.*]

22. **Petalody of Calyx.**—The enclosed Primula flower is one from a plant on which all are the same; there is no calyx to any of them, and it would interest me and others very much if you would kindly explain the process through which they come in NATURE NOTES next week.

C. J. MAURICE.

[There is no class of questions in biology as to which we are more profoundly ignorant than we are as to the causes of abnormal variations or "sports" such as "petalody" or "calycanthemy" of the calyx. Our correspondent is not technically correct in saying that his specimen has no calyx. The calyx is present, but is petaloid, like the corolla. This is, in a variation, a phenomenon similar to the cases where floral colouring repeats itself in bracts, or even—as in the Violet in galls; but as to the conditions of its origin nothing is known.—ED. *N.N.*]

SELBORNE SOCIETY NOTICES.

Council Meetings.—The usual monthly meeting of the Council will be held at 20, Hanover Square, W., on Monday, June 27, at 5.30 p.m.; and the Publications Committee on Tuesday, June 14, at 5.30 p.m.

New Members.—Mrs. W. J. Treutler, Hove; Sir Harry H. Johnston, K.C.B., F.Z.S., &c., Regent's Park; Alf. S. Adams, Esq., Marple Bridge; Aubrey L. H. Townsend, Esq., Tunbridge Wells; The Fulham Field Club and Literary and Scientific Society, per Geo. A. Rowe, Esq.; Ralfs Brown, Esq., Dean; Miss Lermit, Edgbaston; Mrs. E. Hutchings and Miss Eleanor Hutchings, Hampstead; E. E. Newton, Esq., West Hampstead; Arthur W. Lindy, Esq., Victoria Park Road; H. G. Batley, Esq., Hampstead.

Donations and Subscriptions.—The Council beg to acknowledge the following Subscriptions over 5s.: Rt. Hon. Sir Mountstuart E. Grant-Duff, A.S.C.I., &c., 21s.; Lady Jenkyns, 10s.; R. M. B. Otter-Barry, Esq., 10s.; G. S. F. Marston, Esq., 10s. 6d.; Sir John Goldney, 21s.; Mrs. Richmond, 7s. 6d.; Rev. E. F. Russell, 10s.; W. C. Stapleden, Esq., 21s.; Andrew Pears, Esq., J.P., 21s.; Mrs. Marshall, 10s. 6d.; E. S. Morphew, Esq., £2 2s.

Donations.—Rev. J. E. Hall, 15s.; Mdmlle. de la Rive, 5s.; Ralfs Brown, Esq., 5s.

FIELD CLUB RAMBLES.

April 23.—Favoured with fine weather, a dozen members, under the able guidance of Mr. Matthew Hunt, had a delightful ramble. Starting from Chipstead and following field-paths we leisurely made our way to Burgh Heath, where tea was served. Great profusion of spring flowers, cowslips and primroses, wood anemones, the lesser celandine, bluebells, barren strawberry, the stitchwort, and the humblc little moschatel were found, and cherry trees bore masses of snowy bloom. Amongst the bird-choristers were noted the lark, linnet, thrush and yellowhammer. After tea the party divided, some hurrying on to catch an early train for town, while the rest sauntered more slowly along the pleasant road leading to Kingsdown station. In the gathering dusk nightingales were singing all round us, and a screech owl was uttering his unmusical cry under the pale rays of the moon, even this note falling pleasantly on ears weary of the clamorous din of London.

April 30.—Thanks to the skill with which Mr. James Whiting had arranged the route, the threescore or thereabout of Selbornians who started from Northwood Station on this afternoon for Batchworth Heath had a most enjoyable ramble, and one of a surprisingly rural character, considering that it barely crossed the confines of Middlesex. The walk was by no means a long one, a circuit, as it were, round the new Mount Vernon Hospital for Consumption at Northwood Park, with a radius varying from half a-mile to 200 yards. The backwardness of the season was evidenced by the fact that of some ninety species of flowering plants that were noticed only a third were in flower. Bird-life was, however, very varied. Mr. Whiting soon detected the note of the Wryneck, or Cuckoo's mate, and the bird was seen from the high-road close to the station. On the Common the Chiff-chaff, Thrush, Nightingale, Blackcap and Cuckoo were seen or heard, and later on, besides enjoying the carol of the Lark, we found the nests of Thrush, Wren and Robin, the latter already containing young birds.

The ponds on the Common were covered with *Ranunculus floribundus*, whilst the Blackthorn bushes near by were still in full flower. A Badger's earth showing signs of recent use was hardly to have been expected so near London. This and a young rabbit dead, as the naturalists' verdict was, "from natural causes," were the only signs of wild mammals which were noted. The Lords-and-Ladies in the hedgerows aroused some questioning as to the relative frequence of the spotted and the "immaculate" forms. Hereabouts they appeared almost equally common, whilst a field of Cowslips on the way to Duck's Hill afforded evidence of a similar equality of the long-styled and short-styled forms of that species. A ferruginous

spring made an extensive swamp in which were many plants of *Pedicularis palustris* and *Orchis maculata*, and the field-hedges were gay with the blossoms of the Wild Cherry. At "Ye Olde Green Man," Batchworth Heath, the party enjoyed a comfortable tea, after which the midges made their meal off the party while they listened to a few remarks from Professor Boulger as to the flowers seen *en route*, with special reference to the discussion as to the pollination of the Primroses. A different route, entirely by field-paths, where the grass was studded with *Viola Riviniana*, brought the members back to Northwood Station.

The ramble was organised by the Hampstead Branch.

FORTHCOMING FIELD CLUB RAMBLES.

June 4.—Woldingham to Chelsham. Tea at the Bull, Chelsham. Take cheap return tickets to Woldingham. London Bridge (L.B.S.C.R.), 2.25; Victoria (L.B.S.C.R.), 2.30. London Bridge passengers change at East Croydon. Guide, Mr. Matthew Hunt.

June 11.—Broxbourne to Hoddesdon. Tea kindly provided by Dr. S. H. Appleford. Take return tickets to Broxbourne. Liverpool Street, 1.48 p.m. (excursion ticket, 1s. 9d.) and at 2.15 (ordinary ticket, 2s. 6d.). *N.B.*—Excursion tickets *not* available by 2.15 train. **Members only.**

June 18.—Weybridge, Chertsey, and Laleham Ferry; by heath, wood, fields and river. Tea at Chertsey Bridge (short route, if wished, to Chertsey Station). Waterloo, 2.28; Weybridge, 3.10 (unless time changed for June). Weybridge, third class return, 2s. 10d. Guide, Dr. Henry Willson.

June 25.—Stanmore, and the Gardens and Grounds of the Grove, by kind permission of Mrs. Brightwen, V.P. Take return tickets to Stanmore from Euston, 1s. 4d.; Broad Street. 1s. 9d. Tea at the Vine Inn, Stanmore Common. Trains from Euston, L.N.W.R., 2.20 and at 3. Broad Street, 2.15 and 2.47. Guide, Mr. John W. Odell.

July 2.—Nutfield; walk to Antwood. Tea kindly provided by Mr. W. W. Maw, F.R.A.S., who has also consented to show his large telescope and observatory. Train leaves Cannon Street (S.E. and C.R.) at 2.16. Take return tickets to Nutfield; price specially reduced to 2s. 4½d.; tickets to be obtained at main line booking office. **Members only.**

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 175. JULY, 1904. Vol. XV.

OBJECTS OF THE SOCIETY.

To promote the study of Natural History. To preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of: (1) The skins and furs of such animals as are in danger of being exterminated; (2) birds and their plumage, except when the birds are killed for food, reared for their plumage, or are known to be injurious. To protect places and objects of natural beauty or antiquarian interest from ill-treatment or destruction. To afford facilities for combined effort in promoting any of the above or kindred objects.

ANNUAL MEETING AND CONVERSAZIONE.

HELD in the Theatre and Halls at the Offices of the Civil Service Commission, Burlington Gardens, New Bond Street, W., kindly lent for the occasion by the Commissioners, the Annual Meeting and Conversazione on Friday evening, May 27, proved an unqualified and gratifying success. Despite the extremely unpleasant weather there was a very much larger muster than last year, Members and their friends attending to the number of quite 500, and among those present were the President, Lord Avebury, the Rev. Prof. Henslow, Prof. F. E. Hulme, Mr. A. Holte Macpherson, Mrs. Percy Myles, Mr. C. M. Mühlberg, Mr. G. Avenell (Chairman of the Council), Mr. W. M. Webb (Hon. Librarian), Prof. Bertram H. Bentley, M.A., F.L.S., Mr. Fred Enock, F.L.S., F.E.S., Prof. G. S. Boulger, and Mr. R. Marshman Wattson. Letters of regret for inability to attend were received from the American Ambassador, the Duke of Bedford, Sir John Cockburn, Sir Robert Hunter, and the Right Hon. James Bryce.

The President proposed from the chair the adoption of the following Report of the Council (which was taken as read) as the Eighteenth Annual Report of the Society.

I.—General.

During the past year your Council has been actively employed in forwarding the various objects of the Society in a number of different directions.

The Wakes.—Your Council heard with regret, which will doubtless be shared by all, of the serious damage done by the gale, in September last, to some of the trees planted by Gilbert White.

II.—The Study of Natural History.

Nature Study.—A prize of ten shillings was offered by your Council for the best Nature Diary in the Nature-Study Section (organised by your Librarian) at the Seventeenth Annual Exhibition of Arts, Crafts, and Industries at Hammersmith, 1903.

At the Home Counties' Nature-Study Exhibition, in the organisation of which the Society took a prominent part, a number of prizes were offered by your Council, by the Committee of the Hampstead Branch, and by individual members. They are as follows: Offered by the Council:—

(1) For a Nature-Study painting by a pupil (value £1 1s.).

(2) For an illustrated description of a ramble by a pupil (value £1 1s.).

(3) For an illustrated description of a visit to a good museum (value £1 1s.).

Offered by the Committee of the Hampstead Branch:—

(4) For an illustrated description of the work of a school Natural History Society (value £1 1s.).

Offered by Mrs. Brightwen, F.Z.S., F.E.S. (Vice-President):—

(5) For an illustrated description of a visit (books to the value of £1).

Offered by the Rev. R. Ashington Bullen, B.A., F.L.S.:—

(6) For a local collection (value £1 1s.).

Offered by Mr. Wilfred S. Durrant (member of Council):—

(7) For a Nature Notebook (value £1 1s.).

Offered by Mrs. Owen Visger:—

(8) For a Nature calendar (books to the value of £1 1s.).

Offered by Miss A. G. Redpath:—

(9) For a Nature photograph (value 10s. 6d.).

Offered by Mr. Wilfred Mark Webb (Honorary Librarian):—

(10) For a Nature Note-book, written by children under seven years of age (value 10s. 6d.).

During the Exhibition a meeting of the Society was arranged on the evening of Tuesday, November 3; the Chairman of your

Council, Mr. George Avenell, presided, and lectures were given by Professor G. S. Boulger, F.L.S., F.G.S., on "The Study of Living Plants"; and by Mr. Edward A. Martin, F.G.S., on "Open Spaces and Green Fields."

The Exhibition was a success in every way, a fact that was due very considerably to the great interest taken in it by the members of the Society. Your Librarian acted as Honorary Secretary to the Exhibition.

Your Council also notes, with satisfaction, that courses of free lectures on Nature Study have been organised by the London County Council at the Horniman Museum.

The Field Club.—As a proof that this very important branch of the Society's work is progressing as it should do, it may be pointed out that the same number (twenty-three) of rambles was organised during the past year as during the year before, and that the total attendance was 468, as against 304.

Below is given the full list of the places visited, the names of the conductors, and the number of members present:—

Date.	Place.	Guide.	No. of Members present.
April 18	Kew Gardens ... ... (Rock Garden, Tropical and Temperate Houses)	Prof. Boulger, F.L.S., F.G.S. ...	36
25	Northwood ... ... (Northwood to Batchworth Heath)	Mr. J. E. Whiting	42
May 2	Woldingham ... ... (Woldingham to Warlingham)	Mr. Matthew Hunt...	12
9	Clandon ... ... (Clandon to Newlands Corner)	Mr. A. B. Wilkinson	12
16	Epping ... ... (Epping to Theydon Bois)	With the North London Natural History Society	26
23	Rickmansworth ... (Valley of the Chess and Chenies)	Mr. and Mrs. Douglas Wilson ...	38
June 6	Hayes .. .. (Hayes and Keston Common)	Mr. Matthew Hunt	14
13	Selborne ... ... (The Wakes and the Hanger)	Dr. Bowdler Sharpe	40
20	West Horsley ... ... (To Newlands Corner and Clandon)	Mr. A. B. Wilkinson	8
27	Stanmore ... ... (Stanmore to Elstree)	Mr. George Avenell	40
July 4	Epsom ... ... (Epsom Downs to Ashtead Oaks)	Miss Giberne	19
11	West Drayton ... ... (West Drayton to Iver Water Splash)	Mr. Wilfred Mark Webb, F.L.S.	22
18	Chertsey ... ... (Chertsey Abbey and Laleham Church)	Dr. Willson and Mr. G. Jennings	13
25	St. Albans ... ... (St. Albans Abbey and to Verulam)	Mr. W. Percival Westell, M.B.O.U.	24
Aug. 8	Coulsdon ... ... (Coulsdon to Farthing Downs and Chipstead)	Mr. Matthew Hunt	17
15	Pinner ... ... (Pinner *viâ* Ruislip to Northwood)	Mr. C. M. Hailes	11
22	Hanwell ... ... (Hanwell to Greenford)	Mrs. Wilfred Mark Webb	16
29	Bickley - ... ... (Bickley to Chislehurst)	Mr. A. B. Wilkinson	12

Date.		Place	Guide.	No. of Members present.
Sept.	5	Chipstead ... ... (Chipstead to Woodmansterne)	Mr. Matthew Hunt	5
	12	Winchmore Hill ... (Ramble round Winchmore Hill)	Mr. Oliver G. Pike	7
	19	Chingford ... ... (Chingford to High Beach)	Mr. and Mrs. Douglas Wilson ...	30
	26	Oxted .. .. (Oxted to Caterham)	Prof. Boulger, F.L.S., F.G.S. ...	24
Oct.	24	Loughton to High Beach. Joined The Essex Field Club. (Fungus Foray in Epping Forest)		

Perhaps the ramble on June 13, to Selborne, is the only one which calls for very special attention. Your Council has to express its thanks to the guides who were responsible for the various excursions, and it wishes particularly to emphasise the fact that this branch of its work entirely owes its success to the energy and self-sacrifice of Mrs. Percy Myles, who, with Mr. A. B. Wilkinson, carries on the whole of its organisation.

Selborne Society Saturday Afternoons.—Your Council has the pleasure of recording another most successful series of afternoon visits to places of interest during the winter months, which have again been organised by Mrs. Percy Myles and others. The visits were as follows:—

Date.		Place.	Guide.	No. of Members present.
1903.				
Nov.	14	Natural History Museum ... (Ornithological Department)	Mr. W. P. Pycraft, A.L.S.	16
	28	Westminster Cathedral ...	Mr. Griffiths	47
Dec.	12	Natural History Museum ... (Botanical Department)	Prof. Boulger	16
	19	Brewers' Hall and Barber Surgeons' Hall	Messrs. H. Plowman, F.S.A., G. Avenell and S. Young	50
1904.				
Jan.	16	Natural History Museum ... (Geological Department)	Dr. C. W. Andrews ...	31
	30	St. Paul's Cathedral	Minor Canon Smith-Child	73
Feb.	13	Temple Church and Halls ...	Mr. F. Downing	57
	20	Merchant Taylors' and Skinners' Hall	Messrs. G. Avenell, Edwin Nash and E. H. Draper	70
	27	Natural History Museum ... (Ornithological Department)	Mr. W. P Pycraft, A.L.S.	15
March	12	Natural History Museum ... (Mineralogical Department)	Mr. L. Fletcher, F.R.S....	21
	26	Lincoln's Inn	Mr. W. Paley Baildon, F.S A.	110
April	9	Stafford House	... ...	90

In addition to the above, two special visits were made at which only a limited number of members could be present by invitation of the Council, viz., to St. James's Palace on March 19, and to Apsley House on February 6. Permission was given by the Lord Chamberlain for the former visit, a privilege never before granted to a Society. Several members of the staff of the Palace conducted the party through the State Apartments, pointing out the more interesting pictures, and the Rev. Edgar Sheppard, Sub-Dean of the Chapel Royal, read an account of the

Chapel in the building itself and exhibited the historic collection of church plate. The latter visit was by permission of His Grace the Duke of Wellington.

From this list it will be seen that 14 visits were organised, as against 9 in the preceding year, and that the average attendance has largely increased, being 49 as against 34.

Your Council wishes this year to repeat its expression of its indebtedness to the staff of the Natural History Museum for the unstinted pains invariably taken by them in assisting the educational efforts of the Society.

III.—The Protection of Animals.

Your Council has during the year been in correspondence with the authorities with regard to the protection of birds and other animals on Achill Island, in Egypt and in Australia. They now receive from the Home Office all the Wild Bird Protection Orders as issued, and these are filed for future reference. They have also been furnished with particulars of what has been done for the protection of the fauna of Uganda and that of the Federated Malay States. It was with much satisfaction that they heard of the consent of His Majesty's Government to the employment of the Coastguard for the execution of the Wild Birds Protection Acts and of Sir Harry Johnston's proposal for making Achill Island into a sanctuary. The stringent regulations for putting a stop to what is now well-known as "murderous millinery" in some of the United States of America should, your Council thinks, encourage us to renewed efforts in this apparently hopeless task.

Hampstead Bird Sanctuary. — The inception of the Shelter was indicated in the Society's last Annual Report. Since that time the shrubs and grasses which were planted upon the Society's recommendation have come on fairly well, though, as was previously explained, a few years must elapse before it can be decided whether the enclosure is a complete success. It has been closely watched by members during the past year, and so far indications are favourable. It would perhaps be unwise to state in detail what has been observed in or about the shelter; yet mention can be made of a squirrel that frequents the big trees close by, in which nuts for it are lodged periodically by a friendly hand. In pursuance of the original understanding with the Hampstead Heath Protection Society, the London County Council has lately made a further enclosure a little higher up the stream. This should prove a valuable addition to the Shelter when what is needed to fit it for the end desired has been done.

Ealing Bird Sanctuary.—Arrangements have again been made for a keeper to watch the enclosure in which the Ealing Branch of the Society interested itself last year. It is hoped that some details with regard to the birds which are being

successfully protected, may appear in the near future in NATURE NOTES.

IV.—THE PROTECTION OF PLANTS.

The feeling that it is necessary that something should be done to check the extermination of our rarer and more beautiful plants has spread from Devonshire to other counties. Considerable interest in the matter has been evinced in the Press, and it would appear that there is likely to be some legislation in connection with this question. Your Council sent to all the County and Borough Councils a letter enclosing a reprint of the two papers upon this subject which appeared in NATURE NOTES, by Professor Boulger and Mr. E. A. Martin respectively, and received several very sympathetic letters in reply to this circular.

V.—PLACES OF ANTIQUARIAN INTEREST AND NATURAL BEAUTY.

Hampstead Heath: Proposed Extension.—An outline of the scheme was given in NATURE NOTES for July, 1903. As was then mentioned, it is sought by the Hampstead Heath Extension Council to acquire of the Eton College trustees some eighty acres of land, comprising in effect meadows to the north-west of the Heath and immediately overlooked by it, for the purpose of forming a green fringe or buffer between the Heath and the houses which are confidently expected to be built on the completion of the Tube Railway to this part. The point, therefore, to be decided is whether the immediate prospect is to be over green fields or back gardens of houses, probably of none too attractive an appearance. Of the £48,000 required for the purchase, £33,000 has been paid or promised, and appeals have now been made to the Metropolitan Borough Councils north of the Thames for pecuniary aid. With the movement for purchase the Selborne Society has been identified, since several of its members have seats upon the Extension Council, and have attended special meetings called to promote the scheme.

The Pryors.—This small yet well-wooded estate, situated upon the East Heath, a year or two ago fell into the hands of the builder, to the regret of all lovers of the picturesque. Part of the site has already been utilised for the erection of flats, the huge blocks of which are a sad scar upon the landscape. As the buildings could not be removed, the local branch of the Selborne Society approached the London County Council with a recommendation that a number of quick-growing trees should be planted near these flats so as to form some kind of screen or foil to their ugliness. The Society's recommendation was favourably entertained by the Parks Committee, some members of which at once visited the spot to judge of the question for themselves, and it was not long before two or three dozen trees were put in, which, it is hoped, as they grow and develop thick

foliage, will do something to mitigate the assertiveness to the eye of the staring red-brick pile alluded to.

Digging for Treasure.—In view of the craze which the hunt for money, at the instigation of certain newspapers, ultimately assumed, your Council would remark that the Society was probably the first body of the kind to appeal to the public authorities to do what they could to repress a practice which could not fail to be very injurious to open spaces generally. A communication was addressed to the London County Council, and elicited the reply that everything possible was being done to stop the digging mentioned.

Cottages at Stratford-on-Avon.—All who were present at last year's Annual Meeting and Conversazione will remember the spirited address delivered by Miss Marie Corelli upon the great historic interest of Henley Street, Stratford-on-Avon, certain old cottages in which, close to Shakespeare's birth-place, the local authorities proposed to demolish or to include in a scheme for a Carnegie Library. Your Council subsequently appointed a delegate to investigate matters on the spot, and in due course he proceeded to Stratford-on-Avon in company with representatives of the British Archæological Association. The site of the suggested Carnegie Library was inspected, and interviews were sought and obtained with Mr. Flower, Chairman of the Library Committee, and with Miss Corelli, in order further to ascertain their respective views. Our delegate's opinion was that the cottages should be allowed to remain, an opinion since ratified by the trustees of the birthplace, who, it was subsequently announced, had decided to restore and preserve them.

Windermere.—Last July the Council's attention was called to this, the longest and perhaps not the least beautiful of the English Lakes, which, it was stated, was suffering pollution from two sources—from the bad quality of the sewerage effluent into the lake, and from the large quantities of ashes cast into it by passing steamers. To remedy the first cause the Society could do little or nothing, as it was essentially a matter for adjustment between the places concerned, Windermere and Bowness, and the Local Government Board. But as to the second cause of pollution, representations addressed by the Society to the Windermere Urban District Council, under whose jurisdiction the lake lies, elicited the gratifying reply that that body had called upon the owners of the steamers to stop the nuisance.

Marble Hill.—Your Council was represented at the public function when Lord Monkswell, on behalf of the London County Council, opened this newly acquired space on May 30, 1903. Its acquisition protects an important part of the view from the Terrace, Richmond.

Dunfermline.—Your Vice-President, Canon Rawnsley, your Council is pleased to record, has been fully advising the local authorities of this ancient Scottish town as to how they shall set about beautifying its surroundings by means of the munificent donation they have received for that purpose from Mr. Carnegie.

Cheddar Gorge.—The National Trust, upon the governing body of which your Society is represented, has been taking active steps to arouse local and general public opinion as to the serious injury now being inflicted upon this beautiful spot by quarrying operations. Your Editor, having recently visited the spot, was able to indicate the extent of the damage, and has suggested a possible remedy. As the Bath Branch of the Society is arranging an excursion to Cheddar on July 16, it is hoped that this may lead to something being done.

Avon Gorge.—Your Council is watching with much sympathy the movement dealing with a closely similar state of things in the gorge of the Bristol Avon. It was, in fact, a suggestion made by Mrs. Barnett with reference to the quarrying at this spot that formed the basis of your Editor's proposal as to Cheddar.

Pwllycrochan Woods.—The purchase by the town of Colwyn Bay (North Wales) of the small but valuable strip of woodland behind that rising watering-place is a matter for congratulation.

Beddgelert Tramway.—The proposal to run a tramway or light railway from Bettws-y-Coed to Beddgelert is engaging the careful attention of your Council. It has received an undertaking that it shall be notified as to all steps taken in the matter, and is accordingly awaiting further developments.

Purley Beeches.—Encouraged by the success that attended the efforts of the Croydon Branch in assisting to secure Croham Hurst from the builder, your Council hopes that the endeavour to purchase Purley Beeches may prove equally successful. This charming little bit of primitive woodland has been temporarily protected by a lease, and the sum required to secure it permanently is one that there should be no great difficulty in raising.

VI.—Publications.

"Nature Notes."—The members will have noticed that, as anticipated in our last Report, it has been found possible to include in the magazine more original illustrations than in former years. The varied objects of the Society find their reflection in the contents of Nature Notes, whilst during the past year more space has been devoted to a record of the meetings of your Council and of the Field Club.

Your thanks are especially owing to the Editor for the care and ability displayed by him in editing the Magazine.

VII.—Organisation.

Membership.—From death and other causes 106 subscribers have been lost to the Society, and 241 new members have been enrolled, making the total membership on March 31, 1,423.

Among the losses by death your Council would especially call attention to those of Miss Frances Power Cobbe; Mr. William Joseph Richards, the Founder of the United Devon Association; and Mr. A. Winkler Wills, founder and formerly President of our Birmingham Branch.

Rules.—The rules of the Society, as originally drafted, having been found in many respects vague and inadequate, they were referred to a Committee of your Council for revision, and after being very fully discussed in Committee, and also by the Council as a whole, were passed by a Special General Meeting on February 22 last. Attention is directed to the fact that, under these Rules, a copy of which has been sent to every member, a new grade of membership, that of Adherents, has been created, paying a minimum annual subscription of not less than one shilling.

Branches.—Reports have been received from the Bath, Birmingham and Midland, Clapton (Lower Lea Valley), Croydon, East Riding, and Hampstead (Northern Heights) Branches. The following are extracts from these:—

Bath.—The chief event in the annals of the Bath Branch of the Selborne Society to chronicle for the past year is the acceptance of the presidency of the Board by Col. H. M. Skrine, J.P. The Committee was willing to leave the post unfilled for a time, in the hope that Col. Skrine would kindly take the office, as it felt that if he undertook the position the future well-being of the Branch would be assured. In such a large Branch there are always a great many changes in the membership, and the past year has been no exception to this rule, 54 members having left and 43 new members have been enrolled. During the winter four lectures were given at the Royal Literary and Scientific Institution. On November 14 Miss Wheelwright gave a paper on "The Growth and Structure of a Tree"; on January 9 Mr. Griffin lectured on the "Decorative Aspect of Plant Life"; on February 13 the Branch gave a soirée in connection with the Literary and Philosophical Association, and Mr. Appleby lectured on "Stone Crosses, Ancient and Modern," illustrated by lantern slides, most of which were from photographs which he had specially taken for the occasion; and on March 16 Miss Long gave another of her papers, this time the subject being the "Life History of the Fern." Since the last Annual Meeting there have been seven excursions. On May 31, 1902, the Rev. W. S. H. Samler conducted about 25 members in the neighbourhood of Midford, and on June 14, 46 members visited Longleat Park. On July 5 Canon Ellacombe entertained about 70 members; while on July 19 Mr. M. H. Scott conducted a party of 33 members over Malmesbury Abbey. On September 20 about 50 members spent an afternoon in the Botanic Garden of the Royal Victoria Park. On April 25, 1903, 48 members were conducted over the most picturesque spots of Bristol by Mr. F. Bligh Bond. On May 16, Mr. M. H. Scott conducted an excursion to Glastonbury, which 45 members attended.

During the year a "Flora of the District" has been compiled by past and present members, and is in manuscript in the library. Although it does not contain as many varieties as Babington's list which was published nearly seventy years ago, at least it does not perpetuate the errors into which that writer fell through copying the lists of previous authors without verifying their statements.

The Report of the Natural History Sections, which may be looked upon as the working branch of the Bath Branch, is as follows: There have been five meetings. The first paper was by Mr. Appleby, "Reminiscences of the Flowers of 1902 as Seen through a Stereoscope." The second was by Mr. W. C. Elwood, "Notes on the Bath Flora"; and the third was by Miss Wheelwright, "Introduction to the Study of the Mosses." Since Christmas, 1903, there have been only two meetings, when the Rev. H. H. Winwood kindly took the section members round the geological rooms of the Museum; and again when Miss M. F. Heaven read a paper on the "Life History of the Gnat." The branch consists of sections for the study of—Section B, birds; Section F, flowers; Section I, insects. It is only by the careful and minute study of Nature that we can fully enter into the spirit of the Selborne Society.

Birmingham and Midland.—There has been a large increase in the number of members, which, it is hoped, denotes an increasing interest in the aims and objects of the Society; and the Committee would welcome any suggestion by which its usefulness might be extended.

A very successful Lecture was given on March 12 by Mr. Richard Kearton, entitled "Wild Nature's Ways." The Lord Mayor, who is President of the Branch, kindly granted the free use of the Town Hall, and presided on the occasion. The floor and great gallery were filled with children, numbering about 1,400, from seventy of the Elementary Schools of the city. The head teachers were also invited, and the side galleries were reserved for members and friends.

Upwards of 1,300 of the leaflets, "Spare the Birds and the Flowers," were distributed in connection with the Children's Country Holiday Fund, through the kindness of the Country Correspondents, thus reaching about forty of the country homes.

The Secretary was enabled, through the courtesy of one of the Country Correspondents, to arrange a Selbornian walk with the girls who were spending their holiday at Alcester, and endeavoured to interest them in the flowers and other objects of Nature during their stay in the country. The Committee feels that there is great scope in this direction for promoting the love of Natural History in the young; one advantage being that the children are already on the spot, so that there is very little difficulty in making suitable arrangements for the ramble, and little expense incurred.

In the hope of inducing the members to take a more active interest in the Society, the Committee has arranged for Lectures to be given from time to time on Natural History subjects. The first of these was given on November 17, by Mr. T. H. Russell, on "Moss-Life," when upwards of a hundred members and friends were present.

All members of the Selborne Society must regard with aversion the apparently increasing desire for feather ornamentation. One of our local Vicars, in a recent sermon, characterised those ladies who wore aigrettes in their hats or bonnets as either ignorant or uncivilised; rather strong terms, certainly, but not very far from the truth; and your Committee trusts that the members of this Branch will do their utmost to put a stop to this inconsiderate practice.

The state of the finances is very satisfactory.

Clapton.—The syllabus prepared for the season 1903-1904 has been duly carried out, and your Committee has the pleasure to record that on the whole the meetings have been slightly better attended. The following is a list:—

1903.		
Oct.	17	"Bog Plants." C. Nicholson, F.E.S.
Nov.	21	"A Homely and Unscientific Chat on Shells." Miss A. S. Philpott.
*Dec.	19	"Snap-shots in Belgium and Brittany." C. E. Allnutt.
1904.		
Jan.	16	"The Cause and Prevention of Decomposition." J. F. H. Gilbard, F.I.C., F.C.S.
*Feb.	20	"Stones of English History." R. Marshman Wattson.
March	19	Social Evening and Annual General Meeting.

* With Lantern Illustrations.

It was with much satisfaction that your Committee was able to include in the syllabus a paper by one of our lady members, and it hopes that other ladies will be encouraged to follow this excellent example.

Croydon.—The Croydon Branch has as usual held monthly meetings during the winter months, when lectures have been delivered. The lectures are given in the Hall attached to the North Park Ladies' College, Croydon West, by kind permission of the Principal, Miss H. C. Sturton, the pupils of the College being present by arrangement.

The following is a list of meetings that have been held :—

1903.		
Nov.	6	"Creatures of the Seashore." Lantern Lecture. Mr. Edward A. Martin, F.G.S.
Dec.	4	Some Geological Photographs and Studies. Lantern Lecture. Mr. W. Whitaker, B.A., F.R.S., F.G.S.
1904.		
Feb.	5	Museum Evening. Short Lecturettes and Notes.
Feb. (Sat.)	13	Visit to Natural History Museum. Entrance Hall, 3 p.m.
March	4	"He Made the Stars also." Illustrated. Mr. Councillor H. Keatley Moore, B.A., B.Mus.
April	8	"Ocean Depths." Lantern Lecture. Captain Alfred Carpenter, R.N. Some personal experiences of the "Challenger" Expedition.
April	15	Annual Meeting and Exhibition of Nature Slides. The Honorary Secretary.

In addition, the Secretary's services have been in request by Bands of Hope and similar institutions, to which lectures suitable to children have been given.

The summer rambles, which have been held in the South of London, have been well supported by members of the Branch.

The Croydon Branch has devoted its best influence towards the movement for the preservation of the well-known Purley Beeches. Under the able leadership of Captain Carpenter, R.N., D.S.O., the Committee formed to watch over the matter has been enabled to obtain a lease of fourteen acres, with a view to the subscribing in the meantime of the sum of money necessary to purchase the ground at the end of that period.

The Branch is represented on the Council of the Society by its delegate, Mr. H. S. M. Grover.

East Riding.—At present only pioneer work can be attempted here. Meetings have been held at five different centres, much literature has been distributed, several new members have joined, one lady has promised that her keeper shall not destroy harmless birds, several ladies have left off wearing birds in their hats, and other interest, such as feeding birds in winter, has been shown.

Hampstead (Northern Heights).—The conversion of this into a working Branch has been attended with gratifying results, upon which Mr. James E. Whiting, the Honorary Secretary, is to be congratulated. The rambles in the district last year were much appreciated, and were more fully attended than they have ever been before. Support has been lent by the Branch to the movement for the extension of the Heath, and to the protection in general of its amenities. Five lectures have been given during the winter, viz. :—

"Earthquakes, Volcanoes, and the West Indian Eruptions." Professor J. Logan Lobley, F.G.S.
"Pictures from Bird-Land." Mr. Oliver G. Pike.
"The Milky Way, and New Stars." Mr. A. C. D. Crommelin, F.R.A.S. (of Greenwich Observatory).
"Spiders—their Structure and Habits." Mr. Frank P. Smith.
"Radium." Mr. J. B. Butler Burke, M.A.

Four ancient halls of the City Guilds have been visited, and on each occasion a large number of members have availed themselves of the opportunity of inspecting the headquarters of these historic companies.

It may be pointed out that the Representatives of Branches upon the Council need not be members of the Branch they represent; but that it is most desirable that even the more distant Branches should be represented at the Annual Meeting, if not at other times, and that, by sending in reports of their past, or a forecast of future, proceedings to the Editor for insertion in the Magazine, they may keep in touch with the general body. It is also most desirable that all Branches should hold both occasional meetings and evening lectures. Some Branches, it is feared, act merely as Magazine distributing agencies, and do not even keep the parent Society informed as to local matters of great importance to the whole body.

The Council has recently decided to appoint a Branch Organiser in accordance with the suggestion made in the last Report.

SUMMARY OF BRANCH PAYMENTS.

Branch.	Paid for "Nature Notes."		Contributions.	
Abinger and Shere	£1 14 8		£0 8 0	
Bath a/c 1902	—		3 0 0	
,,	4 1 8		3 0 0	
Birmingham	7 18 2		3 0 6	
Brighton a/c 1902	—		0 6 0	
,,	1 16 10		0 5 0	
Clapton	3 18 0		1 1 0	
Croydon and Norwood	4 19 8		1 3 3	
*Ealing	—		—	
East Riding a/c 1902	—		0 10 0	
,, ,,	1 12 6		0 4 9	
,, ,,	—	(Special don.)	0 5 3	
Farnham	2 1 2		0 19 0	
,,	—	(Special don.)	2 0 0	
Halifax	1 16 10		0 6 7	
,,	—	(Special don.)	5 0 0	
Hampstead	10 8 0		2 10 0	
Kensington	4 4 6		1 1 8	
,,	—	(Special don.)	5 7 2	
North Somerset a/c 1904	1 8 2		0 7 4	
,, ,,	—	(Special don.)	1 15 6	
*Rape of Lewes	—		—	
Richard Jefferies (Worthing)	2 9 10		0 8 2	
Rother Valley (Midhurst)	1 17 6		0 11 6	
,, ,, ,,	—	(Special don.)	1 0 0	
Wimbledon and Putney	2 10 0		1 1 4	
,, ,,	—	(Special don.)	0 10 0	
	£52 17 6		£36 2 0	

The following Branches have remitted their subscriptions in full and these are included under the head of Subscriptions: Markwick (Horsham), Portsmouth, Sutton, Rother Valley (Petersfield).

*Paid, since audit.

Dr. FINANCIAL STATEMENT FOR YEAR ENDING 31ST MARCH, 1904. **Cr.**

	£	s.	d.
To Balance at Bankers, 1st April, 1903 ...	223	4	11
,, Subscriptions—Balance, 1903 ... ... £76 11 6			
,, Do. —on account, 1904 ... 132 13 6			
	209	5	0
,, Donations	12	10	0
,, Sale of NATURE NOTES to Branches	52	17	6
,, ,, Leaflets, Badges, &c.	1	16	2
,, Branch Contributions	36	2	0
	£535	15	7

	£	s.	d.
By Printing and Publishing NATURE NOTES, including Postage to Members: 1st April, 1903, to 31st March, 1904	166	15	9
,, Secretary	25	0	0
,, Do. (Honorarium)	15	0	0
,, Rent	15	15	0
,, Printing and Stationery	41	1	9
,, Postage and Petties	16	18	5
,, Annual General Meeting	15	2	1
,, Gratuities	1	7	6
,, Badges	1	8	6
,, Subscription to Thames Preservation League	1	1	0
,, Cheque Stamps	0	4	2
,, Travelling Expenses of Delegate to Stratford-on-Avon	1	15	6
,, Office Furniture	1	1	0
,, Durrant's Press Cutting Agency	2	12	6
,, Bird Protection Acts and Orders	0	15	4
,, Postage on Special Leaflet to County Councils ...	3	12	1
,, Commons and Footpaths Preservation Society *re* Stonehenge	5	0	0
,, Prize—Hammersmith Arts and Crafts Exhibition ...	0	10	0
,, Prizes—Home Counties Nature-Study Exhibition ...	5	5	0
,, Balance, Capital and Counties Bank:			
On Deposit Account of Life Members £10 10 0			
Current Account 205 0 0			
	215	10	0
	£535	15	7

I have compared the above Accounts with the Vouchers, and certify the same to be correct.

26, THEOBALD'S ROAD,
GRAY'S INN,
15th April, 1904.

ALFRED T. CRAIG,
Chartered Accountant.
Hon. Auditor.

	£	s.	d.
Balance	215	10	0
	£215	10	0

	£	s.	d.
Liability to Members for NATURE NOTES to 31st Dec., estimated at	111	0	0
Balance	104	10	0
	£215	10	0

Mr. A. H. Macpherson seconded the President's motion for the adoption of the Report, and it was carried unanimously.

Mr. J. Argyle moved the election of officers as in the list here annexed, observing that they had done their work most admirably, and that consequently no one could desire any change.

OFFICERS, 1904-1905.

President.

THE RIGHT HON. LORD AVEBURY, D.C.L., F.R.S., &c.

Vice-Presidents.

O. V. Aplin, F.L.S.
Prof. G. S. Boulger, F.L.S., F.G.S.
The Hon. Mrs. R. C. Boyle.
Mrs. Brightwen, F.E.S.
The Right Hon. James Bryce, M.P.
*The Rev. H. E. U. Bull, M.A.
Charles Burt, J.P.
*Dudley W. Buxton, M.D., D.Sc., M.R.C.P.
His Grace the Archbishop of Canterbury.
The Hon. Sir John Cockburn, K.C.M.G., M.D.
The Right Hon. Sir Mountstuart E. Grant-Duff, G.C.S.I., F.R.S.
W. Warde Fowler, M.A.
The Right Hon. Sir Edward Fry.
Marquis of Granby.
The Right Hon. Sir Edward Grey, M.P.
The Rev. Professor Henslow, M.A., F.L.S.
Mrs. Arthur Hill.
Prof. F. E. Hulme, F.L.S., F.S.A.
Sir Robert Hunter, M.A.
G. B. Longstaff, M.D.
*A. Holte Macpherson, B.C.L., M.A., F.Z.S.
Right Hon. The Earl of Mansfield.
Mrs. Martelli.
Mrs. Charles Mathews.
Hon. J. Scott Montagu, M.P.
G. M. Murray, F.R.S., F.L.S.
G. A. Musgrave, F.Z.S., F.R.G.S.
Mrs. G. A. Musgrave.
*Mrs. Percy Myles.
J. L. Otter.
Earl Percy, M.P.
Mrs. E. Phillips.
The Rev. Canon H. D. Rawnsley, M.A.
The Hon. Lionel Walter Rothschild, M.P., B.Sc.
*R. Bowdler Sharpe, LL.D., F.L.S.
The Right Hon. The Earl of Selborne.
The Right Hon. The Earl of Stamford.
*W. Whitaker, B.A., F.R.S., F.G.S.

(*) Nominated to serve on Council under Rule VIII.

Council.

George Rowland Blades, F.R.G.S.
G. A. B. Dewar, B.A.
F. Downing, F.S.I.
C. M. Hailes.
Edward A. Martin, F.G.S.
C. M. Mühlberg.
H. Plowman, F.S.A.
Hubert Poole.
W. P. Pycraft, A.L.S., F.Z.S., &c.
R. Hedger Wallace.
Mrs. Douglas Wilson.
A. B. Wilkinson.

Officers of the Council.

George Avenell, *Chairman.*
J. L. Otter, *Hon. Treasurer.*
Wilfred Mark Webb, F.L.S., *Hon. Librarian.*
Prof. G. S. Boulger, F.L.S., F.G.S., *Editor.*
R. Marshman Wattson, *Secretary.*

The Rev. R. Ashington Bullen seconded, and the motion was agreed to.

Mr. E. A. Martin, F.G.S., said he had given notice of three amendments to the revised rules which were adopted at the meeting held three months ago, and he had done so because he considered that the decisions then arrived at were not allowable under their constitution. They had individually no notice given them of the amendments to the rules that were being introduced, and it was possible that members were not present at the meeting which adopted the new rules who might otherwise have attended. He would not have taken the step he was now taking if it had not been for the fact that the objects of the Society had been altered. As over a thousand or more members joined the Society when it had certain objects in view, he held that in the absence of something approaching a referendum it was not within the power of the Council to alter these objects. Personally, he had been working in support of them for twelve years, and many members had probably done the same for longer, and it was not right that the Council should effect any alteration without having first obtained permission from every one who had joined under the old conditions. There was, he thought, a great danger of the Society developing into a purely Nature-Study Society. Nature study was an excellent thing, but there were plenty of societies which studied natural history, and sometimes from a very cruel point of view. As they stood out distinct from everybody else in wishing to protect Nature as well as to eliminate the illimitable collection of objects, they should make a stern stand against anything that would do away with the great aim of the Society, viz., the protection of Nature from spoliation. Rule 2 set forth the objects of the Society as passed three months ago. Formerly their fourth and final object was the study of natural history, and now it was put at the head of the list. He wanted to see it relegated to the position it held before, and therefore he proposed that that object, as in the former rules, be placed at the bottom of the list.

The amendment was not seconded and therefore fell to the ground.

Mr. Martin said his second amendment dealt with object C. As it formerly stood this rule was to discourage the wearing and use for ornament of birds and their plumage, except when the birds were killed for food or reared for their plumage, but at the last meeting the words, "or are known to be injurious," were added. He believed that a good many Members felt as he did, that the introduction of these words was a great mistake; there was such a variety of opinions as to what birds were injurious and what were not. The introduction of the words he complained of was an early step in the tendency of the Society to go the wrong way and reduce itself from a protective Society to one that would be merely a Natural History Society. In this they differed from all other societies, and he therefore moved the omission of the words, "or are known to be injurious."

Mrs. F. E. Lemon, F.Z.S., Honorary Secretary of the Society for the Protection of Birds, seconded the amendment. She thought the words in question constituted a very dangerous innovation.

The President said he saw no great objection to leaving the words out. He had a suggestion to make to the Council, however. Frequently he saw ladies wearing plumes in their hats, and with the natural diffidence of his sex he felt a little nervous about suggesting to them that they should "drop them." He was afraid that such action might be resented. It had occurred to him that if those who saw ladies wearing these ornaments in their head-dresses were to communicate with the Council, the latter might undertake to send the offender one of their appropriate leaflets. An impersonal appeal of that sort might have more effect than an individual remonstrance.

On being put to the vote the amendment was rejected by a large majority. Mr. Martin thereupon intimated that he would not proceed with his third amendment.

This concluded the business, and an adjournment was made to the Theatre, where Lord Avebury delivered his Presidential Address :—

"Sir Mountstuart Grant-Duff, in the last volume of his charming Diary, tells us that Brandis, the eminent botanist, said of himself: 'When I was fifteen my relation, the famous old Professor Link, said to me, "Do not think yourself yet a botanist; you do not know 3,000 plants. No one has a right to call himself a botanist who does not know 5,000; and no one is a great botanist unless he knows 20,000."'

"It would, of course, not be fair to attach to Professor Brandis's words a meaning which I am sure he would repudiate. Nevertheless, there are many who seem to think they know a plant if they can mention it by name and know a few of its most obvious characteristics. This, however, is really as if a person was to claim to know London because he could find an address in the *London Directory*.

"No one in the world knows 20,000 plants, or 5,000. I might almost say no one really knows a single one. We all remember Tennyson's profound and beautiful lines about 'the flower in the crannied wall.' Tennyson, however, may perhaps be said to have been speaking rather as a philosopher than as a botanist. But even apart from metaphysics, if we consider the plant from a merely botanical point of view—its past history, relations, and life-history—how little we know even about the commonest and most familiar species.

"Apart from botanists, we may partly realise how incomplete and inadequate are the popular ideas, if we remember how often people talk of being 'fond of flowers,' or 'devoted to flowers.' I am not sure that I ever heard anyone—not a real botanist—speak of being fond of plants. But if one phase of plant-life is more important than another, it is the seed, not the flower. The

seed is not there to produce the flower, but the flower is important as necessary for the production of seed.

"The popular ignorance of the commonest plants is phenomenal, and the most improbable statements are accepted as facts on the slightest evidence. I remember once calling on Mr. Darwin, and he told me that some time before he had a letter from a gentleman asking him if he had heard that the beans in Lincolnshire had all grown that year the wrong way up in the pods. Mr. Darwin was too courteous to contradict his correspondent, but wrote asking for a few of the pods. He had just got the answer, which he showed me, and it was something to this effect :—

"'DEAR MR. DARWIN,—Your letter—or rather mine to you—has given me a great deal of trouble. As soon as I got it I looked at my own beans, but they were all the right way up. I then rode over to my friend who told me about the beans. He said he had not looked at them himself, and referred me to a gentleman at the other end of the county. I then rode over to him, but he only sent me on to another friend; and to cut a long story short, I have been riding all over the county after those beans, and at last I have come to the conclusion that it is all a mistake, and our beans are the right way up after all.'

"A great many people seem to think that animals and plants are only to be studied either from books or in collections. This opinion is not confined to non-naturalists. Many years ago my friend Mr. Stainton sent a circular to entomologists asking them to mention what groups they studied, and whether they collected and were willing to exchange specimens. When he published his list Mr. Newman, one of our best naturalists, wrote a review of it, and coming to my name he said: 'Mr. Lubbock tells us he studies Hymenoptera, but has no collection. What then does he study? Books? Books are blind guides, Mr. Lubbock.' It never seemed to occur to him that one might study the anatomy, physiology, and life-history without having a collection.

"Not, of course, that I would under-value collections. They are very important, and in some cases necessary. But a collector is not necessarily an observer. Collecting takes up a great deal of time. Moreover, the National and other collections are open to most of us. Botanical collections, however, are less time-taking than those of insects, and most botanists find it useful to have a collection of the plants of their own neighbourhood, and of any special group they may be studying. But it seems to me that any one who is going to take up Nature Study would do well to select some part of the field which has been left, so to say, fallow. Virgin soils give the best crop.

"Now so far as our British flowering plants are concerned, and with the exception of certain variable groups, we cannot expect very many additions to the list. Some, no doubt, there

will be, but this department of botany has been worked at much more than others.

"When we come to the structure, physiology, and life-history, we have indeed a most interesting field of study before us. Yet I wonder how often it has occurred to any of the thousands who admire flowers to ask themselves, for instance, why a rose has five petals, why the lime has a round leaf, the Spanish chestnut a sword-shaped leaf; why some pines have long leaves and some short ones.

"I remember a story of two botanists who were much interested in mosses. One said to the other that he had often wondered why the teeth of the capsules differed so much in different species. 'Oh,' said his friend, 'I see no difficulty. If it was not for those differences, how in the world should we be able to distinguish the species from one another.' I once heard a lady suggest that the reason of the great number of bulbous plants in South Africa was because the Dutch are so fond of bulbs!

"We have in the last number of NATURE NOTES an interesting illustration of the problems open even as regards one of our commonest and most familiar wild flowers—the primrose.

"I remember very well, though it is more than forty years ago, hearing at the Linnæan Society, in 1862, Mr. Darwin's memorable paper in which he suggested the explanation—I doubt not familiar to you all—of the two forms, the pin-eyed and the thrum-eyed, which occur in both the cowslip and the primrose. Sir Joseph Hooker, in rising to discuss it, said it was quite a revelation to him. He said he had been till that evening like Peter Bell in Wordsworth's poem:—

> The primrose on the river brim
> A yellow primrose was to him;
> And it was nothing more.

He fully accepted Darwin's explanation, and I myself have little doubt it is in the main correct. Mr. Edward Bell, however, has questioned it in a special work,* and again in a paper 'On the Pollination of the Primrose,' in NATURE NOTES for April. This paper has a pathetic interest, as the author, who had been for some time in bad health, died before it was published. The Editor has some wise remarks in reply in the May number, with which in the main I concur, and especially that the question has no decisive bearing on what Mr. Bell calls Darwinism. Mr. Bell scarcely appreciated, I think, the cases of insect visits which are on record, and the fact that while Darwin attributed the fertilisation to night-flying moths, most of the observations have been made by day. At the same time I admit, and it is for this reason that I have referred to it, that even as regards these beautiful, common, and familiar species, however probable Darwin's view may be, the question cannot be

* "The Primrose and Darwinism." By a Field Naturalist.

said to be definitely settled, and more observations are required. In fact, there is not an animal or a plant, however common, which would not afford material for, and amply repay, not merely the study of an hour, a day, or a year, but even the devotion of a life-time. Look round at the endless diversity and complexity of leaves and flowers and fruits. For every one of these innumerable differences—differences of colour, form and structure—there is no doubt a sufficient explanation if we only knew it. Some, no doubt, we can explain, more or less satisfactorily, but for every problem we solve we open out a dozen mysteries. Zoology and geology present also in the same way an endless succession of entrancing problems. From this point of view the country becomes intensely interesting: every walk is a scientific expedition, every field a museum, every wood a fairy forest, every stream an enchanted river.

"We are beginning, moreover, to realise the importance of science in education. Years ago I used to have friendly discussions on the subject with Matthew Arnold. He maintained that science was not suited to the minds of children; but one fortunate day he went over to Germany and saw what was being done there, and came back quite convinced that 'Naturkunde' ought to be introduced into our schools. The recent 'Nature-Study Exhibitions' show that this has been done in some cases; and how successful it is.

"The Selborne Society has thrown itself heart and soul into the work of forwarding the Nature-Study movement, and last year took a very prominent part in organising the Home Counties' Nature-Study Exhibition. The promoters of this undertaking were very successful in their endeavour to show that observational work on living things, by pupils themselves, is the essence of Nature Study. They also took every possible advantage of the experience gained at the previous exhibition, and not only did they choose practical teachers whose work is on specially good lines to address the conferences, but they prevailed upon our leading Nature lecturers to speak at the evening meetings held in this theatre.

"No doubt there are still some who think we can learn nothing except from books; that the words of men (especially if they lived a long while ago in Athens or Rome) are more instructive than the works of Nature.

"We still hear that Nature Study is in its essence superficial. That it is elementary I agree, but it is not, or at least ought not to be, superficial. It is elementary, of course, as science, but not as education; or, if elementary, it is so only in the sense that it is a beginning. Nature Study is good both for the mind and for the body. The naturalist after a day in the open air comes home with a good appetite, with his muscles strengthened, his nerves soothed, his mind full of gratitude and wonder. We know what a trial it is not to be able to sleep—

Night hath no wings to him that cannot sleep;

but after such a day the night flies! If any one of your friends is suffering from dyspepsia, from insomnia, from low spirits, or any nervous affection, recommend him or her to take up Nature Study and join the Selborne Society."

Professor Boulger, in asking the audience to accord their thanks to the President for his address, observed that they must all have enjoyed it very much, and that although it began, perhaps, in a somewhat alarming manner it contained a great deal that was consoling. According to the standard which he quoted from Professor Link, it was quite certain that there were very few botanists. They might remember that Darwin expressly denied to himself the title of a botanist. The author of the "Fertilisation of Orchids" and "Insectivorous Plants" was not a botanist, and, according to Professor Link's decision, the author of "Contributions to the Knowledge of Seedlings" could not claim to be one. He remembered speaking some years ago to Sir Joseph Hooker as to the number of plants that a botanist might know, and he said—and he (Professor Boulger) was not surprised at his statement, although he (Sir Joseph Hooker) was still hard at work at 87—that, as the years went on, as he got to know one new plant he forgot others. Robert Brown, who everyone would admit was a botanist, refused to examine plants that were not dried, preferring to shake them up with hot water in a test tube. The President of the Linnæan Society, in his Address on the previous Tuesday, dwelt on the limitations of Linnæus in this very respect of an incomplete study of the plant. Linnæus knew plants in their mature condition and paid no attention to their development. They might remember that Gilbert White rebuked one of his nephews for making use of a microscope, and pointed out that Linnæus completed all his work without such an instrument. The whole point as to what constituted a botanist had altered, and a question their President had so frequently asked, as to why a thing was so, was one the botanist of the past never asked at all. The botanist of the past was quite satisfied with the facts of anatomy, and mature anatomy at that. But perhaps it was well that the great botanists, whom they recognised for their vast knowledge of plants, did not ask this question, because they devoted themselves to very useful knowledge in the early days of science. No one would question for a moment what their President had said, that there was not a single plant which they could say they knew. If there was one plant which might be supposed to have been studied since Darwin's work it would be the primrose, and he was glad to say that in the forthcoming number of NATURE NOTES there would be another article on this ubject by Professor Weiss, of Manchester, who was in correspondence with Mr. Edward Bell, before his death, upon this question. It was certain that there were a great many points in the life-history of a common primrose that we did not know. As another instance, only a little while ago some one sent him a

mass of minute seedlings, smelling very strongly of peppermint, and expressed the belief that they were seedlings of peppermint. He looked the matter up, but without result, not one book giving a figure of what the seedlings of peppermint were like. Collections of plants did not, as a rule, contain seedlings. He knew some that did, and it made them far more interesting. He would add a suggestion to those offered by their President. It was not necessary to collect in order to study living things. If they wanted to study a life-history the commonest plant would serve just as well as the rarest—perhaps better. There was, therefore, no necessity to root up rarities if they wanted subjects of study. There were plenty of plants to be found everywhere. There was a considerable danger in the multiplication of private collectors if the collector was always to suffer from the mania of a want of rarities, attaching great importance to an animal or a plant because it was rare. They might remember that there were some people to come after us, and we did not want to see the British fauna and flora reduced for our successors.

Mr. Avenell formerly seconded the vote of thanks, and it was carried with acclamation.

The President having briefly expressed his acknowledgments, the thanks of the Society were, on the proposition of Mr. Webb, seconded by Professor Hulme, and supported by the President, accorded to the Civil Service Commissioners for their kindness in lending the use of their building for the occasion.

Professor Bertram H. Bentley, M.A., F.L.S., then delivered a lecture on "Flowers and their Insect Visitors." After defining a flower as an arrangement found in certain plants to ensure the production of fertile seeds, he explained the process of pollination by the wind, and indicated how cross-pollination is affected by bees, butterflies and other insects. He pointed out that certain flowers, such as the foxglove and the honeysuckle, were so formed that they could only be entered by certain insects, and that in many cases they were provided with what he termed "path finders." In illustration of his remarks a number of particularly good photographs were thrown on to a screen by means of a lantern, showing Hazel, Willow, Lords-and-ladies, Wood Anemones, Foxgloves, Snowdrops, Honeysuckle, and other well-known blossoms. Anent the honeysuckle, the lecturer alluded, amid some laughter, to the popular song associating it with the bee, and remarked that while the latter did occasionally visit this particular bloom, it had very little to do with its pollination.

A vote of thanks to Prof. Bentley was proposed by the Rev. Prof. Henslow and carried unanimously.

Subsequently a second lecture was given by Mr. Fred Enock, F.L.S., F.E.S., who, with the assistance of some sixty excellent slides of insect life in natural colours, taken by himself on the Sanger-Shepherd process, told of "Nature's Protection of Insect

Life." Mr. Enock demonstrated the wonderful manner in which Nature provided for the safety of certain members of the insect world by means of protective coloration which agrees with the creatures' environments. The insects seemed to be careful to see that their markings fell in with the markings on the tree, thus rendering them practically invisible.

A vote of thanks to Mr. Enock was proposed by Prof. Hulme, seconded by the Chairman, Mr. Avenell, and carried unanimously.

In the Conversazione a very extensive series of objects were exhibited. Mrs. Brightwen, Vice-President, contributed a series of "Studies from Nature" in water-colours, affecting principally birds and plant life. The fine original drawings for "Eton Nature-Study and Observational Lessons," exhibited by Mr. W. M. Webb (Hon. Librarian), and a large collection of photographs, principally archæological and architectural, by Sir Benjamin Stone and others, exhibited by Mr. Geo. Scamell, Secretary of the National Photographic Record Association, and intended to augment the British Museum Records, were also on view.

Several cases illustrating protected mimicry in insects were lent by Mr. Montagu F. Hopson, F.L.S., and Mr. F. Primrose Stevenson; and Mr. E. C. Goulton exhibited a selection of interesting photographs of insects. A hundred drawings of plants round Farnham were the exhibit of Mrs. Marindin (Branch Secretary), and among other articles shown by Miss Whitmore was a d'oyley manufactured from the fibre of the Lace-bark of Jamaica. The origin of our common vegetables was explained by a series of very carefully coloured prints and drawings sent by the Rev. Prof. Henslow, M.A., F.L.S., and some photographs of baptismal fonts, representing different periods of Gothic architecture, were displayed by the Secretary of the Society, Mr. R. Marshman Wattson. Other exhibitors were Miss Edith Hopkins, South African plants in water-colours; Dr. T. K. Rose, of the Royal Mint, photomicrographs of brittle gold coinage bars; and Mr. H. Plowman, F.S.A., archæological exhibits.

Microscopes were kindly lent by Messrs. H. Austin, J. E. Cooper, H. E. Freeman, E. C. Goulton, Alf. E. Hilton, Ernest Hinton, M. K. J. Marks, T. Plowman, H. Taverner, C. Turner, C. West, C. H. West, and W. Wood.

Mr. T. Ernest Waltham exhibited stereoscopic slides of plants. Messrs. Sanger, Shepherd and Co. were represented by some of their best photographic work; the British Mutoscope and Biograph Company, Ltd., supplied a "Kinora," the pictures in which included a very entertaining series illustrating the idiosyncrasies of the pelican; and the Orchestrelle Company, New Bond Street, sent a pianola, selections of music on which provided a very agreeable diversion.

SELBORNIANA.

Lost.—On the occasion of the Annual Meeting and Conversazione, a lady lost an umbrella. She would be obliged if the finder will return it to Miss Russ, 27, Clifton Hill, St. John's Wood, N.W.

Purley Beeches Fund.—The Treasurer of the Fund asks us to acknowledge the receipt of £1 from "A Lover of Purley Beeches," who requested that the acknowledgment might appear in Nature Notes. Should others of our readers wish to subscribe, any contributions would be gladly received by Capt. A. Carpenter, The Red House, Sanderstead, Surrey.

A Nature-Study Museum for School Children.—On June 4 a small, unpretentious building, situated in St. George's Recreation Ground, Stepney, was opened as a Nature-Study Museum. Such is the excellent result of the arduous efforts on the part of Miss Hall, Curator of Stepney Museum. This lady has been loyally supported by the members of the Borough Council. The Libraries Committee accumulated £150, and with this, and an anonymous contribution of £100, alterations were effected and the building stocked with a number of the commonest forms of living things, such as bees, fish, and other animals familiar in our every-day life. The museum is intended to serve as an object lesson for the school children of the district, who will occasionally visit it and be taught the love of Nature.

Sir William Collins, Chairman of the Education Committee of the L.C.C., declared the building open, in the presence of a gathering over which the Mayor of Stepney presided. Father Wainwright, as Chairman of the Libraries Committee, made an appeal for £100 to purchase a lantern and other things necessary for the better carrying on of the work. It is to be hoped that such an interesting undertaking will find many valiant supporters.

The Work of the London County Council.—In response to a letter from the Council of the Society asking for information as to the steps taken by the London County Council for the preservation of wild animals, the following letter has been received from Mr. G. L. Gomme, the Clerk of the Council:—

"With a view to inducing wild birds to visit the parks of London, the following steps are taken: (1) grain is provided in the parks during the cold winter weather; (2) small bags filled with suet are hung in the trees to encourage titmice and other birds; and (3) at some places small boxes have been fixed, on the tops of poles, in which little birds such as robins and wrens have, by food being placed for them on the tops of the boxes, been induced to build their nests. Cats are prevented from reaching the nests, as a smooth metal band is fixed around each of the poles at a short distance from the top.

"Certain wild birds are protected in the County of London under the provisions of the Wild Birds' Protection (County of London) Order, January, 1900, a copy of which I send herewith. Wild birds' eggs are, however, under Clause 6, only protected for a period of five years from the date of the Order, and the Council is about to apply for an extension, without limit of time, of this clause.

"A few years ago artificial means were taken with a view to the propagation in Battersea Park of some of the more common kinds of butterflies, but, owing chiefly to the voracity of the sparrows, the experiment was not successful and was not proceeded with after the first season.

"Most of the lakes and ponds in the Council's parks and open spaces are stocked with fish of indigenous species, as, for example, carp, roach and perch. Angling is allowed at the open spaces but not at parks.

"At Hampstead Heath and Golder's Hill, Avery Hill, Bostall Heath, and some other places, rabbits are to be found, although no special attention has been given to their preservation beyond the enforcement of the by-laws, Clause 23 of which is designed to protect birds, game and animals. A proposal is at present under consideration to form at Golder's Hill an enclosure for rabbits, as at present they do considerable damage to the young trees there.

"I may say that the Council does all in its power to preserve such forms of animal life at its parks and open spaces as tend to the interest, enjoyment or instruction of the public visiting those places; but it is, of course, necessary to kill rats and other rodents, which do considerable mischief there."

We would remind our readers that, in addition to all this useful and thoroughly Selbornian work, the Council manages the Horniman Museum, with its admirable courses of lectures on Nature-Study, and supplies plants to schools, besides maintaining botanical gardens in its parks, not to mention the extensive endowment of direct science-teaching by its Technical Education Board and the Elementary Education of London recently taken over.

South-Eastern Union Congress.—The ninth Congress of this Union, to which the Selborne Society is affiliated, was held at Maidstone on June 9, 10 and 11, under the presidency of F. W. Rudler, I.S.O., F.G.S. While departing in some details from the precedents of its predecessors, it certainly equalled any of them in sustained interest and success. The beautiful and interesting country round the Kentish county town suggested the holding of more excursions than on previous occasions, the Congress opening with one of these on the afternoon of June 9 to Malling Abbey and St. Leonard's Tower. In addition to the architectural interest of this latter early example of Norman work, the occurrence of *Linaria origanifolia*, a Spanish species,

on the Abbey walls, occupied the attention of the botanists. On the Friday morning a Photographic Record and Survey for Kent was practically inaugurated: in the afternoon visits were paid to the Aylesford Gravel-pits, the Friars, Aylesford, and the Downs, which thereabouts are rich in wild orchids; and in the evening the Mayor and Mayoress gave a reception in the beautiful Museum with its many treasures, among which Mr. Harrison's collection of flint implements may be specially mentioned. Mr. Swanton, of Haslemere, had arranged the temporary Congress Museum in one room, and our Hon. Librarian, Mr. W. M. Webb, had a small Nature-Study Exhibition in another. At the Delegates' Meeting on June 11 our Editor urged that every Society should express some opinion as to the desirability of legislation for the protection of wild plants, and Mr. Webb read a paper on the teaching of Nature-Study, to hear which upwards of a hundred teachers and pupil-teachers attended. The Congress concluded with a walk to Allington Castle, which was described by Mr. D. C. Falcke, and to a neighbouring Ragstone quarry. The hospitality of the residents and the perfection of the local arrangements rendered the whole meeting most enjoyable. The Selborne Society was officially represented by Mr. Webb and Mr. Downing; and, in view of the intention of holding an experimental winter meeting of the Union in London, the former was elected onto its Council. Next year's Congress is to be held at Reigate, under the presidency of Professor Flinders Petrie.

The Erosion of the Yorkshire Coast.—Visitors to the Yorkshire coast next summer will have the opportunity of noticing considerable changes in the coast line, the erosion which has taken place during the past few months having, it appears, been much greater than usual. The Yorkshire Naturalists' Union have for some years had a committee at work on the subject, and that committee assisted materially in the preparation of the remarkable paper on the subject of the wasting of our English coasts which was laid before the British Association last year. The report of the committee on its more recent observations, which will shortly be issued, attributes the specially rapid rate of erosion which marked last year in large measure to the persistent rainfall. The amount of water running over the edge of the Boulder-clay cliffs has, it is said, had an appreciable effect in softening and dislodging large masses of clay, which in drier seasons would have stood for some time without movement. This factor of the water flowing down the face of the cliffs is held to be very important in considering the erosion which is taking place with alarming rapidity on the Holderness coast. The report contends that no system of protection of the coast can be complete unless the water draining from the fields above the cliffs is gathered together and conveyed down to the shore in such a manner that no erosive action from

this cause can take place. As an example of the waste of the cliffs in the neighbourhood of Hornsea, it may be mentioned that one single fall of clay south of Atwick Gap measured 240ft. in length, was 34ft. in width in the widest part, and was estimated to contain about 9,000 tons of clay. The chalk cliffs along the south side of Flamborough Head have suffered to an unusual extent, there having been many falls of chalk and superincumbent clay, some of these of very large size. Here again last year's weather is held to be responsible.—*Yorkshire Daily Observer.*

An East Grinstead Beauty Spot.—One of the questions of the day at East Grinstead is the attempt on the part of the Post-Office authorities to spoil the beauty of Blackwell Hollow by the erection of a line of telegraph posts along an attractive length of road. East Grinstead cannot afford to have one of its beauty spots spoiled even to meet the demands of present-day requirements in the matter of telephonic communication. The deputation of the Urban Council which has been appointed to meet the Post-Office engineers on the matter will no doubt be able to state the case so eloquently that the authorities will abandon the idea of erecting ugly wooden posts along the rock-lined tree-covered road, and accept the alternative of carrying the wires through pipes or on poles placed on the banks above. —*Sussex Daily News.*

Ullswater.—The latest scheme of the National Trust—to acquire a portion of the Ullswater foreshore—will appeal to all who love Lakeland. There is, indeed, no great danger of the coming of the villa builder, but Aird Force and the Gowbarrow Fell have special claims on the nation, not less on account of the connection with Wordsworth than for their intrinsic beauty. The price, £13,580, asked by Mr. H. C. Howard for the 740 acres which the Trust propose to buy, is locally regarded as very reasonable, working out at only £18 per acre; and the only surprise is at the owner's willingness to sell, seeing that for a very long time the mansion of Lyulph's Tower, between the waterfall and the lake, has been a favourite residence of the Dukes of Norfolk and their descendants in the Greystoke branch of the family. It is worth noting, in connection with the proposed sale, that much of the beauty of the upper reach of Ullswater, which divides Cumberland and Westmoreland, is due to the foresight and enterprise of a Leeds gentleman. When, eighty years or so ago, Mr. William Marshall, M.P., purchased Patterdale Hall from the Mounseys, Kings of Patterdale, there was a great lack both of timber and undergrowth. He planted extensively, the wood has flourished astonishingly, and to-day Patterdale owes a great deal of its charm to the trees planted by Mr. Marshall and his sons.—*Yorkshire Daily Post.*

Wild Bird Protection Orders.—We have received from the Home Office an Order for the County of Salop, dated April 23, repealing that of March 9, adding several species to the schedule of the Act of 1880, protecting several kinds of eggs throughout the county, and entirely prohibiting the killing or taking of the Goldfinch, Kingfisher, Owl, Lesser Redpole, Mealy Redpole, Siskin and Woodpecker.

An Order also reaches us, dated May 30, for the County Borough of Warrington, protecting all birds in the River Mersey within the County Borough, and the eggs of many species, and adding a large number of species to the schedule of the 1880 Act.

An Order, dated June 3, for the County of Hereford, protects the eggs of many species, protects many birds throughout the year, adds the Buzzard, Honey Buzzard, Dipper, Peregrine Falcon, Hen Harrier, Hobby, Kite, Merlin, Raven, Red-backed Shrike, Woodchat Shrike, Siskin and Wryneck to the schedule of the Act, and deprives the House Sparrow and Woodpigeon of protection. It is certainly regrettable that the authorities should find it necessary to vary the law so frequently as they have in the first-named of these districts.

LETTER TO THE EDITOR.

The City Pigeons.

Sir,—Are there any readers of Nature Notes who would not miss the flying and strutting about of the pigeons in various parts of the metropolis? I should not like to think so. However, it is stated that the City Medical Officer suggests that they contribute to the pollution of the atmosphere during the hot weather.

That pigeons are not very cleanly birds we know; but are there any extraordinarily clean birds? How is it that this gentleman has only just thought of bringing out this remarkable theory of his; has it been lying in a dormant state, or, as the *Westminster Gazette* jokingly puts it, "Has any city magnate had a new hat spoiled?" According to the above paper, a recent estimate of the birds' numbers was 4,000. It would be better to have this number decreased than to have the whole lot of them destroyed.

I am sure there are many who would agree with me that such places as St. Paul's Churchyard, the Guildhall Yard, and the British Museum, would lose an attractive feature were they minus their pigeons.

Carlyle Lodge,
Canonbury Place, N.,
May 27, 1904.

Chas. E. J. Hannett.

A CALENDAR OF GRASSES.

When April leaves are freshly green,
Then first the *Vernal Grass* is seen:
Of all the grasses of the year
This, sweetest, doth the first appear.
No laggard in the yearly race
The *Cock's foot* next spurs on apace;
And all the lanes in early May
With *Melick-grass* are softly gay.

Then as the springs to summer yield
What great grass armies take the field!
The *Meadow Oat* stands firm and slight,
But *Briza* quivers in the light,
And *Holcus* points his purple spear
Here and there and everywhere.
The *Meadow Poa* and the *Rough*
Field Brome and *Yellow Oat* so blithe,
Short time they live, yet long enough
To bloom—then perish on the scythe.

By hedges, too, ere June has sped
The *False Oat* rears his stately head:
The *Straight Brome* sways in every wind,
And *Fescues* are not far to find:
Then *Lolium* when the sun is bright
Opens all windows to the light,
And hangs therefrom his streamers white:
And even on the stony ground
Barley and *Sterile Brome* are found.
Now in the ooze of gentle streams
Whitely the *Floating Poa* gleams
Near where the *Foxtail* bends the knee:
And in the later meadows see
The "*Cynosure* of every eye,"
And *Cat-grass* named of *Timothy*.

Then in the heats of great July,
By every lane that leads us home
Falls fountain-like the *Hairy Brome*,
And over tufts of yellow green
The *False Brome's* slender arc is seen:
While hedge and ditch and mead alike
Welcome the frail *Agrostis* spike.

The year runs on : the grasses fade :
Bent are they, broken and decayed.
And from their scorched and dusty dress
How fair they were you scarce could guess.
Yet is each empty seedless glume
Promise and pledge of next year's bloom.
The seeds have fallen and therein lie
The folded flowers of next July.

A. F.

REVIEWS AND EXCHANGES.

Field-Path Rambles : Series 28. *Mid-Surrey Series, comprising Routes round Reigate, Kingswood, Horsley, Bookham, Cobham, Byfleet, Shere, Ripley, &c.* By Walker Miles. R. E. Taylor and Son. Price 1s. net.

We wonder our Surrey lanes and field-paths are not thronged, now that Mr. Miles has shown such entrancing routes to Newark Priory, Stoke d'Abernon with its brasses, the beautiful Church-Stile House, Cobham, and other favourite haunts of ours. The Tattenham Corner Railway, on which, however, there are very few trains, has opened up some charming new ground, such as the country between Stoat's-Nest, Chipstead and Woodmansterne, and here every point is as clearly mapped out as usual, with twenty-six pretty little photographs thrown in.

The Quantock Hills, Their Combes and Villages. By Beatrice F. Cresswell. *With Chapters upon Stag-hunting on the Quantocks*, by Philip Evered, and *The Folk of the Quantocks*, by the Rev. C. W. Whistler. Homeland Association. Price 2s. 6d. net.

Coleridge was but twenty-five when he wrote *The Ancient Mariner*, in which occur the immortal lines :—

"He prayeth best who loveth best,
All things both great and small ;
For the dear God who loveth us,
He made and loveth all."

The epoch-marking volume of *Lyrical Ballads* in which it appeared belonged wholly to the Quantocks ; and, indeed, for many of us who have never had the good fortune to visit these beautiful hills it is their connection with Coleridge, Wordsworth and Southey that forms their sole association. The Homeland Association has done well, therefore, to publish this altogether adequate and daintily got-up addition to their series of Handbooks ; and considering that it has sixteen full-page photographic illustrations, perfectly reproduced, and eighteen others, with a folding map on the scale of one inch to the mile, in a pocket of the neat, flexible buckram cover, it cannot be considered dear. We are pleased to see the Society's list of "Don'ts" for picnic parties reproduced, and also that the authoress says : "I purposely omit mentioning localities, as too frequently information about rare plants leads to their extermination." The scientific names of plants are not quite accurate in spelling.

Wayside and Woodland Trees : a Pocket Guide to the British Sylva. By Edwar Step, F.L.S. With 127 plates from original photographs, by Henry Irving, and numerous text figures drawn by Mabel E. Step. Warne and Co. Price 6s.

We congratulate the author, artists and publishers of this manual on having excellently met a decided want. We have had many books on British trees, but most of them are out of print, or out of date, and none of them are so portable or so fully illustrated as this work of Mr. Step's. Dealing, as it does, not only with our indigenous trees, but also with our more familiar alien species,

174 pages of letterpress give none too much space for description. What there is is excellent; but it is to be regretted that it was not possible to arrange the species in some order, or that, failing this, the classified index was not replaced by some such brief systematic diagnosis as the present writer used in his "Familiar Trees." Perhaps the publishers will find room for the few additional pages necessary in the next edition, in which case we would plead also for the strict botanical usage in the matter of capital initial letters to specific names.

BOLE OF BEECH.

The drawings of details in the text are very good, though more are needed for identification of willows and other types, for which we would suggest as models the little cuts in the French floras of MM. Bonnier and De Layens. The photographic illustrations are simply exquisite. No better plan could have been adopted than that of photographing the same tree from the same point of view in summer and in winter; and the representations of the boles at close quarters, two of

which, by the courtesy of the publishers, we are able to reproduce, are eminently educational in calling attention to that character of the bark to which the floras seldom do justice. Mr. Irving has, we think, taken too many of his examples from Kew Gardens, thereby losing natural surroundings, and in some cases having to be content with immature, and therefore less characteristic, trees.

BOLE OF SPANISH CHESTNUT.

Rowan, Larch and Silver Fir, for example, would have looked more natural in more rugged surroundings. Its portable form and small weight add to the usefulness of a first-rate achievement.

Proceedings of the South London Entomological and Natural History Society, 1903. Price 2s.

Papers on the Pearly Nautilus, Amersham (Bucks) and Dawlish are hardly to be looked for in the Proceedings of a South London Society; but this

volume also contains the usual full reports of the field meetings, an excellent address on the progress of zoology by the President, Mr. Step, and a beautiful coloured plate of the life-history of a new Psychid *Pyropsyche moncaunella*.

Our Country's Animals and How to Know Them. A Guide to the Mammals, Reptiles and Amphibians of Great Britain. By W. J. Gordon. With 33 full-page coloured plates and 43 diagrams by R. E. Holding. Simpkin, Marshall and Co. Price 6s.

This volume seems to us an improvement on its predecessors. The colour-printing is not of a high order; but then the volume is inexpensive considering the number of the illustrations. The title is confessedly "popular" in excluding birds, fishes and invertebrates; but most of these have been dealt with in other volumes of the series; and, *per contra*, room has been found for the unexpected enumeration of all known British fossil mammals and for a glossary of scientific terms. Mr. Holding has drawn a skull of one species in each living genus; but it is to be regretted that some indication of the scales of these drawings has not been given. School-teachers will find this a useful guide to the groups of British animals with which it deals; but there is little space for any natural history beyond mere identification.

The Field Naturalist's Quarterly for June contains its usual variety of excellent articles, though our readers will be sorry to learn that our Member, Mr. Hedger Wallace, has been prevented by illness from furnishing his quota on Nature-Study. Articles on "Bardsey Island," "Social Wasps," "Protective Plumage," "Pollination," "Turbellaria," "China," and "Field Geology," however, all written by competent authorities, would seem to cater for every naturalist.

The Second Annual Report of the Horniman Museum (price 1d.) gives a long list of marine and freshwater animals exhibited during the year, and is illustrated by two plates, one of which is a fine representation of stone implements from India and Egypt.

The Parents' Review should obtain some scientific revision. The June number contains "A Chat about Flowers," which states that "a wonderful South African plant, the *welwitschia*, discovered in 1860—of which the dicotyledons *never* fall off; it has in fact no others," and speaks of "an umbelliferæ."

Received: *Board of Agriculture and Fisheries Leaflets*—101, *Prevention of White Scour in Calves;* 102, *Quarter Ill, Quarter Evil or Black Leg;* 103, *The Pine Sawfly* (*Lophyrus pini*) illustrated; 105, *Black Scab of Potatoes;* and 106, *Fertilisers for Market Garden Crops; Parents' National Educational Union, Thirteenth Annual Report; The American Botanist* and *Nature Study* (Manchester N.H.) for April; *The Plant World* and *The Victorian Naturalist* for May; and *The Naturalist, The Irish Naturalist, Nature Study* (Lockwood), *The Animals' Friend, The Animal World, The Humanitarian, The Commonwealth* and *The Agricultural Economist* for June.

NATURAL HISTORY NOTES.

124. Hedgehog.—In answer to the query on p. 118, I well remember many years ago meeting with hedgehogs in an Oxfordshire orchard, to the spines of two of which several apples were sticking. The apples had adhered to the spines, there was little doubt, when the creatures were rolling under the trees. That the hedgehog climbs the apple-tree and carries off the fruit stuck to its spines (as country people say it is in the habit of doing) is, of course, absurd.

Fyfield, near Abingdon. W. H. WARNER.

125. Squirrels.—The squirrel probably has an *occasional* feast on eggs, certainly on young birds, as we have caught it in the act twice in West Sussex, the victims being young thrushes and chaffinches.

W. A. SHAW.

126. Squirrels. In answer to Mr. Mackie, permit me to say I have in my possession several letters from reliable observers respecting the toll squirrels

take of our little birds. They treat the head of a bird as they do a nut. Twelve out of thirteen nests of gold-crested wrens have been found turned inside out and the eggs eaten by them. They have been seen devouring blackbirds' eggs, while the poor parents vainly remonstrated close by, and have been caught in the act of taking pheasants' eggs. As they are frequently taken in traps baited with meat, their tastes are very similar to those of the brown rat, to which they are closely allied. It is to be borne in mind that in England almost all the squirrel's natural enemies are practically extinct, and that, consequently, their numbers are in many places excessive. If we want to preserve our little birds, squirrels should be kept in check. One of the squirrel's greatest foes is the pine-marten, which I should like to see introduced into spots like that in which I now reside.

Southacre, Swaffham, Norfolk. EDMUND THOS. DAUBENY.

127. Crested Grebe.—Eight or ten pairs of these birds are on the lake at Narford, about three miles from here, and their numbers are on the increase; for till quite lately there have been one or two pairs only. Armed with a telescope, kindly lent me by the Squire, I have just spent an afternoon in making their acquaintance. Nine cock-birds were visible at the same time on different parts of the lake, but their mates were all absent, engaged in the important duties of sitting. I had the good fortune to obtain a fine view of one bird in more striking and beautiful plumage than any of the others. They are in safe quarters where no one will be permitted to molest them in any way.

EDMUND THOS. DAUBENY.

128. Standing Still.—The following incident illustrates the value to the naturalist of being able to stand motionless. I had been examining the under-portions of the woodwork of a small bridge spanning a narrow stream, and was just emerging from beneath it—one hand grasping the railing of the bridge, one leg being on either bank, my body at an angle of 45 degrees to the water, and my right arm extended in front of me—when a kingfisher flew between my legs, darted on for about 15 yards, paused, turned round, and came back to me and hovered close to my face, wondering whether to perch on my shoulder. However, he elected to settle on the rail within six inches of my face, though behind me, so that I dared not move a muscle. In this somewhat strained posture I remained for a minute or more, when he obligingly flew away as leisurely as is consistent with the nature of a kingfisher to fly.

North Walsham. A. C. MACKIE.

129. Nightjar's Nests.—I recently found two eggs of this bird on the ground with absolutely no pretence to a nest; within a foot of them was a cup-shaped hollow in the ground about three inches in depth. Is it not the case that as incubation advances the parent scratches a slight hollow beneath the eggs so as to keep the chicks in "bounds"? Could it be that the mother in this case prepared a separate nursery for the little strangers at a convenient distance? Being the first eggs I have found, I could not resist the temptation of taking them, and so shall not be in a position to ascertain the ultimate object of the parents. Perhaps your readers may be able to throw light upon the incident.

A. C. MACKIE.

130. A Mother's Appeal.—On Monday last Mr. Norman Nicholls, of Porthallow, St. Keverne, whilst walking past Gwavas Farm, about midway betweeen Cadgwith and the Lizard, had his attention attracted to a robin which flew about him, flapped its wings in his face some two or three times, and appeared greatly excited and distressed. Mr. Nicholl's curiosity being aroused, he watched the robin for some time, which flew toward him and then back into the hedge a short distance away, uttering apparently cries of distress all the time. Mr. Nicholls walked towards the hedge, when the bird seemed to wish him to come, and creeping up close he discovered a medium-size rat, which had got into the robin's nest and was devouring one of the little young birds. At the sight of Mr. Nicholls the rat jumped out, and was promptly knocked senseless on the road. When the robin saw the rat lying on the road she flew at him and pecked at him, viciously, "just as a little terrier dog would do," said Mr. Nicholls. The rat was killed and thrown over into the field, and as Mr. Nicholls walked away the robin seemed to chirp him her thanks. There were four

young in the nest. One had been killed, but the other three were free from injury.—*Western Morning News*, *June* 4, 1904.

131. Birds and their Nests.—*A propos* of the paragraph, in Wednesday's issue of *The Standard*, respecting the freaks of birds in the choice of nesting-places, it may interest your readers to know what I can vouch for with regard to a pair of blackbirds. In a yew tree, some ten feet in height, I placed an empty cocoanut, fixing it between two upright boughs. A pair of wrens took possession and built therein; then the blackbirds, thinking that the top of the cocoanut would serve well as a base for their nest, erected their edifice thereupon. The usual quota of eggs appeared. The sitting period was an eventful one, the violent winds over and over again bending the young yew nearly double, and gradually the nest in its very insecure position on the round surface of the cocoanut was tilted to emptying point. I came to the conclusion that of hatching there would be none. One morning I found the nest blown right out and lying on the path, and the eggs broken. It was evident that the eggs were on the point of hatching.

As an experiment, I took the empty nest and fixed it in a secure place in the same tree, about one yard only from the ground. A few days after I looked in and found two eggs. These were added to later on, incubated, and hatched. Despite the nearness to the ground they escaped meandering cats, and I now have the satisfaction of seeing the young strong on the wing, and well able to look after themselves. I have neither known nor heard of birds resuming immediate possession of a nest so shifted and handled. The birds in question have built in my garden for some seasons, and are unusually tame. All through the two sitting periods they allowed me to handle the boughs for the purpose of close inspection, never leaving the nest. The cocoanut weathered the wild winds, and the wren occupants remain there, thankful no doubt for the weight removed from both mansion and mind, and for the ill wind, &c. To complete the series of "flats," sparrows have constructed their huge affair about two feet above the wren's retreat.—From *The Standard*.

May 27. WM. GREENWOOD,
Vicar of Foxton, Cambridgeshire.

132. Starlings Abroad.—So many correspondents have written to NATURE NOTES anent the starling's curious habit of laying eggs here and there on bare branches, whence they fall to the ground and smash, that it may interest them to know that the same practice has been recorded by an observer among the imported starlings of Victoria, Australia. These birds are, like the rabbits and blackberries, increasing in the Colonies with such tremendous rapidity that they are likely to become an unmitigated nuisance to small fruit-growers. In the Hobart Domain one may see flocks of forty or fifty birds any time they are walking there, and in Victoria they exist in far greater numbers. A fruit-grower whose orchard is situate in the Derwent valley told me that they attacked his apples this season. If this practice spreads the starling is likely to become more obnoxious in Tasmania than even the sparrow.

Hobart, *May* 2, 1904. H. STUART DOVE.

133. Avian Mania.—Nearly every year I am asked why birds tap at windows in the way described by your correspondents. The offenders are generally pied wagtails, but one was a hen chaffinch last year, and the period was about three weeks in every case, and in the breeding season.

W. A. SHAW.

134. Blackcap.—I have often seen both cock and hen blackcaps fluttering before me on the ground when their young had just flown, but have not noticed them do so when they had only eggs. W. A. SHAW.

135. Swans.—A pair of swans always nest in the Castle moat. Last year my male swan persistently illtreated some other swans which were put on the river, so I was obliged to give him away, trusting that the female would find a new mate, as she has done before when the male was killed on the river. As far as I knew she found a mate and laid two eggs. Her mate then usurped the nest and laid three more, and has sat tight ever since. I am almost certain both are

females, although it is possible that I may be mistaken, and that my original female did not return, but that a new pair seized the nest, and that the one I took to be the new swan laid all five eggs. Against this supposition is the fact that the one I take to be my original female came off the river into the moat at my call, which the new one would not do till she was driven in by the other. I should be glad to know if your readers have experience of a similar case.

Allington Castle, Maidstone. DUDLEY C. FALCKE.
April 26, 1904.

136. The Methods of Lagado.—Not the least amusing part of Gulliver's Travels is that which describes his visit to the Academy of Lagado in the kingdom of Laputa. We are not likely to forget the sage who "had been eight years upon a project for extracting sunbeams out of cucumbers," and who so touchingly appealed for help, as "it had been a very dear year for cucumbers." It would be rash to affirm that none of his scholars are known among us now. But I doubt whether any of the Lagado professors have at the present day so many representatives as that "Universal Artist," with his great design "by a certain composition of gums, minerals and vegetables, outwardly applied, to prevent the growth of wool upon young lambs." This eminent man has had, and I suspect has still, many followers among us, and sufficient justice has hardly been done him as the true originator of many modern popular ideas.

I have never been an exhibitor, and am not very familiar with exhibitions, but from what I read from time to time, and from what I occasionally see, I may say that I am credibly informed, and do verily believe, that prizes have been sought and won for specimens, animal and vegetable, whose merit consisted in peculiarities, eccentricities, not to say deformities, cultivated even at the expense of real beauty and usefulness. At one time we read of rabbits with ears of enormous and unwieldy length and breadth. I am not able to say whether prizes are now awarded for these. But in our poultry shows I more than suspect that honour and fame may be gained—strictly after the Lagado plan—by exhibiting fowls with exaggerated combs, preposterous top-knots, and feathers in the wrong places. So I have seen pictures showing what should be aimed at in prize canaries; and this appeared to be a deformed shape and an unnatural and far less beautiful colour. And one may ask, what would not a horse-breeder give for a "strain" in which the natural growth of the tail should never exceed the size of a shaving-brush?

Turning to vegetable examples, I will draw briefly on my own limited, everyday experience. We all, I suppose, admire the rich colour of the *Pirus japonica*. It has always seemed to me an interesting example of colour-blindness that a former friend of my own should have expressed himself unable to see any difference in colour between its flower and leaf. But I pass every day by a shrub of this kind whose flowers are white, and, in my (perhaps prejudiced) opinion, a very poor thing it is. Once or twice a week I pass a garden, recently formed, in which are two or three bushes of the *Ribes*. But instead of the bright crimson-pink of the usual kind, all these have pale flowers of a nondescript tint, too pale for pink, too pinky for white. This must surely have come straight from Lagado, and the importer must be complimented on his complete success in eliminating the beauty and attractiveness of the more vulgar sort. If I look on the other side of the road I see in a roadside shrubbery some laburnums which in due course produce the familiar bright yellow flowers. But on several of them some painstaking person has, with perverse ingenuity, budded (on the upper boughs) some sprays of laburnum or cytisus of a dull pink colour, producing thereby a most unpleasing result. The pink colour is of the poorest, and by no means blends well with the natural yellow.

And here I stop, conscious that I have barely touched the fringe of a wide subject. But my object is to plead for justice to the memory of a great man. Those who have acted on his principles—and, to do them justice, with conspicuous success—should not grudge him the honour that is his due. *Palmam qui meruit, ferat.*

Otham, Maidstone. F. M. MILLARD.

137. A very Long-styled Oxlip.—I noticed this week in a wood in Sussex an oxlip bearing flowers whose styles projected almost exactly three-eighths

of an inch beyond the tops of the tubes. This excessive length gave the umbel of flowers a distinct appearance.

Brighton, April 21, 1904. J. L. OTTER.

[Found in a wood in Sussex, this was probably not the oxlip (*Primula elatior*), but a caulescent primrose. It would be interesting to know whether more than one plant exhibited the modification described, or all the flowers of one plant, and what was the exact length of the styles.—ED., *N. N.*]

138. "Honey-in-the-comb."—Scientific writers on plant-nomenclature and folk-lore frequently protest against "mere book-names," such as "Wayside Mouse-ear Chickweed," caring only for names actually in use among the people. Many of these latter, however, had once undoubtedly a learned, if not a literary, origin, as, for example, "Elecampane"; nor is it obvious why a botanist may not suggest a new vernacular name, if appropriate, as fitly as any country yokel. With this preamble we beg to suggest the above as a name for *Herminium Monorchis*. According to Messrs. Britten and Holland's Dictionary, the book-name "Musk Orchis" has no popular currency, nor does it seem to our olfactory nerves to be very appropriate. Other flowers smell strongly of honey, as, for example, *Galium Cruciata;* but in this species there is also a distinct smell of bee's-wax. The name is no longer than "Love-in-a-mist," upon which it may be said to be modelled; and there is no necessity to add the ugly ordinal name "Orchis." G. S. BOULGER.

NATURAL HISTORY QUERIES.

23. New Forest.—Has any cause been assigned for the absence of bird-life in the New Forest, which I am told is so remarkable there? A few birds, it is said, are found in the vicinity of houses in that district, but in the remote parts of the forest not a sound or sight of a bird is perceived. Is this so at *all* seasons of the year? A. R. P.

24. Swallows and Flies.—May I ask if it is generally noticed that many fewer swallows come to England than formerly? I certainly think so. And may this not help to account for the unusual swarms of flies which everybody has observed, and which have caused many victims to be observed this spring?

Hillingdon, Middlesex. C. J. MAURICE.

25. Pears.—I send you some pears from a tree in this village. When growing they look in good health, and there is a large crop. Every one, however, that I have opened is tenanted by forty or fifty small grubs, which have destroyed the centre of the fruit. Can you tell me what the insect is? Is there any remedy? Short of picking and burning them I can think of none.

EDMUND THOS. DAUBENY.

[The grubs were determined at the Scientific Committee of the Royal Horticultural Society as those of *Diplosis pirifera*, one of the *Cecidomyiidæ*, and it is recommended to put kainit on the ground under the trees, as it kills them when they fall to pupate.—ED., *N.N.*]

26. Copper Beech.—A young *copper* beech tree in my garden has three or four of the lowest twigs covered with *green* leaves. Could you tell me if this is common or unusual, and the reason?

[Most colour-variations show such a tendency to revert to the normal colour of the species, especially when growth is luxuriant.—ED., *N.N.*]

SELBORNE SOCIETY NOTICES.

Council Meetings.—At the Council Meeting held on June 8, permission was given to Mr. C. M. Hall to form a Junior Branch at Wood Green and Southgate, to be called the North Middlesex Junior Branch; and to Mr. G. F. Pollard, to form one at Totnes, to be called the King Edward VI. School (Nat. Hist. Soc.) Junior Branch.

The usual monthly meeting of the Council will be held at 20, Hanover

Square, W., on Monday, July 25, at 5.30 p.m. ; and the Publications Committee on Wednesday, July 13, at 5.30 p.m.

New Members.—G. F. Pollard, Esq., Totnes ; King Edward VI. School (Nat. His. Soc.), Totnes (Junior Branch) ; Miss Edith Welch, Forest Hill ; Francis Lys Smith, Esq., Norwood ; Mrs. Addis, Kensington ; Geo. H. Coltam, Esq., Hampstead ; Mrs. Allen, Kentish Town ; Miss Florence E. Watson, Ealing ; Miss C. Watson, Ealing ; Cecil Clarke, Esq., West Hampstead ; Miss Jessie George, Hampstead ; Mrs. A. Byard, Hampstead ; Miss E. Burden, Bloomsbury.

NEWS FROM THE BRANCHES.

Birmingham and Midland.—On May 28 an excursion was made to Dodder Hill Common and Hanbury. On arrival at Stoke Works station the Members walked to the Common, where tea was kindly provided by Mrs. Wm. Gibbins and Mrs. Waterhouse Gibbins. After tea Hanbury Church was visited, from which there is a most extensive view. Thence the party walked through Hanbury Park to Droitwich station, some of them being fortunate in seeing the experimental garden at Droitwich, which is under the management of Mrs. J. Udale, F.R.H.S.

On June 17 there was an excursion to Burcot and Cattespool. From Blackwell station the Members walked to Burcot Grange, the residence of F. H. Osler, Esq., who kindly conducted the party round his gardens and grounds, in which many rare flowers and trees were to be seen. From thence they walked to Cattespool, an interesting old timbered house belonging to Richard Peyton, Esq., where tea was kindly provided by the host and hostess. After tea a pleasant field-path brought the party to Blackwell station.

FIELD CLUB RAMBLES.

On May 14 a large detachment of Selbornians went to Waltham Abbey, where Mr. H. Plowman, F.S.A., gave a lecture. He described how, in the days of Canute, the district was a tract of rich alluvium lying between the two great forests of Essex and Middlesex, and was conferred by Canute on his standard-bearer, one Tovi, who was an astute statesmen and a wealthy nobleman, having estates in different parts of England : it was at his nuptials that King Hardi Canute met his death from over-indulgence. At Tovi's estate at Montacute, in Somersetshire, a pious smith dreamed that buried beneath a certain hill was a holy rood or cross. An excavation was made and the holy rood was duly found, and was placed upon a waggon drawn by twelve red oxen and twelve white cows and brought to Waltham, where it was duly installed in a church which had been built by Tovi for two secular priests. After Tovi's death, Athelstone, his son, got into political difficulties : he was deprived of his estate, which reverted to the Crown, and it was conferred by Edward the Confessor on his brother-in-law, Harold, the Earl of the West Saxons. Harold then proceeded to build a very magnificent church for the period ; it was intended to vie with Edward the Confessor's church, which was then in course of construction at Westminster. Mr. Plowman then stated that in his judgment a great part of the existing church is the work of Harold. The church was cruciform with a central tower, and was intended for twelve secular canons and a dean. It was consecrated on May 3, 1060, by Kinsize, Archbishop of York, in the presence of the King, Harold, Harold's brothers, Tostig, Gyrth, and Leofwine (Harold's father-in-law), Allfgar, the great Earl of Mercia, Norman William, Bishop of London, Leofric of Exeter, Wulfwi of Dorchester, Æthelric of Tilsey, and some others. Six years after came the memorable field of Senlac, where Harold was slain. Although one chronicler states that he escaped and went on a pilgrimage, ultimately dying at Chester, William of Poiton states that he was killed and buried under a cairn by the seashore; but the author of "De Inventione Sanctæ Crucis Walthamensis," who wrote in the time of Henry I., states that Harold's body was identified by two canons and Edith of the Swan Neck. It was brought to Waltham and there interred. The fact of the matter seems to be that William allowed the body to be removed from the cairn and buried at Waltham, as up to the time of the

Dissolution there was a tomb with an inscription, "Hic Jacet, Harolus Infelix." The successors of Harold's canons were accused by Henry II. of loose living and he turned them all out, replacing them on June 11, 1177, with sixteen canons, under the rule of St. Augustine of Hippo, six from Oseney, six from Cirencester, and four from St. Osyth: these were practically monks, so buildings such as a dormitory, refectory, kitchen, guest-house and prior's house had to be erected. In the time of Edward II. an attempt was made to Gothicise the west end by carrying the nave arches up to the clerestory, but the stability of the structure was affected and further alterations were stopped.

In the time of Edward III. the fine decorated Lady Chapel was added. Waltham was a favourite residence with Henry VIII., who had a house in the Romeland, so-called because the rents went to the See of Rome. There are other Romelands at St. Albans and Norwich. Mr. Plowman said that at another house in the Romeland there was a memorable conversation between Cranmer, then a student at Cambridge, and Henry's two ministers, Fox and Gardiner, when the former made use of remarks on Papal supremacy which practically initiated the Reformation in England. The monastery was disestablished in 1540, and Mr. Plowman handed round a copy of the seal of the deed of surrender from Robert Fuller, the last Abbot. The choir, transepts and chapels were levelled to the ground, leaving the central tower; but this was so much weakened that in 1556 the greater part of it fell down, and the remainder had to be blown up. The existing tower at the west end was then built by the inhabitants, Sir Anthony Denny having given them the materials for the gift of a nag. The manor was conferred on Sir Anthony, who, it will be remembered, is a character in Shakespeare's play of Henry VIII. Mr. Plowman expressed his conviction that the existing church is in great part the work of Harold, and called attention to the fact that the pillars to the east end contained some remarkable ornamentation in the form of deeply-cut spirals and chevrons which are very unusual, as other examples are only to be found at Durham and Lindisfarne, and two at Norwich, and instanced that a chronicler of the time of Henry I. describes how the arches and pillars were ornamented with brass. It was a remarkable fact that in one of the pillars are still to be seen the remains of the rivet-holes, which seems a strong piece of evidence. Mr. Plowman said that it was unreasonable to suppose that a church built in such a magnificent style in 1060 would have been rebuilt within one hundred and seventeen years after. Mr. James Parker had made out that the edifice dated from 1177, but had not adduced any architectural evidence, but relied on the fact that he had found in the Pipe Rolls of the Exchequer an account of large disbursements on buildings at Waltham, and had also discovered a contract for a large supply of stone; but this may be easily accounted for from the fact that Henry II.'s sixteen canons were really monks, and it was necessary for large monastic buildings to be erected. Mr. Plowman told a story of Henry III. going to Waltham disguised as one of his guards, and being assiduous in his attentions to a piece of beef. The Abbot said that he would give £100 to possess such an appetite, as his queasy stomach could scarcely digest the breast of a chicken. Shortly after the Abbot was sent to the Tower, where he was fed on bread and water. At the end of ten days a piece of beef was placed before him, and he was making a hearty meal, when the king came in and requested the £100 as a fee for his restoration to health. Just before the Reformation, Sir John Colte, of Netherhall, caught some of the monks of Waltham in a buck-net when they were out poaching one night, and brought them before Henry VIII. in a very bedraggled condition. The king remarked that "he had often seen sweeter but never fatter venison." Some interesting objects were shown in the vestry, some coins, a pilgrim's bottle, a wooden stake, found in the market place driven through a human skeleton, and the head of an ancient axe. The Register dates from 1563. Under the tower is to be seen a carved whipping post, dated 1598, and also an old pillory. Mr. Plowman, in conclusion, expressed his thanks for the kindness and courtesy he had met with from the Vicar, the Rev. F. B. Johnston, and also from the Rev. J. H. Stamp.

May 28.—Mr. James E. Whiting, Honorary Secretary of the Hampstead Branch, had a very large following for the second ramble which he has conducted

this season. Just sixty persons assembled to support him, including ten or a dozen members of the Fulham Field Club, to whom a cordial welcome was given.

While the rain kept off, the weather was anything but promising, and sodden was the soil and vegetation if you deviated a yard from the path. The approaches to some of the stiles were particularly difficult in consequence. The way lay across the fields to Eastcote, whence it had been proposed to proceed through the woods to Ruislip, but as this path was pronounced impassable, the road had to be followed, adding considerably to the distance.

Recent rains seemed to have heightened the luxuriance and profuseness of Nature's belongings, and though they often hung invitingly on hedge, or studded bank and ditch, the extreme wetness of their surroundings prevented a very close inspection. The avian choir was fully represented, and if its members sang all together, Mr. Whiting's practised ear soon unwove the tangled skein of songs.

Ruislip Church, to which a visit was made, excited the Selbornian's antiquarian interest. It is a structure of flint, chalk and stone, in the decorated style, with an embattled tower (in which are hung eight bells) and a nave of six bays. In the edifice are numerous stained glass windows, two piscinæ, a brass with effigies of the year 1593, and marble monuments dating from the middle of the nineteenth century The oldest Register is the baptismal one, going back to 1689. By a bequest of 1802, a fee of £2 2*s.* is payable to the Vicar if he preaches on Good Friday; and by the gift of one Jeremiah Bright, in 1697, 2*s.* is devoted weekly to the purchase of bread which is distributed to the poor on Sunday morning. The loaves for the following day were waiting in the church when the Selbornians visited it.

A stay of an hour or so was made at Ruislip for tea, on the conclusion of which Professor J. Logan Lobley, F.G.S., delivered an address of singular interest upon the geology of the district, and upon the lessons to be learned from the study of the science generally. Particularly did he insist upon its great educational value, though unfortunately in many cases little attention was paid to its teaching. The party afterwards returned to Northwood station.

June 4.—In delightful weather over twenty Selbornians met at Woldingham station and made their way by field-paths and lanes to Bull Green, Chelsham. On the way, while skirting a beech-wood, some of the party watched with great interest a bird feeding its young, whose heads popped out of a hole in the trunk of a tree about twenty feet above the road. Many flowers were found, among which may be noted the birds' nest orchis and the helleborine. After tea the party strolled to Upper Warlingham, listening with great pleasure to the singing of numerous nightingales. It was a truly delightful ramble, such as are all those we are privileged to make in this beautiful district.

June 11.—Thirty-seven members of the Society took part in the ramble round Broxbourne and Hoddesdon, under the direction of Dr. and Mrs. S. H. Appleford, who filled the double *rôle* of guides and hosts upon this very pleasant occasion.

Some parts of the district are remarkable for nurseries, and it was through one of these coloursome places that the Selbornians were first taken. In the wood beyond red campions seemed to grow in masses, and the prevalence of the flower on bank and in hedgerow was a noteworthy feature of the afternoon. An enormous hornbeam in the same wood, pollarded in days past, also engaged the visitors' attention. Near by was a beech avenue, where the trees joined branches overhead, disclosing a lovely peep.

By permission of the owner, a London banker, a path was followed through his park, in which are some very fine specimens of timber, especially of oak, elm and chestnut, which are allowed the natural development denied to them in London and suburbs, where the trees, often without apparent reason, undergo such mutilation as to leave them but caricatures of what they would otherwise be.

Through the heart of the woodlands the party proceeded, meeting no one and hearing little save their own voices and birds which broke into song now and again. Though within half an hour's run from Liverpool Street, it was the country pure and undefiled. A portion of what is known as the Roman Road was next traversed, but there would appear to be no warranty for the title, since in former days the track was known as the London Way.

The residence of the Selbornians' generous hosts, Dr. and Mrs. Appleford,

stands on a gentle slope overlooking the old-world town of Hoddesdon. The gardens are alike extensive and beautiful. Of roses there seem no end; they grow on house, on trellis-work, and in small thickets. For birds the grounds must be a haunt of peace, because they are not interfered with, as the owners do not grudge a payment in kind for the music to which they delight to listen. Tea was served out of doors in an annexe to the main lawn, and on its conclusion Mr. C. West and Mr. R. M. Wattson expressed the indebtedness felt by those present to Dr. and Mrs. Appleford for their unsparing efforts to entertain their visitors.

FORTHCOMING FIELD RAMBLES.

July 2.—Nutfield; walk to Outwood. Tea kindly provided by Mr. W. W. Ward, F.R.A.S., who has also consented to show his large telescope and observatory. Train leaves Cannon Street (S.E. & C.R.) at 2.16. Take return tickets to Nutfield; price specially reduced to 2s. 4½d.; tickets to be obtained at main line booking office. **Members only.**

July 9.—West Drayton and Iver. By the Colne to the Water Splash and Iver Village. Tea at the Swan Inn. Book to West Drayton, return tickets. Train leaves Paddington 2.30; Ealing 2.44 (Hanwell 2.28). Guide, Mr. Wilfred Mark Webb, F.L.S.

July 16.—Titsey Hill. Tea at Botley Hill Cottage, Titsey Hill. Train leaves London Bridge (L.B.S.C.R.) 2.55; Victoria (L.B.S.C.R.) 2.30. Book to Woldingham. Cheap return tickets, 1s. 6d. Guide, Mr. Mühlberg.

July 23.—Chalfont St. Giles to view Milton's Cottage and the Church. Book to Chorley Wood, return tickets. Train leaves Baker Street 2.20; Swiss Cottage 2.8; Finchley Road 2.16 (Metropolitan Railway). Tea at Chalfont. Guide, Mr. L. Douglas Wilson.

July 30.—No ramble.

August 6.—Chalfont Road through woods to Chenies; returning either from Chorley Wood or Rickmansworth. Tea at Chenies. Take return ticket to Chalfont Road; same trains as July 23. Guide, Mr. C. M. Hailes.

LETTERS RECEIVED.

Miss Agnes Fry; Dr. Arthur Malaher; Miss Elsie C. Swinden; Arthur Swift; Edward Wood.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 176. AUGUST, 1904. Vol. XV.

SELBORNIANA.

Elms on Hampstead Heath.—In reply to a letter from our Hampstead Branch, the Clerk of the London County Council writes:—

"With reference to your letter of the 4th inst., asking for an explanation of the lopping of certain trees at Hampstead Heath, adjoining Priory Mansions, and of the removal of one of such trees, I am directed by the Parks and Open Spaces Committee of the Council to supply you with the following information. The branches of the trees in question considerably overhung the wall forming the Council's boundary at this point, and, in April last, a complaint to this effect was received from the builder of the mansions. The committee, considering the matter to be one of the greatest importance, took an opportunity of visiting the Heath, when it was evident to them that, if the owner of the buildings in question were to exercise his legal right to cut back the branches of the trees to the extent to which they overhung his land, the appearance of the trees would be entirely ruined and their safety endangered. The committee accordingly determined to have the trees judiciously lopped, under the supervision of the Council's experts, with the exception of the most northerly tree in the row, which, inasmuch as not only some of its branches but also part of its trunk overhung the builder's land, and it could therefore not be lopped without being entirely disfigured, the committee reluctantly decided to have removed.

"From these particulars you will see that the committee have acted with the sole object of protecting the trees from the mutilation and disfigurement which in default of such action would have resulted, and I am instructed to add that the committee have no objection to your publishing this letter, should you deem such a course desirable."

Whitgift Hospital.—We are glad to hear that the proposal to sacrifice this interesting old building at Croydon to widen a street for tramways without demolishing a public-house on the other side of the road, has been shelved—for a time, at least. "A Croydon Councillor," writing to the *Times*, justifies the proposed vandalism by the amusing plea that the hospital is only brick, and therefore of no great value. Only brick, forsooth! Hampton Court, St. James's Palace, Hurstmonceaux Castle, Lincoln's Inn Gate and St. John's College, Cambridge, are only brick!

Ivy *versus* Antiquity.—The destructive effects of ivy on masonry have been recently exemplified in the collapse of the ancient church of Chingford in Essex, owing to the encroachments of the creeper. Some of the building dates probably from about 1300, but great part of it was reconstructed in the fifteenth century. Although partially abandoned in 1845, when a new church was built, it was still cherished as an interesting monument, and money was occasionally spent in keeping it in repair. Meanwhile, the ivy was encouraged as an element of the picturesque, and attained a wonderfully luxuriant growth, smothering the roof under its foliage, and rendering it a favourite subject for photography. In some of the windy weather of last February, the catastrophe came, the roof of the whole nave and of one aisle coming down with a crash that has shaken and dislocated the walls. It now presents an aspect of hopeless ruin with the parasitic growth hanging about it in coils and trails where it has been stripped from its support. Its stems had attained a great size, measuring 27 and 24 inches in girth. —*Tablet.*

The Commons and Footpaths Preservation Society.—We have received the Proceedings at the General Meeting of this excellent Society held June 9, together with the Report, then presented, for 1902-3, and the Report of the Kent and Surrey Committee of the Society for 1903. It is probably without precedent that the Society should after forty years be presided over by its first President, the Right Hon. G. J. Shaw-Lefevre; and, whilst he had undoubtedly good reason to congratulate his colleagues on a busy year of many achievements, he had equally good reason for insisting on the continued necessity for watchfulness and effort, and for appealing for wider support. With a very small income the Society has done wonders, and is now even being invited by landowners to arbitrate over disputed rights of way. Mr. J. St. Loe Strachey, at the Meeting, made some sensible remarks on the needless damage of open spaces by the digging of gravel and flints by local road-making authorities; and there was much in the Chairman's Address which, did space permit, we should have liked to reproduce here. We must, however, content

ourselves by quoting the following remarks on Stonehenge by the Right Hon. James Bryce.

"It seems to most of us extraordinary that a monument of the immense value and interest of Stonehenge, should ever have been allowed to become the property of a private proprietor. Where has the Legislature been, and where has that intelligent and large interest in the history and antiquities of the country been, that a monument of this character should have been allowed to be in the hands of a private proprietor, who is in a position to put a fence round it, and say that the public shall be excluded from it? I venture to think that there is hardly any country in Europe where such a thing could happen. I have visited most places of historic interest on the Continent, but I have never been anywhere on the Continent where I can remember that anyone has been able to act in such a way in regard to public rights and interests; and seeing what has been done in this country at Stonehenge, I think that the Legislature should not allow such a state of things to continue any longer. I should hope that the case will not present any great difficulty to the Law Courts, because it seems to be an *a fortiori* case to the Giant's Causeway. Our prehistoric ancestors may not have taken any great interest in the Giant's Causeway—there is no reason to think they worshipped there, and there is no reason to think they buried there; but Stonehenge must have been a place of public access and resort far before there was any England, and far before our laws, for it was anterior to our law. Whether it was originally a place of sepulture, or a place of sacrifice in connection with Druidic or any other form of worship, or whether it was connected with the astronomical ideas of antiquity, this much is certain—that it was not put up to be looked at from a distance of half-a-mile. If it was put up for those who wanted to worship, or offer sacrifices, or if it was for the purpose of burial, the people of those days must have had free access to Stonehenge; and therefore from time whereof the memory of man runneth not to the contrary, and from long before that time if I may so express myself—from long before any time we can think of as belonging to history, there must have been a right of free access to Stonehenge. I hope very much that the action will be persevered in by the Society and those who support it, and I think we may confidently look forward to a successful issue. If an absurd demand of £50,000, or anything like that sum, is made, it could not be entertained; because if one were to estimate the value of Stonehenge by the benefit the proprietor can derive from it, assuming he has a right to charge a shilling for everyone who comes to see the place, even so he could not get a very large income from it in the year."

The Report deals with a multiplicity of interesting cases, including the effect of the now defunct Port of London Bill on the amenities of the Thames, the protection of East Hill, Hastings, under the Harbour Railway scheme, the regulation of Oxshott Heath, the various steps taken to preserve the view from Richmond Hill, the proposed purchase of Purley Beeches and of Oak of Honor Hill, the acquisition of Hainault Forest and the proposed extensions of Hampstead Heath and Brockwell Park. It is illustrated by eleven excellent landscape views. The Report of the Kent and Surrey Committee, which is also illustrated by several interesting views of Purley Beeches, Merrow Downs and old farms near Ockley, is, of course, of immediate interest to our Field Club. It alludes to the natural objection of some of the inhabitants of Mitcham to the lease of most of their Common to a Golf Club, and to the proposed regulation of Malden and Horsell Commons and Gomshall Marsh. In the discussion of Walton Heath we see no reference to the Roman Villa. The faintly-marked traces of this, with

the scattered *tessellæ*, should be carefully preserved. A plan exists—or did exist—in the Epsom College Museum.

The National Trust for Places of Historic Interest or Natural Beauty.—At its Annual General Meeting on July 13, held in the Royal Society's Apartments, Burlington House, the Council of the National Trust were able to announce the completion of the purchase of the Old Post Office at Tintagel, and the gift to the Trust of Prickly-Pear Blossoms Park, Rockbeare Hill, by Mr. W. H. C. Nation, and of three acres on the summit of Crockham Hill, Kent, some two miles from Westerham and three from Edenbridge, which command extensive views. Their Report deals also with the efforts to protect the banks of the British Avon and the Cheddar Cliffs, giving an only too truthful view of the quarry by which the latter beauty-spot is now being needlessly uglified. Reference is also made to Canon Rawnsley's valuable advice to Dunfermline, to the happy abandonment of the scheme to demolish Whitgift Hospital, to the apparently successful intervention on behalf of the old walls of Berwick and the less successful opposition to the Snowdon Light Railway.

Ullswater.—Many though the directions are in which the action of the National Trust appears desirable, its success in the past is, perhaps, largely due to the concentration of its efforts for the time being upon some one object. The most ambitious endeavour to which the Council have as yet directed their energies is the acquisition of some 750 acres of park and fell extending from the summit of Gowbarrow, 1578 feet above sea-level, to the shore of Ullswater, where Wordsworth

> "saw a crowd,
> A host of golden daffodils."

The estate, for the purchase of which the Trust has secured an option at a rate of only £18 per acre, comprises a mile of lake shore, with rights of fishing and boating, a deer forest where fallow deer haunt the bracken on the lower slopes and red deer range over the summit of the fell, and the lovely ravine through which the Aira Beck flows from its Force to the Lake. Of this beautiful glen, part of which is seen in the accompanying view lent to us by the Trust, Wordsworth writes:—

> "Not a breath of air
> Ruffles the bosom of this leafy glen.
> From the brook's margin, wide around, the trees
> Are stedfast as the rocks: the brook itself,
> Old as the hills that feed it from afar,
> Doth rather deepen than disturb the calm
> Where all things else are still and motionless.
> And yet, even now, a little breeze, perchance
> Escaped from boisterous winds that rage without,

Aira Beck. (By kind permission of the National Trust.)

Has entered, by the sturdy oaks unfelt,
But to its gentle touch how sensitive
Is the light ash! that, pendent from the brow
Of yon dim cave, in seeming silence makes
A soft eye-music of slow-waving boughs,
Powerful almost as vocal harmony
To stay the wanderer's steps and soothe his thoughts."

Many points in this most beautiful part of a beautiful district are filled with associations with the poetry of Wordsworth, and we hope and trust that rich and poor alike will support the Council of the Trust in securing this invaluable possession for all time for the nation.

Wild Birds Protection Orders.—An Order has been issued by the Home Office, dated June 27, for the county of London, extending the close time from January 31 to September 1, prohibiting the killing or taking of wild birds on Sundays in many parishes, protecting the eggs of many species, and protecting many species of birds throughout the year. This last list includes the goldfinch, kingfisher, linnet, robin, owls, tits, warblers, woodpeckers and others. A similar Order, dated July 7, has been issued for the county of Wilts, protecting all birds on Sundays, Good Friday and Christmas Day in Bradford, Salisbury, Amesbury and Warminster and extending the close time except as regards wild duck and snipe.

Wild Plant Protection.—The Editor of Nature Notes has been asked to lecture on this subject to the Royal Horticultural Society. The lecture will be delivered in connection with the Society's usual fortnightly show, to which non-fellows are admitted on payment of a shilling, at the new Royal Horticultural Hall, Vincent Square, Westminster, at 3 p.m. on Tuesday, August 23.

WASPS' NESTS AND A SEQUEL.

THE sight of a wasps' nest in a gooseberry bush does not invite even the most ardent naturalist to make very close investigations, and when we arrived at our summer cottage in Scotland, and found our favourite gooseberry bush, with its load of golden fruit, in possession of the family *Vespidæ*, we at once consulted the villagers as to the best way of ousting the usurpers. The suspended nest looked like a Chinese lantern of greyish hue, the exit and entrance at a hole in the base. As we watched from a distance, we could see troops of wasps entering and leaving the colony at intervals. In accordance with local custom the nest was shot at, and so the papery palace fell shattered to the ground. Many of the

wasps of course were killed, but the rest, incensed to fury, formed a yellow and black cloud of seething vengeance over the fallen fortress. We gave the gooseberry bush a wide berth for four days, and then, the vindictive humming being hushed, and only a stray wasp visible at intervals, we ventured nearer to view the ruins. To our surprise, the ground was quite clear of débris, and among the thickest branches of our favourite bush was once more hanging a perfect wasp citadel. In that short space of time the wasps had reconstructed a new fortress out of the old material, and all that remained of the previous attack was a few dead wasps lying on the ground.

For a time we left the colony unmolested, as we desired more closely to watch it, but at last the wasps became so troublesome, entering the cottage in hordes, and taking possession of any sweet food left uncovered for a moment, that we felt something must be done. The question now was, whether we or the wasps were to be the occupants, for there was not room for both. One night, when the wasps had all retired into their fortress, an intrepid villager, veiled so as to be sting proof, destroyed the colony with sulphur, and the nest, in its entirety, we secured as a trophy. When our holiday came to a close, and before leaving, we remarked to one of the village boys, that we should very much like to possess a ground-wasps' nest.

In the following June a nest of the ground-wasp, packed in a tin box, reached us by post in London. It was made up of five stories of hexagonal cells very like the honeycomb of the bee, and yet unlike the honeycomb in one way, because the cells were placed horizontally and composed of layers and layers of thin paper instead of wax. Each terrace of cells was separated from that above or below by slender rods or columns about half an inch long, leaving spaces between the different terraces. The uppermost storey contained the oldest cells, the one below the next oldest, and so on, and in each cell was an undeveloped wasp.

We put the box and its contents aside, but happening to mention to an interested friend that we possessed both a tree and a ground-wasps' nest, opened the box which contained the latter.

A vindictive buzz greeted us from six full-grown wasps, who, very much alive, had vacated their nurseries in the top storey and were anxious to inspect a larger world. They had tried to appease their hunger by nibbling away the cells from which they had issued, and had also demolished the walls of some other cells which held their younger brethren, who, being exposed to the cold world before their time, perished. We sustained a nasty sting, for which we necessarily sought redress of those six wasps, and anxious to prevent a like *contretemps*, so dealt with the box and its contents, as in our belief to destroy all germs left alive in the comb.

In the meantime, another episode happened. A friend from

Clapham presented us with a fine specimen of a male stag-beetle, *Lucanus cervus*. *Lucanus* had been investigating our friend's house, and had caused the cook an involuntary shock by appearing on the window curtains of the kitchen. This led to the transfer to us of *Lucanus* in a lucifer match box.

A fine, handsome fellow he was; his horns, head and thorax were chestnut-coloured, with a high polish, while his legs and wing cases were a dull black. He looked as though he could pinch hard, but we did not test his mandibles.

The question arose, "how are we to feed him?" On consulting the best natural history books to hand, we learned from one that he lived on the decayed wood of the oak; from another, that he subsisted by lapping the sap which exuded from the wounds made by his mandibles on trees. We tried him with every kind of twig and leaf our garden afforded, but he would have none of them. We made a special excursion into the country to get some decayed oakwood, but from this he backed slowly in evident disgust. As we could not feed him we set him free in the garden, hoping he would find for himself. Two days later we noticed our cat playing with something. The victim was our poor *Lucanus*, who had fallen on evil times. We rescued him from his tormentor and brought him indoors once more.

The notion that the creature was starving haunted us, and at dinner-time the idea occurred to try him with some tapioca pudding. Eureka!!! The beetle ate and ate, his jaws moving in a comical way, but most business-like withal. We were so delighted we gave him a second helping.

Now of all those natural history books we had consulted not one had mentioned *pudding* in any form. The next morning, alas, we found *Lucanus* stretched out stiff and stark in death. He had finished his second helping, but at what a cost! He had gorged himself to death. We placed his dead body in the box which contained the ground-wasps' nest, and put box and contents aside.

Three weeks later we had occasion to open the box again, and to our surprise found it a veritable cemetery. In spite of the treatment we gave it, many of the wasps had matured and emerged from their cells full grown. They had eaten almost the whole of the comb, and the poor stag-beetle they had torn to pieces and picked his armour clean. The tapioca pudding had not been wasted.

Later, from the little Scottish village whence the wasps' nests came, ominous rumours reached us. The children were neglecting their lessons and hunting after wasp binks to send to some person in London. They appeared in school with lop-sided cheeks, swollen lips, and eyes that were positively not respectable looking.

The schoolmaster's wrath had been so roused that he threatened punishment to the very next pupil who made his appearance in school with a damaged physiognomy.

S. D. W.

ADVICE TO A YOUNG BLACKBIRD.

H, there you are, let out alone at last.
I've watched your goings on for some days past;
Though you may try to hide your youth with cheek,
I know your age: you left the nest last week.
Come here and let me give you some advice,
It shall be useful, kindly and concise;
For your new life has jars as well as joys,
And there are cats and catapults and boys.
When on the lawn be vigilant and firm,
And deftly learn to land the unwilling worm;
When times are hard and every lawn is dry,
Give up the usual worm and try the fly.
Feast through the summer; but, when autumn comes,
Abstemious be (but chiefly with my plums).
Thank man in winter for his crumbs and grain,
And in the summer praise the Lord for rain.
In nesting time don't build too near the sod,
Choose a thick holly, and then trust in God.
Get a good mate, with kindly heart, and tail
Managed with grace, not flaunted like a flail.
When you fall out—as will do hens and hubs,
Don't make it known by scolding through the shrubs.
And now about your singing, just a word:
Practise for skill, not merely to be heard;
You ought to have a voice of some repute,
Your father's voice, you know, is like a flute;
Keep your song low, and warble from the chest,
A mellow, rich contralto suits you best.
Whate'er you do, don't trifle with the air,
But work it out with conscientious care;
"Give yourself airs," but don't go on the street,
Or your best passages too oft repeat;
At early morn, a cheerful voice maintain,
But in the evening sing your tend'rest strain.
Work hard, be true, and for perfection search,
Then in your art you'll take the highest perch.
Think over what I've said: remember that
Where'er you are—look out! here comes the cat!

ELLIOT STOCK.

REVIEWS AND EXCHANGES.

Manual of British Botany. By the late Prof. C. C. Babington. Ninth Edition, enlarged from the Author's Manuscripts and other sources. Edited by Henry and James Groves. Gurney and Jackson. Price 9s. net, or thin paper edition bound in leather, 10s. 6d. net.

Since its first appearance in 1843, Babington's "Manual" has marked in its successive editions as no other book has, the progress of our critical knowledge of the British flora. It would have been a great loss to science if its author's death had been permitted to close this long career of usefulness, and no more competent editors could have been found to bring it up to date than the Messrs. Groves. The study of such "critical" genera as *Rubus*, *Hieracium*, *Potamogeton* and *Euphrasia* has rendered the growth of the thickness of the volume inevitable, though something might have been saved if we had not been given two distinct accounts of the genus *Rubus*. True respect for the memory of a botanist who was throughout his life receptive of new ideas would not retain his arrangement of this genus or of the willows or mints merely because it was his twenty-three years ago; and some of those students of British plants whose eyes are not as young as they were, may regret the very minute type in which some of the additions have been printed. The assistance of Mr. F. J. Hanbury, Mr. Townsend, Rev. W. Moyle Rogers and Mr. Fryer, has been obtained in the cases of those genera with which their names are chiefly associated. This is not the place for any attempt at a discussion of minutiæ, so that we can only express our gratitude to all concerned in its production for once more giving us an authoritative flora. Now we want a new edition of the *London Catalogue* to correspond.

The Student's Handbook of British Mosses. By H. N. Dixon. With illustrations and keys to the genera and species by H. G. Jameson. Second Edition, revised and enlarged. V. T. Sumfield, Eastbourne, and Wheldon and Co. Price 18s. 6d. net.

Handbook is too modest a title for this standard work, in which our British mosses, some 630 in number, are fully described, somewhat on the scale of Syme's "English Botany," with a glossary, artificial keys to genera and species, a concise account of the external anatomy of the group, and sixty-five plates, including figures of every species. Of these last, five are new to this edition, and illustrate the new forms discovered in Britain since the publication of the first edition in 1896. The derivation of the generic names and the indication—in the Index—of the pronunciation of all the names, are further improvements that have been now introduced. It is, in fact, a double subject for congratulation that there should so soon be a demand for a new edition of such a work on bryology, and that the demand should have been so admirably met.

In the King's County. By E. K. Robinson. Isbister and Co. Price 6s.

Mr. Robinson is fortunate enough to live in Norfolk, to have his eyes open, and to possess a facile pen. Hence we get a light and handy volume of some 350 pages, containing nearly forty brightly written papers, mostly about birds, suggested by first-hand observation and eminently readable. Our readers, whilst in a boat on the Broads, or on the beach at Cromer, or elsewhere, will be amused to learn how to tell the time of year by a study of small boys' hands, or to trace the connection between hibernating tortoise-shell butterflies and the same small boys' demand for dock leaves.

Dunstable: Its History and Surroundings. By Worthington G. Smith. The Homeland Association. Price 6s. net.

Many who know Dunstable will probably not know a tithe of what they may here learn about it and its neighbourhood from the learned first freeman of the borough; but those who know Mr. Worthington Smith and his writings will know beforehand that they are sure to get from him something readable and worth reading. He has for some years been identified with Dunstable, so that a most successful portrait of him forms a fitting frontispiece to this book, which is issued by the Homeland Association in conjunction with the Corporation. The prehistoric, Roman and later remains from the district, including the fine Priory

Church, are fully described and illustrated: suggestions are given for rambles through the surrounding country; and in a pocket at the end of the volume there are two maps, one a reproduction of the 1-inch ordnance map and the other drawn by the author and comprising many years' industrious toil in tracing the old roads, lanes, footpaths, earthworks and other antiquities. Dunstable stands on the Chalk, nearly 500 feet above the sea, so that those seeking an inland holiday resort with bracing air and abundant sunshine might well do worse than take Mr. Smith's book in hand and try Dunstable.

Nature-Study: its progress and interpretation. The present position of the movement, and a descriptive review of the Home Counties Nature-Study Exhibition and Conferences, 1903. By Wilfred Mark Webb. Reprinted from The Record of Technical and Secondary Education. Agricultural Education Committee. Price 6d.

In this pamphlet our Honorary Librarian is chiefly concerned in describing the Exhibition which he organised with such conspicuous success last year. All the valuable papers read at the conferences for teachers are given *in extenso*, whilst sixteen plates by such masters in photography as Mr. Kearton, Mr. R. B. Lodge, Mr. Oliver Pike and Mr. Henry Stevens, are alone worth more than the price of the whole.

Guide to the Municipal Museum, Hull. By T. Sheppard, F.G.S., Curator. Price 1d.

With admirable industry Mr. Sheppard has published no less than nineteen penny pamphlets descriptive of the objects under his care, ranging from skeletons of Ichthyosaurus and Sibbald's Rorqual, to local coins, tokens and tobacco-pipes. The Museum, founded by the Literary and Philosophical Society, became municipal in 1902. From this guide it appears to be mainly local, so that it is to be hoped that it may be developed in the educational direction, for which no doubt many non-local specimens will be requisite.

Knowledge and Scientific News for June contains *inter alia* an article on "Osprey Plumes" by Mr. W. P. Pycraft, A.L.S., exposing many fallacies as to egret farms and imitation or artificial ospreys.

The Parents' Review for July contains a paper on "Nature and Nurture," by Prof. J. Arthur Thomson, read at the Edinburgh Conference in May, which is practically a protest against the fatalistic view of heredity, and another on "The Educational Value of Observing Nature," read at the same Conference by Canon Rawnsley.

Received:—*Bulletin of the New York Botanical Garden*, vol. 3, No. 9; *The American Botanist* and *Bird-lore* for May; *The Plant World*, *The Victorian Naturalist*, and *Our Animal Friends* for June; *Bird Notes and News*, *The Naturalist*, *The Irish Naturalist*, *Nature-Study* (Lockwood), *The Animals' Friend*, *The Animal World*, *The Humanitarian*, *The Estate Magazine*, *The Agricultural Economist* and *The Commonwealth* for July.

NATURAL HISTORY NOTES.

139. **Hedgehogs.**—The reason why the hedgehog was generally represented with apples stuck on his quills, appears from the following words in Bossewell (p. 61): "He clymeth upon a vine or apple-tree and biteth off their branches and twigges, and when they (the apples) be fallen down he walloweth on them, and so they stick on his prickles, and he beareth them unto a hollow tree or some other hole." The early naturalists also said that if when so loaded one of the apples happened to drop off he would throw all the others down in anger and return to the tree for a new load—Harl. MSS. 353, fol. 145.

I have lately been seeking information about hedgehogs amongst my parishioners. One confidently asserts that she has more than once caught a hedgehog sucking her cow. Another says he knows they devour strawberries. Another complains that they destroy chickens, having found one in the coop, and chickens,

missing and dead. As long as this idea prevails the "*tough customer*" has little chance of carrying on his useful work (insect destroying).

Louis Figuier says: "Their aliment chiefly consists of insects, molluscs, frogs, toads and small mammals. When they can obtain nothing else, they subsist upon roots and fallen fruit, but they do not climb trees in search of it, as certain naturalists have stated. The ancients used to hunt them for their spines, which they employed in carding wool. I speak from experience, when I say that their flesh is a great delicacy."

Barmly Moor. W. D. WOOD REES.

140. Field Mice in Regent's Park.—A pair of field mice are bringing up a family of, I believe, four among the flowers in Regent's Park this season. Looking toward the Zoological Gardens, on the left hand of the broad walk, there is a much narrower path. Here, there is a long narrow bed of pink geraniums, fuchsias and white pansies, backed by a low border of privet. I frequently sit an hour in a chair opposite, studying and admiring the small deer in this their home. Any of the gardeners would direct a would-be observer to the exact spot, and a piece of biscuit thrown on the grass within, say two inches of the flowers, never fails to attract them.

12, *Queen's Road, Ilford.* ARTHUR T. BARNARD.

141. A Cat Story.—The following true cat-story may interest your readers: A cat climbed up an elm tree in Queen's Square, Bloomsbury, where a pigeon had its nest, and having devoured two young pigeons it deposited two new born kittens in their place.

1, *Palace Gardens Terrace, Kensington, W.* MARION C. BEDFORD.
July 16, 1904.

142. Female Birds Pairing.—A somewhat similar case to that of the swans mentioned by Mr. Falcke in NATURE NOTES this month, came under my notice some years ago. A pair of geese—I think they were called "Labrador geese," were given to a neighbour. They came to this county from Kent, and were the only pair of the sort anywhere about. They lived on the pool all winter, and in the spring made a nest, and several eggs were laid. Just when the owner thought the goose would sit, the other bird made a nest and began to lay, Between them the two geese laid some thirty eggs.

The Gables, C. E. MEADE WALDO.
Wirksworth, July 8, 1904.

143. Larks.—Larks frequently alight on posts or the flat top of a clipped hedge; but rarely if ever attempt to grasp a twig like perching birds, owing to the lack of prehensile powers. The other day I saw a lark perch on a wire in a fence, where it had difficulty in preserving its balance, as could be seen by its continually bobbing forward and then recovering itself with expanded tail. A feeble grip no doubt was made with the foretoes; but the hind one, with its long claw, stood straight out, and in no way helped the bird to maintain its precarious position.

July, 1904. EDMUND THOS. DAUBENY.

144. Lesser Redpole.—These birds build in the trees round my house, and are frequently seen on the carriage drive. The middle of June they may be observed in pairs, evening after evening, going off in circles a hundred yards or so round the tree in which the nest is built, before finally settling down for the night. When on the wing, and especially at this time of year, they are very noisy little birds.

Southacre, Swaffham, Norfolk, EDMUND THOS. DAUBENY.
July, 1904.

145. Bird Life in the New Forest.—A. R. P. asks, "Has any cause been assigned for the absence of bird life in the New Forest?" Allow me to suggest the presence of squirrels as a cause. The squirrel is being found out at last. £200 damages were awarded in a lawsuit a week or two ago, owing to mischief done to trees by squirrels. They harry little birds, destroy their nests, and eat their eggs and young. By these means they drive them out of our woods and plantations. Here I am surrounded by woods. Birds-nesting by small boys is practically unknown in this highly preserved spot. In spite of this the amount

of bird life in the woods in spring and summer is very small; but squirrels abound. In the wood fifty yards from my house little birds rarely nest. I have heard but one nightingale this year in the coverts, and only one chiffchaff, which soon moved on. The only nightingale's nest I have ever seen in the woods here was at the bottom of a bed of nettles. In my garden it is quite different. Goldfinches, lesser redpoles and other birds breed in my trees; there are nests in almost every bush. The barking of my dogs, and proximity to the house keep the squirrels away, at all events until the nuts are ripe. In the reeds and water plants by the side of the stream there are many little birds; but there the squirrels do not go. I often see small birds chase and mob a squirrel. Why do they do it? They do not treat their friends thus. They raise objections to cats, rats, squirrels, stoats and weasels, but not to hares or rabbits.

Squirrels, all of whose natural enemies have long ago been mummified in our museums, have got the upper hand at the expense of our little songsters, and in many places are far too numerous.

EDMUND THOS. DAUBENY.

146. In reply to a query in NATURE NOTES, I have seen the bird boxes in a park on the edge of the Forest well tenanted, year after year, by various tits and wrynecks, and should certainly say there are plenty of birds in summer, both in the Forest and also on its confines. I have many notes on corn buntings, red-backed shrikes, hawfinches, tree pipits, cirl buntings, &c., in my diary. Wood wrens used to swarm in some parts of the Forest: the Dartford and grasshopper warblers nest locally, and so does the woodlark. Woodcock and snipe breed there in some numbers. The greater spotted and green woodpeckers are to be seen, and occasionally the lesser spotted's note, "ri, si, si, si, si" is heard in a forest ramble all the year round, and the same remark applies to the goldfinch and kingfisher. True, one may walk over miles of open forest (heather, dead bracken or gorse) in winter and see little but meadow pipits or wrens, but the birds have their favoured spots all the same. You come across the family parties of tits and huge flocks of woodpigeons here and there; twenty bullfinches together are to be seen, and parties of goldfinches and fieldfares in the heart of the Forest. Have an alder bog beaten towards you and you will see the jays stealing off, a few teal and snipe, and a woodcock will be flushed, and the reed bunting, red-poles, and perhaps a grey wagtail will be noticeable. If not there, the snipe may rise in numbers on some wet "plain," and the sedgy bogs hold the water rail, jack snipe and mallard. In winter one wants to know the likely places, and to remember how the birds shift their quarters, *e.g.*, woodcock may be in the open or in the alder bogs, or the hollies, or the blackthorn, and the same seems to hold good of all the birds of the Forest. They are local, perhaps, but there. Not many people have seen the black-game, but they are there none the less. In winter and summer alike Mark Ash, and Boldrewood, Burley Old and Stony Cross, and the Queen's Bower stream, would be lovely even with no bird life, but to say there are no birds is not true to fact. Birds of prey are not killed down indiscriminately in the New Forest. You can see the various hawks: owls and jays are common: the merlin is an occasional winter visitor; and in the spring and autumn of 1892 I saw a buzzard quite close, and one of the best observers of wild life in the forest assured me that a pair still nest there. Long may they remain.

Hazelbeech Rectory, Northampton. W. A. SHAW.

147. Large Trout.—Near here there is a lake, the home of otters, gadwall, and crested grebe, a home to them in the truest sense, for they live in peace and safety. The lake is stocked with trout, which run to a large size. At the head of the lake, where the spring that feeds it rises, the water is raised above the level of the lake, and is about three feet deep, and very clear, with a gravel bottom free from weeds. Here live some tame trout which are a sight to see. After looking about for a little time and throwing in pieces of raw beef we attracted the attention of a 10-lb. fish, which hunted backwards and forwards close to us and greedily devoured all we had to give him. A far larger fish than this, estimated to weigh 14 lbs., frequents the waterfall, and is also tame. I have been twice to try and see this grand trout without success; but I did see a beautiful 3-pounder creating Meg's diversion among the shoals of dace, off which no doubt he and his huge neighbour often made their supper.

It causes the heart of a Selbornian to rejoice in visiting spots like this where so many interesting creatures are protected from the rapacity and thoughtlessness of man.

EDMUND THOS. DAUBENY.

148. A Flying Fish in an Engine Room.—A flying fish, twelve inches long and fifteen inches across the wings, fell into the engine room of the American Line Steamer "Philadelphia," during the last homeward passage from New York to Southampton. All the passengers had retired for the night, and the fish was, no doubt, attracted by the lights that were burning in the engine room. Flying through the open door on the main deck, it fell upon the iron grating of the first platform, just above the engineer on watch, who found that one of its eyes had been lost in the fall. The fish has been preserved by the chief engineer of the "Philadelphia."

149. Humming in the Air.—I was on the Malvern Hills about a month ago with a companion, and several times when walking in parts sheltered from the wind, we noticed the humming in the air very loud. The first time my friend thought she had put her foot into a wild bees' nest. As far as I could see, and one day I lay for two hours enjoying the hum and the lovely view, the authors of the hum were bees or large insects, and the note of the hum was a very loud one, denoting large insects, about middle C. Gnats, and the smaller insects, of which there were plenty near the ground, would have made a much shriller sound. Evidently the insects did not like wind, for wherever that was strong, there was no hum.

The swifts were very actively employed, coming close to our heads or so low that we could see their shadows on the grass; there was evidently plenty of food for them and their fry, for the grass was covered with the white bedstraw, wild thyme, and the other minute flowers common to such localities.

I may be wrong, but it seems to me that *everywhere* in the summer the air is full of that delicious humming; perhaps more so this year than usually, as all the flowering shrubs and plants are very full of bloom.

M. S. YOUNG.

150. Cuckoo Spit.—A cutting from *The Field* has been sent me in which it is said that "when a pheasant chick swallowed the insect alive the result was invariably fatal. When the insect is swallowed without being killed, the crop of the bird soon fills with spit. For some two or three hours the bird gasps for breath, and in the end is choked, not poisoned." This is an ancient belief and common too, but until proved by experiment should be looked upon as improbable, to say the very least. In "Agricultural Entomology," by the late Miss Ormerod, it is stated that the cuckoo-spit insect or froghopper "is to be found in its two first stages on many plants in a mass of froth which it has caused . . . . not by biting, but by suction. The upper and under pairs of jaws are lengthened into long bristle-like growths, and enclosed in the lengthened lower lip. The whole apparatus forms a kind of beak, by means of which the insect pierces the soft parts of the plants on which it feeds, and draws out the juices." The amount of moisture thus drawn is so great that, after passing through the body of the insect as through a sieve, it is deposited in the well-known form of froth, forming a covering and protection against enemies. The insect is far too tender and easily crushed to continue to exist after being picked up and swallowed by a bird. Pheasants are granivorous, with a gastric juice and gizzard that soon reduce to pulp the food on which they feed. If a seed is ground up by a process almost as thorough as that of a millstone, how can the froghopper escape death? The correspondent of *The Field*, however, states not only "that it is swallowed without being killed," but also that the crop of the bird soon fills with spit." Where does the spit come from? In the bird's digestive organs the froghopper no longer has a plant from which to draw supplies of froth, and no insect of its size could store in its body a twentieth part of the spit that surrounds it on a plant, much less could it produce sufficient to cause a bird to "gasp for breath," and in "the end be choked" from being "filled with spit." When next spring comes it will be easy to put the matter to the test. A good sized plant of garden lavender will afford a supply of froghoppers, which, if given to a chick or two, will settle the

question. Till then, and probably for ever after, I shall look upon the cuckoo-spit insect as innocent.

July, 1904. EDMUND THOS. DAUBENY.

151. **Honey-dew.**—During the long spell of hot, dry weather, which we have been enjoying of late, we have had here in Richmond a most unusual production of honey-dew. Hawthorn leaves have been glazed on the upper surface, and have even dripped to the ground; while the Black Italian Poplar (*Populus monilifera*) streamed almost to the same extent as did the Linden, so that the pavement beneath them actually ran with the saccharine exudation. I noticed that it proceeded mostly from the upper surface of the leaves, mostly on parts exposed to direct sunlight, and most abundantly on the hottest days. For the first week or two the leaves looked healthy, and there was no sign of aphides on them; but latterly numbers of white woolly forms made their appearance on the Linden leaves. In his article on the Pathology of Plants in the Encyclopædia Britannica, Professor Marshall Ward says: "In many cases the punctures of Aphides and Coccideæ are shown to be responsible for such exudations, and at least one instance is known where a Fungus—*Claviceps*—causes it. But it also appears that honey-dew may be excreted by ordinary processes of over-turgescence pressing the liquid through water-pores." G. S. BOULGER.

NATURAL HISTORY QUERIES.

27. **Dytiscus marginalis.**—In the early part of last June I placed three females of this species in a small aquarium with one male, and plentifully supplied them with food. Next morning I found two of the females dead. The remaining two are still (July 5) very much alive. Many Selbornians doubtless keep aquaria and have had many specimens of this species under observation. I should like to ask them through the medium of NATURE NOTES whether they have observed female *Dytisci* kill one another, especially when the food supply (such as small crustacea) was in abundance. If mine did so, which is quite probable, as they were perfectly healthy the previous day, then subsequent observation suggests that the battle might have been fought for the sole possession of the *male*. This is, however, a point which certainly would require further and very careful observation.

128, *Mansfield Road, N.W.* J. W. WILLIAMS, M.R.C.S., F.L.S.

28. **Sundew.**—Some weeks since I found some Sundews growing, and brought home two plants. When I found them the hairs, or tentacles, were a bright red, but since I have had them, although they seem perfectly healthy, the hairs are *quite green*. I give them flies, but kill them first, would that affect the colour, do you think? Since I have had them they have grown much larger, and have developed peduncles, bearing flowers, but they seem some time in opening. Will you kindly explain the reason in NATURE NOTES?

M. H. CRAFER.

[The reddening of the Sundew is largely produced by direct sunlight or consequent drought; greenness, by vigorous growth in comparative shade. It is not probable that the plant can discriminate dead flies from live ones. Its flowers are almost always cleistogene, *i.e.*, fertilise themselves without opening. In forty years' observation we have only once or twice seen them open.—ED. *N.N.*]

SELBORNE SOCIETY NOTICES.

Council Meetings.—There will be no meeting of the Council during August. The Publications Committee will meet on Monday, August 8, at 5.30 p.m.

New Members.—Miss A. Adams, Shepherd's Bush; Miss Gibbs, Upper Norwood; Miss A. Brazil, Llanbedr; North Middlesex Junior Branch, Master Claude Pidcock, Hampstead; Miss Sophie Farmer, Hampstead; H. J. Allen, Esq., Kentish Town.

NEWS FROM THE BRANCHES.

Bath.—Annual Meeting at Warleigh, June 23. Between seventy and eighty members took part in the drive to Warleigh, which was most enjoyable. At Warleigh they were warmly welcomed by Colonel and Lady Mary Skrine, and in the drawing room, where seats were arranged for the meeting, the business was proceeded with, Colonel Skrine being in the Chair. Those present included General Coningham, Major G. R. Edgell, Mr. M. H. Scott, the Revs. H. B. Barry, G. L. Hallett Mr. E. J. Appleby, Mr. W. F. Gould, Mr. G. Norman (Hon. Treasurer), and Mr. William C. Elwood (Hon. Secretary).

Opening the meeting, Colonel Skrine expressed, on behalf of Lady Mary and himself, the pleasure it gave them to see them all there on that occasion. It was very gratifying to see such a large party, as it showed that the Society was making progress. He referred to the great good the Society was able to do in encouraging and inculcating an appreciation of the beautiful country around, and in teaching kindness to wild animals. He commented also on the extraordinary tameness of wild birds, which he had himself observed, compared with what it was some years ago, and remarked that one thing the Society should teach them was the preservation of wild flowers and wild birds.

The Balance Sheet, submitted by Mr. Norman, showed that the year commenced with a balance at the bank of £39 10s. 8d., and a balance in hand of £10 9s. 3d., a total balance of £49 19s. 11d. Subscriptions amounted to £34 12s., and a sum of £2 11s. 6d. accrued from lectures, bringing the receipts up to £87 3s. 5d. The items on the expenses side included £20 7s. 1d. for printing, &c., a grant of £3 to the parent Society, and a £2 grant to the N.S.P.C.A. A balance in hand remained of £8 12s. 6d., and a balance in the bank of £39 9s. 8d., or £47 2s. 2d. in all. One or two slight extra expenses, the Treasurer explained, accounted for this reduced balance.

The Chairman observed that they ought to thank the Treasurer for all the trouble he had taken, but Mr. Norman disclaimed any thanks. The vote of thanks, he said, he would pass on to their energetic Secretary, who had really done the work of both Secretary and Treasurer. All he himself had to do was to appear and read the Balance Sheet.

That the Bath Branch was progressing in a most satisfactory way was evidenced by the Annual Report, which was read by the Secretary, Mr. W. C. Elwood. The Bath Branch of the Selborne Society was formed in 1887, with a nucleus of 45 members, two years after the formation of the parent Society. That day they were celebrating the seventeenth anniversary of the birthday of the Branch, and the membership now numbered 294. There had been less alteration than usual in the composition of the Society during the past year, 20 members having left, while 31 new members had been elected. The success of the series of lectures given during the winter season at the Royal Literary and Scientific Institution was alluded to, and that also of the seven interesting excursions which had taken place since the last annual meeting, the places visited including Vallis, near Frome (June 27), Chepstow Castle and Tintern Abbey (July 18), Wick Rocks (May 14, 1904), Lacock Abbey (May 28), and Cheddar and Burrington Combe (June 11), this latter excursion being substituted for the one to Caerwent, which Mr. A. Trice Martin had kindly promised to conduct on July 9. "Only one flower," the Report continued, "has been added to the Bath flora during the past year, *Medicago maculata*, the spotted medick. Members who botanise regularly in the neighbourhood should endeavour to add to the list of the Bath flora which is kept at the Institution." It was announced with regret in the Report that Miss Baily intended to resign the post of District Secretary for Upper Kingsmead, which she had so ably filled for a great many years. "Miss Baily," it was mentioned, "who is leaving Bath, has always been one of the first District Secretaries to hand in the subscriptions year by year, and the Society owes her a deep debt of gratitude for the valuable services she has rendered in past years." Finally, the Report tendered the thanks of the Society to the other District Secretaries and those ladies and gentlemen who had conducted rambles or given lectures or entertained members, or in any way contributed to the well-being of the Society.

The report of the Natural History Section, which, in the absence of Miss Bryant (Secretary of that Section), was read by Mr. M. H. Scott, mentioned

that only two meetings were held during the winter, and the attendance at both was very poor. The meeting arranged in the autumn had to fall through on account of illness, and those in February and March were both of a high order of excellence, but so miserably attended that the meeting due in April was shelved for that and other reasons. Miss Blathwayt's paper in February gave a very clear account of the life history of the Chironomus Fly, and Miss Knight's paper in March was unique in its clever treatment of the subject—Microfungi. The Report called for some arrangement of these section meetings, the date of which had hitherto been the first Monday in the month, but which had on two occasions last session clashed with other fixtures unknown at the time of arranging the winter rota, and, in conclusion, appealed for better attendances at the meetings.

The election of officers was the next business to be disposed of, and it was moved by the Rev. G. L. Hallett, who observed that they could not think of electing anyone as President in the place of Colonel Skrine. He included in his resolution a vote of thanks to Colonel and Lady Mary Skrine, for their kindness in inviting them. The Vice-Presidents elected were as follows: Mr. W. J. Braikenridge, Rev. Preb. B. Norton Thompson, Rev. T. P. Methuen, and Rev. Preb. Tugwell. Mr. Gould having seconded the resolution, the President and Vice-Presidents were unanimously re-elected.

Returning thanks for his re-election, the President regretted he was not sufficiently acquainted with natural history to give them an address, but he promised, at least, to always do all in his power for the Society.

The Committee, according to the following list, were re-elected, on the motion of General Coningham, seconded by the Rev. H. B. Barry: The Rev. W. S. H. Samler, Mr. Leveson Scarth, Major Edgell, Mr. M. H. Scott, Mr. E. J. Appleby, Mr. W. C. Elwood, Miss Bryant and Miss C. Pedder. General Coningham, in moving the resolution, said they were indebted to all the Committee for the excellent way in which they had done their work. The District Secretaries were re-elected on the motion of Mrs. Mulcaster, seconded by Mrs. Coningham, and three new members were elected.

A formal, but cordial, vote of thanks to Colonel and Lady Mary Skrine for their kindness and hospitality was then moved by Mr. M. H. Scott, seconded by Mr. Appleby, and, of course, carried. Colonel Skrine briefly replied.

Before the meeting finally broke up, the Rev. G. L. Hallett moved a vote of thanks to their Hon. Secretary, Mr. W. C. Elwood, and this was seconded by General Coningham, who remarked that they could not have a more efficient Secretary, or one who took more pains with his work.

The time between the meeting and tea was spent by the members in roaming around the beautiful grounds and terraced gardens of Warleigh, which could not well have been seen under more favourable conditions. Tea was served indoors shortly before five, and at about ten minutes to six the party started on their homeward drive, reaching the city again at half-past six.

FIELD CLUB RAMBLES.

June 18.—A party of about forty Selbornians met for a pleasant ramble through Weybridge to Chertsey by "heath, wood, fields and river," under the guidance of Dr. Henry Willson. Leaving the station, the party almost immediately started on the furze-and-broom-covered Weybridge Common, skirted with plantations of fir. Abundant white patches of the heath bedstraw were found, and the heather was just beginning to show its blossoms. From the Common the route went along the banks of the Wey by a cool, tree-shaded path; then across open fields where the yellowrattle (*Rhinanthus Crista-galli*), Ragged Robin and ox-eye daisies flourished amid the tall grasses. Several grasses, such as *Cynosurus cristatus*, *Dactylis* and *Poas* attracted attention from their shape or hue and the abundant provision of pollen for fertilisation. The walk was then interrupted for tea at Taylor's Restaurant, on the banks of the river, just by Chertsey Bridge. After tea, the party crossed the bridge and proceeded along the towing path towards Laleham. The river looked its best in the late afternoon sun, with moving silver gleams on the water, and the gentle lapping of the waves against the reed beds and the splashing over the weir made pleasant music. The edge of the water was diversified by great clumps of

the yellow iris (*Iris Pseud-acorus*), the great water dock, comfreys, and nodding grasses and sedges. At Laleham most of the party went up to the church and admired the square ivied tower, the low, red-tiled brick porch with a curious dormer window above it in the roof of the nave, the old transition Norman pillars, and the quaintly lighted altar. Some, too, lingered over the simple grave of Matthew Arnold, who lies buried here in the churchyard of the village where he was born, and where he passed so many years of his life. From the church it was only a short walk back to the river, then veiled in evening shadows; over the ferry to the opposite bank, where fumitory, the yellow vetchling, and the feathery white crowns of some umbellifers graced the hedge. The way then led along a lane, where trails of the dog rose flowered high above reach, and the elder and guelder-rose blossoms mixed with the yet green hawberries. From the tranquillity of the lane, broken only by the evening songs of blackbird and nightingale, the party emerged on to the noisy Saturday night shopping of the Chertsey High Street. But the fragrance of the gathered blossoms, the pleasant walk by the river, and the old world appearance of some of the houses in the High Street overcame even the prosaic noise of the country market place, and it was a happy party that left the sights and scenes of the country for the toilworn metropolis.

June 25.—A large and representative company made a pilgrimage to Stanmore principally with a view to visiting "The Grove," by kind permission of Mrs. Brightwen, F.Z.S., F.E.S., Vice-President. Mr. John W. Odell acted as guide and met the party at Stanmore station. A brief halt was made at the churchyard, in which there still remain the ruins of the Church which was in use before the present building was erected. In the centre of the ruins there is situated a tomb which might well have been the resting place of a naturalist, for on it are carved "creeping things innumerable," not to mention birds and butterflies, stoats eating eggs and lizards swallowing flies. Buried beneath the monument, however, lies a celebrated beauty, who in time gone by gave sittings to Ary Scheffer. Afterwards, by the kind invitation of the Rector, the Rev. S. F. L. Bernays, the members and their friends visited the Rectory grounds, in which at least thirty-seven kinds of birds have built their nests and reared their young. At the time there was on the ornamental water a very interesting nest built by a semi-wild duck who had furnished it with an elaborate roof. Other features which excited admiration in what is altogether a delightful spot, were a beautiful hornbeam with branches down to the ground, a peculiar tree belonging to the beech family, and a fasciated lily.

After leaving the Rectory the party walked direct to the Vine Inn, on Stanmore Common, where a good tea was taken, a feature of which was the surprising number of new laid eggs which made their appearance unasked for. It transpired afterwards, however, that these were a present from Mrs. Brightwen. An object on the window-sill of the Inn which gave rise to considerable discussion was a fern growing inside a whisky bottle. It seemed to be flourishing in spite of the neck being apparently closed by roots, though the porous nature of what soil had been provided no doubt allowed sufficient air to enter the bottle. After tea a move was made to "The Grove," where Mrs. Brightwen herself received the party in her conservatory and conducted it through her charming museum. It was, however, with great sorrow that some of the party noticed that Mrs. Brightwen from time to time took advantage of a chair when giving these pleasing little descriptions of the various objects in her collection which every one appreciates so highly. Interesting as are Mrs. Brightwen's writings with which Selbornians are familiar, it stands to reason that Mrs. Brightwen's own personality in the centre of the beautiful spot in which she has carried on her life's work must needs have a greater attraction for those who are privileged to meet her. On leaving the house the tour was made through the grounds and conservatories, where many a rare and curious British plant, many a strange importation from foreign lands was seen and graphically described by Mr. Odell, in whose charge they are. Space does not allow of anything like an exhaustive list being given, but one might mention the woad with which the ancient Britons dyed their naked bodies blue, the lady's slipper orchid and the variety of snap-dragon, known as "peloria," which has secondarily acquired a regular corolla owing to each petal producing a spur. These were out of doors. In the houses were the curious flowers of the Aristolochia or Dutchman's Pipe, seedlings of Cacti, Loophar

gourds, and Squirting cucumbers, which were allowed to exhibit their curious characteristics; while some of the party learned for the first time that the young fig is a hollow flower-head. Few more pleasant afternoons have been spent than those which it has been the lot of the "Field Club" to pass at "The Grove," by the kindness of Mrs. Brightwen.

July 2.—Delightful scenery, pleasant weather, and the kindest hospitality characterised this excursion. On arrival at Nutfield, the visitors, who numbered over forty, were met by their host, Mr. W. H. Maw, F.R.A.S., and in carriages he was good enough to provide they proceeded direct to his residence at Outwood, some three or four miles away. The drive was through a lovely country, that wound between green fields bounded by hedgerows luxuriant with wild roses, elder, honeysuckle, and other flowers.

Under Mr. Maw's genial guidance a walk was taken round the west of the hill, whence were disclosed charming views in all directions. Amongst the finds were white and red foxgloves, *Orchis maculata*, *Habenaria bifolia*, *Hypericum pulchrum*, and *humifusum*, and different species of rushes and grasses. Others of the party passed part of the time safely navigating the miniature lake in Mr. Maw's grounds. Tea was served in the orchard attached to the residence, and among those assisting the host and his daughters to minister to the Selbornians' needs were the vicar of Outwood and his family. On the conclusion of a most refreshing repast the heartiest thanks were accorded to Mr. Maw for his hospitality, upon the motion of Mr. H. Plowman, F.S.A., seconded by Mr. James Walker. In the course of a brief reply Mr. Maw remarked "that he was himself the happiest member present."

On Outwood Common stand two picturesque windmills, reminiscent of old time, the vanes of which were beating the air. One is over 200 and the other over 100 years old. These mills are still in working order, and have been owned by the same families respectively during several generations. In the case of the smaller the whole structure turns itself to the wind about a huge wooden axis, on which is cut the year of erection, but in the case of the larger it is only the top of the mill that revolves. Without these antiquarian landmarks Outwood would hardly be itself, and long may they remain to answer to the breeze.

But, staunch supporter of the Selborne Society as he is, it is perhaps in the astronomical world that Mr. Maw is best known. All the members of the British Astronomical Association know him as their Treasurer and as a past-President of that body. His observatory stood invitingly open, and under the pitch-pine dome is housed an eight-inch refractor by Cooke, a name that is a guarantee of good workmanship. The mount is equatorial, so that an operator, after reference to the tables and adjusting his circles, can pick up an object either by night or day, if the sky be clear. Once in the field of view, a driving clock, the speed of which can be regulated, moves the tube and so enables the observer to follow planet or star without the frequent screwings incidental to altazimuth telescopes. It is to double-star work that Mr. Maw has mainly devoted himself, and he gave to the visitors a lucid explanation of his system for computing orbits, as well as other interesting details of his vigils of years.

We regret that by an accident Mr. Maw's name was incorrectly given in the July number of the Magazine.

July 9th.—The ramble to West Drayton and Iver Water Splash is now an annual institution, and once more, by the kind permission of the Thorney Weir Fishing Club, Mr. Wilfred Mark Webb was able to conduct some five-and-twenty members of the Society and their friends through the Water Meadows to Iver. Fresh-water mollusca, which are usually studied on this ramble, were not forthcoming in any great quantity, possibly owing to the heat of the day acting upon the energy of the conductor; but he was able to demonstrate among other things the peculiar movements of the bifid stigma of the large Mimulus which, introduced from Alaska, now grows by many of our streams. Among other botanical finds was another escape in the shape of a balsam, *Impatiens biflora*, and some fine specimens of the Reed-mace. Before taking tea at the Swan Inn, Iver, a visit was made to the Church, where a stone coffin, the Norman font hewn from a mass of Purbeck marble, and almost unique (there is one other at Winchester Cathedral), not to mention the well-preserved brasses and curious tomb of a lady who was once buried prematurely and had a narrow escape, created much interest. A section of the party, including the

youngest and the oldest of those present, as well as several ladies, climbed to the extreme top of the tower and enjoyed the fine view for their pains. On the return journey, when the other side of the water was followed, an opportunity occurred of examining a fine swift, one of many which were flying about. It had apparently struck against a telegraph wire immediately before it was caught. It is said that these birds find it extremely difficult to rise from the ground, and an attempt made by the bird in question to fly from Mr. Webb's hand was a failure. It was only when he threw it high up into the air that it was able once more to pursue its accustomed flight.

FORTHCOMING FIELD RAMBLES.

August 6.—Chalfont Road through woods to Chenies; returning either from Chorley Wood or Rickmansworth. Tea at Chenies. Take return tickets to Chalfont Road. Baker Street, 2.20; Swiss Cottage, 2.8; Finchley Road, 2.16 (Metropolitan Railway). Guide, Mr. C. M. Hailes.

August 13.—Ramble round Oxshott and to Black Pond. Waterloo, 2.15 train. Meet at Oxshott at 3 p.m. Take cheap return tickets, 1s. 7d. Tickets can be obtained in advance at any of Cook's or Gaze's offices. Guide, Mr. Matthew Hunt.

August 20.—Clandon, Newland's Corner. Take cheap return tickets to Clandon, 2s. 3d. Train leaves Waterloo at 2.15; Clapham Junction, 2.27. Meet at Clandon Booking Office at 3.30. Tea at Newland's Corner. Return trains leave Clandon 8.26, 9.22. Guide, Mr. A. B. Wilkinson.

August 27.—Bricket Wood, Aldenham, and Munden. Tea at the Chequers, Aldenham. By kind permission of the Hon. A. Holland Hibbert, Selbornians will be allowed to visit the gardens and grounds of Munden Park, and also to inspect a collection of rare birds, fish, &c., &c. Train leaves Euston 1.45; Broad Street 1.15; Willesden Junction 1.57. It may be necessary to change at Watford for the Bricket Wood line; enquiries to be made at Euston and Willesden. Distance covered, about six miles; return trains 7.8 and 9.14. Guide, Mr. Percival Westell, F.R.H.S., M.B.O.U.

September 3.—Marden Park. Trains from London Bridge (L.B.S.C.R.) 2.55; Victoria 2.30. Take cheap return tickets to Woldingham. Guide Mr. Matthew Hunt.

Members are requested to verify the times of the trains by comparison with the August time-tables.

ANSWERS TO CORRESPONDENCE.

Miss E. C. Swinden.—It is difficult to prove that bees hear, or to fix with certainty the position of their hearing organs. It is improbable that such intelligent and otherwise highly organised animals, which have the power of emitting sound, should be without hearing organs. Mr. Cheshire and many other authorities believe such organs to exist in the antennæ.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 177. SEPTEMBER, 1904. Vol. XV.

OBJECTS OF THE SOCIETY.

To promote the study of Natural History. To preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of: (1) The skins and furs of such animals as are in danger of being exterminated; (2) birds and their plumage, except when the birds are killed for food, reared for their plumage, or are known to be injurious. To protect places and objects of natural beauty or antiquarian interest from ill-treatment or destruction. To afford facilities for combined effort in promoting any of the above or kindred objects.

SELBORNIANA.

Thinking Imperially.—"We have a Society for the Preservation of Wild Birds and a National Society for the Prevention of Cruelty to Animals; but it will be news to many good people to know that there is a Society for the Preservation of the Wild Fauna of the Empire. Such is the fact, however, and it is already doing a considerable amount of work. The report just issued shows that the efforts of the Society have been recognised by Lord Cromer and the Sirdar in the Soudan, and by the Directors of the British South Africa Company in Rhodesia. It is not proposed to make a close time for the wild hyæna, but there will be close territories or sanctuaries, in which 'the denizens of the forests' may 'range the valley free,' like those flocks which Goldsmith's Gentle Hermit absolutely refused to partake of in the form of succulent mutton. The contractors on the Rhodesian Railway have been forbidden to kill the game to feed the workmén, an edict which may possibly rob the expansion

of empire of much of its picturesqueness. Poachers will be visited with the utmost rigour of the law. There is something delightful in the spectacle of 1,500 elephants in South Africa being under the joint protection of the fauns and a British High Commissioner. This masterful restoration of the conditions of the Garden of Eden is one of the finest pacific strokes which has yet been attempted in the name of empire."—*Eastern Morning News.*

The Late Mr. Watts and the Docking of Horses.—By the courtesy of the editor, E. O. Greening, Esq., we are able to reproduce from *The Agricultural Economist* a charming portrait of the late Mr. G. F. Watts, R.A., O.M., whose death in July last was a loss to the humanitarian cause as well as to all lovers of art in its highest forms. Describing a visit paid by him to Mr. Watts' beautiful Surrey home, Limnerslease, Mr. Greening writes:—

"Surrounding the house and its workshops were the trees and bushes full of bird-life, carefully cherished. Nesting places for the feathered friends of the great artist were added to the natural conveniences of the shrubs, and food to suit the tastes of the various songsters was ungrudgingly given. So the living things of the woods loved the artist, as did the little children, who danced and gambolled around him whenever he walked out. Honoured, beloved, revered, Mr. G. F. Watts lived, to over eighty-seven years, a life full of nobility of thought and deed."

The following is the opinion expressed by the late Mr. Watts, on the docking of horses, in a letter addressed by him to the Humanitarian League, of which he was a member for the last eight years of his life:—

"The brutal fashion of docking horses is a disgrace to our civilisation, and cannot be too strongly protested against. I do not see how the Legislature and the Church can be so indifferent to it. Cropping dogs' ears was, I believe, put down: docking is far worse; indeed, it is, I think, more degrading than bull-fighting. There is, in *that*, courage and address, though in a bad cause; for the brutal practice of docking, a mere caprice of fashion, nothing can possibly be said—indeed the short agony in the time of excitement is probably less than that suffered by the horse during the protracted time between the brutal (I wish I could find a stronger word) operation and the healing of it. With regard to the artistic side, there is degraded want of taste in destroying the harmonious balance of Nature's arrangement, the somewhat heavy head of the beautiful animal being balanced by the tail, which naturally should have considerable volume. Setting aside the disgusting cruelty, this want of taste, which can prefer to see the noble creature changed by the destruction of the fine appendage into a thing that resembles the stump of a worn-out broom—made to resemble a pig or a tapir—is very lamentable, when found among the classes that can boast of

education and refinement. The cruelty is barbarous in those who practise it, infinitely degrading in those who encourage it from so mean a motive as fashion—only not contemptible because so much worse."

(*By kind permission of E. O. Greening, Esq.*)

THE LATE G. F. WATTS, R.A., O.M., IN HIS GARDEN AT LIMNERSLEASE.

BIRD PROTECTION ORDERS.—We have received from the Home Office a Wild Bird Protection Order for the County of Huntingdon, dated July 15, by which the close time is altered to March 14 to September 1; the Bullfinch, Goldfinch, Hedge Sparrow, Heron, Kingfisher, Robin, Swallow, and all species of Owl and Wren are protected throughout the year, as are also their eggs; the killing and taking of scheduled species is prohibited on Sundays throughout the County; and all birds on or near the Rivers Ouse and Nen are similarly protected on Sundays. We have also received an Order, dated July 20, for the County of Derby, by which the close time is so extended as

to be from the last day of February to August 13: the Bittern, Great Grebe, Kingfisher, Owls and Woodpeckers are protected throughout the year; numerous other species, including Heron, Swallow, Martins, Kestrel, Merlin, Osprey, Thrushes, Wrens, Flycatchers, Wagtails and Warblers are added to the Schedule; and all scheduled species are protected on Sundays throughout the County.

Ancient Earthworks.—In the Report of the Committee on Ancient Earthworks and Fortified Enclosures presented to the Congress of Archæological Societies in July, it is stated:—

"That greater interest is being manifested is pleasurably shown by such action as that of the Corporation of Brighton in purchasing Hollingbury, an early fortress on the Sussex Downs, in order to preserve it and many acres around from the ever-encroaching builder.

"The Duke of Norfolk's recent gift to Sheffield of a tract of land on the great hill known as Wincobank, with a special proviso that the prehistoric camp thereon shall be carefully preserved, is another instance for which all archæologists must feel grateful." . . .

"But that there is yet room for constant watchfulness of these relics, and efforts for their preservation, is plainly evidenced. Maiden Bower, one of the best known earthworks of Bedfordshire, is in daily peril from the quarryman's pick; the fate of the curious work at Willington, almost certainly a Danish defence, on the banks of the Ouse, is trembling in the balance, and so it is with many another of these evidences of our country's story."

Local Vandalism.—At the annual meetings of the Devonshire Association, held at Teignmouth in July, complaint was made of the wanton destruction of prehistoric relics on Dartmoor, chiefly by the authority of Rural District Councils, whose wish is to save money in obtaining stones for mending roads. Mr. Robert Burnard, Chairman of the Dartmoor Preservation Society, mentioned that a most interesting group of hut circles near Princetown had been removed by the road contractors. Dr. A. B. Prowse stated that one of the large stones of the Scorhill circle at Gidleigh, near Chagford, had been thrown down, and an attempt made in the usual way to split it lengthwise to make gateposts of it. Fortunately the attempt failed. Sir Ropert Lethbridge and Sir Edward Croft, the President of the Association, joined in an appeal to the District Councils to do their utmost to preserve the prehistoric memorials of which all Devonshire men should be proud.

Snowdon and Bettws-y-Coed Light Railway.—We have received from the Light Railway Commissioners a copy of the Order which they have submitted to the Board of Trade for confirmation. The Commissioners state in an enclosing letter, in reply to one from the Editor, that they "have given great care to the question of preserving the natural beauty of the country, and in view thereof have imposed obligations upon the Company which go in their opinion to the full extent of what is not only fair and practicable, but under the circumstances should be

considered necessary." The following is the Clause mainly concerned :—

25.—(1) Before commencing to construct Railway (No. 2) the Company shall submit plans and sections showing the proposed line and levels of the said Railway and drawings accompanied by sufficient particulars showing the proposed design and materials of all bridges thereon as to the part of Railway (No. 2) or as to any bridge which will be constructed upon the lands of any landowner to such landowner and as to the part of said Railway (No. 2) or as to any such bridge as will be situated within the Urban District of Bettws-y-Coed to the Council thereof ;

(2) The Company shall carry out the reasonable requirements of such landowners and of the said District Council as to the position of the said line within the limits of deviation shown on the Plan and as to the construction of the said bridges for the purpose of avoiding injurious affection of the natural scenery and shall for the purpose of concealing any embankment of Railway (No. 2) plant such trees and shrubs as the landowners and the said District Council may reasonably require and the Company shall not allow any spoil or surplus materials from their works to be deposited in the River Llugwy and shall remove any such spoil or materials from any position in which they may be reasonably required to do so by the said landowners or District Council on the ground that they are and will be unsightly ;

(3) All bridges on Railway (No. 2) within the said Urban District shall be made with stone in such a way and of such design as the said District Council may reasonably require ;

(4) The Company shall construct a footpath on the south side of Railway (No. 2) in such manner as to replace sufficiently any part of the footpath now leading to the Swallow Falls which may be interfered with by the construction of the said Railway and the same shall be constructed in such position within the limits of deviation shown on the Plan as the Bettws-y-Coed Urban District Council and the Trewydir Parish Council and the landowner of any lands affected may reasonably require ;

(5) The Company in constructing Railway (No. 2) between the points shown on the Plan as being 4 miles 2 furlongs and 4 miles 6 furlongs respectively from the commencement thereof shall not allow the works to encroach upon the River Llugwy or to prevent pedestrians from walking along the bank thereof ;

(6) The Company shall provide a passenger station at a point to be agreed between the Company and the Earl of Ancaster below and not more than a quarter of a mile distant from the Miners' Bridge and shall construct a road from the said station to the main road on the south side of the River Llugwy ;

Plans showing sufficiently the design of and the materials for a bridge to carry the road to be constructed as aforesaid over the river shall be submitted to the Earl of Ancaster and to the said District Council and shall be subject to their approval (which shall not be unreasonably withheld) and such bridge shall be constructed in accordance with any plans approved as aforesaid ;

The Company shall not erect any buildings between the said station and the Bettws-y-Coed parish boundary at Pont-ty-hyll except with the consent of the said District Council and of the owner of the adjoining land.

The beauty-spots of Britain are a national heritage ; but, as will be seen from the above, all final decision as to their fitting treatment is left in the present case to such small local bodies as the Bettws-y-Coed Urban District Council and the Trewydir Parish Council. Our experience of such little local bodies is that they are generally veritable Esaus, ready at a moment to barter their birthright for a mess of pottage.

THROUGH THE LIGHT REMAINING.

OH the good smell of the hops! The heavy penetrating smell that fills the air these September evenings as the rough wains lumber along the roads piled with soft shapeless sacks. In one or other of these you may find a hole through which the bright green scaly heads are showing. Walk behind the scented load, and help yourself to two or three of these oast-bound blossoms, then press the cool damp heads into the hollow of your hand and sniff hard.

Must one have lived among hops to appreciate this scent, which is almost a taste? Is it possible that anyone not knowing the smell of hops can exclaim (if you blindfold him, and make him smell a bunch) "How nasty! What is it?"

To me the "passing" of the hops from their green alleys to the oast is an event which I store in my heart with the "passing of the swallows," the "Fare-you-well" of the summer; and as such it is a leave taking, an occasion for a last word—a last look—which is perhaps also a swift retrospective glance of gratitude. But so strong is the influence of the scent of things on our minds and memories, that I fancy sometimes the loaded waggons we watch every evening silhouetted against the sky as they move slowly over the old bridge, might pass almost unheeded but for the penetrating sweetness that fills the air and makes the whole land smell clean and healthy.

So much for sentiment. Now for the reality of the things. Here come the hoppers! Let us stand by this gate and watch them go by. But before we pass any remarks on these tired-looking mothers and dusty lagging children, I would like the outside world to know that our "hoppers" are purely local; no London roughs or workers of the tramp class find their way into the hop-gardens I am writing about. Poor enough some of the pickers are, and all seem "weary and heavy laden," for a day's hopping means shutting up house and carrying a wonderful lot of luggage of all sorts to the distant gardens; stools and baskets, kettles, little stone "greybeards"; perambulators, in which it is sometimes difficult to find the baby; umbrellas, jackets, more stools, more baskets.

So the different groups stream along the rough uneven road, cross the red-brick railway bridge, where in spring the first wild apple-blossom and soft grey palm are to be found, and climb the stile into the grass field which is the "last bit" for most of them.

Hopping resembles golf, in that no one is apparently too old or too young to go forth and "hop!" Unlike the ordinary result of the "Royal Game" on the temper, hop-picking seems to have the opposite effect.

Every evening we are astonished anew at the cheeriness and good-temper of these dusty, tired men, women and children.

Some of the perambulators are very heavy, and the younger children drag with all their weight on to hands and arms already over-full; but all go by talking and laughing with never a cross or grumbling word among them.

Is the thought of a hard day's work well done so exhilarating? Have the strong-smelling, enclosing green garlands such a bracing effect? Or is it that you and I meet the hop-pickers within sight of their homes, and the thought that bears them bravely, cheerily over the last half-mile or so is the thought of tea and a well-earned rest?

The old women look up and smile as they pass; the younger women push their piled-up perambulators with tired friendly faces. The girls have decked their hats with trails of hops, and carry bunches and sheaves of white campion, as well as hop-pickers' luggage; and some of the small boys whose lips and cheeks are stained with blackberry-juice, have bundles of green food under their arms for fasting and resentful rabbits. So the pickers cross the last field in the sunset, and the heavens are aflame with fiery clouds. The last waggon has passed over the distant bridge, where the moon as tallyman marks another notch in life's little span, and with lingering steps we turn to follow the pickers; but the sunset over the city and the full moon hung high over the plundered hop-gardens must have absorbed our thoughts altogether, for the stream of self-made toilers has disappeared, so has the sun. The clouds have laid aside their rich apricot robes, and have donned instead diaphanous grey kirtles which look a little chilly. There comes a breath, a touch of sadness suddenly over everything.

"Ah!" you exclaim, as we face the wind, "how the smell of hops lingers in the air!"

And together we turn our footsteps homewards; some stray silvery stars of thistledown float along the field in front of us, and a robin perched upon the gate through which we pass bursts into a small solitary song. RACHEL.

REVIEWS AND EXCHANGES.

Heimatschutz. von Ernst Rudorff. Third edition. Munich and Leipzig George Müller. One Mark.

Cassandra's warnings are always in danger of being ignored from the too wholesale character of her pessimism. We have sometimes doubted whether Mr. Ruskin did not rather provoke ridicule and even opposition by his strongly worded refusal of all concession to the Philistine. Herr Rudorff comes forward as a German Ruskin with a wholesale jeremiad on the sacrifice of natural beauty in its exploitation for industrial ends, and on the decline of German architecture. Foreign styles replace all that is national: the streets are disfigured by glaring advertisements: forests are to be regulated into an ugly but utilitarian monotony: rocky scenery has to give place to stone-quarries: waterfalls are to generate electricity: historic and picturesque scenes are to be vulgarised by huge hotels, all built on the same plan: and the Passion Play is to be made a show for the

foreign tripper. Herr Rudorff denounces the iniquity of mountain railways, and even protests that there are too many roads and too many sign-posts: he laments the loss of the pride of the worker in his work, from the use of machinery to make things better made by hand, and the disuse of national costumes; and he urges that a house should express the individuality of its owner, that the State should set apart some tracts of national ground to be kept free from all building, and should protect rare animals and plants from extermination; and finally, that a Guild of Home Defence be founded to carry out these views.

Der Einzelne und seine Kunst: Beitrage zu einer Oekonomie der Kunst. von Robert Mielke. Second edition. Same publisher.

Though based on a similar lament as to the divorce of industry from art, this seems a more temperate and more philosophical essay than that noticed above. The author complains that public art, as shown in public buildings, is valueless, because it does not spring from any general feeling for art, does not spring from the home, but is imposed upon it from without. He instances the ugliness of motor-cars and of women's dress as proofs of the absence of any general artistic sense, and he, too, proposes the formation of a society to bring about this desired individualism.

How to make Notes for a Rock-soil Flora: A Lecture by the Rev. E. Adrian Woodruffe-Peacock, Vicar of Cadney, Brigg. From the Author; or Louth, J. W. Goulding and Son. Price 1s., post free.

This pamphlet—like everything written by its versatile and talented author—is well worth reading. With the recent development of ecological botany the question of soil-distribution necessarily becomes prominent, and, no doubt, Mr. G. E. Merrill's definite classification is useful, though we do not want his term "regolith," and do not much admire "rock-blanket." Mr. Woodruffe-Peacock's model of systematic tabulation of species according to soil is excellent, but if he can remember his ninety or more alphabetical "sign-contractions," we cannot. We notice that the author has an article in the August number of *The Naturalist*, entitled "The Soil Storehouse," treating of the soil from another point of view, viz., as an archæological repository.

Field-Path Rambles. Canterbury and Kent Coast Series. By Walker Miles. R. E. Taylor and Son. Price 4s. net.

If you want bracing air you can hardly find a better neighbourhood near at hand than north-east Kent, especially if you prefer to walk on the level. The numerous windmills among the many pictures in this new volume of Mr. Walker Miles' inestimable series testify to this characteristic of the district. It may be a recommendation to cyclists; but Mr. Miles' books are purely for the pedestrian: he climbs stiles, crosses fields, and even traverses lanes which may be decidedly muddy, where no cyclist would care to follow. This volume has a prefactory note on rambling clubs by Mr. J. H. Porter, founder of the Forest Ramblers' Club, and a very useful index of starting-points, with distances.

Field-Path Rambles, Series 30. *First Part of the Eastbourne Series.* By Walker Miles. R. E. Taylor and Son. Price 6d. net.

We congratulate Mr. Walker Miles on breaking new ground. Readers of Mr. E. V. Lucas' charming volume on the "Highways and By-ways in Sussex," will rejoice in having this first instalment of a detailed guide to rambles starting from a favourite watering-place. This series also makes a new departure which we are very glad to see, in a concise description of each village at the beginning of the volume. Among the fifteen illustrations are Pevensey Castle and the Wilmington Giant, visits to which are among the routes described.

The Homeland Handbooks: Oxted, Limpsfield and Edenbridge. With their Surroundings. By Gordon Home. Homeland Association. Price 6d. net.

Though perhaps not so remarkable a production at the price as the book last noticed, this volume (which is written and mainly illustrated by one man) containing, as it does, a map, four plates, and nearly twenty other illustrations, is an

(*By permission of the Homeland Association.*)

CROWHURST PLACE, SURREY, AN EARLY TUDOR BUILDING.

admirably complete guide to the district. This comprises Godstone, Westerham, Crowhurst, Hever and Cowden, as well as the places named in the title. These handbooks are for the resident visitor, or leisurely tourist, and may be said to supplement Mr. Walker Miles' ramblers' guides. An ordinary coat pocket would carry both. By the courtesy of the Association we are enabled to reproduce the picture of that fine type of an old English house, Crowhurst Place, which forms the frontispiece to the book.

The Homeland Handbooks: Minehead, Porlock and Dunster, with their Surroundings. By C. E. Larter. Homeland Association. Price 6d. net.

This guide to "the sea-board of Exmoor" includes a transcript of the 1-inch Ordnance map of the district, special articles on the fishing, stag-, fox- and hare-hunting and golf of the district, written by local authorities, four plates and more than thirty other thoroughly artistic illustrations. It runs to more than a hundred pages, and whilst containing plenty of history, archæology and architecture, is equally practical on such matters as routes. Miss Larter also provides that most unusual feature in a local guide-book—a list of the more interesting plants of the neighbourhood, with the scientific names all correctly spelt! Truly it is a marvellous volume for sixpence!

Wiggen and Lake's Popular Guide to Louth, Mablethorpe, Sutton-on-Sea, Alford, and the Villages. Louth: Wiggen and Lake. Price 1d.

We have received two slightly differing issues of this truly remarkable enterprise. Mr. C. S. Carter, Curator of the Museum of the Louth Antiquarian and Naturalists' Society, has furnished notes on the history, antiquities and natural history of the district; and, if the information is rather disjointed and too intermingled with advertisements, it is a great boon, no doubt, to many a tourist to have a guide-book for a penny. We have paid six times the price for an inferior production.

Nature Study (Manchester, New Hampshire) for May contains an interesting article by Stephen D. Parrish, entitled "A Mediæval Naturalist," dealing with Philipe de Thaun, author of the *Bestiarius*.

Our Animal Friends for July contains a paper by William Henry Shelton, entitled "Something about Animals in the Seventeenth Century," which gives a brief account of Topsell's delightful "Historie of Foure-footed Beastes."

The Amateur Photographer for July 28 contains a short illustrated article by Mr. F. Martin-Duncan, on the microphotography of Sea-weeds.

Received: *Bulletin of the New York Botanical Garden*, vol. 3, No. 10; *The American Botanist* for June; *The Plant World* and *The Victorian Naturalist* for July; *The Collector's Illustrated Circular* for July 9; and *The Naturalist*, *The Irish Naturalist*, *Nature Study* (Lockwood), *The Animal's Friend*, *The Animal World*, *The Humanitarian*, *The Agricultural Economist*, *The Estate Magazine*, and *The Commonwealth* for August.

NATURAL HISTORY NOTES.

152. Hedgehog.—I really think there is nothing a hedgehog will not investigate in the way of food, and, in my small experience of them, eat. I have known them eat a piece of apple jam, which, being hard, I had thrown out for the birds one morning, and on hearing a funny little rasping noise, I looked out and saw a hedgehog eating it. About a month ago I was sitting reading one night late by the open window, and on the verandah outside was a plate containing fish and puppy biscuits soaked for a stray cat who had taken up its abode in the garden. Hearing a great rattling of the plate on the tiles of the verandah floor, I went to see what it was, and there was a hedgehog in the plate, greatly enjoying the mixture, while the "stray" longingly regarded, but did not venture

to approach, its vanishing supper. My own large blue Persian cat was also an interested, but respectful, spectator of the scene.

August 2, 1904. LYDIA PENGELLY.

153. Another Cat Story.—The following extract from the letter of a friend of mine residing at Hastings, New Zealand, may interest your readers: "Let me tell you about a cat I had to "take in" with some fowls I bought. It appears that the cat was brought up with the fowls and lived with them entirely, never coming into the house. When I brought the fowls and the cat (a tabby) home I put him and the hens in their house, and when later I went to look at them, there was the cat between two hens up on the roost asleep. He sleeps there every night. During the day he wanders about with the fowls and always feeds with them.

Folkestone. CHARLES F. W. T. WILLIAMS.

154. A Mousing Hen.—The other day I noticed one of our hens snatch up something from the grass in the field, worry it, drop it, and proceed to dance upon it. Going to examine her find, I discovered she had caught a good-sized mouse, but immediately upon my approach she swallowed it whole, tail and all, gulping it down in great haste, and with much difficulty. As this is a unique event in my experience, I should be glad to know if any other Selbornians have hens who are mousers.

Llanbedr, Tal-y-Cafn, N. Wales. ANGELA BRAZIL.

155. Migration of Birds.—In *Harper's Magazine* for February, 1885, in an article on "Guardian Birds," by John A. Coryell, it is mentioned on the authority of Dr. Van Lennep, that the crane is in the habit of carrying small birds across the Mediterranean on its back, "such as the ortolans, darnagas, tree figs, wrens, titmice, smaller thrushes, finches and others, which are obliged to leave Europe for a warmer climate as soon as cold weather sets in. They are incapable of a long-sustained flight, and in the attempt to cross the Mediterranean would surely perish in its waters. . . . Most of the cranes are migrating too, and usually are to be seen making their way south at the first approach of autumn coolness. They fly low, uttering an odd cry, as of alarm. At once the would-be little travellers below mount upward, and incredible as it may seem, take up their quarters on the backs of their long-legged, big-hearted friends. There they comfortably sit, and repay their benefactors by their cheery twitterings and merry songs. In the return voyage the cranes do not trouble themselves to fly low, but, as if knowing that going down is easy work even for a small bird, they fly high, and let their little passengers drop off at their own convenience." The article is accompanied by an illustration of three cranes with their "passengers," and the writer adds, "It may be that future investigation will prove that the conduct of the crane is the result of some less noble impulse than that of doing good for good's sake; but in the absence of necessary proof to that effect, it will do no harm to accept it as it appears to be."

Perhaps not; but it would be interesting to know how much truth, if any, there is in the matter, and what other observers have to say on the subject. The remark as to the "cheery twitterings and merry songs" at any rate would appear to be largely drawn from imagination, as no human observer would be likely to be present to hear and record them. W.

156. Green Sandpiper.—This bird is a regular visitant here, and at this time of the year two or three pairs are to be seen daily on a fallen tree in the decoy a few hundred yards below my residence. They left us, probably to breed in more northern climes, about the middle of May. In the afternoon of July 15 I heard the cry of a pair high in the air. They had just completed the journey from abroad, and on arriving over the decoy made a sudden dash downwards, wheeled round to see that all was right, and then went on to a swampy spot between the hills, where they often feed. The green sandpiper has been under observation here for the last five years, and always goes away about the same time in May.

Southacre, Swaffham, July, 1904. EDMUND THOS. DAUBENY.

157. Partridges.—How many eggs has a partridge been known to lay? When I mentioned that twenty-four eggs were in a nest, the question was raised whether they were laid by one bird. I have kept a partridge's nest close to my beehives under daily observation, and never saw more than the two old birds near it. In this there were twenty-four eggs, and twenty were hatched. The broods are large this year. At the end of July I saw twenty-two young birds with their two parents, and in several cases counted twenty.

EDMUND THOS. DAUBENY.

158. Cuckoos.—Another case has come to my notice to prove, if further proof be necessary, that cuckoos sometimes place their eggs in little birds' nests by other means than the ordinary process of laying. A weak spot in a fence had been stopped by wire-netting rolled up into a ball. Inside this a pair of hedge-sparrows built a nest, the only access being through the meshes. Into this nest a cuckoo managed to introduce an egg. When fledged the young cuckoo was too large to escape, until the ball of wire netting had been opened by the friend who detailed the circumstance to me. EDMUND THOS. DAUBENY.

159. Has a Swallow a Difficulty in Rising from the Ground?—I was lately a witness to the following little tragedy. A swallow had alighted on the road a few yards in front of me. I stood still, intently watching it and admiring its beautiful plumage, when to my horror a cat bounded over a wall, seized the poor bird and instantly disappeared, almost before I could realise what had happened. One would have thought that a bird whose life is spent almost entirely on the wing would have been about the last to fall a prey to the cat.

August 4, 1904. JOHN HORNE.

160. Nightjar's Nests.—In reply to Mr. A. C. Mackie's note (129) on "Nightjar's Nests" in your current issue, I think I may throw some light on this interesting bird's habits. The fact of Mr. Mackie finding a cup-shaped hollow near the eggs illustrates the habit of the nightjar (which, though not commonly known, I have lately been able to verify) of moving its eggs from its original nest if disturbed. The cup-shaped hollow Mr. Mackie found was doubtless the original nest, and the eggs being at a distance from it had no doubt been removed owing to the bird having been in some way disturbed. The fact that they were only a foot away from the original hollow points to the fact that the bird had only moved them a small distance towards the spot she intended to remove them to, as they will generally remove them several yards when so disturbed. I do not think there are any grounds to suppose that the "hollow" Mr. Mackie refers to is intended by the bird to keep the "chicks in bounds" when hatched, as a mere hollow would be quite ineffective for this purpose. The nightjar has such small pretensions to a nest that probably the hollow was an accident.

Eastcote, Middlesex, HERBERT J. RODGERS.
July 24, 1904.

161. Toads.—A year or so ago there was correspondence in your paper about the migration of small toads, which is merely a dispersion round the place of their birth, and occurs directly they have outgrown the tadpole stage. About the middle of June, when walking by the duck decoy below my house, I came across myriads of small toads very little larger than meat flies. The grass was full of them, and in open spaces a few inches square they were crowded together a hundred at a time. As I write (July 28), they are to be seen in every direction, 300 or 400 yards from where they were born, and are double the size they were a month ago. They have been especially in evidence after two severe thunderstorms, and the villagers declare they have descended from the skies. They must be of great use in attacking the legions of aphis which, during the hot weather, have been abundant and destructive. Ducks and chickens gorge themselves with these little toads. EDMUND THOS. DAUBENY.

162. Ants' Undertakings.—I witnessed a curious incident a few days ago which, I think, illustrates in a greater degree than has been recorded before the hugeness of the tasks that ants will undertake. Passing along the main road between Doublebois and Bodmin, I perceived a caterpillar lying in the

middle of the road, making frantic efforts to free itself from a large species of ant, which had clutched its hindquarters and was endeavouring to force it apparently towards its nest, which seemed to be close to the hedge, as I afterwards saw a number of ants there. There is no knowing how long the struggle had been going on. I stood and watched it for several minutes, but the day was insufferably hot, and as I could get no shelter from the scorching rays of the sun, I did not stay long watching the caterpillar fight for its life. While I was there, however, I observed another ant close by, which I directed towards the caterpillar, and when it saw its mate at work trying to drag away a beast about ten times its size, it instantly went to its assistance by getting on the body of the caterpillar and commencing to force it along. However, as they did not perform their labours smartly enough for me, and as I was too impatient to stand any longer in the sweltering heat, I knocked the ants off, leaving the caterpillar to recover, in the hope that it may one day become a butterfly, though I trust if it does attain that stage it will escape being swept into the meshes of the ruthless lepidopterist's net.

18, *Radnor Street, Plymouth*, *July* 26. ERNEST R. COLBRON.

163. The Taking of Wasps' Nests.—*Apropos* of "S. D. W.'s" amusing account of his taking (?) a wasps' nest, I here give a brief description of the very simple plan adopted by the late Rev. Prof. J. S. Henslow, in the "'forties," at Hitcham, Suffolk, where hornets and "ground" wasps (*Vespa rufa* and *V. vulgaris*) abounded. Several of his captures are still to be seen in various museums; one, a large hornets' nest—if I am not mistaken—is in the Natural History Museum, and easily recognised by being suspended from a beam, which was in the roof of a cottage.

His procedure was to wait till nightfall, when the wasps would have nearly all returned to rest, a bottle of beer and sugar being put near the hole for the later revellers. A small quantity of spirits of turpentine was poured down the hole, which was then stopped with a plug of tow saturated with it. A corked flower-pot was then inverted over it. If the scent did not kill them all it so stupefied the wasps that the nest could be dug out the next morning with impunity.

Care was required in digging it up. First the turf was cut off till the nest was visible. This was carefully extracted, the "pavement" being then exposed and taken out. This consists of all the stones which were allowed to fall to the bottom of the cavity, as it was excavated by the wasps.

In mounting the nest, it was supported in its natural position on a square board (about 1 ft. square), supported by four rods on another board for a basement. The pavement was placed on this latter board. The nests were dissected, one side being cut out to show the tiers of comb, all the grubs having been carefully extracted. As many wasps and hornets recovered from their collapse, the nests were first placed on a table near a window, for as they came out they invariably flew towards the light and were easily caught.

GEORGE HENSLOW.

164. Dyticus or Dytiscus.—It is curious how the former of these two words is almost always wrongly spelt. In "Our Insect Allies," by Theodore Wood, we find "The generic name *Dyticus* is from the Greek, signifying a diver, and being therefore very appropriate. The name is very frequently, although wrongly, written as *Dytiscus*, the additional "s" having probably been first interpolated by a printer's error, and having escaped subsequent notice."

EDMUND THOS. DAUBENY.

[With all due deference to our much esteemed correspondent and to the naturalist from whom he quotes, it is by no means so clear that *Dytiscus* is either wrong or a misprint. In fairness to Dr. Williams, I am bound to say that the name was deliberately altered—as I think, corrected—by me in his "query" in our last number. The name *Dytiscus* was, as Professor Miall points out in a note in his "Aquatic Insects," so spelt by Linné in founding the genus, and this spelling has been followed by a host of subsequent authorities, including the *Encyclopædia Britannica* and Dr. Sharp in "The Cambridge Natural History." If Linné or his printer were in error, it is doubtful whether it would

be expedient to correct the original spelling; but I fail to see that they were so. It is true that there is in classical Greek an adjective δυτικος, meaning "diving," which might well be used substantively as "a diver." Linné was no mean Classical scholar and was, moreover, fond of diminutives. In Wordsworth's Greek Grammar many years ago I learnt that "Derivata ab aliis Substantivis sunt . . Deminutiva." . . "Deminutiva, vel *deminutionem* significant, vel *amoris quandam fatuitatem*" . . "Masculina sunt, quæ desinunt in ισκος, ut χιτωνίσκος *tunicula* a χιτὼν; ἀνθρωπίσκος *homunculus* ab ἄνθρωπος *homo*." *Dytiscus* would seem, therefore, to be a correctly formed, though perhaps not classical, name for a little diver or an animal extremely fond of diving.—Ed. *N.N.*]

165. Lusus Naturæ.—There are several peculiar examples of this in my garden this year, and I am wondering whether they are owing to the wet season we have had, or to blight, or to both. The first examples were two buds of the Souvenir-de-Malmaison rose, which were unable to come out comfortably because the centres were full of tiny green buds without stems, but perfect otherwise: one had ten of these in the middle of it. The second instance is much more remarkable. Two Canterbury-bell plants at opposite extremities of the garden are indulging in the same kind of freak. One is three feet high twisted spirally from right to left, a very wide stem like a split pipe from an inch and a half to nearly two inches deep, down which the rain runs in a stream. The whole of the stem inside and out, is covered with little narrow leaves, and along the edges normal blooms on short stems, but the top is crowned with a kind of frill composed of four or five blooms run into one, full of stamens, and with a pistil like a fan in shape, with a row of little curls for stigma, two of these in one flower. The calyx surrounds the whole flower and is not divided. One plant has three stems from the root, the largest as I have described, the other two narrow and flat with normal flowers. The other plant has five stems, three of which are crowned by the frilled flower, and five other blooms semi-detached. They are a handsome purple mass, but look "uncanny." The third example is to be seen on several evening-primrose plants which are crowned at the top of each stem by what looks like a brush with normal buds below. It remains to be seen, when they issue into bloom, what they will look like. These and the Canterbury bells are self-sown, and some are in a hot dry border, some in the more damp and shady.

M. S. Young.

166. Copper Beech.—Might I suggest that the green leaves referred to on page 156, in your July issue (which are very common this year) are merely leaves which have not, as I surmise happened with purple ones, been injured by the cold nights. In many instances the colour of leaves and some flowers is due to injury or decay. Has your correspondent noticed the green-coloured leaves of such trees in the Autumn?

Tunbridge Wells. George Abbott.

167. Cloud-Burst.—During a thunderstorm at the end of July a cloud-burst occurred on a large field in this village. The burst itself spread over twenty or thirty acres, and the water cut large furrows in the earth. It then rushed down the road, tearing it up like the bed of a torrent. My house is 400 yards from the field, and during the storm the downpour was such as is rarely experienced in England. The field, which had just been sown with turnips, must be harrowed over again and resown.

Southacre, Swaffham,
August, 1904. Edmund Thos. Daubeny.

NATURAL HISTORY QUERIES.

29. Holm-screech.—Can anyone tell me what kind of bird is a "*Home-screech?*" The first syllable perhaps is "Holm" or "Hone." I am told it is not any sort of owl, and that it builds in a tree.

A VILLAGE IN SOMERSET.

[The Missel-Thrush (*Turdus viscivorus*) is known as Holm-screech.—ED. *N.N.*]

30. Glow-worm.—Chancing to wake in the darkest hours one night in June, I saw a tiny but brilliant spark on my bedroom floor. I struck a light, when of course the spark disappeared, but I found a little brown creature lying on its back, and put a glass shade over it. How a glow-worm should have managed to get there I could not think. In the morning the creature had turned over, and I saw a pair of dark, soft, helpless-looking wings. I carried it into the garden, laid it on the grass, and it quickly hid itself under the blades. I looked for it the next evening, but I have seen no more of it. What was it?

A VILLAGE IN SOMERSET.

[I know of no luminous winged insect indigenous to Britain. The female glow-worm, which glows, has no wings, but might be carried into the house on someone's dress; the male glow-worm, which has wings, does not glow. —ED. *N.N.*]

31. Cockroaches.—May I ask if there is any particular method of preventing black beetles and cockroaches locating themselves in a new house? In what way do they first come, as a general rule? Are they specially connected with coals?

S. I.

[The Cockroach (*Periplaneta orientalis*), though commonly called a "black beetle," is neither black nor a beetle. It likes warm places such as kitchens and laundries, is entirely nocturnal in its habits, and, therefore, seeks concealment among coals; and it will eat animal or vegetable refuse, paper, leather, cloth, or almost anything. Though of some use as scavengers and enforcing care on the part of housewives, they may be introduced into new houses in many ways without the fault of the human occupants, as in clothes-baskets, packets of groceries, or perhaps coals, and are apt to be unpleasantly numerous, imparting an unpleasant odour to whatever they touch. They may be captured by floating a piece of wood smeared with treacle on a wide basin of water, or may be poisoned with phosphor-paste on bread. Holes whence they emerge should be filled with quick lime and some can be strewn on the ground. They are so far connected with coals that closely related forms have been found fossil in the Coal Measures.—ED. *N.N.*]

SELBORNE SOCIETY NOTICES.

Council Meetings.—The next meeting of the Council will be held on Tuesday, September 27, at 5.30 p.m. The Publications Committee will meet on Monday, September 12, at 5.30 p.m.

New Members.—W. Leonard Wills, Esq., and Mrs. W. Leonard Wills, Barnt Green; Miss Emily H. Wellington and Miss A. M. Wellington, South Hampstead.

The Council begs to acknowledge with thanks the following subscriptions over 5s.: W. Leonard Wills, Esq., 10s. 6d.; Mrs. W. Leonard Wills, 10s. 6d.

NEWS FROM THE BRANCHES.

Birmingham and Midland.—The last excursion of the season took place on Friday, July 22. The party, consisting of members and friends, proceeded by train to South Yardley and then walked to the village of Yardley to inspect the old Church, in which were some interesting monuments. Thence by

a pleasant field path, passing by the remains of an old moat, they proceeded to Gilbertstone, the residence of George Hookham, Esq., J.P., by whose kind permission the grounds were thrown open to the visitors. Mr. and Mrs. Jacob Rowlands kindly provided tea at their residence, Hollyhurst, and the party returned home by train to Birmingham.

[In the report of the excursion of May 28, p. 157, "Mrs. Waterhouse Gibbins" and "Mrs. J. Udale," should have been "Mr. Waterhouse Gibbins" and "Mr. J. Udale."]

Brighton.—On the invitation of Mr. Eardley Hall and Mrs. Blackburne, the members of this Branch visited Barrow Hill, Henfield, on July 23. Barrow-hill was the residence of their hosts' grandfather, William Borrer, the celebrated botanist, and though after his death some of his rarer plants were presented to Kew Gardens, the garden contains numerous herbaceous plants, shrubs, and trees of his collection. Until two or three years ago, when it perished from some unknown cause, a specimen of the Upas tree (*Antiaris toxicaria*) was an object of great interest there. This Mr. Borrer heroically reared at a time when appalling stories of its deadly influence still found credence.

> "Fierce in dread silence on the blasted heath
> Fell Upas sits, the Hydra-tree of Death,"

sings Erasmus Darwin, deceived by the Dutchman Foersch, a most circumstantial liar.

During the afternoon the party gathered together on the lawn to hear some remarks by Miss Robinson of Saddlescombe, on certain wild plants of the neighbourhood. Amongst others she brought specimens of the flowers of *Centaurea Calcitrapa*, *Linaria repens*, *Phyteuma orbiculare*, and *Marrubium vulgare*. The *Linaria* is extremely rare, and its appearance in this instance may be due to foreign seed. The beautiful *Phyteuma*, being abundant within its narrow range, may be called the distinctive flower of the Southdowns. Miss Robinson stated that there is a notable increase this year in the number of frog-orchises (*Habenaria viridis*). This she attributes to recent wet seasons, which have stimulated the germination of seeds previously dormant. She had to lament the complete extinction of the primrose in the immediate environment of Saddlescombe, which lies in a hollow of the downs. There it naturally grows but sparingly, and is particularly exposed to the raids of Brighton plant sellers. In the Weald of Sussex, where it naturally grows profusely, it may be doubted if there is any sensible diminution due to spoliation.

Flowers did not alone engage the interest of the visitors. Mrs. Blackburne, well knowing that to science fruits are as important as flowers, had provided abundant specimens of the fruits of horticultural varieties of *Vitis vinifera*, *Rubus Idæus* ("mounted" in cream), *Ribes Grossularia* and of other species, and a party of decidedly botanical tastes much appreciated the thoughtful attention.

North Middlesex Junior.—On July 15 this Branch was formally opened by Mr. C. M. Hall, member of the Society, to whom the Council's warrant had been issued for its formation. The initiation took place at Brunswick Hall. Mr. C. M. Hall briefly reviewed the objects of the Selborne Society, particularly that of promoting the study of natural history, and stated that primarily with this object the North Middlesex Junior Branch had been formed, so that the young naturalists of the district could meet together and assist each other with their studies. He dwelt at some length on the protective objects of the Society, and urged upon all the coming members to make kindness to animals one of the main features of their investigations. Whilst he agreed that collections of animals, &c., were absolutely necessary for the proper study of some branches of natural history, yet he urged that those species should be chosen which could be kept without cruelty when in confinement. He mentioned the keeping of Vivaria and Aquaria, and the study of the life history of Mollusca, and the metamorphosis of insects, as amongst such harmless studies. He condemned the keeping of captured wild singing birds, whose proper place was in the free air, which was the only place where their habits could be studied. He read the warrant forming the Branch,

after which ten rising naturalists were admitted as Associates of the Selborne Society under Rule 24.

The following officers of the Branch were then nominated and appointed: G. J. Thompson, librarian; E. F. Watkin, treasurer; and E. Gibbens, secretary. At the meetings of the Branch, papers on natural history will be read and discussed. A series of nature study rambles are being arranged, and by the help of adherents, it is hoped that lectures by eminent naturalists will be arranged for the winter months.

On Friday night, August 5, a very good meeting of associates was held at Brunswick Hall, when an interesting paper was read by the President of the Branch, Mr. C. M. Hall, entitled "An Introduction to the Study of Fishes," which was much appreciated by those present. Mr. Hall, after giving a naturalist's definition of a fish, gave black-board demonstrations of their anatomy, pointing out the various types of fins in the class, with their uses, and showed the different forms of scales to be met with. He said most of the senses in fishes were acute, especially those of seeing and smelling, but considered that the sense of taste was blunt, which decision he arrived at by examining the bony nature of the tongue and palate of a fish. He believed hearing to some extent existed in fishes, and quoted Frank Buckland and other authorities on this point, in addition to his own observation of fish in his own Aquaria. He advised those who wished to study the natural history of fishes to keep aquaria, as that was the only means of studying the habits of those animals, which, living in water, were almost entirely shut out from observation except by means of seeing them in a well-managed tank.

After the reading the following questions, amongst others, were asked by the members and replied to: "What are the causes of fish changing colour? are there any permanent changes of colour in fish? what advantage is gained by the chub being able to rise rapidly to the surface? why has a perch ctenoid scales and a carp cycloid scales? does a fish change colour with age? is pain very acute in fishes?" To the latter question Mr. Hall replied in the affirmative, although he agreed that it was more acute in some parts of the body than others.

It was announced that on the 19th inst. Master Garnett Thompson would read a paper on "English White Butterflies."

Hampstead, *July* 20.—By special permission of the Earl of Mansfield (Vice-President of the Society) the members of the Hampstead Branch and their friends enjoyed the privilege of a visit to his lordship's grounds at Kenwood. Several prominent Selbornians from outside were also present, and when heads were counted it was found that Mr. James E. Whiting, Hon. Sec. to the Branch, who acted as guide, and whose knowledge of the estate is quite remarkable, had a following of a hundred.

It was about a century and a half ago that Kenwood came into the possession of the present owner's ancestor, the famous Lord Mansfield. At the time of the Gordon Riots the house narrowly escaped destruction. Lord Mansfield's residence in Bloomsbury Square had been burned by the rioters, and the signal was given to march to Kenwood, there to complete the mischief. But, thirsty from their journey, the mob stayed at the Spaniards Inn to refresh, and so potent were the libations and so freely were they served, that the quick-witted landlord had time to invoke the aid of a detachment of Horse Guards, who were discovered barring the way when the drunken or half drunken ruffians bethought themselves that it was time to finish their mission. It is related that awed by the presence of the military they returned in disorder to London, without having carried out their intention.

Though located so near the Metropolis, Kenwood is noteworthy for its air of seclusion. Even sounds that are intrusive, such as railway whistles and the hum of trains, hardly fail to shake the feeling, so entirely does the barrier of woods exclude the outside world. By the mansion is the old time garden, now a blaze of colour, calceolarias being especially prominent in their yellow blooms. Near by is the superb lime avenue than which, so far as it extends, there is probably little finer in the country. A variegated elm, powdered so to speak with snow, among so much that was green, enlisted a good deal of attention. A circuitous route to the wood was taken, and here was pointed out *Maianthemum bifolium*, a rare growth in England. The badgers' burrow was visited, and the huge pile of sandy loam around gave evidence of their excavations.

Full was the visitors' admiration of the majestic cedars and of one soaring larch that towered over all its neighbours. Down by the small lake, now studded with yellow lilies, a pause was made while Mr. Whiting pointed out the cut-leaved and common alders, both growing there. Birds were nearly silent, but yet most restfully on the ear fell the wood-pigeon's gently chiding tones. This most successful gathering terminated with hearty votes of thanks to Lord Mansfield for his kindness in permitting the visit, and to Mr. Whiting for his most valuable services as guide.

FIELD CLUB RAMBLES.

July 16.—In glorious weather, very warm yet freshened by a south-west breeze, a party of nineteen was conducted by Mr. Miihlberg from Woldingham Station to Titsey Hill and Oxted. With few exceptions the route was entirely along footpaths and woods, *viâ* Flint Farm. The incomparable panorama of the Weald, across to East Grinstead and Crowborough Beacon, from a spot 868 feet O.D. near the Government fort, was admired under specially favourable clear light, and the ancient Pilgrim Way was followed to Botley Cottage.

The *al fresco* strawberry tea was very well served and enlivened by a Japanese rat family, bred at the cottage, which sampled the cake, &c. The journey home was down the steep chalky lane where *Atropa Belladonna* was found in flower as well as sweet briar, and whilst no rare plants were noticed, all the most characteristic species of the Chalk flora were observed.

July 23.—It was into a district rich in historic memories that Mr. L. Douglas Wilson led close on fifty Selbornians upon this fine afternoon.

Mounting the steep hill near Chorley Wood Station, you breast the Buckinghamshire uplands with their rolling swells of Chalk, a geological formation pregnant with interest and instruction as a page of the earth's past history. The drought had disintegrated the road's surface, so that here it was not easy going ; but fortunately the woods and fields were soon gained, and as breezes swept along from time to time and so tempered the heat, nothing could have been pleasanter than the route followed.

In the wood there was a sprinkling of foxgloves, though more noticeable were large patches of willow herbs, their pink contrasting well with the greenery around. Abundant, too, was enchanter's nightshade (*Circæa lutetiana*), so-called from the use of it by Circe, a sorceress of old Greek story, to change people into swine. Ferns, again, were superb. They fringed the path and in places towered above the walkers.

At a convenient spot, whence charming views were disclosed in all directions, Mr. Wilson reminded the visitors that they were in the country of the Chiltern Hundreds. In former days robbers infested those parts, and an officer known as the Steward was appointed to restrain them. The post then would have stood for strenuous activity, whereas now it went for nothing, and was merely applied for and obtained by a member of Parliament to facilitate his resignation. The granting of the Stewardship for this purpose dated from about 1750.

Near by is a country seat known as The Vache. Some portions of the house are admittedly ancient, a point worthy of mention, but the chief interest attaching to the estate lies in its past owners. In 1564 Thomas Fleetwood bought it, and of his descendants one married Bridget, Oliver Cromwell's daughter, and the other was a signatory of the death warrant of Charles the First, while both lost their estates at the Restoration. A later owner of The Vache was Francis Hare, Bishop of Chichester, Chaplain to the great Marlborough, of whose victories at Blenheim and Ramillies the Bishop was a witness. Afterwards came Admiral Pallisер, patron and friend of Captain Cook, the great navigator, to whose memory the Admiral erected a monument in the grounds. To see this came Queen Emma of the Sandwich Islands, in 1865, when the village band, out of compliment to Her sable Majesty, played "The King of the Cannibal Islands."

The Lych-Gate leading to the church at Chalfont St. Giles is extremely picturesque. It is framed in oak and passes under some half-timbered buildings. The church walls are composed of chalk and flints, both, of course, characteristic of the locality. From the bases of columns in the south aisle and from other indications, the edifice is judged to have been originally of Norman build. It

consisted originally of chancel, nave, south aisle, and western tower. About 1220 the chancel was lengthened—it now inclines sensibly to the south—and a north aisle was subsequently added. Other noteworthy features are a double piscina in the chancel, two large squints, and a Norman font supported by four short shafts of Purbeck marble. Brasses are too numerous to be named in detail. In the sixties of the last century a complete restoration was effected under the auspices of Mr. Street.

Attractive though the church and general district may be, it is the name and personality of John Milton that draw so many visitors to Chalfont. Hither the blind poet, at the instance of Thomas Ellwood, the Quaker, retired to escape the plague. Here, in the cottage with its diamond panes, he gave the finishing touches to "Paradise Lost," and received from Ellwood the suggestion to write "Paradise Regained" The cottage is now used in part as a museum and contains relics of great value.

Leaving with reluctance a place so teeming with historic names and associations, the Selbornians found consolation in the beauty of the homeward walk, which was varied for them by the kindly forethought of Mr. Wilson, the guide. A path was followed through an extensive beech wood, into which there penetrated now and again the almost horizontal rays of the setting sun, illuminating faintly the Gothic stems, while tired feet rustled gently against thick layers of last year's leaves beneath. On and among these were discovered large numbers of the yellow under-wing moth, themselves an object lesson in environment.

August 6.—Between twenty and thirty members joined the delightful ramble conducted by Mr. C. M. Hailes. A start was made from Chalfont Road Station, and very soon the party found themselves being led along pleasant paths which ran through cool beech woods. These were not so dense nor extensive, however, that the bright sunshine could not be seen streaming in between the tree-trunks at the edges in a most picturesque manner. The necessity for inward refreshment demanded that the village of Chenies should be sought, and here the church came in for considerable attention, which it well deserves. It is the burial place of the Russell family, and many fine tombs are to be seen in the large chapel which monopolises a great proportion of the church. After tea a descent was made into the Sarrett Valley, and by the water the yellow Mimulus seen at West Drayton was again found. In a small stream some ducks were watched with considerable amusement, for one had caught a freshwater crayfish, and his fellows were so anxious to share in the spoil, and this evinced such a strong desire to escape, that it seemed likely that the meal would have to be postponed. As the evening began to draw in, another wood was entered, and on leaving this a short walk brought the party to Chorley Wood Station, where the train was taken for town. Mr. Whiting, of Hampstead, was present, and as usual added to the general enjoyment; and considering the time of year also, quite a number of members of Council assembled to take advantage of the labours of their colleague, Mr. Hailes.

August 13.—About nineteen members and others assembled at Oxshott for a ramble to the Black Pond. The way led over the purple heatherland of Oxshott Common, through lanes deep in Bagshot sand, and under the shade of Scots fir, birch and beech woods, until at last the rushes bordering the Black Pond were descried through the maze of tree trunks. A Red-Admiral butterfly crossed our path, a jay became for a moment visible before he disappeared in the wood, and on the Pond itself moorhens were observed. Among the botanical treasures were *Hypericum elodes*, bur Marigold, the two sundews, *Drosera rotundifolia* and *D. intermedia*, *Angelica sylvestris*, and that curious thread-like parasite, *Cuscuta Epithymum*. The open view of the Black Pond was enjoyed and photographed, and the party returned through the bracken-clad pine-woods to the village of Oxshott for tea. MATTHEW HUNT.

FORTHCOMING FIELD RAMBLES.

September 3.—Marden Park. Trains from London Bridge (L.B.S.C.R.), 2.55; Victoria, 2.30. Take cheap return tickets to Woldingham. Guide, Mr. Matthew Hunt.

September 10.—Dorking and Ranmore Common. Trains leave London Bridge, 1.53 and 2.0; Tulse Hill, 2.12; Streatham, 2.17; Victoria, 12.55; Clapham Junction, 1.2. Take cheap return tickets to Box Hill Station (meet in the Booking Office at 3.10 p.m.). London Bridge and Victoria, 2s. 3d.; Clapham Junction, 2s.; Tulse Hill, 1s. 10d.; Streatham, 1s. 8d. Tea at Ranmoor Common. Return trains leave Box Hill for London Bridge 7.22, and Victoria 7.32. Guide, Mr. A. B. Wilkinson.

September 17.—Oxshott to Stoke d'Abernon and Cobham. Waterloo, 2.15 train. Take cheap return tickets to Cobham and Stoke d'Abernon. Meet at Oxshott Station at 3 p.m. Guide, Prof. Boulger.

September 24.—Autumn Ramble in Epping Forest. Trains leave Liverpool Street, 2.8; Gospel Oak, 2.4. Take return tickets to Chingford, 1s. in each case. Guide, Mr. L. Douglas Wilson.

October 1.—Coulsdon. Charing Cross (S.E.R.) 2.6; Cannon Street, 2.16; London Bridge, 2.20. Meet at Coulsdon Station, 2.57. Passengers from Charing Cross change at Purley. Cheap day tickets, subject to Railway Company's alterations for October. Guide, Mr. Matthew Hunt.

The times of all trains should be verified by comparison with the September time-tables.

The ramble on October 1 will bring the Field Club Rambles for 1904 to a close; but the Secretary hopes to make arrangements, as in former years, for Selbornians to join in the Fungus Foray of the Essex Field Club in October. Further particulars in NATURE NOTES for October.

ANSWERS TO CORRESPONDENTS.

S. P. Hawes.—I could find no disease in the flowers of the *Tropæolum*, and the root when planted did not live. If this be a case of hereditary malformation it would be interesting and, for that reason only, worth growing again from seed.

P. F. K.—You apparently refer to Mr. Kearton's "With Nature and a Camera" (Cassell's), price 21s., which deals partly with bird-life in the Saltee Islands.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine

No. 178. OCTOBER, 1904. Vol. XV.

OBJECTS OF THE SOCIETY.

To promote the study of Natural History. To preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of: (1) The skins and furs of such animals as are in danger of being exterminated; (2) birds and their plumage, except when the birds are killed for food, reared for their plumage, or are known to be injurious. To protect places and objects of natural beauty or antiquarian interest from ill-treatment or destruction. To afford facilities for combined effort in promoting any of the above or kindred objects.

SELBORNIANA.

Hampstead Heath Extended.—It is announced that the agreement to purchase the eighty acres of Wylde's Farm from the Eton College trustees has been signed, on behalf of the Hampstead Heath Extension Committee, by Mrs. S. A. Barnett, Honorary Secretary, Warden's Lodge, Toynbee Hall, Whitechapel. A balance of £4,000 is still wanted towards the purchase money, and the public are asked to relieve the guarantors from responsibility for this sum, in gratitude for the preservation of the famous view and the extension of the Heath.

Cheques or postal orders can be sent either to Sir Robert Hunter, General Post Office, to Mr. Edward Bond, M.P., Elm Bank, Hampstead, or to Mrs. Barnett.—*Daily Mail*, September 3.

Thames Preservation.—Lot's Eyot, Kew, is saved, thanks to the Board of Trade, who have refused their sanction to the proposed construction of a dockyard there. It was an unlovely prospect this—that of blackened chimneys and clanging hammers,

and all the unsightliness of a bustling dockyard on the little eyot which nestles immediately opposite Kew Palace and Kew Gardens. Happily, the beauty and quietude of this Thames resort have been spared such an intrusion on the part of the company having premises at Brentford who proposed it.

But another scheme that will fill all river-lovers with renewed fear is threatened, for the erection of a wharf and an ugly galvanised iron shed on a portion of the gardens of Cambridge House, Hampton Wick, which have a long frontage to the Thames, just opposite Canbury Gardens, is in contemplation.

This land, some eighty feet in width, has been purchased from the trustees of the late Miss Barker, with the view to its becoming a trading centre, and if the new owner's plans are carried out, we shall ultimately see a beautiful piece of Thames scenery disfigured by barges in the river and timber piled up on the shore.

The idea is all the more repugnant because some years ago, when a similar movement was on foot whereby the Kingston bank would have been marred by incongruous wharves and sheds, house owners at Hampton Wick, fearful of the hand of the spoiler, subscribed £1,000, and successfully prevailed upon the Kingston Corporation to turn their riverside meadows into three-quarters of a mile of Canbury Gardens. Those gardens have since been a source of delight to all their many visitors.

As might be expected, the latest effort to construct a wharf at this spot has aroused strong feelings of resentment at Kingston and Hampton Wick. Without loss of time many inhabitants have been sending to the Thames Conservators protests against the scheme.

Whatever may be the attitude of the Thames Conservancy in this case, there is no disguising the fact that some of the aggrieved inhabitants are a little sceptical of that body. They do not forget that the conservators treated with far too much kindness the scheme for building a dockyard at Lot's Eyot. Fortunately, in that instance, the Board of Trade intervened, in the interest of the public.—*Daily Chronicle.*

Commons and Footpaths Preservation Society, Croydon Branch.—This active branch of an excellent society has been carrying on the important work of verifying footpaths. For this purpose ten walks of from eight to twelve miles each have been organised during the past spring and summer. The Footpath Registrar is Mr. M. G. Sharpe, and the Honorary Secretary Mr. E. A. Martin.

Boa-Constrictor in the New Forest.—The botanists and entomologists of the New Forest have long looked upon vipers as "all in the day's work;" but the news that a boa-constrictor, the length of which increased rapidly by narration, was at large in that generally peaceful region naturally created a scare. It was confidently reported to have strangled and eaten a donkey,

or a pony, or—*mirabile dictu*—a zebra! When, however, an heroic amateur photographer succeeded in marking down this unusual quarry, though the reptile seems singularly well protected among the bracken by its markings, its dimensions, as represented in a photograph we have received, were sadly reduced; and it has, we hear, been transferred to the Zoological Gardens "till called for."

Wild Bird Protection Orders.—We have recently animadverted on the damage done to the effectiveness of the law by repeated tinkerings; but the Order for the County of London, dated June 27, has already been repealed from Whitehall by one dated August 15. By this last, Close time extends between January 31 and September 1, all birds are protected on Sundays in a number of parishes, the eggs of numerous species are protected throughout the county, a few species, including various Hawks and Swallows, the Chaffinch, and the Wryneck, are added to the schedule, and these and some others, such as the Blackbird, Cuckoo, Goldfinch, Kingfisher, Lark, Linnet, Nightingale, Nightjar, Owls, Robin, Starlings, Tits, Warblers, Woodpeckers and Wrens, are protected throughout the year. This list of protected species includes the "Hedge Sparrow (or Dunnock)," but not—as stated in some of the daily papers—the Common Sparrow.

We have also received an Order, dated September 1, for West Sussex, repealing that of September 21, 1899. By it the eggs of certain species, including the Stone Curlew or Thick Knee, Dotterell, Goldfinch, Heron, Kingfisher, Kentish Plover, Raven, Woodpeckers, Owls, and Wryneck, are protected throughout the county; all eggs round the shores of Chichester Harbour, and on the reclaimed harbour at Pagham are protected; all birds are protected on Sundays in Midhurst, Petworth, Steyning, and some other parishes; a number of species, including the Thick Knee, Goldfinch, Kingfisher, Wood Lark, Linnet, Swallows and Woodpeckers are protected throughout the year; the Buntings, Tits, Warblers, Whitethroats, and some others are added to the Schedule, and the Close time is extended so as to be from January 31 to September 1, except as regards certain shore fowl.

Wild Plant Preservation.—On August 23, Professor Boulger gave a lecture to the Royal Horticultural Society at their new Hall, on "The Preservation of our Indigenous Flora." Following to a considerable extent the line of argument adopted by him in the lecture reprinted in Nature Notes, vol. xiii. (1902), pp. 184-190, but illustrating it with many new American and other instances, he dealt first with the natural causes of loss or gain to our Flora, such as encroachment by the sea. Alluding briefly to reckless disafforestation, with special reference to the paper-pulp and wood-alcohol industries and the prevalence

of forest fires in America, and to the extermination of Sandal-wood and Gutta Percha trees, he dwelt more upon the effects of drainage, as in the Fens, and the extension of building, especially round London. Mention was made of the quarrying at Clifton, Cheddar and in the gorge of the Wye, of the destruction of the turf edges of our roads by Rural District Councils, of our commons by golf, and of some plants near towns by smoke. The trade-collector or plant-hawker, and his treatment of Sea-holly, terrestrial orchids, primroses and ferns in this country, of Edelweiss in Switzerland, and of many beautiful species in the United States, was next arraigned; the damage sometimes done by the thoughtlessness of children, tourists, and even Nature-study teachers was then discussed; and the needlessly wholesale collection of known rarities by the botanist was strongly deprecated. Turning to possible remedies, after mentioning forest conservation, smoke-abatement and the desirability of educating our local authorities, the concealment of rare species by picking the blossoms and by refraining from precise localisation in Floras was discussed, the cultivation of native plants in local botanical gardens, as done by M. Correvon at Geneva, was advocated, transplanting was defended, but re-introduction was on the whole deprecated. Much future good, it was urged, must depend on the education of the young, as by instituting tree-planting days, by popular lectures, leaflets and "readers"; local societies might do much to discourage extermination and possibly superintend the erection of warning notice-boards; whilst the lecturer undertook that the Council of the Selborne Society would do everything in their power to stimulate and combine local efforts, and would place as much space as possible in NATURE NOTES at the service of a movement to arouse a general sentiment in favour of plant-protection. In conclusion it was urged that for immediate danger recourse to the law was inevitable, and that the existing law of trespass was inadequate. The correspondence between the Devon County Council and the Home Secretary on the subject was narrated in full, and the lecturer suggested legislatiou on the lines of the Wild Birds Protection Acts. In the discussion that followed Mr. E. A. Martin doubted the necessity or utility of legislation, whilst Professor L. H. Bailey, of Cornell University, U.S.A., spoke of the satisfactory results of legislation in the United States, that legislation being backed by a strong national sentiment in favour of plant protection which had been organised by the Audubon Societies mainly through the elementary and secondary schools. Professor Boulger's lecture will appear *in extenso* in the *Journa of the Royal Horticultural Society*.

A USEFUL WEED.—In the recently issued Report to the Local Government Board by the Chief Inspector of Alkali Works, a prospect is held out by Dr. Alfred C. Fryer that such desolate spots as the heaps of alkali waste at Netham, near

Bristol, may be covered with vegetation. "For many years," he writes, no blade of grass or humble weed would grow upon the unsightly heaps," but at last a plant has been discovered which will grow luxuriantly even on such a soil. This is the Wall Rocket or Narrow-leaved Wall-mustard (*Diplotaxis tenuifolia*), a glaucous plant, 1 to 1½ feet high, with pale lemon-yellow flowers. A few years ago we were attracted to it on the walls of Chester, where Ray had gathered it two centuries before, by its powerful heliotrope-like fragrance, and we subsequently found it in plenty between Pontorson and Mont St. Michel. Strangely enough, neither Hooker nor Babington mention this fragrance, though the later does say "Plant fœtid," with reference to its smell when bruised; while Sir J. E. Smith in his *English Flora* says, "Flowers large and handsome, but unpleasantly scented!"

"It was found growing," writes a Bristol paper, "on some old walls in St. Philip's Marsh, in 1878, and on the Netham mounds it has established itself firmly, so that it is fast covering with verdure these arid heaps of chemical refuse. Dr. Fryer suggests that it might be worth while trying if this little plant could be encouraged to cover other unsightly heaps in various parts of the country, and it is to be hoped that his advice will lead to the experiment being tried. The wonderful power Nature has in covering up the ugly is indicated in many districts. Who will say that some day the heap of coal-shale, which has become a feature in a part of West Bedminster, may not be clothed with firs, as similar heaps in the Radstock district have been for years?"

A New County Museum.—"The celebrated museum at Hawkestone, Lord Hill's well-known seat near Shrewsbury, was to have been offered for sale by auction, but it has been withdrawn, and will be purchased by the County of Salop. The museum contains one of the largest and finest collections of birds in England. The Hawkstone gardens have long been famous, and the well-wooded and much diversified deer park comprises 1,200 acres, and contains a lake two miles long."—*Star*.

The Royal Photographic Society's Exhibition.—The Royal Photographic Society have got together a most interesting series of pictures for their annual exhibition at the New Gallery, which is open from September 22 to October 29. Among the landscapes are many excellent studies of snow, sea-spray, blown sand, &c., especially "Blown Sand and Shadows," by A. H. Blake; "Storm Swept," by Joseph Appleby; "The Reef," by F. J. Mortimer; and "De la Pluie," by A. Canfyn; whilst Dr. Vaughan Cornish sends a fine series of the wave phenomena of Niagara. Professor Bentley exhibits the lantern-slides of flowers which he showed at our Annual Meeting, and, amongst the few other photographs of botanical interest, we noticed lantern-slides of stem-sections by W. P. Young. Six superb illustrations of rock-weathering, by different artists, are sent by Dr. Abbott, and Mr. A. E. Smith exhibits several fine histological studies. Animals, however, are better represented. Mr. Douglas English has caught weasels, polecats, stoats and martens

awake, and sends also a picture of the last British mammal to be discovered, the Orkney Vole, noticed by Mr. J. G. Millais in the *Zoologist* for July: Mr. A. C. Banfield is awarded a medal for thirty-two prints showing the different action of the cat and dog in jumping: Miss E. L. Turner sends some exquisite studies of peacocks, Mr. F. Martin Duncan two painfully life-like chameleons, and Dr. G. H. Rodman a most valuable series of radiographs showing the internal structure of the shell in some forty different mollusks.

THEY CALL ME POOR!

They call me poor, though I am free
Of all the country round;
Mine is the glory of the sea,
The joys of sight and sound.

Do I wish gold? The nearest mead,
Now gemmed with King-cups fine,
Will satisfy my utmost greed
From Treasuries divine.

Do I lack music? Yonder dell
Will yield me sweetest song
From Choristers I love so well,
Who all to Heaven belong.

Or in the soughing of the wind
Where the dim pinewoods stand,
Sublimest requiems shall I find
Played by a Master hand.

Do I crave beauty? I may roam
Through forests far and near,
And see my future Heavenly Home
Foreshadowed dimly *here*.

Call me not poor who see unrolled
The pageants of the sky!
With beauty, song and endless gold,
Who's wealthy, if not I?

F. B. Doveton.

Karsfield, Torquay.

NOTES ON THE GEOLOGY OF SCENERY.

By the Editor.

I. Stratification.

SINCE 1900, when our Vice-President, Professor Henslow, aroused our interest by his papers on "How Scenery is Made," many of us have, no doubt, enjoyed the reading of our President's volume on the "Scenery of England." My present intention is in no way to challenge comparison with the work of such masters of observation and exposition, but merely to note briefly a few points which any tyro may see for himself, illustrating what I have to say by some photographs taken, and kindly placed at my disposal, by Mr. Caradoc Mills, of Llanrwst.

One of the first points that strikes the investigator of the rock-structure of the earth is that some rocks appear in masses, often of enormous thickness and extent, exhibiting little or no division into layers or difference in apparent composition; whilst others are so markedly divided into beds or "strata," often differing slightly in texture or composition, that the name "stratified" seems self-explanatory. Further examination of these two great groups of rocks show that the former, or "unstratified," type is very often of a crystalline texture, and sometimes obviously composed of a mixture of several different crystalline mineral substances; whilst the "stratified" rocks are, in general, not crystalline, each bed, or "stratum," appearing to be of a uniform granular or earthy texture. Such extended examination, moreover, will probably suggest that the crystalline unstratified rocks do not yield any fossil shells or other animal or plant remains to the most persistent hammerer; whilst if the granular stratified rock be a clay, or still more, if it be chalk or limestone, he will almost certainly light upon some, and may find the rock practically made up of them.

It may also occur to our supposed tyro that the crystalline unstratified rocks often present the steep slopes and jagged outlines of true mountain scenery, whilst in the more placid surroundings of low hills or great plains he finds that the rocks are stratified.

More extended experience may tend to qualify some of these first impressions of the rocks. In the Scottish Highlands may be seen many a mile of crystalline rock exhibiting a very distinct system of alternating layers of two or three different minerals; and in South Devon, in a confused hotch-potch of various rocks, coralline marbles bordering on masses of granite, or on series of pure sandstone almost destitute of fossils, granular, non-crystalline rocks may be found, which a careful chemical examination will show to be powdered pumice-like lava, and which will yet yield a few fossils.

In interpreting the past by the present—the cardinal principle

of the whole modern science of geology—we must, in fact, study several very different ways in which rocks are in process of formation to-day. Broadly speaking, however, these fall into two classes: the unstratified, crystalline, non-fossiliferous class of rocks has resulted from a state of fusion by slow cooling, in a fashion more or less similar to what we can see in the lava-flows of any volcano; whilst the stratified, granular, fossiliferous rocks are the result of the mere drying of a series of muds or precipitates.

STRATIFICATION.

It is difficult to realise when we visit beach after beach, and see shingle thrown up in ridges there, a wide stretch of sand here, and clayey mud not far off—that a little further out to sea there is a much greater uniformity in the character of the sediment. Conversely we are apt at first to think of our stratified rocks, such as our Oolitic limestones or our Greensands, as extending farther without variation in mineral constitution than they do. In interpreting even a small section of ordinary sedimentary rock, such as some alternating thick beds of limestone "freestone" and thin beds of "flagstone," with some sand below them, and a thick series of clay-beds below that, it is difficult to realise the element of time, to remember that slow changes in the relative level of the sea-floor and the land may practically at successive periods of time have made that particular part of the earth's

surface near shore, a little farther out, or deep water, and have varied the coarseness of the sediment thrown down accordingly. We must go to the Bay of Naples, with its volcanic mud mixed with sea-shells, or to the flanks of Etna, if we want to realise the thrusting of sheets of molten lava between previously existing rocks. As Mr. Mills' section represents such interstratification of "igneous" rock with shale in the Silurian series near Llanrwst, this little bit of Welsh geology takes us in imagination far afield.

THE DUCK-BILLED PLATYPUS.

THE platypus (otherwise duck-mole, water-mole, mole-beaver, &c.) is, without doubt, the strangest animal at present discovered. Its body is covered with beaver-like fur, its fore-feet are webbed, its tail flattened; and lastly, it possesses a bill like that of a duck, from which it takes its trivial name.

Ornithorrhynchus anatinus, for this is its technical name, is the sole representative of its family and genus. It is found only in Australia, where it is, unfortunately, receding before the rapid growth of civilised life.

A glance at the platypus will suffice to show how well it is adapted for an aquatic life. It is an excellent diver and swimmer, making little or no splash in the water. It chases water insects, which largely constitute its food, with great agility. The skin is very flexible and loose when the animal is alive, though it quickly shrinks and hardens after death: it is at the same time so strong as to resist even shot.

When on land the platypus takes after the mole, in that it is a subterranean engineer, and to this end its hind feet are directed backwards. Its tunnels are often of great length and are terminated by a roomy nest lined with dead leaves, twigs and rushes. The male has a spur on the hind foot, which has not satisfactorily been accounted for. The female also possesses it when young, but it disappears at an early age.

The young are produced from eggs, generally two in number. When first born the young duck-bills have "teeth," if they can be so called, but these have nothing in common with the ordinary mammalian teeth and soon disappear.

Thanks to the advent of the white man to our Australian Colonies, the numbers of the duck-bill are steadily decreasing, and if they continue to do so there is danger of extermination at no very distant date.

In conclusion, I may say that the extermination of such an animal would be a serious loss to science, and therefore, since it is wholly inoffensive to man, every step ought to be taken towards its protection.

W. Royat Dawson.

AQUARIUM MOLLUSCS.

FOR some time I have been experimenting with Fresh-water Molluscs with a view of discovering the most useful species for the aquarium.

It is generally believed that most kinds of the Gastropoda are suitable, more or less, but this has not been my experience. I would exclude the whole of the genus *Limnæa*, as in addition to their predacious habits, so far as the plants of the aquaria are concerned, the result of their dirty habits are apt to set up disease when least expected.

The genus *Planorbis* I place in an intermediate rank as purifiers of the water, from my point of view. They most certainly eat confervoid growths in preference to the ordinary plants, but seldom touch actual decaying vegetable matter when they can find conferva.

I have come to the conclusion that *Paludina vivipara* is by far more to be depended upon than any other Gastropod. They prefer decaying vegetable matter to any other food, which they are continually clearing away. They have also a very handsome shell, are very hardy, and not so apt to die and foul the water of the tank, as are some of the other species. Apart from their use as scavengers of the tank, they are particularly interesting in other respects to the enquiring naturalist. As their specific name implies, they bring forth their young alive, and there is sure to grow up a little colony of young *Paludina* wherever the species is introduced. They come into the world very perfectly formed in comparison with those molluscs which are hatched from ordinary spawn. They are very pretty little creatures, and look very ornamental as they crawl upon the plants and rock-work of the Aquarium.

The interesting mollusc, *Bithynia tentaculata* may also be safely introduced, as also its ally, *Valvata piscinalis*. I have found that these two species prefer to feed on the conferva which grows on the glass side of the tank, rather than on decaying matter.

A useful bivalve, and also one that is easily obtained, is *Anodon cygnea*. Acting as a living filter, a healthy specimen or two will keep the water as clear as a spring.

Dreissensia polymorpha—that mollusc which was found in such profusion in the old London water-pipes—is also useful and interesting. It is always the safest method to place any molluscs intended for the aquarium in quarantine for about a week, for as they are generally found amongst decaying matter in their natural habitat, they are very apt to introduce deleterious substances into the tank, if transferred immediately without going through the cleansing process. This remark applies to all molluscs, whether univalve or bivalve.

C. M. Hall.

REVIEWS AND EXCHANGES.

Field-Path Rambles, Series 31. *Second Part of the Eastbourne Series.* Price 1s. net. And *Field-Path Rambles. Eastbourne Series.* Price 2s. net. By Walker Miles. R. E. Taylor and Son.

Nothing can be more in the spirit of the Selborne Society than the encouragement of the rational enjoyment of the country. Eastbourne is a fashionable watering-place, crowded in the season with visitors, many of whom find a difficulty in "killing time"; and yet, with numbers of pretty and interesting villages near by approached by attractive field-paths, one meets but few ramblers away from the town itself. Mr. Walker Miles has assuredly done his part and done it admirably, as usual, to remedy this neglected opportunity, by providing the needed itinerary, illustrated by numerous fascinating views. In the second part of the Series, of which we have previously noticed the first part, there are twenty-nine of these illustrations, including that of the unique pre-Reformation Clergy-house

PRE-REFORMATION CLERGY-HOUSE, ALFRISTON.

at Alfriston, which the National Trust purchased, when in the last stage of dilapidation, for ten pounds. This view, by Messrs. R. E. Taylor and Son's courtesy, we are able to reproduce here. Even with this ramble-book, however, few are likely to do much exploration round Eastbourne—few ladies especially—until the Parish, or Rural District Councils, do something to replace the disgracefully dangerous, or difficult stiles with which the neighbourhood abounds.

The Eton College Hare Hunt. Three Prize Essays. By Philip Dickerson, Beatrice E. Kidd, and E. Crickmay. Humanitarian League. Price 6d.

Certainly our friends of the Humanitarian League have taken the importunate widow for their exemplar, or that dropping water which weareth away even a stone. If persistence must win, they might have been expected ere this to have put an end to the utterly indefensible hare-hunting which the Eton boys are

allowed to carry on. From a tactical point of view it is perhaps regrettable that one of these excellent little essays should be the work of a lady, but then it may well be doubted whether any good can be accomplished by such a publication where those concerned have shown themselves entirely unamenable to reason.

The South Eastern Naturalist, being the Transactions of the South Eastern Union of Scientific Societies for 1904. Elliot Stock. Price (to non-members) 2s. 6d. net.

This is an excellent record of a most successful Congress, that held at Maidstone last June, the Ninth Annual Meeting of the Union. It runs to over 140 pages with nine whole-page plates, including views of the fine Norman work at Malling Abbey and St. Leonard's Tower, four views of the Maidstone Museum, of which the nucleus is Chillington Manor House, built in 1562, and pictures of the neolithic implements and Keltic pottery recently found near Haslemere. Besides the Address by the President, Mr. Rudler, the papers include a history of Allington Castle by Mr. Falcke, its present occupier, and Mr. W. M. Webb's paper on "The Teaching of Nature-Study." We are pleased to see in the Report and throughout this volume abundant evidence that the Union is steadily progressing in every respect.

The Irish Naturalist for September: *Special Sligo Conference Number*. Price 6d.

There are four naturalists' field clubs united in the Irish Field Club Union, those of Dublin, Belfast, Limerick and Cork, and they have a total membership of 850 only; and yet they maintain an excellent monthly magazine which, on this occasion of their fourth triennial conference, has blossomed out into 50 pages and 17 plates! Their meeting last July occupied a week, and, with only one evening's formal conference, was devoted to serious collecting; so that we have here, as the work of experts, a far more complete conspectus of the natural history and archæology of the district than those prepared in advance for the meetings of the British Association. We notice that 62 members attended, and 18 contributed to the reports on the various subdivisions of the animal and vegetable kingdoms. A new species of water-mite *Eylais bicornuta*, Halbert, was discovered, and is figured in this number, whilst the Union was fortunate in having the camera of Mr. Welch of Belfast, to record other natural phenomena. We notice also that on one evening "the scientific proceedings in the Town Hall were suspended early in favour of dancing."

Hull Museum Publications, No. 20, *Quarterly Record of Additions*, No. ix. By Thomas Sheppard, F.G.S., Curator. Price 1d.

The cost of producing this remarkable little museum-guide is, no doubt, much reduced by reprinting it from a local paper, though the typography, in consequence, leaves something to be desired. The "Museum Notes and News," which occupy ten pages, appear to us to be unnecessarily disjointed and spaced, though their subject-matter is good in itself; but then the pamphlet as a whole contains 38 pages and 8 illustrations, and this for a penny. Hull is not London, and Mr. Sheppard has not the resources, say, of a Horniman Museum at his disposal, but working almost single-handed, he has certainly done much.

Revue des Animaux, No. 8, August, Paris. Price 50 centimes.

We are glad to see this monthly organ of the Ligne pour la Defense des Animaux, which has its headquarters at 7, Rue de Lahorde. The league numbers among its supporters many of the greatest names in the literary world of France. The review is illustrated and seems much on the lines of our own *Animal World*.

Haslemere Microscope and Natural History Society. Report for 1903-1904.

Besides the ordinary contents of a satisfactory Report, we have in this record of a Society which is affiliated to the Selborne Society, a fairly full enumeration of the late Keltic pottery found at Haslemere last year. It is interesting to note that some of this is similar to that from the Early Iron Age Lake-dwellings at Glastonbury, probably dating, therefore, from about 200 B.C.

The University of Colorado Studies, Vol. II., No. 2. Price 50 cents.

As miscellaneous as before, ranging from "State Constitutions" to "Palæontology," and from Birds to Dihydroquinoxalines, this is undoubtedly a valuable collection of researches by the professorial staff of the university, and we are glad to see the local natural history, viz., the palæontology, birds and fishes of Boulder County, occupying a prominent place in it.

Received: *Nature Study* (Manchester, New Hampshire) for June and July; *The American Botanist* for July; *Bird-Lore* for July—August; *The Victorian Naturalist* and *The Plant World* for August; *Our Animal Friends* for August and September; and *The Naturalist*, *Nature Study* (Lockwood), *The Animals' Friend*, *The Animal World*, *The Agricultural Economist*, *The Estate Magazine*, and *The Commonwealth*, for September.

NATURAL HISTORY NOTES.

168. Hedgehogs.—A few days ago, while walking through the woods here, we noticed a hedgehog in the middle of a patch of sedge. His black beady eyes glancing up at us first attracted our attention. As we approached him, instead of rolling into a ball as we expected, he only buried his nose deeper among the sedge roots, and not until we pushed him aside to see what he was doing did he begin (and then very leisurely and reluctantly) to curl himself, at the same time displaying a length of red tongue as he licked his lips in evident satisfaction. We discovered that we had caught him in the act of demolishing a nest of the "foggy" bee—a light brown and gold variety, somewhat smaller than the ordinary bumble bee—"foggy trotters" the children here call them. The comb consisted of a mass of round cells, about the size of sloes and of the colour of potatoes, all adhering together without any apparent order, the entire mass being about 2 in. deep and perhaps 7 in. in diameter. Most of the cells contained larvæ and pupæ in all stages of development, and others were filled with thick viscous honey of a dark brown colour. Three full-grown "foggies" wandered, seemingly aimlessly, among the ruins. We took possession of two small detached clusters of cells, which, wrapped in damp moss, lie before us as we write. One cluster appears very healthy, the other, in which the bees are almost matured, does not look so promising. We are hoping that some of the cell contents may develop under our observation.

During our inspection of the nest our attention was diverted from the hedgehog, who boldly uncurled himself and somewhat startled us by touching our hand with his snout, so determined was he to continue his feast. It was no easy matter for two of us to roll the robber on to a handkerchief, for his spines were particularly sharp and held to everything they touched. We laid him on the grass, his nose and tail meeting uppermost, and returning to the nest covered it very carefully with sedge plants, and above these placed two large flat pieces of sandstone from the burn-side. Afterwards we sat down at a little distance and watched the motionless, thorny ball. A few minutes passed and then the hedgehog's sides began to palpitate as he opened a little and sniffed the air around. Gradually he uncurled, turned over on his feet and stealthily crept back to the same sedge patch. Immediately we approached him he curled himself up again, so once more rolling him on to a handkerchief we gave him a hammock ride for a long way through the woods, depositing him at last by the side of the stream. Two days later, on visiting the nest, we found that, in spite of our care and precaution, a hole had been tunnelled under the sedge patch and every vestige of the bee's nest had disappeared.

The farmers in this district all affirm that the hedgehog destroys the eggs of the pheasant, partridge and other birds. We ourselves have seen a pheasant's nest with the eggs smashed and sucked dry. The work was laid at the door of the hedgehog as a matter of course, but as the hedgehog was not caught in the act further proof seems necessary.

Temple, Midlothian. S. D. W.

169. Squirrels and Fire.—A forest fire has been raging for some days in some extensive woods near here, and I was interested in noting the effects thereof on one at least of its denizens—the squirrel.

When the fire had been practically got under I made a special pilgrimage to find some squirrels, which infest these woods. Hitherto I have found them without any difficulty whatever, it being nothing out of the common to see ten or a dozen in an hour. On this occasion, however (except for one solitary specimen in a tall beech-tree at least a mile from the smouldering embers), I saw no signs of a single

one. This was, perhaps, not surprising in the close proximity to the scene of the fire, but my search was no more successful further afield. For three hours I scanned the trees within a radius of a mile, or a mile and a half away, but entirely without success, even in a part of the wood separated from the fire by a large inland lake.

Unless my eyes—and those of my companions—have lost their cunning, I can only suppose that a general exodus was made by the squirrels in the district to a safer retreat. If so, they must have some alarm-cry, which can be communicated to those of their fellows who are not near enough to the scene of danger to personally grasp the situation.

Animals are, of course, notoriously afraid of fire, and it may be due to the perpetual liability of being overtaken by prairie or forest fires that instinct has been developed so strongly in them in the direction of avoiding any and every risk therefrom.

North Walsham, August 12, 1904. A. C. MACKIE.

170. Rabbit Taking to Water.—It is, I believe, an unusual thing for rabbits to go into water. One day in July I saw two animals swimming in the clear brown water of the river Wharfe. As I watched, one turned back to the shore from which both had started, the other deliberately swam across the current to a rock, jumped quietly on to it, shook his ears, and hopped away up the wooded bank opposite. I cannot actually say that the animal which turned back was a weasel, which would explain the rabbit's taking to the water in his terror to escape his pursuer; but the leisurely manner of the rabbit, his utter unconcern, led me to believe that the second animal in the water was another rabbit. The river was low, owing to absence of recent rains, so that at almost any point it could be crossed by dry rocks and gravel reaches, but the rabbit under discussion chose to swim a pool, instead of making use of Nature's stepping-stones.

ETHEL G. WOODD.

171. Hens as Mousers.—Barn-door fowls are fond of flesh, and will devour any animal small enough for them to swallow. I have frequently seen a number of fowls busily engaged in swallowing mice when a rick was being threshed, and preferring a meal off them to the corn which lay in all directions. On such occasions a bird may be seen running away with a mouse in its beak and pursued by others in their endeavours to dispossess it of the coveted morsel. I once knew of a cat that used to catch, but not to eat, shrews, and laid them on her mistress's doorstep, where they were always eaten by the fowls. Shrews, however, are not mice, in spite of being commonly called so.

September, 1904. EDMUND THOS. DAUBENY.

172. Humming in the Air.—In the discussion on this matter in your pages some persons have thought that bees are the cause; while others, including myself, have held that they are not. On August 28 there was this humming round my house; the same went on during a walk of a mile in the woods, and on returning home at 7 p.m. it was as loud as ever. On looking at my hives I found the bees had all gone to bed. The sound ceased a few minutes later.

Southacre, Swaffham. EDMUND THOS. DAUBENY.
August, 1904.

173. Dyticus, or Dytiscus.—My thanks are due to our editor for his admirable note on this question. The explanation shows that Linné probably coined the word in giving a generic name to a favourite kind of insects, and that *Dytiscus* is not a mere printer's error for the classical word *Dyticus*.

September, 1904. EDMUND THOS. DAUBENY.

174.—I think if our worthy editor will refer to my manuscript he will find that I wrote *Dytiscus* and not *Dyticus*. At any rate, that was certainly my intention. There cannot be any doubt as to which of these words is correct. It is not a question of their derivation at all. It depends entirely upon which word was used first. Linné first wrote *Dytiscus* in 1735, and *he never altered it*. The word *Dyticus* first appeared in Geoffroy's "Histoire Abrégée des Insectes," which was published anonymously twenty-seven years later. Obviously, therefore, in accordance with the law of priority, the spelling must be *Dytiscus*. I would like to add bluntly, but in all sincerity and deference, that this question of

names appears to me a mere quibble at the most. It is certainly not the first nor the twentieth time that it has been raised. But is it not a sheer waste of valuable time? What we *do* want to know is the ecology and the life-story of this creature and of many others equally as common.

128, *Mansfield Road, N.W.* J. W. WILLIAMS, M.R.C.S., F.L.S.

[No doubt Dr. Williams meant to write *Dytiscus*; but on referring to his manuscript we find *Dysticus*, a *lapsus calami*. Questions of nomenclature are admittedly of less importance than the facts of natural history, but they are neither quibbles nor waste of time. Accuracy is a primary element in all science; accurate nomenclature is often essential for identification. No doubt the "rose by any other name would smell as sweet," but that is no reason for calling a Gloire de Dijon a Maréchal Niel. At the moment, moreover, lexicons and grammars were nearer to my hand than water-beetles.—ED. *N.N.*]

175. **Glow-worm.**—With regard to the "glow-worm" mentioned in the "Natural History Queries" in this month's NATURE NOTES, the following may be of interest:—

I remember catching a little beetle, which, when in difficulties, showed a greenish light. I discovered this fact one night. I am speaking of nearly thirty years ago, when a small beetle flew into my room. I caught it and threw it into the water in a basin, when it at once displayed a wee greenish light. I kept the little creature in a tumbler with some grass for two or three days and saw its light on several occasions. I caught similar beetles in my room more than once that same year, and made them show their light by putting them into the water. They used to fly in through my bedroom window. I always imagined they were the male glow-worm. I have not seen these little beetles for many years, and fear it is now too late in the year to try and find them. It was in this county (Derbyshire) that I noticed them, and we used to see a few glow-worms about in the garden in those days.

The Gables, Wirksworth. C. E. MEADE WALDO.

176. **Ants.**—The incidents related by Mr. E. R. Colbron (162) may often be witnessed in places frequented by the wood ant (*Formica rufa*). This ant is of large size and may possibly have been the species noticed by Mr. Colbron. It abounds in a coppice some distance from my residence here, and I have often been amused at its industry and perseverance. Its nest is a heaped-up structure of fir-spines, scraps of bark, sticks, leaves, pieces of fern-fronds, &c. The numerous inhabitants are in almost ceaseless motion, travelling to a great height up the neighbouring trees, searching the bushes and undergrowth, and making excursions generally over the entire neighbourhood. It is amusing to see them returning to the nest laden with all kinds of animal substances—living leaf-roller caterpillars, beetles, bees, grubs, flies, aphides, and frequently dead, or parts of dead, comrades. Worms are often attacked, and dead moles and toads skeletonised. I was greatly amused on one occasion to see one of these ants pulling a woodlouse about, which was rolled up in the usual hedgehog fashion. The ant after a time left it, and the crustacean began to unroll, when another ant rushed viciously at it, and on the woodlouse curling up again the ant was caught between the shelly rings. A tussle then ensued, the ant extricating itself easily enough, and, by way of revenge, pulling, pushing, and bundling the woodlouse about in all directions. The strength of the ant was surprising.

Fyfield, near Abingdon. W. H. WARNER.

177. **Ants and Caterpillars.**—Reading "Ants' Undertakings" in the September issue of NATURE NOTES, I was reminded of a little ant-and-caterpillar incident I witnessed in this district last June. Pendant, with many others, from an oak-tree was a green caterpillar swaying in the breeze at the end of its self-spun, silken descending rope. My eye caught sight of something adhering to it. Curiosity prompted me to see what it was; and, on letting the caterpillar swing against my hand, was much surprised to find the object was a red ant (*Formica rufa*). The ant did not relax its tenacious grip, though the two were kept in my hand several minutes. On getting out my pocket lens to see how the ant had fastened on to its prey, the two wriggled off, and I did not trouble to take them up again, nor to release the caterpillar, as most likely irreparable injury had been

done to it, and had it been released the probabilities are that some other of these diligent "harvesters" would have secured it. How the two had launched together on their downward journey was the next puzzle. Had the ant arrived on the scene up in the tree at the moment this full-fed caterpillar had completed the anchoring arrangements of its descending thread and made ready to cast itself off? Had the ant, in its eagerness, seized its prey at that moment so that both were launched away together? They must have come away together: one can scarcely conceive of the ant climbing down the thread and reaching the caterpillar that way. Then comes the question, how is it the slender, silken cable did not snap with the weight of both, and further, how was the poor caterpillar able to continue to manufacture its cable while in the clutches of so fell an enemy? They had descended 11 ft. or 12 ft., and were still 4 ft. or 5 ft. from the ground. I am sorry I did not watch awhile to see if more thread was given out before getting them in my hand.

This may be an ordinary incident in ant and caterpillar life, but I have not seen one of this kind before. There are countless numbers of ants in these woods, *Formica rufa* especially. I have seen them scores of times tugging, singly and in pairs, with caterpillars, dead flies and spiders, fir needles, &c., but not noticed them descending from trees in the way above stated. On the same occasion scores of ants were climbing the oak-trees to fetch the caterpillars down by the same route they went up, and carrying them home. In fact, this particular day appeared to be their particular "harvest."

Halifax, Yorks. C. CROSSLAND.

178. Insects at High Altitudes.—While on a visit to the south of Tasmania in the early part of the present winter, a friend and myself agreed to try and gain the summit of Mount Wellington, to view its aspect under a mantle of snow. We left Hobart just at dawn, while the frost lay white on the ground, and proceeded by way of a wooded gully and past a waterfall called "The Gentle Annie," from the rush and roar of its waters. Above this we gained a track which led to the "Fern-tree Bower," whence we made our way along the mountain-side to the Springs, at which point climbing began in earnest. We soon got off the track and into deep snow, where climbing became laborious work, and it was only after great exertion that we arrived at the summit of the ridge, and wended our way to the rocks at the pinnacle. This point is 4,166 feet above sea-level, and is surrounded by a great rock-strewn plateau, at this time covered thickly with virgin snow. A cold wind blew across the plateau, which resembled a corner snatched from the Antarctic. Yet, in spite of this, we were surprised to notice quite a number of black insects crawling over the snowy surface, and apparently enjoying this form of exercise. We captured a couple, and found them to be about a quarter of an inch in length, with long, slender antennæ and well-developed hind legs, like those of a young grasshopper.

We afterwards took them to the Government Entomologist, who identified them as immature crickets of the species known as *Acripeza reticulata*, the adult form of which is well known in the colony, and attains a large size.

West Devonport, Tasmania, H. STUART DOVE,
July 13, 1904. F.Z.S.

179. Convolvulus Hawk-moth.—A perfect specimen of the Convolvulus Hawk-moth (*Sphinx convolvuli*) has just been brought to me for identification. The lady who brought it found it in Heath Street, Hampstead, settled on the leaves of a flowering tobacco plant. It had no doubt been attracted by the sweet perfume of those flowers, which they give out especially towards evening.

The measurement from the points of the wings is five inches full, and nearly as large as the Death's-head Moth, which, like the Convolvulus Hawk-moth, is rare, but sometimes found in this neighbourhood.

41, *Heath Street, Hampstead, N.W.* JAMES E. WHITING.
August 15, 1904.

180. Fruit and Blossom.—Apple blossom at this time of the year, when the fruit in the orchards has arrived at a ripening age, is indeed out of season. While staying at a small village near Swindon, I was surprised to find an apple tree in my relative's orchard bearing fruit and some blossom as well.

Carlyle Lodge, CHAS. E. J. HANNETT.
Canonbury Place, N., September 9.

181. Catalpa.—There is in the garden of Gray's Inn a fine specimen of the North American *Catalpa bignonioides*. In Timbs' "Curiosities of London" this tree is stated to have been "raised from one planted by Lord Bacon." Francis Bacon certainly directed the laying out of the garden in 1598—1600, planting elms and quickset hedges, and nowadays one hesitates before saying that there is anything he did not do, from writing Shakspere's plays downwards; but it is not probable that he planted a *Catalpa*. This tree was found by Mark Catesby on the banks of the Ohio and Mississippi, and brought to Carolina about 1725, and to England in 1726. Its name is probably a corruption of Catawba, that of an Indian tribe, whilst its local French name is "Bois Shavanon" from the Shavanon (now the Cumberland) River. It is a quick-growing tree, reaching 20 feet in ten years growth in the London district, and Loudon in 1838 records specimens 40 feet high at forty years of age at Kenwood, and 50 feet and upwards at Syon House and Eastwell Park. G. S. BOULGER.

NATURAL HISTORY QUERIES.

32. Name of Bird.—A finch the size of a goldfinch, with head, neck, breast, glossy black; a little black on belly and between the legs, rest of body and tail bright chestnut. Long claw on hind toe. Legs black. This was shot out of a flock of sparrows in January, four years ago, in the depths of the country away from human dwellings, a curious time and place for a bird escaped from a cage, as may be the case. Will some one kindly say what this bird is and what country it is a native of, and whether it is possible it may have found its own way here from its usual home?

August, 1904. EDMUND THOS. DAUBENY.

33. Sundew.—In all specimens (and they are not a few) of the round-leaved sundew (*Drosera rotundifolia*) I have ever seen I have never seen the flower *fully* open. I do not say they are not found open, but it would be interesting to know at what time it is most likely to find open flowers of that plant. J. E. WHITING.

[I do not remember any other case of an entirely cleistogamous plant. As a rule, cleistogene flowers are produced later in the year than chasmogamous ones. The only occasion on which I have found what I believe to have been open flowers on *Drosera* was early in August, 1885, on Dartmoor, during a bright interval on a showery morning.—ED. *N.N.*]

SELBORNE SOCIETY NOTICES.

Council Meetings.—The next meeting of the Council will be held on Tuesday, October 25, at 5.30 p.m. The Publications Committee will meet on Monday, October 10, at 5.30 p.m.

New Member.—Cuthbert T. Raikes, Esq., Victoria Street, S.W.

The Council begs to acknowledge with thanks the following subscription over 5s.: Col. Saml. B. Bevington, J.P., V.D., 21s.

NEWS FROM THE BRANCHES AND AFFILIATED SOCIETIES.

Hampstead (Northern Heights).—Lantern lectures are announced for the coming winter session by Professor Boulger on Forest Trees (October 20), Mr. E. W. Maunder on Sun and Sunspots, Mr. Oliver G. Pike on Birds, Mr. R. Garraway Rice on some antiquarian and Mr. W. Whitaker on some geological subject, and Mrs. L. Douglas Wilson on Pompeii. There will, in addition, be visits to City Halls and other buildings of antiquarian interest.

North Middlesex Junior.—On Friday, August 19, Master Garnett Thompson gave a paper on "British White Butterflies." Mr. C. M. Hall, who was in the chair, said it gave him more than usual pleasure in presiding, as it was the first occasion since its opening on which an Associate of this Branch had the honour of reading a paper.

For the purpose of illustrating his paper, Master Thompson had a small case containing specimens of the butterflies dealt with, viz., Large Garden White,

Small Garden White, Black-veined or Hawthorn, Green-veined, Clouded Yellow, Pale Clouded Yellow, Wood White, Bath White, Sulphur, and Marbled White. He described the variation of wing-markings in the sexes, and gave details of the larval and chrysalis stages of each species.

On the day following most of the members paid a visit to the Gardens of the Zoological Society, Regent's Park.

On Friday, September 2, the members met at Brunswick Hall, New Southgate, when extracts from some of the best-known works of the late Rev. J. G. Wood were read and discussed. The favourite books appeared to be "Common Objects of the Country" and "Our Garden Friends and Foes," judging from the number of readings chosen from those works. This meeting was so interesting that it was arranged that similar studies should be taken on Friday, September 16.

Haslemere Microscope and Natural History Society announces a Talk about Birds, by Miss Pitcairn, on October 10; a lecture on Invisible Light and Wireless Telegraphy, by Mr. W. Lynd, on October 25; a members' evening on November 8; and lectures on Liquid Air, by Mr. T. C. Hepworth, on November 22; on Wind, Rain and Storm, by Mr. T. P. Newman, on December 6, and by Mr. A. F. Ferguson, on Fairy Tales, on December 10.

FIELD CLUB RAMBLES.

On *August* 20 we paid our annual visit to Newlands Corner, near Guildford. A party of nineteen assembled at Clandon Station, and the walk over the downs was greatly enjoyed. The route has been so fully described in the various accounts of previous rambles that any further details are unnecessary. The return walk was *viâ* the old world village of Merrow, and Clandon Park, the seat of the Earl of Onslow.

August 27. — Twenty-two Selbornians met Mr. W. Percival Westell, F.R.H.S., M.B.O.U., at Bricket Wood, a district hitherto unexplored. It was a most beautiful day, but with just that first flush of autumn in the air which made rambling delightful. Forsaking the usual habitat at Bricket Wood of holiday-makers, with its attendant miniature railway, cocoa-nut shies, itinerant vendors of ice-cream and other paraphernalia, the party, under Mr. Westell's guidance, made their way through lanes and meadows to the banks of the rivers Ver and Colne, indeed struck the rivers just where the latter joins the former, and thereafter becomes the Colne. The absolute quietude of this pretty sylvan scene was much appreciated. On the way towards the time-worn wooden bridge several trout were espied, and a short stay on the bridge revealed minnows (not sticklebacks), dace, roach, and other fish. Hereabouts the water-vole (so often erroneously referred to as the water-rat) is exceedingly abundant, although none of the clean herbivorous little animals were observed on this occasion. Across the verdant meadows skirting the stream it was delightful walking, and then, striking little-used Hertfordshire lanes, the party reached the village of Aldenham, the hedgerows on the way being festooned with the fast-seeding Traveller's Joy, and in the ditches the bright patches of colour thrown off by the red fruit of the Cuckoo Pint did not escape attention.

Ample justice having been done to tea at the "Chequers," Aldenham, the churchyard and church were visited. The tomb from out of which four sycamore trees are growing (some two hundred years old) was shown to the party by the obliging clerk, and the sacred edifice within had many interesting features, old chests, brasses, a rood screen, tombs, &c., and the party were bid God-speed by a special peal of bells from the church tower. Across Aldenham Park, past Aldenham Abbey, pleasingly wreathed with creepers, the Selbornians re-crossed the Ver and entered Munden Park, the beautifully situated seat of the Hon. A. H. Holland-Hibbert. Here the gardens and grounds were visited under the able guidance of Mr. Cox, the gardener. The cedar walk, flower-beds of Cherry Pie, pink Ivy Geraniums, Begonias, Nasturtiums, &c., were a feast of colour, and a hurried visit was paid to the greenhouses, kitchen garden, &c. The house was next entered and the collection of birds and fish in the spacious hall attracted much attention. The panelling in the billiard-room made from oak from the piles of the old bridge at Newcastle, and the mantelpiece carved out of a tree found in the Severn Tunnel, were especially admired, as also the fine pictures in the dining-room, of Charles I., the Creation, and other subjects. The many treasures of this pleasant Hertfordshire mansion were lovingly examined, and on

all sides most hearty and sincere thanks were expressed to the owner for his extreme courtesy and kindness. A moonlight walk across the Park, on through Bricket Wood Scrubs, brought the party to Bricket Wood Station in nice time for the 9.14 train back to the metropolis.

September 3.—Only a small party, after the morning's heavy rain, assembled at Woldingham for the walk. The path taken was the old right-of-way overlooking Marden Park, where crab-apples and blackberries were discovered in the hedge-side. It was noticed that many birds had been drowned in their attempts to get water from the tanks set about in the meadows for the use of the cattle. A suggestion was made, which is worth record, that to prevent this waste of bird-life blocks of wood might be floated in the water wherever similar tanks are in use; these would serve as platforms for the birds to alight on and drink from. Leaving the meadows, the way led through the end of a wood, and at this corner, just inside the park itself, a noble group of lofty beech-trees were much admired, and while passing through the park frequent halts were made to enjoy well-wooded hills and valley. Through the woods, across the road, and then down a steep wild patch of uncultivated meadowland, the party found their way into Hogtrough Lane. Some of the fields were yellow with *Inula dysenterica*, and numerous specimens of *Erigeron acris*, two species of gentian and *Campanula glomerata* were obtained. A white musk-mallow was noticed, as well as some marjoram, the flower of which was fasciated. Through a hop-garden, and by the old Oxted Church, the walk ended at New Oxted, just as dusk closed in.

September 10.—In delightful weather sixteen members met at Box Hill Station and rambled over the fields and through woods to the breezy uplands of Ranmore Common. Here the ground was covered with heather and petty whin, while the hedges were clothed with the beautiful heart-shaped leaves and plentiful green berries of black bryony. Both the wayfaring-tree and guelder-rose were found in ruddy fruit. The fine marble work in Ranmore Church was duly admired, and the party feasted their eyes on the lovely views of Box Hill and the Mickleham Valley, and of the Holmesdale Valley, in which lie Dorking and the little village of Westcott. After tea at the Post Office the party split up, some returning to Box Hill, while others made their way through the drives of Denbies Park to Dorking Station.

September 17.—On leaving Oxshott Station the party of Selbornians, numbering nearly thirty, proceeded along the heathy foot of the scarped outcrop of the Bagshot Sands, through a grove of Scots firs of all ages, with numerous self-sown seedlings, where the brilliant scarlet of the Fly Agaric was conspicuous among the ling and cross-leaved heath, and the blue purple of *Scabiosa succisa* indicated the moist ground on the London Clay. Crossing the line, a field-path was ascended to a height which afforded fine views from Pains Hill to Ashstead and the Mole gorge at Mickleham. A large flock of plover was sighted in the distance, and *Campanula Rapunculus* was found by the side of the path. Descending into the Mole Valley and entering the grounds of the Manor, the party reached Stoke d'Abernon Church after a walk of not more than two miles. Some herring-bone work in flat bricks among the flint work suggest a date prior to the thirteenth century for parts of this little church; but the chancel is said to have been built by Sir John d'Abernon, who died in 1277, and the Norbury chantry to the north of it is fifteenth-century work. The west end is a recent addition and much has been done to alter the character of the building. Harvest-festival decorations were not very conducive to an archæological examination. Attention was called by Professor Boulger, the conductor, to the glauconitic Reigate stone of the original doorway and its holy water stoup, and to the remains of a sun-dial above it. In the interior the rood-stair, the piscina, the traces of fresco on either side of the modern east window, the iron hour-glass stand, the fine Jacobean pulpit, and the recently erected glass mosaics, attracted attention; but the chief interest of the church lies in its monuments. Before the altar are the two fine brasses to Sir John d'Abernon, senior and junior, the former of which is the oldest monumental brass of ascertainable date in England. Close by on the wall is a brass to a chrisom child of the Bray family, and others belonging to the Norburys of the fifteenth century; whilst one a century later showed the decadence of the art of engraving brass. The conductor explained that though brass—an alloy of about

70 per cent. of copper to 30 per cent. of zinc—was used by the Romans for coin, Sir John d'Abernon's brass was the oldest known piece of brass-work in England, though there are some monumental brasses earlier than 1277 in Germany. These brasses are cut from and engraved in sheet brass or latten, which was imported from Flanders. Though an Act of Henry VIII.'s prohibiting its exportation implies that brass was then made in England, the earliest sheet-brass factory was established at Ewell—only five or six miles from Stoke—by a German in 1649. Of some 4,000 brasses in English churches, the majority are in the eastern and south-eastern counties, the latter being once a great metal-working centre owing to the iron mines of the Weald. The boldest engraving is English work done with a lozenge-shaped burin, the later Flemish work being much shallower in its cutting and done in rectangular plates with a chisel-shaped tool. Some reference was also made to the infilling of the shields on brasses with enamels, as at Carshalton, and to the occasional gilding or silver-plating of the brass. The fine early Jacobean monuments of the Vincents commanded some attention, as did also the heraldic glass in the chantry screen, and the thirteenth-century oak chest was also much admired. A short stroll brought the party to the Plough Inn, where tea was prepared, and darkness was approaching when Cobham Station, five minutes distant, was reached.

FORTHCOMING RAMBLE.

Arrangements have been made for Selbornians to join the Essex Field Club in their annual Fungus Foray; as, however, the date is not yet fixed, members wishing to take part must send a stamped addressed envelope, *at once*, to Mrs. Percy Myles, 7, Lincoln Street, S.W. Tea and expenses, 2s. 6d. each.

ANSWERS TO CORRESPONDENTS.

J. M. Roper.—*Dicranum spurium*, an uncommon species, kindly identified by Mr. Gepp, of the Natural History Museum.

Ignoramus.—Johns' "Flowers of the Field," edited by G. S. Boulger (S.P.C.K., published at 7s. 6d.), or "Our Country's Flowers," by W. J. Gordon (Day and Son, published at 6s.), would probably suit you.

A. S. Adams.—Though in the July number, the "announcement" to which you refer occurs in the report of the Annual Meeting on May 27, so that the paper mentioned was that in the June number.

A. H. Duvall.—"Cuckoo-spit," as it is called, is produced by *Philænus spumarius*, otherwise *Aphrophora spumaria*, one of the *Cercopidæ*, a family of Homoptera. A short popular account of the insect appears in "Insect Lives," by Edward Simpson (Religious Tract Society).

Mrs. Needham.—*Allium paniculatum*.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Secretary to the Society, Mr. R. MARSHMAN WATTSON, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 179. NOVEMBER, 1904. Vol. XV.

OBJECTS OF THE SOCIETY.

To promote the study of Natural History. To preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of: (1) The skins and furs of such animals as are in danger of being exterminated; (2) birds and their plumage, except when the birds are killed for food, reared for their plumage, or are known to be injurious. To protect places and objects of natural beauty or antiquarian interest from ill-treatment or destruction. To afford facilities for combined effort in promoting any of the above or kindred objects.

SELBORNIANA.

Feathers Not to be Worn.—Some dissatisfaction has been felt at the wording of the objects of the Society, as recently re-cast and as set forth above. The Council has, therefore, summoned a Special General Meeting for the 22nd inst., detailed notice of which is given at the end of the Magazine, to discuss a proposed amendment of the Rules, which will virtually restore the "Objects" of the Society to their previous form, although the wording is somewhat simplified. By the proposed alteration it will be made clear that it is the wish of the Society to protect all wild birds from being destroyed for the sake of their plumage.

Henley Street, Stratford-on-Avon.—Our intervention in this matter, in favour of delay for reconsideration, has been fully justified. At a meeting of the Shakespeare Birthplace Trust on October 12 it was decided not to pull down the cottages adjoining the birthplace. The Carnegie Free Library, which has been recently completed, is very unlike the buildings which we generally associate with the name Free Library in our larger towns, being a half-timbered cottage-like erection, far more in keeping with its surroundings than other buildings put up in Henley Street in modern times.

Purley Beeches.—A General Committee has been formed to secure the purchase of the 13½ acres of picturesque woodland, of which we gave an illustration in our February number. It is hoped that they may raise some substantial part of the £5,400 purchase money, leaving the balance to be provided by the rates. Our President has consented to serve on the Committee.

Degrading Spectacle at Sheffield.—We have received a copy of a Sheffield newspaper for September 21, describing "a scene of slaughter and butchery" organised to secure a superannuation fund for the Sheffield Branch of the Journeymen Butchers' Federation of Great Britain. We are glad to read that the exhibition was the first of its kind ever held in Sheffield, and hope it may be the last. It consisted in the public slaughter and dressing of bullocks and sheep, which were pushed and dragged on to a platform, "executed" with Greener's humane cattle-killer, skinned and disembowelled, in presence of a crowd of some two thousand people. Harmless athletic sports followed. Though we are informed that "it was not such a gory business as the uninitiated might have expected," we cannot but think such a spectacle degrading and brutalising to all present. Elsewhere such exhibitions have generally been prohibited by the authorities.

Wild Plant Protection.—The South-Eastern Union of Scientific Societies, at the request of Prof. Boulger, have issued the following circular :—

"The Council are desirous of eliciting information as to the danger of extermination of wild flowering plants and ferns, and as to any means—other than educational—of checking the same. Will you, therefore, kindly bring the matter before your Society at an early date, and inform the Council whether, in the opinion of your Society (1) any particular species or groups are, in your district, in present danger of extermination; and (2) if so, from what cause; and (3) whether your Society is of opinion that any legislative or other action can and should be taken to check such extermination."

Answers may be addressed to G. C. Druce, 118, High Street, Oxford; G. S. Boulger, 11, Onslow Road, Richmond, Surrey; or Rev. R. Ashington Bullen, Pyrford Vicarage, Woking.

Branches of the Selborne Society and Societies affiliated to it may be willing to co-operate in this collection of information, in which case their help will be most welcome to the Editor of Nature Notes.

Whitgift Hospital, Croydon.—We have received the following letter from Mr. E. A. Martin: "The attack on this foundation has for the present been postponed, but it must not be considered as abandoned. In July it was decided to postpone the matter for six months, the effect of this being that the removal of the Hospital cannot be included in a Corporation Bill for consideration next Session. At the earliest, supposing we fail in the meantime to convert the Corporation to our way

of thinking, the matter cannot come before Parliament before the Session of 1906.

"The Croydon Antiquities' Protection Committee (inaugurated by the Selborne Society a few years ago) has laid before the Corporation seven alternative schemes, by which widening of the existing thoroughfare could be brought about without interfering with the Hospital; and there is little doubt that if these schemes can be shown to be less costly than, or even only as costly as, that which now holds the field, involving as it does the removal of the Hospital, a number of the members of the Corporation would be willing that the buildings should not be interfered with. This the Committee will have no difficulty in showing. Some of us doubt whether, in the present condition of Croydon's rates, the spending of many thousands of pounds on the improvement of the centre of the town is at all justified, and no doubt there will be opposition on this ground alone, when the 'Omnibus' Bill comes to be introduced into the House of Commons. The question of the widening of North End, Croydon, has only become acute during recent years, and this chiefly in consequence of the 'through' traffic, which is of no use whatever to Croydon as a town, and which has increased with the growth of the use of bicycles and motor-cars. It is needless to say that if the widening project were abandoned the Hospital would not be threatened. The Committee, as a Committee, does not oppose widening, but it desires that it should be intelligently carried out. If the matter be included in a Corporation Bill for the Session of 1906, it will be possible to oppose it at every stage in Committee, even supposing the Bill proceeds so far; but it will have first to survive a meeting of Croydon burgesses, and a poll of the town. Lord Midleton warned the Corporation in the spring that he could not encourage them to think that the Bill would pass through Parliament without the strongest opposition, and it is quite safe to promise that the movement for the removal of the Hospital will meet with the strongest opposition at every stage in the proceedings."

The Conservation of Tintern.—"The eastern end of the beautiful Abbey of Tintern is at the present time bristling with scaffold poles. The ruin, which was until recently the property of the Duke of Beaufort, was, with a great deal of the surrounding country, purchased a year or so ago by the Crown. The ruin, which for a period of over 600 years had withstood the rigour of the elements, was in many places in a crumbling state. Stones often fell from the ivy-mantled walls and parapets, and the mullions of many of the windows, most of which are of the Decorated period of architecture, had suffered sadly from the ravages of time. It was evident that something would have to be done if the ruin was to be preserved, and the Crown authorities decided to take immediate action with a view to prevent further decay.

"Thus it comes about that at the present time the scaffolding well-nigh hides the famous east window, which is generally

regarded as one of the great beauties of the abbey. It is a window some fifty feet in height, and finely moulded on Gothic lines. Nearly all the tracery has at one period or other fallen from the upper part, little but the arch-springs betokening what once its architectural beauties were, but there still remains the slender central mullion, which rises almost the full height of the window, and forks gracefully near the top. How it is that this shaft, so slender in its proportions and of apparently so frail a character, should have stood so long, appears strange indeed, but it certainly is a monument to the excellence of those thirteenth-century builders who completed the work to which Walter de Clare had set his hand a century and a half earlier. But the ecclesiastics of that day, who were themselves skilful with the mallet and chisel of the mason, worked not for 'copper alms' but for the glory of God, and their work was fashioned to endure.

"At length, however, it has become evident that this graceful shaft cannot remain much longer in its tottering state, and steps are being taken to preserve it.

"The preservation work on the east window is but part of a general overhauling of the grand old pile, which is being carried out after consultation with Mr. Waller, the well-known Gloucester architect. As is shown by our illustrations, scaffolding at the eastern end has been erected both within and without, and this has been joined so that the central shaft is surrounded by a series of platforms, tier above tier, until the apex of the arch is reached. A careful examination of the central shaft has shown that the stone has been so much affected by the weather that if it is taken down it is doubtful if it can be put up again. What shall be done is still under consideration, one project being to strengthen it by the addition of narrow steel bands placed close to the stone work.

"The other work of preservation takes the form of pointing the ashlar in many places and filling in the gaps between the masonry on the exposed summits of the walls either with cement or lead, for this will prevent the percolation of the rain. Above the east and west windows at the extremities of the nave, gaunt bare gables, each pierced with smaller Gothic windows, stand out against the sky. These also are all being carefully pointed, and any loose pieces of masonry will be fixed, so that it will not then, as at present, be necessary to warn visitors to beware of falling coping stones or other masonry. The mullions and tracery of some of the windows to the south of the nave have been already strengthened, and a look round will soon convince the visitor that the work is being admirably done, and that the utmost care has been taken that nothing of an unsightly nature shall be introduced into the work. During the present season large numbers of visitors have visited, and are visiting, this grand old relic of days when Cistercian monks lived godly lives there, and angled in the stream that flows 'with a sweet inland murmur' beneath its walls."—*South Wales Daily News.*

Aylesford Bridge.—The interesting and picturesque bridge over the Medway, half-way between Maidstone and Rochester, being again threatened with destruction as an obstacle to navigation, the Society for the Protection of Ancient Buildings has come forward with an alternative scheme. This was fully described and illustrated in the *Daily Graphic* for September 16. The Society's proposal is to cut a short canal across a bend of the river to take the water traffic, to straighten the southern approach to Aylesford Bridge, and to replace a dangerous level crossing by a railway arch. It would unfortunately be necessary to widen the old bridge, which it is proposed to effect by timber staging. The scheme is an attractive one but, we are afraid, somewhat costly.

THE OBSERVATION OF NATURE.

By W. F. Denning, F.R.A.S.
Author of "Telescopic Work for Starlight Evenings," &c.

ANYONE who stands in suburban fields on an early day in spring will find much to exhilarate him. The expanse of landscape, the primroses lining the hedgerows, the insects sporting in the sun, the mated birds carolling a welcome to the returning foliage, must all induce a gratifying sensation in the attentive observer, though he may be there alone to contemplate the scene. In the great city near, tens of thousands of persons crowd the shop-girt streets and parade the principal thoroughfares. Strange, that in the bordering country, where all the congenial attributes of spring are strikingly developed, charming the prospect and opening out attractions of singular beauty, there is scarcely a solitary individual to admire and enjoy! But it was ever so. Mankind loves companionship, delights in seeing and being seen, and often prefers art to Nature. Yet at the very best, artificial productions are but weak and clumsy imitations of natural objects.

When the glow of the vernal sun is forgotten and when autumn provides us with one of her most transparent nights, let an observer stand out in the open at a late hour. Looking upwards, he will perceive myriads of God's stars scattered in grand profusion and endless variety upon the dome of heaven. The town near is still, its inhabitants are wrapped in slumber, as if indifferent to, and certainly unconscious of, the magnificent panorama unfolded above their heads. A meteor falls, momentarily lighting up the firmament with its glories, a comet steals slowly along the constellations, an aurora borealis shoots its coruscating rays over the Arctic sky, but there is no one to "read, mark and learn" these celestial mysteries. Only the wind and the night-birds break the silence of the dark profound. Awhile the pale dawn steals into the east and nocturnal beauties begin to fade away. Sol, in his golden car, will soon arise and call the world to a renewal of life and activity.

Thus the nights and days, the months and years, and the generations pass away. Apparently indifferent, the great majority of the people spend their lives without sufficiently noticing and appreciating the manifold wonders of Nature invitingly presented around them. Yet either the spring day or the autumn night can immensely gratify the observant eye and encourage many pure and elevating reflections. Why, then, is it given only to the few to realise the sweet and thrilling emotions which contemplation can ever freely impart to the true naturalist who looks from Nature up to Nature's God?

No doubt many persons must feel at one time or another a considerable amount of love for and interest in the vividly attractive scenes which both the heavens and the earth are capable of displaying. Man naturally possesses an inquiring mind and longs for information concerning the great theatre of activity manifested around him. Sky and landscape are replete with diversified objects, and transforming pictures are unveiled to his view in a manner which specially lures attention. His observational tendencies and high intelligence prompt him to the contemplation and meditation of things great and small, far and near. The intellectual faculties with which he is plentifully endowed seem well calculated to drift his thoughts towards astronomy and its many sublime associations, and to obviously suggest his tracing, through the great and ever-circling orbs of heaven, the majesty and might of their Creator.

Under the pellucid skies and on the arid plains of Babylonia the ancient shepherds tended their flocks. They could not fail to regard with appreciative eyes the rich expanse nightly exhibited with graphic effect above their heads. Thus the Chaldeans were incited to become astronomers from the nature of their occupations. At the close of day "the moon walked in brightness," and the radiant "evening star" shone in the mellowed west. When darkness deepened the sparkling rays of the sidereal multitude pierced through the azure and glittered one against the other with surprising lustre. Under such a canopy and amid such favourable surroundings there was nought for the Egyptian shepherds to do but gaze upwards in admiration, to watch "the eternal stars" on their regular courses and the glowing planets in their wanderings.

That we are not all observers to-day is, perhaps, but the simple outcome of circumstances. We crowd together in towns and live amid much that is artificial, so that our sentiment is well nigh obliterated. In the great modern Babylon natural scenery has been practically extinguished. We look upon a vast medley of buildings grimly outlined in a smoky atmosphere and, range as far as the eye may, we shall seek the green of the fields in vain. At night, on glancing above, the flickering rays of a single star are scarcely discernible through the brilliantly lit and murky vapours floating over the city.

No doubt the dominating object influencing individuals of

nearly every class is to acquire wealth, so as to be in a position to have and enjoy all the good things which affluence alone can command. Many of us are not mercenary, but it is absolutely necessary that we should enter keenly into the struggle for our betterment, if not indeed for daily existence. The requirements of life shape our employments, occupy our heads and hands ; and, amid the scarcely ceasing rush of business cares and private concerns, there is very little leisure or incentive for the mind to dwell on scientific hobbies, or for the eye to cultivate habits of accurate observation. Young people are usually taught to believe that happiness and prosperity are only to be assured by close and exclusive attention to business. Nature-study is not often supposed to be essential, and rarely meets with serious encouragement. Science offers, in fact, few inducements to success in life: her ways are devious and doubtful, and in her by-paths the thorns are many and the roses few. A youth who develops a tendency to study Nature and devotes time to her service is often regarded with feelings of commiseration, for he is thought to be grasping at the shadows which, in the absence of the substance, are apt to veil the sunshine of life. Fame, when courted and won, has often proved a disappointing illusion, capricious and sometimes transient: she may smile like the rich and attractive tints of a beautiful sunset, and be quickly transformed into the dark, frowning clouds of night. In the unwearying pursuit of her favours the enthusiast may experience the thrills and "heart-throbs" of much pleasurable excitement which nothing else could give, but unless he utilises the tide of his success to gain some material advantage he may find himself in the autumn of his existence stranded upon a bleak and barren shore.

Thus we need not be surprised at the fact that the votaries of unprofitable science are extremely few in numbers, and that this is brought about by the opposing influences of our modern civilisation. Only perhaps one in one hundred thousand of our population becomes an habitual and capable observer, and that by force of the great love inherent in him, which leads him gently to the pure and sweet shrine of Nature along a pathway gilded with glorious attributes, if not paved with gold.

REVIEWS AND EXCHANGES.

Ants and Some Other Insects: Inquiry into the Psychic Powers of these Animals. By Dr. August Forel, translated from the German by Professor William Morton Wheeler. London: Kegan Paul. Price 2s. 6d.

[The following review, by our President, appeared in the *Daily Chronicle*, and is reproduced here by the kind permission of Lord Avebury and of the Editor of that paper.]

From his life-long and conscientious study of ants Dr. Forel is peculiarly qualified to write on such a subject ; while from his position at the head of a great lunatic asylum he has had exceptional opportunities, of which he has ably availed himself, for the study of mind in various phases.

At first sight it might seem as if insects were hardly likely to throw much

light on psychic problems. Nevertheless, if the dog and the elephant are in some respects pre-eminent, and if in bodily structure the anthropoid apes approach nearer to man than do any other animals, yet when we consider the habits of ants, their social organisation, their large communities and elaborate habitations, their roadways, their possession of domestic animals, and even in some cases of slaves, it must be admitted that they have a fair claim to rank next to man in the scale of intelligence. However this may be, Dr. Forel has selected insects, and especially his favourite ants, as the subject of his present memoir.

Many seem to solve the problem to their own satisfaction by saying that animals act by instinct and man by reason. I wish he did! How much happier and better the world would be! But, in fact, the subject is much more complex. Others believe, or think they believe, that their pets, and especially dogs, are as intelligent as man.

Many, again, seem to entertain two entirely opposite and contradictory opinions. I often hear people say that their dog, for instance, can do everything but speak. But when I ask whether it can realise that two and two make four, which is, after all, a very simple arithmetical calculation, much doubt is generally expressed. That the dog is a loyal, true and affectionate friend all will gratefully admit, but when we come to consider the psychical nature of the animal the limits of our knowledge are almost immediately reached.

I have elsewhere suggested that this arises, in great measure, from the fact that hitherto we have tried to teach animals rather than to learn from them, to convey our ideas to them, rather than to devise any language or code of signals by means of which they might communicate theirs to us.

The difficulty of determining the intelligence of dogs is increased because they are so quick in seizing any indication given them, even unintentionally. This is well illustrated by an account Sir William Huggins gave me of a very intelligent dog, appropriately named 'Kepler,' belonging to him. A number of cards were placed on the ground, numbered respectively 1, 2, 3, and so on up to 10. A question was then asked—the square root of 9 or 16, or such a sum as 6 plus 55 minus 3.

Sir William pointed consecutively to the cards, and the dog always barked when he came to the right one. Now, he did not consciously give the dog any sign, yet so quick was it in seizing the slightest indication that it was able to give the correct answer.

This observation is most interesting in connection with the so-called 'thought-reading.' No one, I suppose, will imagine that there was, in this case, any 'thought-reading,' in the sense in which this word is generally used. Evidently 'Kepler' seized upon some slight indication unintentionally given by Sir William Huggins. The observation, however, shows the great difficulty of the subject, while it certainly seems to demonstrate a certain amount of psychic power.

If many are prone to exaggerate the intellectual powers of dogs, and horses, and elephants, others go to the opposite extreme. Descartes, we know, looked on animals as mere automata. Even recently Bethe, Uexkull, and other writers have denied the existence of any psychic powers, at any rate in invertebrate animals, which they explain as reflex-machines.

I confess, indeed, that I cannot understand how anyone who loves animals, or ever has devoted any study to them, can doubt that they possess some power of reason. Many of their actions are unconscious and instinctive; so are some of ours, as we may see by watching a child, but practice enables us to walk or run almost automatically.

Even as regards direction this may hold good. I have been for over forty years a director of a company, which changed its offices twenty years ago, and I have not since had any occasion to enter our old house. One morning this summer, however, I was going to a committee in our present house, but thinking of other things I walked past our door and two or three intervening houses and into the porch of our old office. In fact, many actions which cannot be called automatic are not necessarily conscious. They do not fall under the head of either instinct or reason.

Mr. Gladstone told me that once when he was forming one of his Governments he had some difficulty in arranging the places. He and Mrs. Gladstone

wrote down the titles of the offices and the names of the Liberal leaders on pieces of paper, and tried all the evening, but in vain, to fit them together. At last they gave it up and went to bed. When Mr. Gladstone awoke in the morning everything was satisfactorily arranged in his head; his brain had worked it out for him during his sleep. This was not conscious reason, and certainly was not instinctive. Dr. Carpenter gave to such action the name of unconscious cerebration.

The nests of birds and cells of bees, the search for food, for warmth, and other similar actions necessary to life, may, to some extent, at any rate, be plausibly explained away. No one attributes anything approaching reason, or even sensation, to plants.

The social habits of ants, however, afford other arguments which seem conclusive. Take first their relations with other insects. Those between ants and aphides, which have been called ant cows, are indeed most remarkable. It is not merely that the ants milk them, tend them, defend them from attack, sometimes protect them by earthen enclosures from too great summer heat, but over and above all this they collect the eggs in autumn, keep them through the winter, and plant them out on their proper plant in the spring. Some of the root aphides may always be found in ants' nests, but I was much puzzled years ago by finding in ants' nests some black eggs, which obviously were not those of ants. Eventually I ascertained that they belonged to a species of aphis which lives on the leaves and leaf-stalks of plants.

These eggs are laid early in October on the food-plant of the insect. They are of no direct use to the ants, yet they are not left where they are laid, exposed to the severity of the weather and to innumerable dangers, but are brought into their nests by the ants, and tended by them with the utmost care through the long winter months until the following March, when the young ones are brought out and again placed on the young shoots of the daisy. This seems to me a most remarkable case of prudence. Our ants may not, perhaps, lay up food for the winter, but they do more, for they keep during six months the eggs which will enable them to procure food during the following summer, a case of prudence unexampled in the animal kingdom.

Dr. Forel refers to the phenomena of memory as very conclusive. That insects remember cannot be doubted, for, as he observes:—

"The slavemaking ants (*Polyergus*) undertake predatory expeditions, led by a few who for days and weeks previously have been searching the neighbourhood for nests of *Formica fusca*. The ants often lose their way, remain standing, and hunt about for a long time till one or the other finds the topochemical trail, and indicates to the others the direction to be followed by rapidly pushing ahead. Then the pupæ of the *Formica fusca* nests, which they have found, are brought up from the depths of the galleries, appropriated and dragged home, often a distance of forty metres or more. If the plundered nests still contain pupæ, the robbers return on the same or following days, and carry off the remainder; but if there are no pupæ left they do not return. How do the *Polyergus* know whether there are pupæ remaining? It can be demonstrated that smell could not attract them from such a distance, and this is even less possible for sight or any other sense. Memory alone—*i.e.*, the recollection that many pupæ still remain behind in the plundered nest—can induce them to return. I have carefully followed a great number of these predatory expeditions."

Again, ants are influenced by circumstances which can only affect mind. Dr. Forel says:—

"While success visibly heightens both the audacity and tenacity of the ant-will, it is possible to observe, after repeated failure or in consequence of the sudden and unexpected attacks of powerful enemies, a form of abulic dejection, which may lead to a neglect of the most important instincts, to cowardly flight, to the devouring or casting away of offspring, to neglect of work and similar conditions. There is a chronically cumulative discouragement in degenerate ant-colonies and an acute discouragement when a combat is lost; in the latter case one may see troops of large, powerful ants fleeing before a single enemy, without even attempting to defend themselves, whereas the latter a few moments previously would have been killed by a few bites from the fleeing individuals."

Mr. Grote, the historian, in his "Fragments on Ethical Subjects," regard

it as an evident necessity that no society can exist without the sentiment of morality.

"Everyone" (he says) "who has either spoken or written on the subject has agreed in considering this sentiment as absolutely indispensable to the very existence of society. Without the diffusion of a certain measure of this feeling throughout all the members of the social union, the caprices, the desires, and the passions of each separate individual would render the maintenance of any established communion impossible. Positive morality, under some form or other, has existed in every society of which the world has ever had experience."

If this be so, the question naturally arises whether ants also are moral and accountable beings. They have their desires, their passions, even their caprices. The young are absolutely helpless. Their communities are sometimes so numerous that, perhaps, London and Peking are almost the only human cities which can compare with them. Moreover, their nests are no mere collections of independent individuals, nor even temporary associations, like the flocks of migratory birds, but organised communities, labouring with the utmost harmony for the common good. The remarkable analogies which in so many ways they present to our human societies render them peculiarly interesting to us, and one cannot but long to know more of their character, how the world appears to them, and to what extent they are conscious and reasonable beings.

I have not, at any rate, nor indeed has any one else, ever seen a quarrel between any two ants of the same nest. All is harmony. If, indeed, they are compulsorily made drunk, then, no doubt, they begin to quarrel. But no ant would voluntarily so degrade itself. Among the so-called higher animals which live in association, if one is old or ailing it is often attacked. This is never the case among ants, instances of active assistance are, indeed, common. I have often witnessed cases of care and tenderness on their part.

In one of my nests was an ant which had come into the world without antennæ. Never having previously met with such a case I watched her with great interest, but she never appeared to leave the nest. At length one day I found her wandering about in an aimless sort of manner, apparently not knowing her way at all. After a while she fell in with some ants of another species, who directly attacked her. I at once set myself to separate them, but, whether owing to the wounds she had received from her enemies, or to my rough though well-meant handling, or to both, she was evidently much wounded, and lay helplessly on the ground. After some time another ant from the same nest came by. She examined the poor sufferer carefully, then picked her up and carried her away into the nest. It would have been difficult for anyone who had witnessed the scene to have denied to this ant the possession of humane feelings. In face of such facts as these it is impossible to regard ants as mere exquisite automatons. When we see an ant-hill tenanted by thousands of industrious inhabitants, excavating chambers, forming tunnels, making roads, guarding their home, gathering food, feeding the young, tending their domestic animals—each one fulfilling its duties industriously and without confusion—it is difficult altogether to deny to them the gift of reason; and the preceding observations tend to confirm the opinion that their mental powers differ from those of men not so much in kind as in degree.

This also is Dr. Forel's view. He says:—

"It results from the unanimous observations of all the connoisseurs that sensation, perception and association, inference, memory, and habit follow in the social insects, on the whole, the same fundamental laws as in the vertebrates and ourselves."

Eton Nature-Study and Observational Lessons. Part II. By M. Davenport Hill and W. M. Webb. Duckworth and Co. Price 3s. 6d. net.

Second parts and sequels do not always fulfil the promise of their predecessors. No such discredit can be alleged in the case of the present work. It has sometimes been said that those who talk and write about Nature-study are vague in their language, never clearly saying what they mean by the term, and making impracticable demands upon the school time-table, but such a complaint again could never be urged against Messrs. Hill and Webb's book. Seedlings,

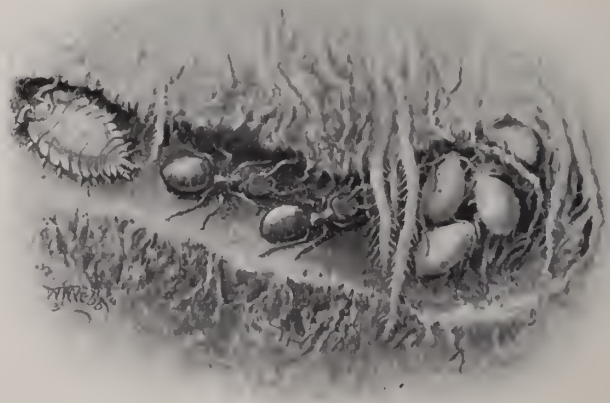
tubers, bulbs, offsets and corms, frogs' spawn, tadpoles, hen's eggs and chicks, have their development traced week by week; and buds, opening flowers, plant-defences, the movements of plants and plant-associations, earthworms, wood-lice, centipedes, silkworms, honey-bees, ants, snails and galls, form the subjects of further lessons. A single course from February to July is here outlined, but it

THE UNDER-SIDE OF A SNAIL. (From *Eton Nature-Study*.)

will be obvious to any teacher that this volume may be used for several years, or for classes of very different ages, by such slight modifications as will at once suggest themselves. Such subjects as plant-association, the flowerless plants, the variation in the beaks, feet and plumage of birds, the teeth of mammals, or the life-histories of insects, are capable of indefinite expansion. An appendix gives detailed information as to where all materials can be obtained, and the whole is illustrated with about 120 excellent drawings and photographs, of which we are

able, by the courtesy of the publishers, to produce three examples. We have only detected one little mistake, the attribution of a work on the folk-lore of plants to Sir W. T. Thiselton-Dyer, instead of his brother, the Rev. T. Thiselton Dyer.

THE COMMON SNAIL (*Helix aspersa*). (From *Eton Nature-Study*.)



A GALLERY IN AN ANTS' NEST, WITH THEIR "COWS."
(From *Eton Nature-Study*.)

Natural History Essays. By Graham Renshaw, M.B. Sherratt and Hughes. Price 6s. net.

We cannot help thinking that Dr. Renshaw would have done better if he had chosen a more precise title for his work. He gives us very full descriptions of sixteen typical examples of the Mammalia of Africa, the results of much personal study and research. His book will prove attractive reading to the habitués of the "Zoo," or the Mammalia galleries of our Natural History Museums; and, in this connection, we may suggest to any student a careful examination of the recently arranged specimens of the giraffes and their ally, the

Okapi, at South Kensington. Dr. Renshaw gives us nearly forty illustrations which have the advantage of being from actual photographs, though they are rather small. Naturally this work from the pen and camera of so thoroughly Selbornian a naturalist as Dr. Renshaw contains a detailed record of the remaining museum relics of the Quagga, exterminated within the last thirty years, together with the expression of the hope, in which we all share, that the action of the signatories of the recent International Conference in creating game-preserves may prevent other species from sharing its fate.

Superstitions about Animals. By Frank Gibson. Walter Scott Publishing Co. Price 3s. 6d.

The author of this unpretentious little book divides his subject into the three divisions of Signs and Omens, Distortion of facts of Natural History, and Creatures of the Imagination. These are fascinating topics and much more might have been said about them, while some copies of old illustrations, such as Gerard's Barnacle Geese, the heraldic "Pelican in her pity," or the Essex Serpent, would be very acceptable and germane to the subject. With reference to the jewel in the head of the toad something might have been said as to the toadstone, the vomerine tooth of fossil pycnodont fishes formerly worn as a gem; nor can we altogether indorse the author's wholesale denial of the ability of the chameleon to alter his colour to suit his surroundings, or the scorn he heaps on the poets who write of slimy snakes. One of our greatest authorities, Dr. Gadow, says of the former, "These changes are not absolutely unconscious; they are, after all, under the control of the creature. . . . Linnæus has summed up the little we really know about the causes of these changes in the following terse sentence: "Vivus varios colores assumit secundum animi passiones, calorem et frigus." The notion of snake slime may well be attributable to the garlic-smelling secretion which the common grass-snake emits when displeased. Mr. Gibson has given a readable essay; but he might at least have divided his volume into chapters.

Healthy Game. By the Rev. E. A. Woodruffe-Peacock. Louth: J. W. Goulding and Son. Price 1s.

This pamphlet, dealing with the epizootic and other diseases of grouse and pheasants, will doubtless prove valuable to all game-preservers. We notice that the author is positive that the fatal disease known as "froth" is caused by the swallowing of a live larva of the Cuckoo-spit or Frog-hopper (*Aprophora spumaria*).

Reports and Transactions of the Ealing Natural Science and Microscopical Society for 1903-4.

This is a model of what such a Report should be, containing, as it does, besides the usual list of members and meteorological summary, an obituary with full bibliography of the late John Allen Brown, by Mr. B. B. Woodward, and abstracts only of nine lectures on varied subjects. It is interesting to learn that at Ealing they had 19·82 inches of rain, or 5·47 inches below the forty years average, in 1902, and 39·03 inches, 13·74 inches above it, in 1903. As illustrating the comparative worthlessness of single phenological observations the following table is instructive:—

	1902	1903	1904
First Crocus in Flower	Feb. 20	Feb. 5	Feb. 26
,, Peach ,,	March 22	March 7	April 3
,, Pear ,,	April 15	March 21	April 18
,, Plum ,,	April 16	March 22	April 9
,, Cherry ,,	April 11	March 23	April 10
,, Apple ,,	April 9	March 30	April 24

Bird Notes from the Nile. By Lady William Cecil. Constable and Co. Price 2s. 6d. net.

This dainty little volume of about 120 pages is singularly complete, and will doubtless be in request with the ever-increasing numbers of tourists who visit Upper Egypt. It contains a list with English, Latin and Arabic names, habitats

and geographical range: of its sixteen whole-page illustrations, one is a coloured portrait of the Bee-eater and several others afford means of comparing the ancient representations on the monuments with the birds of to-day; while the notes themselves are a pleasant ornithological diary kept mainly at Aswan.

Horniman Museum. Handbook to the Vivaria and Fresh Water Aquaria. Price 1d.

Again the London County Council has placed the general public, and especially visitors to the Horniman Museum, under an obligation. It is difficult to imagine anything that could well improve upon this penny guide, for which, we presume, Professor Haddon is responsible. It contains concise directions for keeping an aquarium, a classification of the animals so kept, tolerably full, perfectly accurate, but simple descriptions of each, from *Spongilla* and *Hydra* up to the Grass Snake and the Viper, and a classified list of the many standard works on the subject in the Museum Library. Perhaps more indications of the occurrence of such forms as the Bullhead, Crayfish, Edible Snail, *Testacella* and *Cyclostoma* in Surrey might be added.

The Field Naturalist's Quarterly for September is as good as ever, dealing, *inter alia*, with the acquisition of Gowbarrow Fell, Greensted Church, and the Earthworm.

Notes and Comments for September, the "processed" organ of the Norwood Natural Science Society, which has issued an excellent syllabus for its session, though only eight quarto pages, contains some interesting notes on "Tiddlers," Wimbledon Common, St. Ives, &c.

Bird Notes and News for October contains, with other notes, a useful list of feathers offered for sale which should be especially shunned by everyone interested in the preservation and protection of wild birds.

Received: *The Wilson Bulletin* and *The Victorian Naturalist* for September; *Bird-Lore* for September—October; and *The Naturalist*, *The Irish Naturalist*, *Nature Study* (Lockwood), *The Animal's Friend*, *The Animal World*, *The Humanitarian*, *The Agricultural Economist* and *The Commonwealth* for October.

NATURAL HISTORY NOTES.

182. Rabbit Taking to Water.—I know an old moat near Uttoxeter, surrounding what is now plain grass land, inhabited by rabbits. One corner of the moat gives plain evidence by the footmarks on either bank that the rabbits are in the habit of crossing the water to and fro to the adjoining fields.

With regard to a weasel taking to water, I believe both weasels and stoats will not uncommonly do so. I have seen, when fishing on the river Teme in Worcestershire, a stoat take to the river with apparently no better object than that of stalking a bird on a bush on the river bank.

Eastcote, Middlesex. HERBERT J. RODGERS.
October 9, 1904.

183.—On the banks of Chichester Harbour, near Old Park, it is not unusual to see rabbits and hares swimming back to shore as the clumps of sea lavender get submerged by a high tide. A year or two back I was fishing in Bolterbrooke Park, Northants, when a great squealing and scuffling came from a rabbit burrow on the opposite side and a three-quarter grown rabbit fell into the water with a large rat hanging on to its hind quarters. On touching the water the rat relaxed its hold, but swam after the rabbit and seized it again. I threw a brick at the pair but just missed them. The rat, however, again let go, and the rabbit landed and ran back to the burrow, closely pursued by the persistent rat, which followed it to earth.

Haselbeech Rectory, Northampton. W. A. SHAW.
Northants Nat. Hist. Soc.

184. Squirrels and Fungi.—Squirrels are great fungus-eaters and may frequently be seen making a meal off *Boletus edulis*, and others of its class. A day or two ago I saw a squirrel ascend a tree with a small boletus in its mouth; and have often caught them in the act of eating them. Most of these fungi that I have examined here have been attacked by squirrels, and some have been eaten by slugs.

Southacre, Swaffham, October, 1904. EDMUND THOS. DAUBENY.

185. The Green Woodpecker.—On August 18 of this year I woke up early in the morning and looking out of the window before six o'clock I saw on our lawn, about a dozen yards away, a large bird that I soon recognised as a green woodpecker. I watched him for about ten minutes, during which time he was busily engaged in digging his beak into the turf in search of food, every now and then glancing round in a shy, alert manner. I had never seen a specimen of this beautiful bird before, and probably shall never do so again, and as I believe the woodpecker is not often seen on the ground I thought the occurrence might interest some of your readers.

East Kent. A. L. STEVENSON.

186. Pigeons.—A few days ago I saw a domestic pigeon fly down to the Nar and throw itself for a moment or two on the water in the middle of the stream. This it repeated several times. The bird was indulging in a bath, and did not give itself time to drink.

September, 1904. EDMUND THOS. DAUBENY.

187. Young Cuckoo.—One day towards the end of July as we were sitting in the garden, our terrier puppy dragged a young bird out of the bushes. On rescuing it we found that its right wing and claw were injured. We kept it in a basket for some days and fed it every two hours during the day, till 11 o'clock at night, on hard-boiled egg to begin with, and afterwards on some special meal for wild birds. After a day or two it began to get stronger and to fly about the rooms, although one claw was still very weak. At the end of a week we patched up an old aviary that was in the garden and put the bird in. All this time we had been trying to find out what kind of bird our pet was. Many people declared it was a hawk, while one went so far as to say it was a young owl! At last we asked a keeper, who pronounced it to be a cuckoo.

For a day or two the bird was quite happy in his new house and perched on some boughs we had put in for him at night. But he soon began to mope and refused to eat, although we varied his food with a little fruit and lettuce, and a worm now and then. He became considerably lighter and looked very unhappy. At last we decided to let him go. So one morning we took him on to the lawn and opened the lid of the basket. At first he did not appear in a hurry to fly away but began to feed out of my hand. After a minute or two he realised he was free and flew off to the top of a high fir tree. Nothing was seen of him that day, though several times I went out with food and called him. About one o'clock the next day he flew down in front of the house and called in his shrill chirp. After a little coaxing he came and fed out of my hand and appeared nearly starving. Not being able to feed himself well I think he had had nothing since the morning before. From that time he came about four times a day to be fed, and if I was not there he would call loudly till I went out with the food. He became so tame that he would come to any window in the house directly he was called, and would perch on my hand and feed out of a spoon. This went on for a fortnight, when one day there was a very heavy rainstorm. On calling him as usual to be fed he came in at the window, drenched and looking very miserable. We wrapped him up in hot flannel and he lay down in it as quietly as a puppy might till he was quite dry and warm, then hopped out and fed, after which he flew out of the window. The sun had come out again, so he dried his feathers and stretched his wings. Presently, it began to rain heavily again and once more the poor drenched bird came in for shelter and the drying operations were repeated. Then he flew away and was not seen till next morning.

On the evening of August 24 he called loudly for food at six o'clock. He then

eat much more than usual, in fact he finished a large cupful of food, and flew away and has never been seen since. He may have been frightened away, as that evening we had the garden lit up, a band, and a number of people. But he certainly had his large meal long before anybody arrived, so probably he had made up his mind to go that night, or early next morning.

Foxholes, LORNA J. HORSMAN BAILEY.
September, 1904.

188. Aquarium Molluscs.—Mr. Hall did not, of course, on p. 210, attack *Linnæa*, the "little northern plant, long overlooked, depressed, abject, flowering early," which Linné himself chose to commemorate his own name. He wrote *Limnæa* and was referring to the pond-snail whose name thus differs in one letter only from a very different organism.—ED. *N.N.*

189. River Limpets.—Conchologists were interested to hear the announcement, in 1903, of the discovery of a peculiar habit of the freshwater limpets (*Ancylus*) inhabiting the Chaco country of Argentina. These limpets were stated to develop a plate which closed the entire open base of their hood-shaped shells, with the exception of a small perforation over the lungs, which was left for breathing purposes. This contrivance is made in order to resist the drought, as the ponds dry up in summer in that district. It would be interesting to know if our two indigenous species of British river-limpet practise the same device.

W. R. D.

190. Glow-worm.—I was much interested to see, in the Editor's answer to a query in this month's NATURE NOTES concerning a glow-worm with wings, that it was his opinion that the male glow-worm is a winged and non-luminous creature, while the female has no wings, but glows. I have collected glow-worms for some years and have twice found male glow-worms in conjunction with the female. The male, which is a little beetle about half the size of the female and with chestnut-brown wings covering the whole of its body, possesses two bright luminous spots on either side of its terminal segment. So it may be said with truth to glow. May I also add that I have once caught one of these little "fire-flies" in the house at night, no doubt attracted by the light. They are, however, not sufficiently numerous to call for much attention in this country.

A. L. H.

191. "The males, as well as the pupæ, larvæ, and even the eggs, are slightly luminous." (Westwood, "Classification of Insects," i., p. 250.) "The male (pupa) exhibits the rudiments of the elytra and wings." (Fowler: "British Cœleoptera," iv., p. 130.) Probably your correspondent's insect was a male pupa, and might have been carried into the house by a dress, or by a snail, as both larva and perfect insect feed on snails.

16, *Belsize Grove, N.W.* E. A. ELLIOTT.
September 19, 1904.

192. Some years back I was walking through some woods in west Sussex on a very wet night and noticed on the road a sort of zigzag track like a thin thread of electric light wire—it was caused by a small black beetle, which I caught and examined. W. A. SHAW.

193. A "Goat" Caterpillar in Difficulties.—A short time ago a friend sent me a fine goat caterpillar. I at once placed it in a suitable "cage" and gave it what I considered to be the kind of wood which it would eat. However, it would have nothing to do with it, and for some weeks lived on an exclusive diet of stout cardboard, which it seemed to enjoy immensely, judging by the quantity it ate. One day it got into difficulties. It had eaten a small round hole through the cardboard wall of a box and had then attempted to squeeze through instead of climbing over the top. But most unfortunately it had stuck fast half way through. We at once held a consultation as to what should be done, and decided that it would be best, for a while at any rate, to leave the poor fellow to try to extricate himself unaided. And he tried very hard to do so, but to no purpose; so we determined to operate at once, and started by cutting out a circular piece of board with the captive in the centre. Having done this, we cut down gently until we reached him, but found it an exceedingly difficult

job owing to the great thickness of the cardboard. A slip of the knife would have most probably executed him. Eventually our labours were crowned with success and he was free once more and apparently none the worse for his somewhat unusual adventure. He shortly afterwards "went in," but continued to live on cardboard to the last.

112, *Thirlestone Road, Edinburgh.* R. C. LOWTHER.

194. Cockroaches.—Powdered borax put down plentifully will drive away "black beetles." A few years ago we had swarms of them in the kitchen, and caught lots every night with beer, beetle-traps, &c., but were unable to find their haunts, excepting that one china-cupboard and another containing salt, spices, &c., were filled with an unpleasant odour. We were told to try a hedgehog and did so; but I fancy the poor thing ate too many, for he died. Then we were told to try borax, and in an incredibly short time the beetles disappeared, and now the cupboards are sweet and clean. I keep plenty of powdered borax in the bottom of the cupboard (it is an inexpensive luxury) and renew it every fortnight. We sprinkled it well into every crack and crevice at first; and the cook, who has been here since last October, has not seen one beetle here.

Leslie House, The Park, Nottingham. MARY CLARK.

NATURAL HISTORY QUERIES.

34. Rats.—My sister was staying in a lonely house in the S.W. of Ireland during August of this year. One evening the housemaid, when laying the cloth for late dinner, placed the butter-dish and silver butter-knife on the sideboard and left the room. Returning a few minutes later she found the butter-knife gone and suspected the rats who had taken other articles of silver. When search was made the missing butter-knife was found behind the side-board, and behind a heavy piece of furniture another butter-knife was found which had been lost for three months. Half way down a rat-hole in the pantry was found a silver fork and an ordinary dinner-knife. Silver teaspoons had also been found under the drawing room floor. We should be very glad if any members of the Selborne Society can explain the strange conduct of these Irish rats.

Hon. Sec., Kensington Branch. CAROLINE GICHELL.

35. Wagtails.—There is a pair of pied wagtails which nest every year in the shrubs round my lawn, and are very tame. Is not the wagtail the only creature which moves its tail up and down and not horizontally? It must be supplied with a strong muscle to enable it to do this so vigorously and constantly as it does. The "wagging" appears to express satisfaction, for after catching a fly it invariably does it, and then starts in pursuit of another. It is curious to observe the young birds imitating the parents as soon as they are out of the nest, and before they possess any tail to speak of.

Fern Bank, near Buxted. A. L. HUSSEY.
September, 1904.

36. Late laying Partridge.—On receiving a present of game from my brother, killed on September 20, I was surprised on being shown a fully developed egg in one of the partridges. Is not this very unusual?

W. D. W. REES.

37. Toads.—Toads are generally supposed to be so nauseous that no creature will deliberately tear them in pieces and eat them bit by bit. I have, however, come across an instance that upsets this belief, having just seen the remains of a toad on which some animal had been feeding, consisting of a part of the hind legs and skin of the back. There were fragments of its skin and flesh close by. What animal could have taken a fancy to this toad? A barn-rat, water-rat, squirrel, or what? Water-rats eat frogs, but not toads, as far as I know. The remains, however, were not in a spot where water-rats would be, but under a fir

tree where I see squirrels daily; and squirrels, I suspect, for they will eat almost anything.

October, 1904. EDMUND THOS. DAUBENY.

38. Tappers.—In a room here some creature or other frequently taps. The noise is not that of the death-watch, with which I am well acquainted, but is louder, more deliberate, and with longer intervals between the strokes, and continues for a minute or two at a time. Some kind of spider, which I have been unable to detect in the act, is said to make a tapping noise. The sound, however, is difficult to locate. What is the name of the animal that causes it?

September, 1904. EDMUND THOS. DAUBENY.

SELBORNE SOCIETY NOTICES.

The Secretaryship.—The Council has to announce, with much regret, that, owing to the pressure of other work, Mr. R. Marshman Wattson has withdrawn from the post of Secretary, which he has filled with so much advantage to the Society during the past five years. During that period Mr. Wattson's duties were at times of a very onerous and responsible nature, to discharge which it was necessary for him to enlist clerical aid, so that, although he appeared as a paid official, his services to the Society have really been of an honorary character. In the financial department Mr. Wattson achieved particular success, and it is not too much to say that it is to the system which he inaugurated that the Society's improved position is due. As one of the oldest Members, his knowledge of the history of the Society and of the changes inevitable from time to time has been of peculiar value, and the Council is happy to say that Mr. Wattson's services will still be preserved to the Society, though in another capacity. At its meeting on September 27, the Council passed the following resolution: "The Council desire, on the withdrawal of Mr. R. Marshman Wattson from the post of Secretary, to express their deep appreciation of his able and energetic services to the Society, of which he is one of the oldest members, and order that this expression of opinion be entered on the Minutes and be published in the November number of the Magazine."

At the same meeting the Council appointed Mr. Wilfred Mark Webb, F.L.S., to be Mr. Wattson's successor, with the title of Honorary Secretary, and with an allowance of £25 per annum for clerical help.

Council Meetings.—The next meetig of the Publications' Committee will take place on Monday, November 14, at 5.30 p.m., at 20, Hanover Square, and the next meeting of the Council on Tuesday, November 22, at the same hour and place.

November 22.—**Special General Meeting**, at 20, Hanover Square, at 5.30 p.m., to consider the advisability of altering Rule 2, paragraph (c), Section (2), which now runs as follows:—

> "birds and their plumage, except when the birds are killed for food, reared for their plumage, or are known to be injurious,"

so as to read:—

> "*the skins and plumage of such birds as are not domesticated.*"

Library.—The Hon. Librarian has pleasure in announcing the gift of the following book, which Miss A. Martelli has kindly made to the library of the Society, "Birds of Oxfordshire," by O. V. Aplin.

NEWS FROM THE BRANCHES.

Clapton, *October* 15.—The Members of the Branch met at the Sigdon Road Board School, near Hackney Downs Station, to hear a paper on "Snail Shells, Land and Freshwater." given by Miss A. S. Philpott. The chair was taken by Mr. R. Marshman Wattson, and there was a fair attendance. Miss Philpott commenced her very interesting paper by an account of some of the old legends and medicinal lore connected with snails. A description of the animal and its

habits was then given, the lecturer confining herself to the garden snail, the most familiar to the general public in the univalve section, and the mussel as the example of the bivalve. Specimens of shells, showing the growth, marking, and repair of injuries, were handed round for inspection. Having described their life-history, Miss Philpott then enumerated the various British species, both of land and freshwater molluscs, handing round specimens of each, and enlightening her remarks with hits of folk-lore and personal experience. She concluded her paper by an appeal for humane treatment of the lowly mollusc, pointing out that it is very tenacious of life and possesses nerve-centres all over its body. Hence the kindest, speediest death is to plunge the animal into boiling water. Several trays of beautiful specimens from Miss Philpott's collection, well arranged and labelled, were brought for inspection. A few remarks from Mr. Wattson and Mr. Nash, together with a hearty vote of thanks to Miss Philpott, brought the evening to a conclusion.

Hampstead.—At a Committee Meeting held on October 5, Mr. M. Yeatman Woolf was elected a member of the local Committee, and Messrs. G. H. Cottam, James Walker and L. Douglas Wilson were chosen as Delegates to represent the Hampstead Branch upon the Central Council.

October 15.—Mr. M. Yeatman Woolf, one of the members of the Committee of the Hampstead Branch, invited a few Selbornians to examine his educational museum of natural history and archæology, and during the afternoon he was kind enough to extend his invitation to any other Members of the Selborne Society who may care to communicate with him, at 46, St. John's Wood Park, N.W. Mr. Woolf had displayed a large number of his collections, illustrating protective colouring in insects, the life-history of termites, as well as of the grub in the Mexican jumping bean which causes its curious movements. There was also a good series illustrating various types of marine animals, while geology, prehistoric archæology and ethnology were not forgotten. At first Mr. and Mrs. Woolf spent their time in offering individual explanations to their guests, but afterwards the former gave an interesting address on a number of selected topics in a way calcuated to communicate some of his enthusiasm to his audience. It should be pointed out that Mr. Woolf has for many years been a member of the Selborne Society: he was also one of the supporters of the Nature-Study Exhibition held last year, and one of his objects in forming an educational museum rather than in specialising in one direction, is his desire that in the future his children may profit by the collections made. The visit on Saturday terminated with a hearty vote of thanks to Mr. and Mrs. Yeatman Woolf, proposed by Mr. George Avenell, for their hospitality.

On *October* 20 a lecture on Forest Trees, illustrated with lantern slides, was delivered by Professor Boulger at the Subscription Library. The Chair was taken by Mr. L. Douglas Wilson, and there was a good attendance of Members. At the close of the lecture a vote of thanks to the lecturer was proposed by Mr. Yeatman-Woolf, seconded by Mr. F. Greenhill, and carried unanimonsly.

November 19.—Mr. M. Yeatman Woolf has very kindly consented to give a demonstration at his museum to Selbornians at 3 p.m.

N.B.—Address: 46, St. John's Wood Park, N.W. (near Swiss Cottage and Marlborough Road Stations on Metropolitan Railway).

On *November* 21 a lecture will be given at 8 p.m. at the Subscription Library, Prince Arthur Road, Hampstead, by Mr. G. Walter Maunder, F.R.A.S. (of Greenwich Observatory), on "The Sun and Sun Spots." The chair will be taken by Mr. W. H. Maw, F.R.A.S.

FIELD CLUB RAMBLES.

October 3.—For this last walk of the season, the Field Club, thinned by the morning's rain, assembled at Coulsdon and proceeded over the breezy uplands of Farthing Down. The season of new botanical finds was over, but a few autumn strays are always to be had, marjoram and honeysuckle, the autumn gentian and the clustered bell-flower. These were the most conspicuous, while the walk over the springy turf of the Surrey hill always gives buoyancy to the spirits. In the Devildene Woods the leaves were taking on their richer autumn tints: the russet of the beech vied with the crimson of *Viburnum Lantana* and the

purple leaves of the cornel; the oaks, rich with acorns, were golden-leaved again. Here, too, was a rich gathering of fruit and berry, hip and haw, and the trailing garlands of bryony, emerald, amber and crimson, the rose-flushed, fourfold fruit of the spindle-tree, the shining black clusters of privet, the luscious blackberry. Mushrooms, too, were to be had in the open; and so on, past copses brilliant with the wild cherry's unrivalled foliage, by down and wood, until the gorse-clad heights of Coulsdon Common were reached. Here a short stay at the Fox Inn for tea, and then towards the setting sun, Marlpit Lane, and the station.

October 15.—By the kind invitation of the Essex Field Club a party of Selbornians, organised by Mrs. Percy Myles, was enabled to join in the twenty-fifth Annual Fungus Foray, held by the successful County Society. An interesting slug was obtained (*Limax tenellus*, Müll.), about which there is an article in the current number of the *Journal of Conchology*, though the Epping habitat is not there mentioned. Mr. Petch, who exhibited the specimen at the meeting held in the evening at the King's Oak Hotel, High Beach, has found at least a dozen specimens, and says that it is widely distributed in the Forest. The reason why it has been overlooked apparently is that it feeds on the underground hyphæ of fungi during the greater part of the year, and only comes to the surface when toad-stools appear above ground. Two fungi, which apparently have not been found in this country before, were discovered, viz., *Clitocybe tabescens* and *Agaricus rubella*. Dr. M. C. Cooke and Mr. Massee were, as usual, the experts, and the latter in the evening gave an address on the diseases of trees, using as illustrations the coloured pictures of their life-histories which he has made, and which the Board of Agriculture is publishing for the benefit of horticulturalists and foresters.

SELBORNE SATURDAY AFTERNOONS.

November 12.—Natural History Museum, Cromwell Road, W., Botanical Department. Demonstration on the history of seeds and fruits, by Professor Boulger. Assemble in the Central Hall at 2.15 p.m.

Saturday, November 26.—Visit to two Ancient Halls of City Guilds.

2.30 p.m. Stationers' Hall, Stationers' Hall Court, Ludgate Hill, E.C.
Guide, Charles Robert Rivington, Esq., F.S.A. (Clerk to the Company).

3.30. Apothecaries' Hall, Water Lane, Blackfriars, E.C.
Guide, A. Mowbray Upton, Esq. (Clerk to the Society).

ANSWERS TO CORRESPONDENTS.

S. J. Jones.—*Polygonum Persicaria*, Common Persicaria or Crab-grass.

Villager.—*Pyrus torminalis*, the Wild Service-tree.

Peter Hastie.—*Cosmos bipinnatus*, a native of Mexico, cultivated in South Africa and elsewhere. More about Mark Catesby and the *Catalpa* next month.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, &c., should be addressed to the local Secretary, or the Hon. Secretary to the Society, Mr. W. M. WEBB, 20, Hanover Square, W.

Nature Notes:

The Selborne Society's Magazine.

No. 180. DECEMBER, 1904. Vol. XV.

OBJECTS OF THE SOCIETY.

To promote the study of Natural History. To preserve from needless destruction such wild animals and plants as are harmless, beautiful, or rare. To discourage the wearing and use for ornament of: (1) The skins and furs of such animals as are in danger of being exterminated; (2) the skins and plumage of such birds as are not domesticated. To protect places and objects of natural beauty or antiquarian interest from ill-treatment or destruction. To afford facilities for combined effort in promoting any of the above or kindred objects.

SELBORNIANA.

Proposed Tulse Hill and Streatham Branch.—It has been suggested that a Branch of the Society should be formed for Tulse Hill and Streatham. A meeting to consider the matter will be held in January, the place and exact date of which will be announced later. Meanwhile, Mr. Arthur B. Wilkinson, of Newlands, Northstead Road, Tulse Hill, will be glad to receive the names of any who would be willing to join such a Branch.

Gilbert White and the Selborne Society. — On November 15 the Editor of Nature Notes was the guest of the Horticultural Club, and, after dinner, addressed the members, at their request, on the subject of Gilbert White and the Selborne Society. After briefly sketching the life and character of the Selborne naturalist, and alluding more particularly to his long-kept Garden Diary, and his apparent fondness for double flowers, the lecturer passed to the history of the foundation of the Selborne Society to perpetuate the

memory and methods of Gilbert White. Reference was then made to the fact that in the first years of the Society's existence much interest was evinced by its members in the subject of the preservation of our indigenous flora, and that circumstances have of late made this branch of the Society's work again prominent. In the discussion that followed the speakers were unanimous in the opinion that active measures should be taken to stop the threatened extermination of rare and beautiful wild plants.

The Association of Economic Biologists.—The inaugural meeting of this new Association of workers in economic biology, was held at the rooms of the Linnæan Society on November 8. Professor Theobald, the well-known entomologist, was elected President, Mr. Herbert Stone, author of the latest work on the timbers of commerce, Treasurer, and Mr. Walter E. Collinge, the malacologist, of the University of Birmingham, Secretary. The next meeting is to take place in Birmingham during Easter week, 1905.

THE LIFE OF AN ANT.

THE bee deserves all the eloquence that Maeterlinck has lavished upon her, but the ant is the greater insect, as Solomon told us centuries ago. He is the Roman of the insect world, while the bee might be regarded as the Greek, if she had only a little more sense, and a keener intelligence.

The ant is essentially an organiser and a conqueror, and provides his food in the harvest. He takes account of more things than his own hill, too. Bees carry on no campaigns as ants do, they plan no great conquests and expeditions, nor have they the notions of empire and world power that the ant possesses.

A well-known scientist once stated how, on the brown hills surrounding the famous old city of Toledo, in Spain, he saw an army of ants with banners, crossing a dusty road. They literally carried banners—sprays of dry grass, apparently—which waved above their serried ranks, and in that place of famous battles, of memories of Spanish chivalry and of the fierce wars between Moor and Goth, the spectacle thus presented was like a phantasmagoria of past glories, passing before his eyes in miniature.

Just what they were about it was difficult to say. Perhaps they were in quest of a new country in which to settle, moving with all their emblems, jealously guarding their household gods. But there, in an endless column, they filed out of the grassy forest on the other side, tramping steadily onward with their pennons afloat, and their van-guard and rear-guard in line (military formation) advancing in the direction of Toledo, as if they

meant to assault and capture that ancient stronghold of King Roderick.

Every reader of the works of Lord Avebury knows something of the wars of conquest and domestic and civil economy of the ant family; how these little creatures conduct their affairs, how their armies are organised and move in compact ranks, with leaders, outriders and scouts, van-guard and rear-guard, as described above; and how they advance over long distances, overcoming innumerable and well-nigh insurmountable obstacles, and rush straight upon the camp of the enemy, which they often capture by sheer force of assault; but not before many of the combatants on both sides have perished. Bates, our great naturalist, during his life spent on the Amazon, learned many fascinating facts about the ways and the wars of the South American ants. They take prisoners, they make slaves, and they even keep domestic cattle—consisting of other ants, or different species of insects. Our own English ants keep "cows," that is to say, they retain certain insects called aphides, from whom they obtain a sweet juice by stroking the hinder part of their abdomen with their fore-legs.

It is quite possible to see some of these things for one's self without going to Spain or America. In fact, anybody who goes out into the country, or who has the good fortune to live there, can make delightful studies of the ways and habits of ants, instead of passing by their beautifully constructed dwellings, or crushing them thoughtlessly under foot.

How well the writer remembers a certain heath-land, where the ant-hills rose like green and verdant isles out of the purple sea of heather; where he spent many a pleasant hour watching the several colonies at work! He was only a youngster, but the scene impressed him strongly, for he had just been translating an account from one of the Latin classics, of a town compared to a hive of busy bees, and as he watched these vast, yet miniature cities rising, or already risen all about him, he could not help being struck with the fact that these toiling atoms were more persevering, and showed more intelligence and foresight than he had ever seen in human beings. It is really wonderful to behold the co-operation exhibited by these little creatures, measuring barely a third of an inch in length.

And how often since his school-days has he watched the same process going on and noticed how great a resemblance to human affairs existed therein! Not only do you see the workers toiling over mighty mountains of knocked-up turf, and passing through the deep gorges of cart-wheel ruts, frantically, yet steadily, bringing their load along with them, but you also perceive the shrinkers who, bringing up their loads from the inner galleries of the wonderful city, do not bother to carry them well over the ridge of the entrance, but drop them at the mouth of the opening, when some grains and pebbles roll back into the cavity. And then the foreman of the working gang is seen to rush up

and often seize the carelessly placed grain, and carry it up over the ridge, and far down the other slope. When the danger is safely overcome, the busy little creature hurries back into the nest and doubtless does not fail to pick out the delinquent and give him a "dressing down."

These evidences of fallibility and infallibility, of efforts to shrink hard work and efforts to correct mistakes and shortcomings, seem to me the most convincing proof of the possession of a degree of intelligence far superior to the automatic instinct that many people avow is the only power governing the doings of insects.

The whole ant family contains engineers, warriors, administrators and inventors; equal in their own little world (which doubtless seems to them as great and unrivalled as our Empire seems to us) to those great men whose statues grace our cities, and whose names are handed down to posterity.

A. G. COLLINS.

BRITISH CETACEANS.

I have been requested to complete the list of British Mammals which appeared in the January issue of NATURE NOTES.

Order *CETACEA*.

Family *Delphinidæ*.

(*a*) The Beluga (*Delphinapterus leucas*).
*(*b*) The Narwhal (*Monodon monoceros*).
(*c*) The Porpoise (*Phocæna communis*).
(*d*) The Killer (*Orca gladiator*).
(*e*) Pilot Whale (*Globicephala melæna*).
*(*f*) Risso's Grampus (*Grampus griseus*).
*(*g*) White-beaked Dolphin (*Lagenorrhynchus albirostris*).
*(*h*) White-sided Dolphin (*L. acutus*).
(*i*) Common Dolphin (*Delphinus delphis*).
*(*j*) Bottle-nosed Dolphin (*Tursiops tursio*).

Family *Physeteridæ*.

(*k*) Bottle-nosed Whale (*Hyperoodon rostratum*).
*(*l*) Cuvier's Whale (*Ziphius cavirostris*).
*(*m*) Sowerby's Whale (*Mesoplodon bidens*).

Family *Balænopteridæ*.

(*n*) Humped-backed Whale (*Megaptera boops*).
(*o*) Common Rorqual (*Balænoptera musculus*).
*(*p*) Rudolphi's Rorqual (*B. borealis*).
*(*q*) Sibbaldi's Rorqual (*B. sibbaldii*).
(*r*) Lesser Rorqual (*B. acuto-rostrata*).

[Species marked with an asterisk are rare and seldom, if ever, seen.]

There are also a few species of which only one British record exists.

W. R. D.

REVIEWS AND EXCHANGES.

House, Garden and Field: a Collection of short Nature Studies. By L. C. Miall, F.R.S. Edward Arnold. Price 6s.

Anything dealing with natural science or with education from the pen of so distinguished a worker in biology and so successful an educationalist as Professor Miall, is sure to be of interest and of value. The present work is mainly addressed to teachers in training and is intended to suggest and direct the planning of Nature-study lessons rather than to provide such lessons ready-made. Some of the fifty-four sections into which it is divided, such as those on Old English Gardens, Natural History Clubs and Rare Specimens, can hardly be said to serve this purpose directly, interesting as they are; whilst, considering that the book is not meant as a laboratory-guide, we fail to see any reason for the apparently intentionally hap-hazard arrangement or disarrangement of its topics. Here, however, our fault-finding ends. We differ from the author as to the value of museum demonstrations, unspecialised excursions and local lists; but there can be no question as to the excellence alike of the matter and of the expository method of the lessons themselves. Several subjects recently discussed in our pages are here admirably elucidated, such as Honey-dew, The Freshwater Aquarium, The Glow-worm, The Frog-hopper, and the Death-watch; whilst in some few cases, such as the lesson on the human hand, the Professor allows himself to be more anatomical than is usual in the teaching of Nature-study. Mr. Hammond's illustrations are always adequate, as examples of which we would specify those of the water-lilies, and, if we were compelled to single out any chapters as being in our opinion more interestingly novel than others we should be inclined to choose that relating to these plants and that on the Wood-sorrel.

Notes on the Natural History of the Bell Rock. By J. M. Campbell. David Douglas. Price 3s. 6d. net.

This little book, somewhat highly priced, seeing that it contains but 130 pages and is almost without illustrations, is the Journal from April, 1901, to April, 1904, of the Assistant Lightkeeper, whose tastes lie mainly in the direction of ornithology. It contains many interesting notes, as of a sitting gannet extracting, "one by one, as many as six full-grown herrings" from the mouth of the male bird, of the hen-ware, or badderlock, increasing a foot in length in six weeks, or of the black-back gull devouring not only the eggs or young of the grouse, but even the sitting bird herself. The following is an excellent description of the *modus operandi* of the oyster-catcher as a limpet-picker:—"Wading an inch or so deep, where the limpets were probably opening to the influence of the incoming tide, he appeared to make a judicious selection; then, with a single sidelong blow of his chisel-like bill, he turned the no doubt astonished mollusc upside down. Seizing it in his bill, he carried it to a still dry portion of the Rock, and in a twinkling he had the limpet out of its shell, and journeying up his long bill to its doom. The tip of the upper mandible appeared to do the scooping out, while the lower merely acted as a resistance outside the shell, the operation being performed more quickly than even the adroit oyster-man turns out his wares on the half-shell."

The Published Records of the Land and Fresh-water Mollusca of the East Riding, with Additions. By T. Petch, B.Sc., B.A. With Thirteen Sketch-Maps showing Distribution. A. Brown and Sons, Hull. Price 1s. 6d. net.

This excellent piece of work is a "separate" from the *Transactions of the Hull Scientific and Field Naturalists' Club.* The sketch-maps, showing, as they do, discontinuous areas of distribution, require for their elucidation either a large-scale ecological map or a very full description of the characters of soil and vegetation in the various scattered habitats.

Homeland Handbooks, No. 34. *Dunstable: The Downs and the District.* By Worthington G. Smith. Homeland Association. Price 1s. paper, 2s. cloth.

This is a pocket edition of the more expensive *Dunstable: its History and Surroundings*, which we noticed a few months ago, abridged by the omission of

the folk-lore, the lists of birds, and plants, and the chronological summary, and without the portrait of the author and some of the illustrations; but as it retains both the maps, it is a phenomenally cheap guide-book. To the excellence of its matter we have already borne testimony.

Hull Museum: Quarterly Record of Additions, No. 10. By Thomas Sheppard, F.G.S., Curator. Price 1d.

This number contains an interesting record of Roman pottery from Easington, with a plan of the neighbourhood, together with an account of additions to the collection of china and encaustic tiles and other notes.

The Optical Lantern and Cinematograph Journal, No. 1. Edited by Theodore Brown. Price 3d. monthly. 9, Tottenham Street, W.

This is the first number of a practical trade journal incorporating *The Optical Magic Lantern Journal, The Lantern World* and *The Cinematograph Chronicle.* It contains, *inter alia*, articles on illuminants, lantern-slide-making and micro-photography.

The Parents' Review for November contains articles in praise of gardens and gardening and on the New Forest in August.

Received:—*The American Botanist* for August and September; *The Victorian Naturalist* for October; and *The Naturalist, The Irish Naturalist, Nature-Study* (Lockwood), *The Animal World, The Animals' Friend, Our Animal Friends, The Humanitarian, The Agricultural Economist, The Estate Magazine*, and *The Commonwealth* for November.

NATURAL HISTORY NOTES.

195. Psychic Power of the Dog.—While reading in this month's number NATURE NOTES the review of "Ants and some other Insects; inquiry into the Psychic Power of these Animals," by Dr. August Forel, I was reminded of an incident of which I was an eye-witness some years ago, and which, I think, may be cited as an evidence of a dog being sensitive to the psychic power of man.

I was visiting a relative at one of the Colleges at Oxford. On the evening of which I write, a guest at dinner, a Fellow of another college, expressed a complete scepticism with regard to thought-reading, which came up in the course of conversation. He said he did not believe in it at all. Our host then proposed that during the evening we should make some experiments in thought-reading, and the guest should consent to test the truth of them. Accordingly, later on when we returned to the drawing-room, each of us in turn left the room, while those who were left behind decided, in the softest whispers, what he should do when called to return to the room blind-folded. I must now state that throughout the evening there lay on a large rug in front of the fire two dogs, both sleeping soundly, one a large St. Bernard, furthest from the fire, and in front of him, between his fore and hind legs, a little fox-terrier, close to the fender. Towards the end of the evening our host was blindfolded for the second time, and before he was led back into the room, with signs and the lowest whispers we decided that he should find his way to the little fox-terrier, lift him up and place him on a little occasional table that stood near the centre of the room. Neither of the dogs showed any sign of consciousness while this passed. Our host re-entered he room, and made his way, when left alone, a few steps in the right direction of the table, but then stopped and put out his hand as if uncertain. At that moment the fox-terrier moved, and began to whine and become distressed and excited, then he leaped over the St. Bernard and made his way, whimpering and grovelling, to his master's feet, and made little leaps up his legs, barking and whining. His master stooped down and patted him, saying: "Fox, what is the matter?" In so doing he moved forward, nearing the table, while the dog got more and more excited and barked loudly. At last his master touched the table, and then took up Fox as if to quiet him, and placed him on it. Then

Fox showed the greatest joy, barking loudly and leaping up and down, while we clapped our hands. It seemed very remarkable to me.

Could this show in the dog's brain a capacity for receiving the influence of a psychical impression transmitted by the intensity of our wills, of which we were unconscious?

"*Tregethew*," *St. Martin, R.S.O.* HARRIET E. OLIVE.
S. Cornwall, November 10, 1904.

196. Black Squirrel.—A neighbour reports to me a black squirrel in one of his coverts. I do not remember having come across a case of melanism in this British rodent, though light coloured ones are not uncommon.

EDMUND THOS. DAUBENY.

197. Black-headed Mannikin.—I have at last ascertained that the strange finch shot here four years ago is the Black-headed Mannikin (*M. atricapilla*). It is a native of India and Burma. The one killed here must have escaped from captivity.

EDMUND THOS. DAUBENY.

198. Swallows.—The swallows took their departure this year from my immediate neighbourhood at a very early date. On September 27 I noticed a considerable flock of chimney-swallows and house-martins circling about opposite this house, but more were to be seen the following day. On October 3 a few of both species appeared near the house, but since that date not a solitary straggler has been noticed. Perhaps the rather severe frosts which prevailed at the end of September may have sent the pretty creatures away earlier than is usually the case.

Fyfield, near Abingdon. W. H. WARNER.

199. Goat Caterpillar.—Mr. Lowther's Goat Caterpillar (p. 236) did not actually eat the cardboard, but merely cut a hole in it and used its jaws in endeavouring to escape. It would have treated a wooden box, or even a leaden one, in much the same way. These caterpillars do not leave the tree in which they have lived till they are full fed and have ceased to take food. They desert the tree in the autumn and pupate at a distance. Next thing they turn into a moth. I always put them in a tin canister and supply them with shavings, which they cut up in forming their cocoon.

EDMUND THOS. DAUBENY.

200. Tapping.—Your valuable correspondent, Mr. E. T. Daubeny refers to "tapping" sounds that occasionally are heard in rooms of our houses similar to the noise of the "death-watch." May I be allowed to state what has forcibly struck me as the cause of this sort of noises.

I cannot help feeling convinced that these sounds are emitted from wooden furniture. I have generally noticed that I heard them after a sudden change in the temperature from heat to cold. I have also noticed that similar sounds may be produced at pleasure with a stove that has a fire-brick back to it. After a fierce fire has thoroughly heated the fire-brick back, suddenly with a shovel pull the burning coals forward from the back, and as the back cools, you will distinctly hear these noises emitted.

In furniture, heat causes it to expand and open the interstices of the wood, which become filled with air. A sudden cooling, on the other hand, causes the wood to contract, and the interstices then close and forcibly expel the air with these explosive sounds. The noises vary in force according to the quantity of air expelled and the smallness of the opening through which it is expelled, but they are always similar in sound, though sometimes the air is expelled quicker than at other times.

When the lives of invalids are "hanging by a thread," a sudden change to colder weather often causes death. This is the reason why the death of invalids, especially in the olden times when they had fewer comforts, has been frequently noticed to occur after these noises, and the sounds have consequently got the name of the "death-watch." I can hardly think it possible that these noises can be caused by a very tiny insect that is sometimes found in old furniture.

Hampstead, PETER HASTIE.
November 14, 1904.

201. Autumn Tints.—In speaking of this familiar subject I wish to do so rather interrogatively than positively: to hazard conjectures rather than to lay down the law. We have had some very beautiful displays this autumn, and should have had more but for the ruthless trimming back of the hedges when at their very gayest. It seems to me certain that the sun has much to do with bringing out the bright colours which are so much more conspicuous in some years than in others; and I would offer tentatively a suggestion, that sunny weather (say, from July to September) is favourable to a gay autumn. Coming to particular leaves, to those of the hazel, for instance—and I think there are none that better repay individual study—one may see a leaf with a beautiful curve in it, so that one part catches the full power of the sun, while other parts are almost shaded from it. In such a case the gradations of colour are often wonderful and glorious: the sunniest part may be a rich scarlet, passing through orange to yellow, and almost pure green, with most lovely shading in the "ridge and furrow" of the leaf. I have brought in to-day (November 4), what I call a beautiful bouquet of maple, hazel, and oak. But what strikes me now in the hazel leaves is not so much the gradations of colour as the appearance of green *sprinkled with gold dust:* I don't think any other phrase would describe the effect. The maple leaves show great variety, some are almost as pure gold as we may see on the elm; some show a kind of harlequin mixture of reddish-orange and green, and so on. I have seen beautiful "ridge and furrow" effects in hornbeam leaves in this and other years; but I have noted one hornbeam which gets very little sun (as I think) in the day, and I observed that its leaves turned a uniform yellow without any variety that I could see. This seemed to me to favour the idea that the finest and most varied effects are (at least in many cases), dependent on sunshine. As part of a distant view no leaves have a richer effect than those of the wild cherry, which may, I suppose, be called crimson or blood-red. The hedge-trimming has deprived me, to a great extent, of one favourite combination; viz., the golden maple against the brown-purple dog-wood. The extensive planting of poplar in and round our hop-gardens has added a distinctly new feature; the leaves turn to a pale slightly greenish-yellow, different, I think, from any other common tree: one may contrast it with the much deeper gold of the tulip-tree.

And here I stop, not attempting to describe the stag's horn sumach, or many others that will occur to your readers. But there is a certain pardonable pleasure in recalling the feast that we have been enjoying, at the time when its dainties are in the act of being removed.

Otham, Maidstone. F. M. MILLARD.

202. Catesby and the Catalpa.—Mark Catesby was born, not in London, as the "Dictionary of National Biography" surmises, but at Sudbury in Suffolk, about the year 1679. Having relatives in Virginia he went out there in 1712 and stayed seven years, sending home dried specimens of plants "and some of the most specious of them in tubs of earth at the request of some curious friends, amongst whom was Mr. Dale, of Braintree." Some observations of his on the country having been communicated by Dale to William Sherard, when Catesby returned to England in 1719 he was commissioned by Sherard, Sloane, Mead, Harley and others to go out to Carolina. This he did in 1722, travelling into the interior and visiting Georgia, Florida and the Bahamas before his return in 1726. He then settled at Hoxton, where he had some of his plants grown at the City Gardens in which Thomas Fairchild had just been succeeded by Bacon—a nurseryman, *not* Sir Francis. Though not bred an artist, owing to the expense of publishing his work he learnt the art of etching, and in 1730 began the publication of his great work, "The Natural History of Carolina, Florida, and the Bahama Islands" in numbers, each containing twenty plates. The first volume, containing 100 plates, was completed in 1732, and the *Catalpa* appears in this as Plate 49. The second volume, containing 100 more plates with their accompanying pages of letterpress in English and French, and the general account of the country, was completed in 1743, and an Appendix of twenty more plates and pages of description appeared in 1748. The work is in imperial folio, and, as animals and plants are represented together the 220 plates comprise 401 subjects, which are mostly of natural size. As Catesby etched all the plates

himself from his own paintings and superintended the colouring of the earlier copies, "this work was the most splendid of its kind that England had ever produced" (Pulteney). A second edition, revised by George Edwards, was published in 1754, and a third, with an index of Linnæan names, in 1771. The author was elected a Fellow of the Royal Society in 1733; and a critical account of each part of his work by the Secretary, Dr. Cromwell Mortimer, was published, as it appeared, in the *Philosophical Transactions*. Catesby published one paper in the *Philosophical Transactions* "on Birds of Passage," in which he opposes the view, which, it will be remembered, Gilbert White favoured, that birds lie torpid in caverns or at the bottom of the water. Before his death he removed to Fulham, and afterwards to Old Street, where he died in a house behind St. Luke's Church, December 23 1749, leaving a widow and two children. His "Hortus Europæ Americanus, or a collection of 85 curious Trees and Shrubs," a folio with 17 plates, was not published until 1763, when it was produced by the Christopher Gray, nurseryman, of Fulham, who is mentioned in the following account which Catesby himself gives of the Catalpa.

"*Bignonia Arueu foliis flore sordidi albo, intus maculis purpureis et luteis asperso, siliquâ longissimâ et angustissimâ.* The Catalpa Tree. This is usually a small Tree, seldom rising above 20 feet in height. The bark smooth: the wood soft and spongy; the leaves shaped like those of the Lilac, but much larger, some being ten inches over. In *May* it produces spreading bunches of tubulous flowers, like the common Fox-glove, white, only variegated with a few reddish purple spots and yellow streaks on the inside: the calix is of a copper colour. These flowers are succeeded by round pods, about the thickness of one's finger, fourteen inches in length; which, when ripe, open and display its seeds, which are winged, and lie over each other like the scales of fish. This Tree was unknown to the inhabited parts of *Carolina* till I brought the seeds from the remoter parts of the country. And though the inhabitants are little curious in gardening, yet the uncommon beauty of the Tree has induced them to propagate it; and 'tis become an ornament to many of their gardens, and probably will be the same to ours in *England*, it being as hardy as most of our American plants, many of them now at Mr. Christopher Grays, at *Fulham*, having stood out several winters, and produced plentifully their beautiful flowers, without any protection, except the first year."

The tree was named *Bignonia Catalpa* by Linnæus; but in 1788, in Thomas Walter's "Flora Caroliniana," it appears as *Catalpa bignonioides*, which name has, therefore, priority over the *Catalpa syringæfolia* of Sims. It is tolerably certain from the above quotation that the species was unknown in Britain until 1726, exactly a century after the death of Francis Bacon. G. S. BOULGER.

NATURAL HISTORY QUERIES.

39. Enemies of Bees.—A neighbour assures me that on one occasion he noticed four or five swallows and the same number of house-martins engaged in catching his bees. This is foreign to my experience. Another friend tells me that one summer his bees were decimated by nightingales. This also is news to me. Tits sometimes attack bees which venture out in a cold early spring; and robins too, I have been told. Can any one corroborate any of these statements?

EDMUND THOS. DAUBENY.

40. Luminous Centipede.—A few nights ago after switching out the electric light in the drawing room I saw a patch of phosphorous light on the carpet. By putting my finger upon it I was able to spread and divide the light. A match was struck and I saw a small brown centipede crawling away. I gently crushed it hoping to see light emitted, but in vain. Can anyone throw light on this luminous subject?

ETHEL G. WOODD.

[The luminosity of these myriapods is well-known, having been observed by Mouffet before 1634, and by Ray. It occurs at certain times of the year, in both

the British species of *Geophilus*, and is produced by a phosphorescent fluid secretion from glands on the under surface.—*Ed. N.N.*]

41. Honey-dew.—I was very much interested in your note on page 175 of NATURE NOTES, as the same unusual production of honey-dew has been most noticeable in these suburbs. The trees most infected have, of course, been the limes, but sycamores and chestnuts have also shown signs. The plane trees have escaped and, so far as I noticed, poplars have not been infected, even though limes in the same garden have been covered with aphides.

I have searched in vain through Ward, Strasburger and many other books to find some authoritative statement as to this honey-dew and have failed to find even casual mention thereof.

The extract from Professor Ward's article appears to leave the matter in doubt, as he states the punctures of aphides or the ordinary process of over-turgescence might occasion this exudation. I presume he accepts the fact that the aphides themselves largely exude this "dew."

If I am not troubling you too much, I should be glad if you could refer me to any books bearing on the subject, and if you would at the same time let me know whether you consider the "dew" an insect or a vegetable exudation. Whichever it may be it appears to do the trees no harm, as none that I examined appeared in any way the worse for their insect guests. I was interested in reading Gilbert White's reference in his letter, No. 108, and, whatever may be the cause, I take it we are now agreed that his theory is wrong.

22, *Crouch Hill Road, Crouch End, N.* C. S. NICHOLSON.
September 25, 1904.

[Honey-dew has been dealt with by Büsgen in *Der Honigthau* (Jena). The orthodox view is that it is primarily the excretion of aphides that live on the leaves, boring holes into their tissues, sucking their juices, and ejecting a drop of the fluid, which is rich in sugar, on an average once in every half-hour. When dew falls the hygroscopic honey-dew takes it up and spreads over the leaf; and then, later in the day, evaporation converts it into a varnish over the whole leaf-surface, which serves to check transpiration. Among European trees it is general on Linden, Maple, Beech and Oak; but, as I mentioned in the August number, I have also noticed it freely produced on Hawthorn and on *Populus monilifera*. —*Ed. N.N.*]

SELBORNE SOCIETY NOTICES.

Business Meetings.—The next meeting of the Council will be held on Tuesday, January 3, at 5.30 p.m., and the Publications Committee will meet on Monday, December 12, at 5.30 p.m.

Election of Librarian.—At the Council meeting held on October 25, Mr. Hubert Poole was elected Honorary Librarian in succession to Mr. Wilfred Mark Webb.

Election of a Councillor.—At the same meeting Mr. R. Marshman Wattson was elected a Councillor in the room of Mr. Poole.

Emendation of Rule II.—At the Special General Meeting held on November 22, Rule II., paragraph (c), section (2), was altered to read as follows:—"the skins and plumage of such birds as are not domesticated."

Junior Branches.—At the Council Meeting held on the same day the warrants constituting two new Junior Branches were approved. They are the Laleham Junior Branch, of which Miss Kate E. Fanner, of Laleham, Clarence Road, Clapham Park, is the Secretary, and the Roland Houses Nature Study Society, for which Miss Grace E. Southwell, of 5, Roland Houses, South Kensington, is acting as Secretary and Treasurer.

New Members.—*Central Society*—C. H. Crawley, Esq., Bowes Park; John Curtis, Esq., Fulham; Miss Kate E. Fanner, Clapham Park; G. Haldane, Esq., Anerley; Miss Dora Hollins, Honor Oak Park; Alfred W. Oke, Esq.,

F.L.S., F.G.S., Hove ; Miss Dorothy Raikes, Hatfield ; Miss Hilda T. Raikes and Miss Margaret T. Raikes, Victoria Street, S.W. ; Frank Richardson, Esq., Harpenden ; Miss A. Swindells and Miss Bertha Swindells, Clapham Park ; Arthur Shephard, Esq., Woking.

Brighton Branch—Miss Wallace, Brighton.

East Riding Branch—The Rev. H. P. Thornton, Market Weighton.

Hampstead Branch—Miss L. H. Ashton, Catford ; Mrs. C. Beach, Hampstead ; Miss Bishop and C. E. Bishop, Esq., Heathfield Park ; E. C. Channing, Esq., South Hampstead ; Mrs. Copland, Hampstead ; Mrs. Edith Corby, Cricklewood ; Mrs. E. P. Davies, Regent's Park ; Master Stanley Davis, Maida Vale ; H. Faraday, Esq., Hampstead ; Miss A. J. France, Highgate ; S. H. Gillett, Esq., Marlborough ; T. H. Hiscott, Esq., and Mrs. T. H. Hiscott, Holland Park ; Mrs. Blanche J. Isaacs, William Lawry, Esq., Hampstead ; Mrs. Wolfe Levy, Frognal ; Miss C. Magnus, E. McCann, Esq., Hampstead ; C. S. Marks, Esq., West End Lane ; F. Morris, Esq., St. John's Wood Park ; J. W. Odell, Esq., Stanmore ; Miss S. Pitt, Hampstead ; Mrs. A. Rozelaar, West End Lane ; Mrs. R. Solomon, West Hampstead ; Miss Young, Primrose Hill.

Subscriptions.—The Council has pleasure in acknowledging subscriptions of more than 5s. from the following members : Mr. and Mrs. Alfred Currey, £3 3s. ; S. G. Huntley, Esq., 10s, ; Rev. H. B. Hoare, 7s. 6d.

Library.—The Honorary Librarian begs to acknowledge the receipt of "Superstitions about Animals," by Frank Gibson, and "Bird Notes from the Nile," by Lady William Cecil, for the Library, from the Editor.

NEWS FROM THE BRANCHES.

Bath.—On Thursday, November 10, Mr. Fred. Enock gave a delightful lecture on the "Wonders and Romance of Insect Life." The lecture was copiously illustrated with a unique series of lantern slides. Dr. Norman presided over a large and appreciative audience ; and, in thanking the Lecturer at the close, he expressed a hope that Mr. Enock would give them another lecture next year.

Birmingham and Midland.—On Wednesday, November 16, Mr. Ernest Thompson Seton delivered a most attractive lecture on "Wild Animals I have Known" to a large audience in the Birmingham Town Hall. Many hundreds of children from certain of the primary schools of the city were invited, and the Members and their friends who had purchased tickets filled every available seat in the side galleries. Mr. Seton is a clever story-teller, and the children were particularly delighted with his amusing accounts of bear life, illustrated by lantern views. He is also a very keen observer, and gave some interesting details of the way in which he had made out the track of a fox by impressions left in the snow. Mr. Seton has also given a great deal of study to the various cries of wild animals, many of which he imitated, to the great delight of the younger portion of his audience. He concluded his lecture by relating his capture of "Lobo," the "King Wolf of the Currumpew," which is so graphically described in the lecturer's well-known book, "Wild Animals I have Known." Sir Hallewell Rogers, President of the Branch, accorded the lecturer a hearty vote of thanks, which was carried by acclamation.

Hampstead.—On Monday, December 12, a lecture will be given at 8.15 p.m., at the Subscription Library, Prince Arthur Road, Hampstead, by Mrs. L. Douglas Wilson, on "Pompeii." The Chair will be taken by Mr. H. Plowman, F.S.A.

North Middlesex Junior.—At a general meeting of this Branch at Brunswick Hall, New Southgate, following up a suggestion that it was of advantage that the Warrant-holder, Mr. C. M. Hall, should be responsible for the secretarial duties, a resolution to that effect was carried. Mr. Hall, in acquiescing, said that for some time he had seen the propriety of the step the members were taking, that course being conducive to the proper organisation of the Branch. Mr. J. W. Grint was appointed Honorary Treasurer.

On Friday evening, November 4, Mr. C. M. Hall gave a paper on "Ichthyology," illustrated by drawings, and by specimens lent by Mr. G. Brooks.

It was announced that on November 18 Mr. G. Brooks would give a paper on "Popular Entomology," demonstrated by specimens; and that on Friday, December 2, a Limelight Lecture would be given by Professor Boulger, F.L.S., &c., on "Gilbert White and his Work." The latter will be open to the public by ticket.

SELBORNE SATURDAY AFTERNOONS.

November 12.—The first afternoon of the winter session was devoted to a demonstration at the Natural History Museum. The temporary collection of fossil seed-bearing pteridophytes having been dispersed and the botanical galleries being occupied by decorators, Professor Boulger, the guide for the occasion, restricted himself to two cases in the Central Hall illustrating parasitic and insectivorous plants. Mr. George Murray, F.R.S., Keeper of the Department, a Vice-President of the Society, explained that the drawings and models in the cases were all made direct from Nature, and, after the Demonstration, received the party in his private room and showed them some interesting relics of Sloane, Linnæus and Banks. Over thirty Members were present.

FUTURE ARRANGEMENTS.

Saturday, December 10.—Visit to St. Saviour's Collegiate Church, Southwark (Future Cathedral). The church is close to London Bridge Station. Assemble at the south transept door at 2.15. The Rev. Canon Rhodes Bristow has kindly promised to act as guide to the Selbornians.

ANSWERS TO CORRESPONDENTS.

H. Churcher.—*Bird Notes and News* from the Society for the Protection of Birds, 3, Hanover Square, W., price 1s. per annum post free; *Bird Lore* from the Macmillan Co., New York, price 1 dollar per annum.

Rev. F. M. Millard.—Like as your shrub is to the Holly, it is not even a near ally, being the Japanese *Osmanthus ilicifolius*, one of the *Oleaceæ*. Its leaves, you will notice, are opposite. October is its usual flowering season.

NOTICES TO CORRESPONDENTS.

1. All communications for NATURE NOTES must be authenticated with name and address, not necessarily for publication.

2. The return of an unaccepted contribution can only be guaranteed when it is accompanied by a stamped and addressed envelope. We cannot undertake to name specimens privately, to return them, or to reply to questions by letter.

3. All communications for any number must be in the Editor's hands by the 10th of the preceding month.

4. Communications for NATURE NOTES, books for review, specimens for naming, &c., should be addressed to the Editor, PROFESSOR BOULGER, F.L.S., F.G.S., 11, Onslow Road, Richmond, Surrey.

5. For the supply of the Magazine to others than members, or for back numbers (except in the case of new members), address the publishers, with stamps at the rate of 2½d. per number, Messrs. JOHN BALE, SONS AND DANIELSSON, Ltd., 83-89, Great Titchfield Street, London, W.

6. Letters connected with the business of the Society, subscriptions, and applications for membership, should be sent to the local Honorary Secretary, or to the Honorary General Secretary of the Society, WILFRED MARK WEBB, F.L.S., at 20, Hanover Square, London, W.