The Natural History of Everyday Creatures.[1]

MISS FRANCES PITT has given us a delightful book of personal observations on the everyday creatures that may be met with in garden, meadow, and hedgerow—the mice, birds, frogs, toads, and other animals that every person comes across. She records what she has seen and learnt, and is plainly an observer of experience and insight. She shows the interest of the life at our doors, and makes it clear that there is a great deal still to be discovered. Her book is strongly to be recommended for young people, not only because of its interest and its simplicity of style, but also because of its scientific temper.

FIG. 1.—A toad climbing. From "Wild Creatures of Garden and Hedgerow."

We feel at every turn that here is an observer who has a great respect for facts. We recommend the book to young people—there is no writing down to them, but we are sure that many people who are not young in years will enjoy the author's observations thoroughly and learn much from them. The photographic illustrations are excellent.

The book begins with bats, which are bundles of peculiarities and puzzles. Let us take an example of Miss Pitt's method. When a bat, hawking in the twilight, makes a dash after an insect and catches it, it often apparently tumbles through the air for a foot or two. This is because the bat, having grabbed its insect, bends its head down into its interfemoral pouch, where its prey cannot escape, and crunches it quickly as the bat goes on flying. Now Miss Pitt won the confidence of a pipistrelle to such a degree that it sat on her hand and ate all the flies it could get—making nothing of twenty to thirty at a meal. "My little pipistrelle had hitherto caught and pouched all its food when on the wing, and from habit felt compelled to try and pouch the flies I gave it, though sitting in an attitude that made this almost impossible. The result was that time after time it tumbled over, and would right itself with such a puzzled and bewildered look! However, the difficulty of doing the proper thing did not stop it eating."

The bank-vole matches the soil, dead leaves, and withered grass so wonderfully well that it is very safe so long as it does not move; but if it moves too soon the kestrel drops on it like a stone. Miss Pitt kept three in a large glass-sided cage, and proved their fear of attack from above. "They did not take any notice of things moving beside them, but the slightest thing overhead sent them dashing for cover or made them crouch like stones where they were. The cage was arranged to be as much like part of a bank as possible." Of great interest is the story of a young thrush which took about a week to learn how to deal with snails. "It was very evident that he learnt by experience, and that the snail-cracking habit of the thrush is not a specialised instinct, but arises from the tendency of this bird to beat on the ground and thus kill any food, like a big worm, which cannot easily be managed. My thrush would beat and hammer anything that was at all troublesome or which he did not understand." This is the kind of observation that gives the book a high value. Dealing with shrews, Miss Pitt says: "It is only by watching these small animals that one can gain any idea of their untiring energy, intense vitality, and their great pugnaciousness. They are perhaps the most quarrelsome creatures in the world! If lions and tigers were as fierce, active, and fearless in proportion to their size, as shrews and moles are in comparison with their little bodies, what awful creatures they would be!" In regard to the death of large numbers of common shrews in the autumn, the author favours the theory that these animals are "annuals." Here, as in some other parts of the book, there is a useful exposure of the nonsense that is often talked about the misery and cruelty of wild Nature. "If to us it seems dreadful that death should be always on the watch

[1] "Wild Creatures of Garden and Hedgerow." By Frances Pitt. Pp. ix+285. (London: Constable and Co., Ltd., 1920.) Price 12s. net.

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for them, it seems almost certain that the small animals enjoy their life to its utmost." We come next to a sympathetic study of frogs and toads. The toad's eyes are described as of "a pale metallic brown with reddish lights like flickering fires in their depths." This is good, but we do not like the suggestion that *iris* and *pupil* are synonymous, and we should not ourselves speak of the toad *ejecting* its poison. It is interesting to learn that toads will go over a mile to a particular breeding-pond—perhaps a sort of "homing." Miss Pitt's workmanship is first-class throughout, but she excels herself in dealing with mammals. What a fine picture she gives of the long-tailed field-mouse, with "great black eyes looking ready to jump out of its head," which washes itself when the least upset, a great climber, a burglar of bee-hives. If the tail is suddenly seized, it *skins*, and the animal escapes, very like "a special arrangement to enable its owner to get away from hawks and owls." The mouse does not bite off the skinned bone, as some books say; the caudal vertebræ dry up and fall off of their own accord.

We thought we knew something about moles, but we have learned much from Miss Pitt. For their size they are extraordinarily fierce and strong; they fight furiously, and it is doubtful whether a weasel could master one. On one occasion a mole moved a nine-pound brick, which is like a man moving more than three tons. Their rate of digestion is past belief, and they require meals almost continuously. One that was supplied with forty worms in the late afternoon was dead next morning—with an empty stomach. "Whatever you do, don't despise the 'poor little mole,' . . . in its dark tunnels it fights, hunts, feasts, mates, and enjoys life with quite as much gusto as the creatures of the light and air."

Miss Pitt made a fine experiment with a very young common rat, still blind, feeble, and very naked. She gave it in a diplomatic way to a cat, whose litter had been reduced to one—about ten days old. "I could hardly hope that the cat would be so good, or shall I say so foolish, as to nurse such an utterly different baby as the rat!" But that was what happened. The rat was accepted, cleaned, fed, fondled, tended, and treated just like the kitten along with which it was reared. Even after another family came to occupy the cat's attention, she remained on friendly terms with the rat and often paid him a visit. The cat in question had been a good ratter, but after the adoption ratting was done with!

In the study dealing with the pied-wagtails, willow-wrens, and great tits of a garden, the author notes that the parent wagtails worked for sixteen hours a day, and in that time brought food about 192 times to the nest; and it is not merely the going to and fro; there is the searching for insects in between. It is suggested, by the way, that the willow-wren's domed nest serves to keep the sun off the young birds, which are greatly distressed by heat. There is a lively account of the slow-worm, the common lizard, and the grass snake; thus in reference to the local life of the discarded tail of the slow-worm we read: "Fancy being able, when threatened by a foe, to throw off such an important part as a tail, and slip away, while it dances on the ground and occupies his attention." We have often found students puzzled by the expression "casting or shedding *the skin*"; and as Miss Pitt explains that the skinned tail of a field-mouse dies, perhaps she may be fairly asked to explain why a snake which sheds "many skins" is able to live on. It is new to us that the skeleton of the slow-worm shows rudiments of *legs*. We make such trivial observations because the book is so perfect.

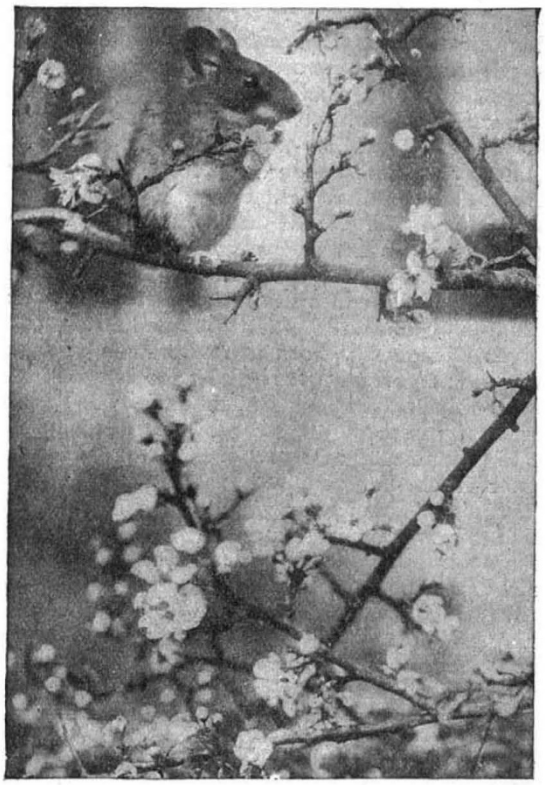

FIG. 2.—The long-tailed field-mouse. From "Wild Creatures of Garden and Hedgerow."

A study of the short-tailed field-vole, prolific, harmful, greedy, but very likeable, raises a number of interesting points. The dull, dark brown fur is a good instance of prolonged sifting: "It is not that it matches either the stems of the grass, or the bare earth, but it goes wonderfully well with the shadowy places between the plants." Who can explain why a comfortably caged mother, captured along with her litter of six, will coolly and collectedly, after a careful toilet, remove one baby after another from the nest, and give each a sharp and fatal bite? The ways of mice and men! We have left to the end the story of the hedgehog, which Miss Pitt defends from many

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calumnies. Its appetite for a dead rabbit or the like has doubtless given some basis for misinterpretation. We doubt whether it is quite correct to say that the rolling-up musculature (*orbicularis panniculi*) of the hedgehog is also used in raising the spines, but perhaps Miss Pitt means merely that the contraction of the cap-like sheet is a factor in making the spines stand out firmly. We like what is said in regard to the individuality of hedgehogs and other beasts of the field. Miss Pitt is to be congratulated on a book which takes its place in the first rank of works on field natural history. It is a personal record of clever, patient, and sympathetic observation. J. A. T.

Obituary.

PROF. YVES DELAGE.

BY a large number of zoologists, who have known the charm of Roscoff Marine Station during the last twenty years or more, the death of Prof. Yves Delage on October 8 will be felt as a personal loss. It was not merely that Prof. Delage grudged no time or trouble if he could help one with a piece of work; it was the impressive sincerity of the man and the simplicity with which he wore his learning. He had an encyclopædic knowledge of the shore-fauna and of the literature of biology, but he encouraged the learner with a Darwin-like humility. His devotion to science was singularly complete. All through his life, with an extraordinary intensity, he was preoccupied with biological and psycho-biological problems, and he did not often unbend his bow except for the simple pleasures of domesticity and the open air.

Yves Delage was born at Avignon in 1854 and educated at various provincial schools. He was greatly influenced in his student days by de Lacaze-Duthiers, whom he afterwards succeeded both at the Sorbonne and at Roscoff. It was under this master that he acquired a great liking for "microtomy" of a rather different sort from that which the word now suggests. We mean what Delage himself called "patient dissections under the microscope," the kind of investigation which he illustrated in his thesis (1881) on the vascular system of sessile-eyed Crustaceans. That he did not, however, stand so aloof as Lacaze-Duthiers did from the use of the microtome was shown in subsequent researches, such as those dealing with the development of sponges (1887). After a period of assistantship to Lacaze-Duthiers, of whom he always spoke with great reverence, Delage became professor at Caen and director of the adjacent Marine Station at Luc. He soon returned, however, to the Sorbonne, and was actively at work there until quite recently. He was elected a member of the Institute in 1901, about the time when he assumed full charge at Roscoff; he received the degree of LL.D. from Aberdeen University when he attended the quatercentenary celebrations in 1906; and he was awarded the Darwin medal by the Royal Society in 1916. For some years past his eyesight had given way badly, but his mental vision was unimpaired.

Delage's scientific industry was at once a reproach and an inspiration to those who knew him; it was almost incredible. His great book on "Heredity and the Great Problems of General Biology" (1895, second edition 1903) is a monument. It is marked by erudition, clearness of exposition, fair-mindedness, and keen criticism. We have temperamentally a great admiration for his judicial way of balancing evidence, sometimes so judicially that the reader's mind is left in a state of indecision. His own view was definitely neo-Lamarckian, and he had many a thrust at Weismannism. Then there are the twenty volumes or so of "L'Année Biologique," a very valuable series of critical summaries of current biological memoirs, even the last volume containing many contributions from Delage himself. Again, there are the half-dozen volumes of the "Traité de Zoologie Concrète," in which he was ably assisted by M. Hérouard and others. Besides these there were smaller undertakings, such as the very successful volume, written along with M. Goldsmith, on "Modern Theories of Evolution" (1909), and a similar volume on "Parthenogenesis" (1913).

Delage's most important contributions to zoology and biology have been (1) his fine study of the life-history of the extraordinary Crustacean parasite Sacculina, (2) his precise work on the development of sponges, and (3) his remarkable experiments on artificial parthenogenesis, with which his name (along with that of Jacques Loeb) will always be associated. We recall also the strange experiments on "merogony" and researches on the semicircular canals and otocysts. The study of the ear had a great fascination for him. Nor can we forget a long paper on a whale stranded near Luc, for it was in this connection, about 1885, that we had in our student days, working at the Luc laboratory, our first knowledge of Delage. We suppose that he made mistakes in his work like other distinguished men, but surely his life was marked by what he said Lacaze-Duthiers had by example taught to his school—"la persévérance, la suite dans le travail, la conscience dans l'observation, la sobriété dans les inductions théoriques."

Delage was at work at Roscoff this summer and autumn, and it is surely not unfitting that the last subject of his eager scientific analysis should have been *dreams*, on which we believe he had recently completed a treatise. A young student who returned last month from a working holiday at Roscoff has given us a pleasing glimpse, with which we close our appreciation. Every day after lunch it was Delage's habit to sit for a while in front of the laboratory so that any student might know he was then and there at home.

J. ARTHUR THOMSON.

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