

female brood on the eggs alternately; while one is sitting the other is not far off; but this occurs only in twenty-eight per cent. of the genera, and these are on the whole of somewhat inferior type. In sixty-five per cent. the female alone undertakes the brooding, but the male is, throughout, her faithful attendant, feeding her assiduously, driving away intruders, and cheering her with the joy of his tumultuous song. In accordance with the teachings of economics, we must regard this division of employment as a sign of progress." . . .

"That family life, which T. H. Green, in his 'Prolegomena to Ethics,' so justly regards as the ultimate basis of moral ideals (p. 257) . . . is faintly seen in a few fish; it is not wholly absent among reptiles, but it is for the first time distinctly observable among the lower birds, increasing ever as the type advances, till we find the nest-life of one of these higher birds to be marked by many graces of an indubitably moral character. The conjugal tenderness of the mated pair, and their unwearied self-sacrifice in ministering to the wants of their offspring, are ethically beautiful. Where these appear in an equal degree in the human couple, we reckon them as a solid fundamental element of goodness. Much else is required of man and woman, but it is no slight praise to say 'he was a kind husband and a devoted father,' or that 'she was a tender wife and a mother of unwearied love and self-sacrifice.'

"The family life, which we see so beautifully developed in these birds, is like the seed, enclosing within itself the full potentiality of all the ethic good to be developed in yet later stages, wherein a growing intelligence makes the young always more and more dependent upon family and social union."

Similarly in mammalian species, the number of offspring decreases with each successive stage of increasing intelligence and parental sympathy. It not only does so in the four orders of monotremes, marsupials, deciduate and non-deciduate placentalia, taken as wholes, but also when they are severally analysed in much detail. It is impossible to go further into this subject within the space at our disposal.

The portion of the book thus far noticed, is but a small part in bulk of the whole, but it will be of superior interest to those who are disposed to argue in a lazy offhand way, that after parental instinct had attained the level reached in the lower savages, its further evolution would be merely a matter of time and of favourable conditions. This was, however, by no means the feeling of the author, for he has taken very great pains and given much anthropological research to trace its actual steps. It is only possible here to give extracts from his summary.

"The process of moral development, as I see it, has been a slow dawning of parental sympathy, whence arises a simple and natural morality which is strengthened by the growth of the sense of duty and other accessory developments of sympathy. Out of the morality thus engendered springs whatever is moral in law, though, fundamentally, law is not moral but retaliatory."

One of the most interesting parts in the later portion of the book relates to the evolution of the sense of chastity. In the course of that discussion he treats lucidly and with great fairness many vexed questions concerning marriage in early times. He is in full concurrence with and gives important contributions to the present reaction against the excessive but clever dogmatism of McLennan about the universality of marriage by capture, endogamy and exogamy, and the

rest. But it is impossible to cope in a short article with the wide range of careful inquiry contained in this really remarkable book. Yet extensive as it is, some additional chapters have been written and afterwards omitted, as the author informs us. Others, too, might have been inserted; for instance, it would be very interesting to trace and describe the origin and purport of superstitious fears in human nature and their bearing on moral instinct.

F. G.

THE ANIMALS OF ESSEX.

The Mammals, Reptiles, and Fishes of Essex. By H. Layer. Essex Field Club Special Memoirs, Vol. iii. Small 8vo. Pp. viii + 138, illustrated. (Chelmsford: Durrant, 1898.)

IN respect of physical conditions Essex is one of the most favourably situated of the eastern counties of England for the possession of a large local fauna, its inland districts presenting variety of station, while it has a large sea-board, forming an estuary into which discharge several more or less important rivers. Indeed, were it not for the pollution of the Thames, the fish-fauna of the county would be even larger than is at present the case, and would reckon among its constituents the lordly salmon itself. Among other special advantages from a naturalist's point of view the county includes Epping Forest, which under its present excellent administration forms a sanctuary for wild creatures of many kinds. And in addition to its natural advantages, Essex is fortunate in possessing a Field Club which includes on its working roll many naturalists of high capacity. It is to a member of this club that we owe the present contribution to a knowledge of the fauna of the county.

So far as numerical completeness is concerned, the author seems to have done his work thoroughly; if he errs at all, it is in mentioning certain species which have admittedly been introduced into the county. The scientific importance of local faunistic works is not, however, to be reckoned by the number of kinds of stray cetaceans and other wanderers they record; but by pointing out the reason why particular species are restricted to particular districts, and in what respects the local representatives of each species recorded differ from their kindred in other districts. In both these respects the work before us fails to come up to modern requirements; since it completely ignores these portions of the subject, and merely gives general notes of little or no value on the animals mentioned. The work may be, and probably is, of considerable interest to the residents of Essex, but can lay no claim to a position of any scientific importance. It may, however, be useful as a foundation on which to build a more important superstructure, when the naturalist arises who will treat the Essex fauna from a broader standpoint.

It is somewhat unfortunate that the work appeared too soon after Mr. Thomas's revision list of the nomenclature of British mammals to admit of the author following the new light. In some cases, such as the retention of *Arvicola* for the voles, and of *Lepus timidus* for the common hare, the author is obviously behind the times. It may be uncongenial, but the sooner amateur

naturalists take to follow the lead of their professional brethren in nomenclatural questions (always reserving the "*Scomber scomber*" principle) the better it will be for all parties. The change is bound to come, and it may as well be accepted gracefully. In making a family "*Arvicolidæ*," the author departs from all authority; and the adding of the name of its founder to each family and order of fishes is an unnecessary redundancy.

The volume is illustrated with several photogravures, all of which are excellent from an artistic point of view, while several afford interesting glimpses of local scenery. If it be regarded merely as a stepping-stone towards fuller treatment, the work may be welcomed as indicating the recognition of the importance of treatises on our local British faunas.

R. L.

THE AMERICAN EXCAVATIONS IN MESOPOTAMIA.

Nippur; or, Explorations and Adventures on the Euphrates. By J. P. Peters. Vol. i. pp. xvi + 375; vol. ii. pp. x + 420. (London: Putnam's Sons, 1897-98.)

THOSE who take an interest in Mesopotamian excavations, and in the building up of the history of the ancient empires which flourished in the land "between the two rivers" by means of almost undecipherable cuneiform documents, will welcome the appearance of Dr. Peters' volumes. We must, however, warn the reader that he is not to expect a thrilling narrative like that which the late Sir Henry Layard gave us in his "*Nineveh and Babylon*," and "*Nineveh and its Remains*," both of which works were published nearly forty-five years ago, and he is not to look out for vivid tales of the uncovering of the palaces of mighty kings in the presence of hundreds of wondering and enthusiastic natives, nor for anything of the kind. No Mesopotamian traveller can ever hope to attract the attention of the reading public as thoroughly as did Sir Henry Layard, for there is, unfortunately, no second Nineveh to "discover"; though, by the way, its site was not only never lost, but was thoroughly well known. Moreover, the reader must not expect from Dr. Peters a scientific work like Dr. Oppert's "*Expédition Scientifique en Mésopotamie*," the first part of which appeared in 1859, for the work which he undertook to do in Babylonia and Assyria was not on all-fours with that which the eminent French man of science was called upon to perform. Sir Henry Layard's want of knowledge of Assyrian was made up for by the possession of considerable skill in writing an easily read and popular account of his travels and works; in the early days of the science of Assyriology when he wrote, he was able to put forward theories which in subsequent years scholars like Sir Henry Rawlinson and Dr. Oppert were unable even to mention. Dr. Peters starts, of course, with much better equipment than any one of the three Mesopotamian explorers whose names we have mentioned, for he has all their experience to help him, and an enormous mass of archæological facts, which have been heaped up by several workers, at his free disposal. Notwithstanding these advantages, his work is not a scientific exposition of the results obtained from the excavations by the expedition of which he was the director, nor is it a very readable popular story, interesting by reason of the personal details which it contains.

His two volumes are well printed and very fairly illustrated, and they have maps, an index, appendices, &c. Dr. Peters must have given much time and attention to the work before us, and those who are able to wade through some hundreds of heavily-written pages will, of course, thank him for it. It is not our intention to discuss "*Nippur*" in detail, for many of the results obtained from the excavations carried on at the city of this name by Dr. Peters, and by his distinguished successor Mr. Haynes, have already been made known by Prof. Hilprecht; our object is only to call attention to the excellent work which the Americans have done by establishing a Consulate at Baghdad, and by systematically working through a site.

Just as England owes its unrivalled collections of Babylonian and Assyrian antiquities in the first instance to the private initiative of the British Ambassador at Constantinople about the year 1845, so the fine collections of inscribed tablets and other antiquities which America now possesses are due to the private enterprise of some of the principal citizens of Philadelphia. The American expedition was inaugurated by Mr. E. W. Clark, a leading banker of that city, and the scheme was adopted with great vigour and good-will by Dr. W. Pepper; other public-spirited men joined them, and their efforts have been crowned with such success that up to the present time nearly fifteen thousand pounds sterling have been expended by America on archæological researches in Mesopotamia. The chief site of the work of the Americans was at Nippur or Niffer, a city which was situated about fifty miles to the south-east of Babylon, and was the centre of a great and flourishing civilisation some seven thousand years ago. Some of the early explorers had ascertained that the mounds which marked the site of the old city contained remains of buildings, inscribed tablets, &c., but the work of digging them out seriously did not begin until Dr. Peters and Mr. Haynes arrived on the scene. Dr. Peters toiled for several weeks at Niffer in 1891 and 1892, and succeeded in clearing out part of the great Temple of Bel, and in finding a large number of inscribed tablets; the two volumes before us deal practically with the results of his labours. In 1893 Mr. Haynes took over the work, and was so fortunate as to light upon a "find" of thousands of tablets, seals, and other important documents; he was also enabled to lay bare the ruins of the greater part of the ancient city and its temple in such a way that we are now able to understand the plan upon which an ancient pre-Babylonian city was arranged and built. Many tablets and other precious objects had, according to the terms of the agreement between the Ottoman Museum authorities and the Americans, to be sent to Constantinople; but we are glad to learn from Prof. Hilprecht's publications that a substantial number have been allowed to cross the Atlantic as a reward for the money and labour expended by the Americans at Niffer. It is to be hoped that copies of all such documents may be made available for scholars as soon as possible, and that other cuneiform experts in America will follow the example which Prof. Hilprecht has set them. Meanwhile it is to be hoped that a successor to Mr. Haynes and Dr. Peters has been found, and that a good work so well begun may be continued.