

THREE ANIMAL BIOGRAPHIES.¹

MR. LONG is always interesting and original, and he is especially so in the daintily illustrated little volume standing first on our list, of which individuality in animals seems to be the keynote. Premising that no species breeds true in all its individuals, the author urges that analogous differences in temper, disposition, and mind reveal themselves to those who take the trouble to observe closely. All who make pets of cats, dogs, horses, and other domesticated animals are fully convinced of the existence in them of individual traits and idiosyncrasies; and the apparent absence of these in wild species seems due merely to the want of careful and minute observation of their habits. That such individualities do exist the author demonstrates, for example, in the case of the American lynx, which, although normally a cowardly and slinking creature, will on occasion follow the trail of a hunter with as mischievous intent as a panther. As usual, Mr. Long discusses members of widely different groups, and in the present volume we have delightful peeps into the life-histories of the black bear, the wolf, the wild goose, the trout, and other denizens of the forest and the stream. Where all is good, it is difficult to make a selection; but we have personally found special interest in the chapter on the bear. Describing the actions of a bear when ant-hunting, the author tells us that "he just knocks the top off the hill, stirs up the nest, and lies down quietly, placing his fore-paws where the ants are thickest. At first he makes no effort to pick up the hurrying insects, workers and fighters, which swarm out of their tunnels. . . . 'Moorween' waits till they crawl over the big black object that rests over the nest, and then he begins to lick his paws more and more greedily as he tastes the acid things. . . . So he gets all he wants, cleanly from his own paws, instead of filling his mouth with dust and chaff, as he must do if he attempted to catch them in any other way." Many other passages in this attractive volume bear equally eloquent testimony to the closeness with which its author has observed the habits of the creatures he loves so well and describes so graphically.

In the volume standing second on our list, Mr. Graham Renshaw brings to a close his long series of articles on mammals, interesting either from their rarity or from peculiarities in their structure or habits. The four-and-twenty species here discussed include a very varied selection, ranging from the musk-ox and the European bison to the Pacific walrus, the Tasmanian devil, and the platypus. As in the case of the earlier essays, the author deals specially with the historical aspect of his subject, and furnishes his readers with a large amount of detail connected with specimens exhibited in menageries and museums. Several

¹ (1) "Whose Home is the Wilderness; some Studies of Wild Animal Life." By W. J. Long. Pp. xxi+230; illustrated. (Boston, U.S.A., and London: Ginn and Co., 1907.) Price 5s. net.

(2) "Final Natural History Essays." By Graham Renshaw. Pp. xii+225; illustrated. (London and Manchester: Sherratt and Hughes, 1907.) Price 6s. net.

(3) "Home-Life of some Marsh-Birds." By Emma L. Turner and P. H. Bahr. Pp. 62; 32 plates. (London: Witherby and Co., 1907.) Price 2s. 6d.

of the illustrations are taken from specimens in the British Museum, and among these special attention may be directed to the one of the Congo buffalo, as an example of what may be accomplished in the way of photographing animals as they stand in the cases of the exhibition galleries. We may, however, venture to take exception to the photograph of a very tame-looking park bull being made to do duty for the extinct aurochs; and we should also like to know why the author, in defiance of Herberstein's evidence, states that the latter animal was mainly white. The



Bearded Titmouse and Young. From "Home-Life of some Marsh Birds."

assertion that all typical sheep have a lacrymal gland (p. 114) seems also to be contrary to fact, while the statement (p. 105) that two Greenland musk-oxen exhibited in 1900 were the first examples of their race known to science is contradicted on the following page by a reference to calves received in England in 1899.

The author has evidently devoted a large amount of time to working out the history of the various species, and he has certainly succeeded in producing a very attractive volume.

One of the objections to the employment of photography as a means of illustrating natural history books is that very frequently the animals are taken in postures which do not display their leading characteristics, and thus render the pictures more or less completely useless for the purpose of specific identification. The same thing applies in the matter of characteristic attitudes and the nature of the habitat; and, in the case of birds, to the form of the nest and the appearance and growth stages of its occupants. To remedy these shortcomings in the case of the feathered denizens of British marshes has been the main object of the authors of the charming little volume standing third in our list. They have set themselves the task of portraying marsh-birds in positions and attitudes which will render the pictures of real service to the scientific ornithologist; and we venture to think that the verdict of their readers will be a pronouncement of unqualified success in this respect. As a specially good example of their work we may cite Miss Turner's photograph of a bearded titmouse, showing the black face-marks of the cock from which the species takes its name. This would not print satisfactorily in the pages of NATURE, but we are able to give another illustration showing the bird feeding its young. The book does not, however, depend entirely on its illustrations, and even in such a hackneyed subject as the life-history of British birds, the reader will find much of interest in the brightly written biographies which accompany the plates.

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STUDIES IN NATIONAL DEGENERATION.¹

THE several aspects of study which the statistics deal with in this memoir are chiefly parental and fraternal heredity, the fertility of tuberculous stocks, and the distribution of pulmonary tuberculosis in tubercular families. Prof. Pearson's observations are admittedly, from a numerical standpoint, wholly insufficient, but if his deductions are thereby rendered inconclusive, he has pointed the way and laid the foundation for further study of an all-important subject.

Prof. Pearson discusses only pulmonary tuberculosis, that is, phthisis, or, as it is popularly termed, consumption; yet even with this limitation it is uncomfortable reading that about 10 per cent. of the inhabitants of the British Isles are affected by pulmonary tuberculosis. Unfortunately, other organs besides the lungs become the seat of tuberculosis, and their disorganisation is attended by as serious results as when the lungs alone are considered. It may be that tuberculosis of the lung is, from the point of possible national deterioration, not the most deadly form of the ailment. Tubercular diseases of the bones of the joints, of the lymphatic system, and of several of the organs other than the lungs, prevail to an extent little appreciated as being of an equally deadly nature, with the more evident lesions in the lungs. They all indicate a diathesis, and give rise to types of infirmities well known to medical men. These evils of tuberculosis, therefore, are much more widely spread than pulmonary tuberculosis or consumption would give us to understand, and being less manifest to the public scrutiny are more insidious and more apt to be neglected in the reckoning of tuberculous disease generally.

That heredity plays an important part in tuberculous disease is, in Prof. Pearson's opinion, un-

doubted. Recent beliefs point rather to infection as being the major element in rendering the disease so prevalent, and it is noteworthy that Prof. Pearson inclines to the older belief of heredity. He finds that tubercular lung trouble is chiefly prevalent amongst those who inherit a predisposition, that is, a phthisical or consumptive diathesis. It is impossible, however, owing to insufficient data, to assume that the tendency to any disease is inherited in the same sense as are physical and mental characteristics, but did inheritance not explain the matter it is difficult to understand how anyone escapes the disease, seeing that, in urban districts especially, the tubercle germ is so prevalent that "few individuals who lead a moderately active life can escape an almost daily risk of infection."

Such being the case, the tubercle germ can thrive best in the suitable soil to be met with in lung tissues which are prepared by hereditary predisposition, or, in some cases, by what may be termed accidentally acquired predisposition in the lung tissues themselves, by previous local lesions. That the predisposition to the lung becoming the seat of tuberculous disease is to be statistically ranged alongside well-established inherited characteristics, such as physical and mental traits are known to be, can only be proved by obtaining complete histories of multitudes of families and family stocks. This, however, is at present a long way off being established, and until this gap is filled any deductions we make at present can only be speculative for the most part.

The period of life during which tuberculosis is most likely to show itself in the lungs is between the ages of twenty and thirty. The mean age of onset in men is set down at the twenty-ninth year, and in women at the twenty-fifth year. The actual danger zone cannot, however, he said to be passed until the fortieth year, or perhaps the forty-third year, is passed.

The observation that there is but an insignificant difference between the time of onset of the disease when some member of the household is the subject of tuberculosis and when no member is thus afflicted is rather against the infection theory pure and simple; for with the constant possibility of infection in the immediate environment, phthisis should, according to infection beliefs, appear at an earlier age than statistics seem to show.

After discussing the part played by parental and fraternal heredity, Prof. Pearson concludes that the tuberculous diathesis is inherited in the same way and with the same intensity as the physical characters are inherited in man.

Concerning the fertility of tuberculous stocks, Prof. Pearson shows that the pathological conditions do not tend to reduce fertility, but, on the other hand, that such stocks appear to be quite as fertile, and in all probability are more fertile, than normal stocks of the same class in the community at large. The fact, however, that tuberculosis is a disease of youth and early middle life distinctly lowers the marriage rate and limits the child-bearing period of such stocks, and thus reduces the total number of offspring born to tuberculous people; there can be no doubt that by the inbreeding of purely tuberculous persons the stock would become in time extinct.

The question of order of birth, that is, whether the child belongs to the early or late portion of a given tuberculous family, is of considerable interest. Are the elder or the younger members of the family the more liable to develop tuberculosis and to possess a tuberculous diathesis? The children of old people, of, say, a man over sixty and a woman of forty-seven, are popularly believed to be handicapped in the struggle for life owing to inherited physical defects. There is no

¹ Drapers' Company Research Memoirs, II. A First Study of the Statistics of Pulmonary Tuberculosis. By Prof. Karl Pearson, F.R.S. Pp. 26. (London: Dulau and Co., 1907.) Price 3s.