

rife in certain parts of the British Empire," and, by prohibiting their import into England, to discourage the wearing of birds' skins, feathers, and plumes.

Of course, the badly informed humanitarians are the ornithologists and the lovers of birds in all parts of the civilised world. These people form, however, a large body of highly educated men and women, who among them have closely studied bird-life in every corner of the globe; and who, entirely disinterested, are possessed of—let us say—*quite* as much common sense, are as little led by "sentiment," and know "the true facts of the case through long years of experience," as well as Mr. Harold Hamel Smith and the feather traders.

The book is full of red-herring trails across the question, and of mean suggestions (*cf.* pp. 31, 41 (footnote), and 56) which are not worth our while to notice, and from which even Sir J. D. Rees, who writes a foreword to the book, dissociates himself. It would be reslaying the slain to discuss the question whether or not the slaughter of many kinds of birds for trade purposes is cruelly carried on or not. "Their [the plumers'] ravages are simply sickening," says Prof. Newton, one of the most accurate and unsentimental ornithological historians that ever lived. The evidence is overwhelming. Nor is it worth while discussing whether or not many species of birds are, through the same agencies, becoming exterminated. That question is also beyond contention. The paper on extinct and vanishing birds, by the Hon. Walter Rothschild, in the Proceedings of the fourth International Ornithological Congress (1905), should be read by those interested in this question, and also the remarks of Prof. Newton on Extermination in his "Dictionary of Birds." "The collection of skins for ornithological museums or fishing tackle," we are told, "is far more likely to exterminate a few rare birds than the millinery trade"—who, we are also told, are "the real protectors of birds"—"ever will be." The great bird collection in the British Museum, the largest in the world, contains probably about 500,000 skins, the result of more than a century's assiduous amassing. The present writer has been witness of that number of humming-birds (chiefly) and other bright-plumaged denizens of the Brazilian woods, all killed in the breeding season, being shipped in one consignment (and that not the solitary one of the season) from Rio de Janeiro to London; and has seen in the Moluccas a single canoe-load brought by native hunters consisting of scores of thousands of the most gorgeous members of the New Guinea avi-fauna spread out like wheat in a godown awaiting shipment to Europe.

Such extensive massacres, in which not only the parents but the nestlings perish, may go on for years and not become very obvious without investigation on the spot; but history shows that the results appear only when it is too late for protective measures to be taken. When a species has been reduced in numbers below a certain point, natural enemies, "red in tooth and claw," and causes difficult to determine, begin to operate, and these complete the ruthless work of man without his further interference. Another good reason for legal regulation of this trade is that, by the extinction of dominant species in a region, the equilibrium of nature is disturbed, and results disastrous to agriculture and in other directions arise. These questions formed the theme of many serious discourses by ornithologists from all parts of the world at the congress held this summer in Berlin. There the consensus of opinion was that measures must be taken internationally to prevent the present wanton slaughter of birds.

The burden of this book is that the plume-traders

will suffer great loss by the exclusion of skins and feathers from this country. The same cry was raised by the slave-traders against the emancipators who struck at a "legitimate and honest trade" and "an important industry in this country." One correspondent of the *Times* writes (p. 98) it is "generous of you to offer your columns to both sides of this controversy." Mr. Smith, less generous, excludes all correspondence sent to the same journal on the protectionists' side. From one of the letters he publishes we learn that the feather trade is rapidly going to other countries, for reasons independent of threatened legislation or of interference by "badly informed agitators."

If it be true that the really large part of the trade is done in "the millions of poultry and game-birds' plumage, quills, and tails" (p. 105), why, then, this great outcry against the protection—which the traders say they desire—of the most beautiful and useful of living creatures, since tropical skins form in England so small a portion of the trade. Among the demands of the traders one is protection for the birds at their natal centre only. This the Government to some extent has done, and can do only, in its own possessions; still, its legislation instead of "not securing the preservation of a single bird" (p. 84), is providing, and will increasingly provide, very large areas of sanctuary for them. It would stultify itself if it allowed the importation of feathers from everywhere else, but prohibited it from its own dominions. Another demand is a close season (in India, for instance), after which skins and plumes would be allowed to be exported. As it is in the breeding season chiefly during which the birds don the ornamental plumage for which high prices are paid, it is obvious—human avarice being what it is—that bird slaughter would be carried on surreptitiously during that season, and the results quietly stored away until the closure was over. The expense of enforcing a close season being prohibitive, the next best means of staying the evil is prohibition of export. The "agitation" has been taken up by the Ornithological Congress, and we may shortly look forward to international regulation of the trade.

This book may contain "the truth" about the collection of "aigrettes and bird skins" as it appears to Mr. Harold Hamel Smith; but we conscientiously believe that every unprejudiced, disinterested humanitarian in this country will repudiate his assertion.

A MONOGRAPH OF THE OKAPI.¹

THOUGH this monograph is replete with exact, and in many cases novel, information regarding the outward aspect and bones of the okapi, it will certainly strike the general reader, as well as the zoologist, as being an incomplete treatment of the subject. This may not be the fault of its principal author, Sir E. Ray Lankester, and is certainly not that of the keeper of the Natural History Museum, Dr. Sidney F. Harmer, but is apparently due to the financial control disliking the expense of publishing the volume of text, which should have accompanied the mere illustrations included in the volume under review. The reason given is that as Jules Fraipont has already published a monograph of the Okapi for the State Museum of Tervueren, Brussels—an admirable piece of work, it is generally admitted to be—the publication of the text of Sir E. Ray Lankester's studies and deductions would be superfluous. It is

¹ "A Monograph of the Okapi." By Sir E. Ray Lankester, K.C.B., F.R.S., assisted by Dr. W. G. Ridewood. Pp. viii+48 plates. (London: British Museum (Natural History) printed by Order of the Trustees, Longmans and Co., B. Quaritch, Dulau and Co., Ltd., 1910.) Price 25s.

difficult to agree with the propriety of such a decision, and it is to be hoped that before long the text which should accompany these illustrations will also be printed and published, especially as in the interval of time which must elapse, further accurate information regarding this interesting beast may have come to hand. (The present writer has just been advised by Dr. Bumpus, of the Natural History Museum at New York, that a collector sent out by that museum has succeeded in capturing alive a male, female, and calf of the okapi, and these living forms of the animal are now being conveyed across the Congo basin for shipment to New York.) M. Fraipont's work, moreover, complete as it was for the date of its publication in 1908, is not nearly so accessible to ordinary students of zoology as the British Museum publications.

The history of the discovery of this Giraffid form at the very opening of the twentieth century has already been related so frequently that it does not need to be repeated. But the specimens received during the first few years from the present writer and others, left

and above the eyes, swellings to which attention was immediately directed by the whorls of hair in the skin of my large specimen, which suggested that the okapi could develop giraffe-like "horns" on those places. The complete skin and skull obtained for me by Lieuts. Meura and Eriksson, and now in the British Museum, were shown conclusively to belong to an example that was sub-adult, namely, not grown to its fullest size of development. The sex was very doubtful. The natives who brought in the skin seem to have spoken of it as the skin of a male, but it was generally adjudged to be a female.

As soon as attempts were made to transmit okapi specimens to Europe, the zoological authorities in Brussels, London, and Paris were not long in having in their hands skulls of undoubted male okapis possessing ossicones three inches long or more, some of which bore at the tip a small piece of naked bone equivalent to the beginning of an antler. Other skulls, again, supposed to be female, were quite hornless. In some cases, minute ossicones were dis-

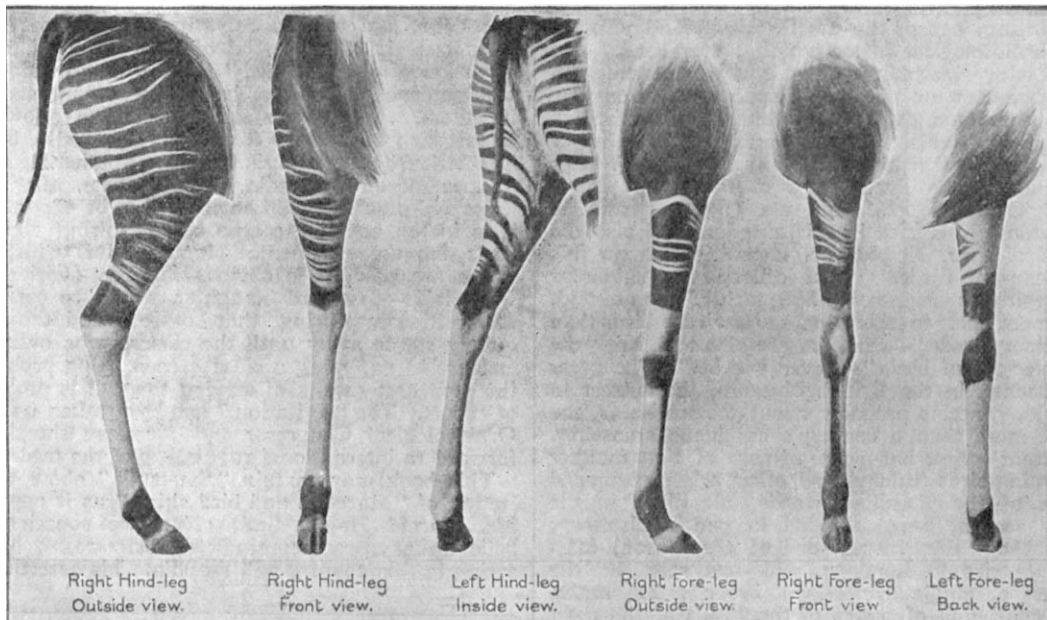


FIG. 1.—Specimen of Okapi in the British Museum (Natural History) presented by Sir Harry Johnston. From "A Monograph of the Okapi."

those zoologists who studied them in some perplexity, for they seemed to indicate, when closely compared and examined, the existence of two types, or even species, of okapi. There was considerable difference, for example, in the arrangement of the stripes on the hindquarters between the first strips of skin sent home by myself in 1900 and the complete skin obtained by me with the help of Lieuts. Meura and Eriksson in 1901, and still more in the specimens secured later by the Belgian officers in the Congo basin and a number of British explorers or natural history collectors.

As already stated by M. Fraipont, this variability of the alternations of black and white on the hindquarters and fore limbs must apparently be accepted as a characteristic feature of the okapi, and can scarcely be regarded as of specific value. But then arises the problem of the existence and non-existence of ossicones. Both the skulls sent home by me in 1901 were found to be hornless, though one presented slight swellings of the bones at the base of the nose

covered under the skin. The general conclusions to which zoologists were brought by the imperfect material at their command were: that there were either two species of okapi, one horned and one without horns; or that the comparatively speaking hornless female okapi was larger than the male: for the horned skulls of all the known male okapis are found to be smaller than those of the specimens of hornless females.

Then, again, the skulls seemed to be divisible into two series, broad and narrow. The question of two distinct races, subspecies, or species, of okapi (the first known of which was styled *Okapia johnstoni*) can only be decided finally by extended research. M. Jules Fraipont came to the general conclusion in 1908 that there was but one species known to us which he re-named as above, but opined that there might be distinct local races, varieties or even subspecies, within a geographical range, which, although described in the monograph under review as of limited

area, is really not so very restricted after all. The notes and observations of explorers and Belgian officials show that the okapi is met with from the vicinity of Nyangwe, in the eastern part of the Congo basin, at no great distance from the west coast of Tanganyika and from between 4° and 5° south latitude, to the River Welle at the same distance north of the equator, and almost to the banks of the Semliki River and the forests west of Lake Albert Nyanza; while its western range has already been extended (north of the main Congo) to the lower course of the Mubangi River, which lies not far away from the zoographical limits of the Cameroons district. Indeed, it would not surprise me at all if some such explorer as Mr. George Bates discovered the okapi in the Cameroons hinterland, just as he has discovered there the Black Forest pig, and other equatorial African animals first recorded in the East or Central African forests.

Whether the okapi is found anywhere to the west or south of the course of the main Congo is as yet

INTERNATIONAL MINERAL STATISTICS.¹

TO the student of mining economics, part iv. of the Mines Report is always a volume of special interest. The publication of Colonial and foreign statistics in the present form was due to the initiative of the late Sir Herbert Le Neve Foster, to whom all interested in mineral statistics owe a deep debt of gratitude. No one, however, was more sensible than Le Neve Foster himself of the many shortcomings of this publication, as the writer of the present review can personally testify, and it is a matter of great regret that so little has yet been done to remedy some of the more glaring of the defects of this publication. It is not to be inferred that the removal of these defects is a simple or an easy matter, or even that it lies within the power of any one individual to accomplish it, for it is highly probable that nothing short of an international agreement amongst the great mineral-producing countries of the world can effect this end, even partially. Such a work as the present

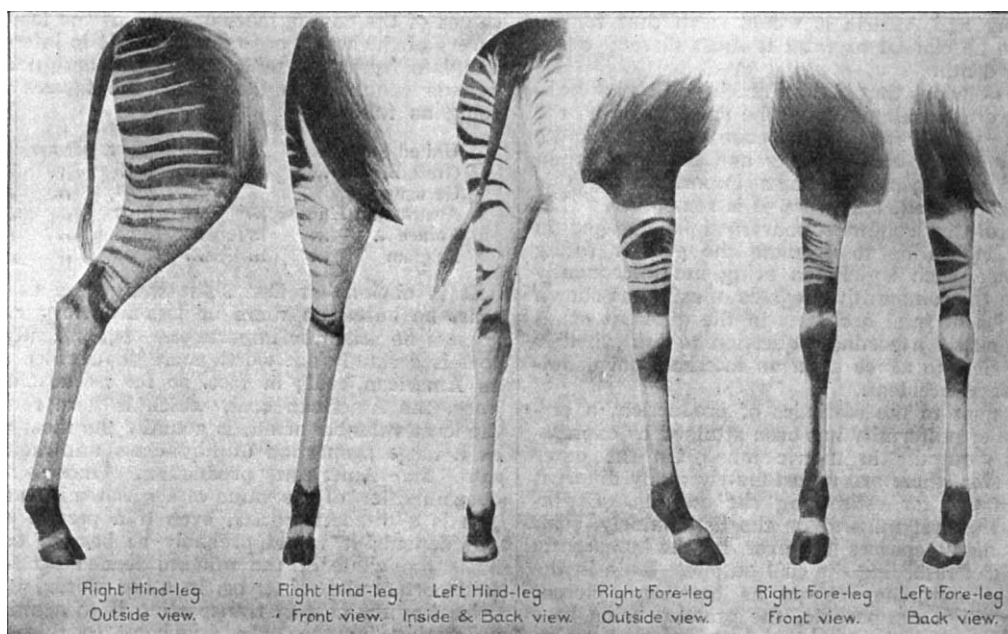


FIG. 2.—Specimen of Okapi in the British Museum (Natural History) presented by Major Powell-Cotton. From "A Monograph of the Okapi."

unrecorded, just as we have no record of the existence of any anthropoid ape in the Trans-Congo regions. So far as our imperfect information goes, the main stream of the great Lualaba Congo acts as the limit of distribution of some other forms of mammals, and it may well be that at the time these creatures entered tropical Africa the greater part of the Congo basin was still a vast, shallow, fresh-water sea. A good many of the creatures of the equatorial belt of Africa extend from Mount Kenia and the East African and West Tanganyika forests, right across Uganda and the northern Congo basin to the Lower Niger, the Gold Coast, Liberia, and Sierra Leone, but of this series so far no trace of the gorilla, the okapi, or the Black Forest pig have been met with westwards of the Lower Niger, or even of the Cameroons, though there are Dutch records of the seventeenth century, as well as existing native traditions, which point to the existence of some form of Black Forest pig in the Liberian forests.

H. H. JOHNSTON.

has for its main object the comparison of the mineral outputs of various nations, and of the conditions under which this output is obtained, mainly with reference to the labour engaged in its production and the relative danger of the miner's occupation. It is a truism that no real comparison is possible unless similar data are compared, and it is here that the main difficulty lies, the same terms being used in different countries with widely different meanings.

To take a striking example, we find in the introduction a statement to the effect that the death-rate from accidents in coal mines is as follows for the year 1908:—

Per 1000 Persons employed.			
United Kingdom...	1'32	France	0'95
British Empire ...	1'45	Germany	2'46
Austria	1'10	United States ...	3'42
Belgium	1'07	Foreign countries generally	2'34

¹ Home Office. Mines and Quarries: General Report and Statistics for 1908. By the Chief Inspector of Mines. Part iv., Colonial and Foreign Statistics. Cd. 5284. (1910.) Price 1s. 8d.