

THE ZOOLOGICAL GARDENS AND ESTABLISHMENTS OF GREAT BRITAIN, BELGIUM, AND THE NETHER- LANDS.^a

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The zoological gardens now existing in the world, with the exception of that at Schönbrunn, are all derived in some manner from our Jardin des Plantes. They were not established until a long time afterwards, since the oldest of them, that of London, was not opened until 1828, but they have all taken it for a model as regards their aviaries, cages, and inclosures, as well as in their museums and their laboratories. A proof of this is very explicitly given by Mr. Henry Scherren, in his book "The Zoological Society of London, A Sketch of its Foundation and Development" (1896, p. 19), and by Mr. Stanley Flower, in his report of a tour of which I shall speak further on. This origin is at once evident by comparing the drawings given by Mr. Scherren of the animal quarters in the London garden of 1850 with those which still exist, unchanged, unfortunately, in the menagerie of the Jardin des Plantes.

Though these foreign gardens were originally inspired by our old national institution, they have increased in size and during recent years have renewed the greater part of their old structures. For this purpose the directors or superintendents of some of these gardens have visited the principal countries of Europe in order to note and profit by the progress attained by other similar establishments.

In making this tour of inspection I did not confine my visits and studies to zoological gardens alone. I was charged to give attention

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also to other establishments, public or private, where wild animals were reared either for the purposes of acclimation, of general zoology or of animal biology. I was therefore led to travel over England, Scotland, the Isle of Man, Ireland, Belgium, and the Netherlands, receiving everywhere the warmest welcome, not only from the scientists whose laboratories or experiment stations I visited, but also from the presidents or secretaries of societies, from the directors or superintendents of zoological gardens and from the great proprietors who opened for me their parks.

THE ZOOLOGICAL GARDEN AT LONDON.

The Zoological Garden of London belongs to the Zoological Society of London, founded in 1826 for the purpose of "the advancement of zoology and for the introduction into England of new and curious animals." The society performs this double function first by maintaining the garden which we are about to describe, then by publishing Proceedings (two volumes per year), Transactions (*id.*), the Zoological Record, a Guide to the Garden, and illustrated postal cards of the animals, finally by holding monthly meetings at which the fellows, the corresponding members and even strangers may present communications. These communications are submitted to a committee of publication which considers them carefully; thus, among 132 offered in 1905 only 86 were published in full, 84 in the Proceedings, 2 in the Transactions; the others were merely announced by title or by a concise abstract.

The society comprises at present 3,702 active members, 200 corresponding members, and 25 foreign members. It is administered by a council of 21 members, elected annually, among which are a president (the Duke of Bedford in 1906), six vice-presidents, a secretary, and a treasurer. The secretary (Dr. P. Chalmers Mitchell, F. R. S., at present) is the executive officer.

The council meets regularly every two weeks from January to the end of June and once a month during the remainder of the year; it publishes each year a report for the general session at which all members of the society may attend.

The total receipts of the society amounted, in 1905, to £30,421 6s. 9d. Among the details of these receipts I will mention the following:

	£	s.	d.
Admissions to the garden.....	17,469	6	4
Riding receipts (elephants and camels).....	470	19	8
Sales of living animals.....	428	11	8
Sales of guides and postal cards.....	894	14	3
Rent from restaurant.....	1,000	0	0
Receipts from lavatories.....	72	8	1

The Zoological Garden is administered, under the general direction of the secretary, by a scientific staff comprising a superintendent, Mr. R. J. Pocock; a prosector, Mr. F. E. Beddard, F. R. S., specially charged with the conduct of the laboratory of comparative anatomy (prosectorium) attached to the garden; a pathologist, Mr. C. G. Seligmann, also attached to the prosectorium. * * *

The ordinary expenditures of the garden amounted, in 1905, to £22,435 15s. 8d., the principal objects being as follows:

	£	s.	d.
Rent, rates, taxes, etc.....	1,485	9	14
Salaries	4,356	8	10
Pensions	260	0	0
Provisions (including wages of storekeeper).....	3,608	6	2
Cost and carriage of animals.....	1,124	11	6
Menagerie expenses	1,980	2	10
Expenses of the prosectorium.....	863	4	6
Maintenance of buildings, etc.....	3,901	1	11
Garden expenses	1,280	4	0
House and office expenses.....	322	13	1

The garden is situated in a portion of Regent's Park, occupying a space of 31 acres, for which the society pays an annual rental to the Crown. It is open to the public every week day from 9 a. m. until sunset; on Sundays and holidays only members and persons provided with special tickets are admitted.

It is divided by a canal (Regent's Canal) and a public road (Outer Circle) into three parts—the north garden, the middle garden, and the south garden, connected with each other by two bridges and a tunnel. On December 31, 1905, there were, in these three gardens, 2,913 vertebrate animals:

Mammals	689
Birds	1,554
Reptiles	560
Fishes	110

Invertebrates, variable number.

Of these 860 were acquired by gift, 286 by purchase, 286 were born, 1,097 were received on deposit, and 202 obtained by exchange.

During 1905, 514 animals died in the garden, 296 being mammals and 218 birds.

The animals are distributed in a most irregular manner, as is usual in all gardens of this character. This is doubtless due to the necessities of the case. In the following enumeration I shall, however, follow the usual zoological classification:

Mammals.—The garden contains a fine collection of monkeys and lemurs arranged so as to present examples of all the great natural groups. They are placed in three structures, each designed for a different purpose. * * *

The proboscidiens are represented by four Indian elephants and one African elephant. Their house has a broad public corridor from which open eight large stalls. Without are two large paddocks with deep pools. In the same house are found a two-horned Indian rhinoceros, an enormous single-horned Indian rhinoceros, and a very young African rhinoceros. Another young Indian rhinoceros is in the Prince of Wales collection.

The tapir house, heated in winter, comprises a paddock and an interior stable provided with a large tank. It contains the two species of tapirs—Indian and Brazilian. Near this is a fine series of specimens of the zebra, including all the existing species, various species of wild asses, a Prjevalski's horse and a remarkable hybrid between Burchell's zebra and a mare, obtained from the Transvaal in 1902.

The swine family, such as the wart hogs, the red river hogs, the babiroussas, the peccarys, etc., are in a building that will no doubt soon be replaced by one better adapted to the needs of these animals. The female hippopotamus exhibited here was born in the garden in 1872; she is placed in a warmed stall which communicates with a tank nearly 3 meters deep and with an outer paddock which has another still deeper tank.

The giraffes, very delicate animals, requiring special care, are represented by a female of *Giraffa camelopardalis* imported from southwestern Africa, and by a young pair of *G. c. Antiquorum* from the Egyptian Soudan. These animals are placed in three large stalls, having the ground covered with fine sand, without litter (except for bedding), heated during winter to 10° C., and communicating with large inclosures open to them only in summer. * * *

Birds.—The Passeres or perching birds are represented by a large number of tropical species distributed in four aviaries.

The western aviary, 57 meters long, dating from 1851, but reconstructed in 1903, has fifteen separate compartments and a large central cage; each compartment has a retiring cage covered with glass which can be closed and heated in winter; in front of this is a little garden plat, part of which, covered with sand, has a little circular bathing pool, while the remainder, covered with grass, has three or four shrubs of various species.

The eastern aviary comprises a long row of cages which were repaired and improved last year and which can now be heated by a well-devised hot-water system. They serve as a permanent residence for a large number of tropical birds and as winter quarters for certain others placed during summer in other cages.

The birds of paradise and the humming birds are represented only by *Paradisea apoda*, *P. minor*, and *Cicinnurus regius*, which are placed