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The Natural History Museum at South Kensington

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William Thomas Stearn was from 1952 to 1976 on the staff of the Department of Botany at the British Museum (Natural History). In 1964-65 he was Sandars Reader in Bibliography at the University of Cambridge; he is an Honorary Fellow of Sidney Sussex College, Cambridge. He is also an Honorary Foreign Member of the Royal Society of Sciences in Uppsala and of the Swedish Linnaeus Society and has received honorary doctorates from the Universities of Leiden, Cambridge and Uppsala and medals from the Royal Swedish Academy of Sciences, the Linnean Society of London and the Royal Horticultural Society. After retirement from the British Museum (Natural History) as a Senior Principal Scientific Officer, he became a Visiting Professor in the Department of Botany and Agricultural Botany at the University of Reading. In 1980 King Carl Gustav of Sweden appointed him a Commander of the Royal Order of the Northern Star for his services to science and scholarship.

Professor Stearn has served on the councils of ten learned societies and is currently President of the Linnean Society and of the Garden History Society. His publications number some 350, including books, introductions to facsimiles of rare and important botanical works, notably those of Carl Linnaeus, and many papers in learned journals on botanical, bibliographical and horticultural matters; these deal principally with the taxonomy of plants. He edits the Greek natural history periodical *Annales Musei Goulandris*.

next twenty-four years; at the age of eighty-four, he journeyed almost every day to the Museum and was working there the day before he died suddenly on 8 August 1947. Among the achievements of this third period of Pocock's life were two volumes (1939-1941) on primates and carnivores in *The Fauna of British India* and a posthumous *Catalogue of the Genus Felis* published in an edition of 500 copies in April 1951.

William Flower (Chapter 7), on becoming Director of the Museum in 1884, soon found his activities therein severely restrained by the virtual independence of the Keepers who controlled the policy, arrangements, spending and exhibits of their four Departments and who made his position, as Richard Lydekker (p.184) said, 'of a somewhat peculiar and anomalous nature' comparable to that of Richard Owen as Superintendent. His territory within the Museum was limited to the main hall. This alone gave him the opportunity to transfer to the Museum the ideas on museum display he had formed and used during his many years as Conservator at the Royal College of Surgeons. An especially noteworthy and historic exhibit, which survived in the Museum until 1978, was one illustrating the comparative anatomy of a man and a horse by means of skeletons and half models (p. 185) carefully labelled, placed in juxtaposition, as Lydekker stated in 1906, 'in order to display the special adaptations for, on the one hand, the upright posture and great brain-capacity, and, on the other, the high degree of speed and endurance essential to an otherwise defenceless quadruped living, in a wild state, on open plains. In this exhibit, which forms the frontispiece to his well-known and deservedly popular little work on *The Horse* (1891), Sir William always took an especial pride; and it was one of the first objects to which he directed the attention of the many illustrious and distinguished visitors who sought his guidance in viewing the collections under his charge.'

For Flower, Günther's retirement as Keeper in 1895 was too good an opportunity to lose of putting himself as Director on a level with the Keepers. He thereupon became acting Keeper of Zoology as well as Director and thus gained control at last of the west wing of the Museum devoted to Zoology. Here he did away with the separation of skeletons in one gallery, the uppermost, from the mounted skins of the same animals in another gallery and put them as close as possible together. Whenever he could, he replaced badly mounted or inadequate ones by better examples and provided new descriptive labels. Gradually, the Zoological galleries became more informative and more pleasing, although it must be pointed out that the celebrated exhibits of British birds in their natural habitats (see p.55,56) were the creation of Sharpe and Günther, although Flower added to them.

Whales, dolphins and porpoises had long held an especial interest for Flower, certainly earlier than 1864, when he published his first three papers on them. In 1895 there was a skeleton of a sperm whale in the main hall, but other specimens of Cetacea, i.e. skeletons, skulls, whalebone and teeth, lay in a basement. He therefore urged upon the Trustees the need for a special annexe to display such bulky creatures, with the result that a temporary building of galvanised iron was erected at the back of the Museum. Flower placed here not only the skeletons, but half models in plaster constructed to indicate the size and shape of the living animal. This exhibition, certainly unique at the time, was opened to the public in 1897. It was the predecessor of the present Whale Hall (p.131).

Flower's chief collaborator in the Museum was Richard Lydekker (1849-1915), who later became his scientific biographer by contributing a volume, *Sir William Flower* (1906), to the *English Men of Science* series. Lydekker's family came originally from Holland but had been resident in England for several generations before his birth. After graduating from Trinity College, Cambridge, he entered the Geological Survey of India in 1872, explored the mountains of Kashmir and did much work on the Tertiary vertebrate fossils in the Indian Museum, which resulted in his *Indian Tertiary and Post-Tertiary Vertebrates* (1879-1887), before returning to England in 1882 after the death of his father, a barrister-at-law and a Hertfordshire magistrate, in 1881. He inherited the family home, Harpenden Lodge, Harpenden, Hertfordshire, and lived there for the rest of his life. He could not, however, abandon his palaeontological interests to become simply a country gentleman and county magistrate, although he was both, and he accordingly undertook the preparation of a *Catalogue of the fossil Mammalia in the British Museum (Natural History)* (5 vols, 1885-1887), to be followed by a *Catalogue of the Fossil Reptilia and Amphibia* (4 vols, 1888-1890) and a *Catalogue of the Fossil Birds* (1891). This work for the Department of Geology under Henry Woodward necessitated reference to the recent collections in the Department of Zoology under Günther and he came to know Flower. Their joint *Introduction to the Study of Mammals Living and Extinct* (1891) marked the beginning of a close friendship. In 1896, when Flower had got control of the Department of Zoology, he engaged Lydekker to re-arrange the mammals in the exhibition galleries, thus leaving Oldfield Thomas (p.185) free to devote himself to the mammal collections which were now reaching the Museum on an ever-increasing scale. That year Lydekker published his *A Geographical History of Mammals*. His relations with Edwin Ray Lankester, Flower's successor as Director, were equally harmonious.

Ray Lankester (Chapter 8) became both Director and Keeper of Zoology in 1898, after Flower's retirement. Lankester's relations with those above and below him were often not harmonious. Lydekker, an esteemed helper of the Museum with private means but not an offical servant of the Trustees, was on a different footing. Darwin had used the variation of domesticated animals through human selection as cogent evidence for evolution by means of natural selection and Flower had illustrated this in the Museum with exhibits of breeds of pigeons, so beloved by Darwin. Lankester, with an enterprise too often associated in him with lack of tact, decided to devote the north hall behind the main hall of the Museum entirely to an exhibit of domesticated animals. He made the project widely known among breeders and as a result the Museum received skins and skeletons to form a unique collection of breeds, hybrids and abnormalities. Lydekker collaborated wholeheartedly, his connection with *The Field* being an asset, and in 1912 produced *A Guide to the Domesticated Animals (other than Horses) Exhibited in the Central and North Halls of the British Museum (Natural History)*. The exhibit was dismantled in 1959, although the unique collection of dogs which formed part of it is now displayed at Tring.

Lydekker's association with the Museum lasted until his death. He produced a *Catalogue of the Heads of Indian Big Game bequeathed by A. O. Hume* (1913), but a much bigger allied undertaking was a *Catalogue of the Ungulate Mammals in the British Museum (Natural History)* (5 vols, 1913-1916). Few zoologists have worked with greater speed. Apparently he did not begin his *Catalogue of the Ungulate Mammals* until 1913, but had practically finished it by the time of his death on 16 April 1915, 'working on his sick bed at the proofs of the fourth and the MS of the fifth and last volume', which was published in July 1916.

During the second half of the nineteenth century, the wilds of India and Africa literally provided happy hunting grounds for well-armed Europeans, such as army officers and high-placed government officials and men of wealth seeking a little adventure, for whom the collecting of big-game trophies to display to visitors gave the romantic pleasure of life in the open and the atavistic sporting pleasure of skilful killing. Much of their collections has ultimately enriched the Museum with numerous heads, less often hides and skeletons, of such large mammals. Lydekker's later work is based on these. He thus lightened the task of the Museum's mammal curator Michael Rogers Oldfield Thomas (1858-1929), appointed to the Museum Secretary's office in 1876 and transferred to the Zoological Department in 1878. Gray published in 1843 a list of the mammal collection as it was then, enumerating 3,062 specimens assigned to 1,031 species; by 1904 it had risen to about 45,650. For the period 1850-1859, the average annual acqui-

sition was 477 specimens (an average boosted, however, by the gift of the collection of the Indian Museum formed by the Hon. East India Company), for 1860 to 1869 it was 327. For 1870 to 1879, the annual average was 334; for 1880 to 1889 the annual average was 448. By this time Oldfield Thomas had become known as an active mammal expert, eager to investigate and publish; the mammal collections coming to the Museum increased as a consequence. For 1890 to 1899 the annual average was 1327 and for 1900 to 1906 it was 1976.

There were, in addition to big-game hunters, scientifically-minded collectors who gave much attention to rodents, bats etc. Trapping a rat in the jungle may be scientifically valuable, but does not provide such conspicuous evidence of prowess as shooting a driven tiger from the back of an elephant. Hence from about 1895 Oldfield Thomas, who had married the heiress to a small fortune in 1891, encouraged professional collectors of lesser mammals by privately employing them and presenting their specimens to the Museum which by 1904 had received 3,136 mammals from him. These efforts were necessarily confined to limited areas. The Museum possessed much Indian material derived from Thomas Hardwicke, Brian Hodgson, the Indian Museum of the Hon. East India Company and other sources, and there were in India keen and competent amateur naturalists belonging to the Bombay Natural History Society, founded in 1883, which from 1886 onwards had published a *Journal* with contributions of high quality, mostly relating to zoology. The Society by 1911 possessed 1,500 members. Encouraged by Thomas it initiated a survey of the mammals of India, Burma and Ceylon. The collections made were identified in the Museum, samples and type specimens retained and the remainder sent back to India. Oldfield Thomas described about 2,000 reputed new species and sub-species of mammals in all, from many parts of the world. As with the investigation of African plants during the same period, this was pioneer, descriptive work based on specimens inadequate for assessment of variability within populations, and undoubtedly Thomas distinguished more species than later workers with much more material have found acceptable.

Oldfield Thomas had John Guy Dollman as an Assistant 2nd Class from 1907 onwards and he too became a mammal specialist. Much of his time before his retirement was occupied with exhibition work for which Lydekker had earlier been responsible. He published a series of illustrated articles in the *Natural History Magazine* on interesting mammal specimens received by the Museum.

Another distinguished Museum worker on mammals, and in particular rodents, was Martin Alister Campbell Hinton (1883-1961), who joined the staff in August 1921, became Deputy Keeper of Zoology in

December 1927 and Keeper in December 1936 and retired in 1945. His career, like that of J.E. Gray, did not follow the now customary pattern of state-aided university education and early entry into the scientific staff of the Museum. His father, a legal shorthand writer in London, had died when he was ten and he had to leave school at twelve to work as a lawyer's clerk in the City. Self-educated in geology, palaeontology, zoology, languages, and English and French literature, he often spent his evenings working in the Geological Museum and in the famous Reading Room of the British Museum. He thus acquired early the spirit of independence and will to work necessary for a fatherless boy anxious to rise in a fiercely competitive world.

When only sixteen he read a paper in 1899 on Pleistocene deposits around Ilford and Wanstead, which the Geologists' Association published in its *Proceedings* 16: 271-281 (1900). Fortunately a lawyer, later a judge, John Cameron Brown, himself interested in natural history, invited young Hinton to work in his office. The hours of work were long but the tasks were not burdensome; Brown allowed him much time for private study and thereby gained Hinton's life-long gratitude. From 1905 onwards, he became a regular visitor to the Natural History Museum and worked as a volunteer on fossil rodents, meanwhile rising to senior clerk in the law office. Living rodents engaged his interest as much as their Pleistocene representatives and he published in 1913 and 1914 a study of the island voles of the Hebrides and the Orkney Islands. Although not a Museum staff member he wrote a Museum economic pamphlet, *Rats and Mice as Enemies of Man* (1918; 2nd ed., 1920; 3rd ed., 1931), which has been described as 'a minor classic . . . clear, concise, vivid, written with an easy style and tinged with wit, yet packed with accurate records and sound advice.' It deals comprehensively with the history, habits and zoology of these pests, as well as their control and their menace; it indicates the contribution of gamekeepers to the increase of rats, notably through their destruction of weasels, stoats and owls. For appointment in 1921 to the Museum staff, despite his age and lack of academic qualifications, Hinton needed no recommendation other than this Museum publication. At the Museum he devoted most of his time to taxonomic work on rodents, resulting above all in his *Monograph of the Voles and Lemmings*, vol. 1 (1926), but his most important service to the community was urging and planning the extermination of the muskrat (p.128) before, as on the Continent, it became ineradicable; failure to heed his warnings against the menace of the coypu has cost the nation dear. Hinton's biographer, R.J.C. Savage, in *Biographical Memoirs of Fellows of the Royal Society* 9: 155-170 (1963), has summarised his four major contributions to science:

'1. He was the first to recognize the zonal value of Pleistocene Microtinae and apply this to the interpretation of the stratigraphy, with its extensions to correlation of different types of deposit, cave, crag and terrace. From this work the age and correlation of British Pleistocene deposits began to be understood. Nowadays the rodents are universally recognized as most powerful faunal elements in dating, not only in Pleistocene, but also further back in Tertiary strata.
2. He laid the basis for systematic studies of the Microtinae, a subfamily of un-nerving complexity, through detailed investigation of all characters, taken in relation to their functional adaptations.
3. He preached and had put into practice the biological control of murine pests, and his work in connexion with the eradication of the muskrat plague from Britain was a major public service, though the State never rewarded its piper.
4. His work on the *Pseudorca* school is a major contribution to the population dynamics of Cetacea.'

Hinton was a gifted unorthodox character and his ways, as well as his thoughts, were certainly unusual. To quote R.J.C. Savage: 'In spite of the number of administrative jobs he undertook, he was never an organized man. He had the innate habits of a squirrel; literally everything was kept. He boasted of smoking an ounce of tobacco every day of his life since he was seventeen years old and never threw a tin away — they (or at least a few) came in useful to contain his rodents. After his death, his rooms yielded over 10,000 tobacco tins, cheque book stubs, receipts for groceries, rent, clothes, notices of meetings, catalogues, used envelopes and advertisements — over a ton of paper, leaving aside correspondence, manuscripts and the like; all was completely mixed up together, and some of it going back over sixty years.'

His mind had the same miscellaneous capacity. He was not only interested in chess, Shakespeare, Verdi and Beethoven; he read in the original French all seventy volumes of Voltaire's works and he left at his death some 300 paintings by himself in oils and watercolours. Men of such versatility are capable of unexpected acts. By 1912 his self-education had given him a remarkable knowledge of Pleistocene stratigraphy and Pleistocene mammals. He was a frequent visitor to the Departments of Geology and Zoology and was well acquainted with their collections and the working of their members. He was one of the few people with the requisite knowledge and facilities to have perpetrated the Piltdown hoax (p.245). His possible involvement has been publicly stated by L.B. Halstead in *Nature* 277: 596 (1979) and privately suspected earlier by others. If so, his motive for committing it

could have been simply to test and unmask the fallibility of accepted authority, which was only too well proved. Initially his reason for not revealing it may have been the possibility of future employment in the Museum. Later it would have caused acute embarrassment. Suspicion here is not proof, but it is certainly a tribute to Hinton's ability and knowledge. Hinton in a letter to *The Times* on 22 December 1953 stated, however, that he had not seen the Piltdown material until the reading of the paper by Dawson and Woodward in 1912. If he had been involved earlier, he was then deliberately lying. That I myself find difficult indeed to believe.

Subsequent work in the Mammal Section included the preparation of *The Families and Genera of living Rodents* by John Reeves Ellerman (1909-1973), of which vol. 1 was published in 1940, vol. 2 in 1941 and vol. 3 in 1949. This was followed by a *Checklist of Palaearctic and Indian Mammals 1758 to 1946* (Nov. 1951; 2nd ed., 1966), compiled by J.R. Ellerman and Terence C.S. Morrison-Scott (later to become Director, p.340) and *Southern African Mammals, 1758 to 1951, a Reclassification* (1953) by J.R. Ellerman, T.C.S. Morrison-Scott and Robert William Hayman (b. 1907), who joined the Department in 1921 as a Boy Attendant and retired in 1967 as a Chief Experimental Officer. John Ellerman, described in 1957 as 'Britain's richest, shyest, most elusive millionaire', inherited at the age of twenty-three from his father, Sir Johann Herman Ellerman (d. 1933), shipowner of Kingston-on-Hull, not only a baronetcy, but £40,000,000 which death duties reduced to £18,000,000; this, by judicious management of investments in shipping, land, breweries, property, newspapers (including *The Daily Mirror*) and investment trusts, had increased at the time of his death to above his father's fortune. As a boy he was much interested in small mammals and their critical study became an absorbing, serious hobby, as fleas had become earlier with Charles Rothschild. Small rodents are shy animals, keeping out of view as much as possible; they and Ellerman had that at least in common. His dislike of publicity was obsessive. He happily spent many hours studying the rodent specimens in the obscurity of the Museum basement and during the 1939-1945 World War the rodent collection was evacuated to his mansion at Bagshot. He paid for the printing of these rather grandly produced Museum publications and contributed to the cost of Jacqueline Palmer's Children's Centre in the Museum. Several months of every year he spent in South Africa, where he learned Afrikaans and also braille so as to spend time with blind, handicapped and maimed ex-service men and others, to whom he was both a deeply sympathetic and secretly generous friend. He was such a recluse that only a few workers at the Museum knew of his existence, or connected this shy, tall, lean,