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Zoological collections in the early British Museum: the Zoological Society's Museum

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The most important zoological collection in London outside of the British Museum was that established by the Zoological Society of London. It was to have only a fleeting existence of 30 years from its foundation in 1825. Yet in that short space of time, its collections of vertebrate specimens came to rival those of the British Museum both in volume and in taxonomic value, and attracted visiting workers from Europe to study its specimens. To some extent its extraordinary success was due to the high calibre of its contributors during the expansionist and exploratory period of the British Empire, but the quality of its curatorial staff played an important role in its success. Well within the three decades of its lifespan inadequate funding leading to difficulties with accommodation and insufficient spending on the care of the specimens caused the collection to deteriorate. Within the administrative priorities of the Society the Museum took second place to the Menagerie and by 1854 the dispersal of the collection had commenced. Some of the material came to the British Museum but not all the important specimens. Many specimens including type material and historically important collections were dispersed to relatively obscure local collections in which their importance has been lost sight of, if it was ever recognized.

This paper outlines the history of the Zoological Society's Museum, discusses the importance of its holdings and assesses the contribution that it made to the collections of the British Museum.

THE FOUNDATION OF THE ZOOLOGICAL SOCIETY OF LONDON

The Zoological Society was founded following the circulation of a draft prospectus dated 1 March 1825 by Sir Stamford Raffles. The prospectus was revised to its final form a year later.[1] Although the most important function of the Society was to establish a menagerie in which "Quadrupeds, Birds, and Fishes . . . should be placed, for ascertaining their uses, their power of increase, or improvement", the stated second object was the establishment "of a general Zoological Collection, consisting of prepared specimens in the different classes and orders, so as to afford a correct view of the Animal Kingdom at large in as complete a series as may be practicable . . ." (Prospectus quoted from Bastin, 1970: 385). From this it is clear that the formation of the general Zoological Collection was a major object for the Society from its first foundation. In this the Society differed from the Linnean Society which found itself the owner of a museum collection by chance and not by design (Wheeler, 1995).

The concept of a menagerie and a zoological collection combined was a clear reflection of Raffles's desire to model the new institution on the Muséum national d'Histoire Naturelle in Paris (Bastin, 1973). Because living animals in the menagerie would necessarily be limited in numbers of species and in lifespan the museum exhibits would always be complementary. In practice, in the fullness of time, the living specimens took their place in the museum collection, a situation which came with

depressing regularity in the 1830s and 1840s as live animals were imported, only to die within days or weeks in the menagerie, and litters of new-born tropical mammals failed to survive in the conditions offered by London's climate.

The foundation collection of the Zoological Society's Museum was the material collected by Raffles in Sumatra[2] which was officially presented to the Society by Lady Raffles in April 1827. The gift was contingent on two conditions, first, that all specimens were to be "distinguished by a special mark", and second, that a separate catalogue of the collection was to be prepared and printed. Failure to observe these conditions was to have resulted in the collection being vested in Raffles's representatives (Scherren, 1905; Bastin, 1973). The specimens were certainly labelled as to their origin from Sir Thomas Raffles's Collection (*vide* specimens of fish in The Natural History Museum collection) but there appears to be no "particular mark" on them—possibly attribution to the donor was considered by all concerned to be sufficient.

The requirement that a catalogue of the collection be compiled and published seems never to have been achieved, although Bastin (1973: 241) suggested that the Catalogue of Zoological Specimens published as an Appendix in Lady Sophia Raffles' *Memoir* . . . (S. Raffles, 1830) may have substituted for it. That some of the information it contained may have been derived from a manuscript catalogue of the Raffles material in the Museum is certain, but this Appendix also listed specimens in the Museum of the East India Company presented by Raffles, and even species (e.g. *Viverra Genetta*) of which no specimen existed. Moreover the insects merely gave the number of specimens of each order represented in the collection.

This Appendix of the zoological specimens collected by Raffles is a significant listing amounting to 63 pages. Author's names are not given for the various systematic groups, but they are identified in a letter dated 5 March 1868 from John Joseph Bennett pasted on to the flyleaf of the copy of the *Memoir* . . . in The Natural History Museum Library. The full text of the letter is reproduced by Bastin (1973) but in summary the section authors are identified as Mammals—Thomas Horsfield,[3] Birds—Horsfield and N.A. Vigors,[4] Fishes—E.T. Bennett[5] (J.J. Bennett's younger brother), and Reptiles—T. Bell.[6] The involvement of Vigors, Horsfield and E.T. Bennett can be seen as a specific Zoological Society input as Vigors was the Society's Secretary, Horsfield the Assistant Secretary, and Bennett the Assistant Secretary from 1831.

However, there clearly had been the intention to produce a catalogue of the Raffles material in the Society's Museum, as Vigors is cited as in the process of preparing "a more extensive work" with the title of "Museum Rafflesianum" in a letter from Horsfield to Lady Raffles dated 31 December 1829 (Raffles, S., 1830: 629), and Bell's list of reptiles refers to a planned detailed publication in the "Museum Rafflesianum". This must have been the beginnings of the catalogue of material collected by Raffles which never reached publication. No doubt any materials for it were subsumed into the Appendix to the *Memoir* . . . and at least the details of the mammals formed part of later printed catalogues of mammals (1828) and mammals and birds (1829).

Despite the failure to produce a catalogue dedicated to the Raffles collection, the Appendix to the *Memoir* . . . showed that it was a very large collection. The

Zoological Society Museum element of it comprised 51 mammal species, 176 birds, about 41 fishes and 15 reptiles which were mostly identified to species. The insect collections comprised 320 species of Coleoptera, 30 Orthoptera, 20 Neuroptera, 10 Trichoptera, 60 Hymenoptera, 40 Hemiptera, 30 Homoptera, 200 Lepidoptera and 20 Diptera. None of the insects was identified to species in this listing.

CURATORS

As the Museum was a recognised part of the Zoological Society it is probable that the energetic Secretary N.A. Vigors and Assistant Secretary Thomas Horsfield (and later E.T. Bennett) played a curatorial role in identifying the specimens to species, labelling and compiling catalogues. Thomas Horsfield appears to have resigned the Assistant Secretaryship (Scherren (1905) refers to his post as Vice-Secretary) in 1827 and E.T. Bennett was appointed to succeed him.

In April 1828 John Gould was appointed as Curator and Preserver to the Museum. Soon after, John Gilbert (1812–1845) was appointed as taxidermist at the Society, a post he held until he left with Gould for Australia (Torrens, 1987). In 1833 Gould was appointed Superintendent of the "ornithological department of the Museum", a post he held until 1837 when he resigned to commence his Australian travels (Scherren, 1905). Before leaving he wrote to the Society's Council, "I have at all times taken a great interest in it, and have done my utmost to increase its value, I hope that on my return to England, I may be allowed to resume the care of it, should I be desirous of so doing" (Scherren, 1905: 53). Gould never formally resumed his post but he continued to support the Society in various ways. (Parenthetically, it might be noted that at the same time John Gould was described as the "present stuffer to the British Museum" in J.G. Children's evidence (24 July 1835) to the Select Committee on the British Museum).

Before Gould left George Robert Waterhouse[7] was appointed to be Curator of the Museum in 1836. He already had experience as a museum curator having been appointed to the Museum of the Royal Institution at Liverpool in 1835. Waterhouse's flair as a curator was demonstrated by the publication of the second edition of the *Catalogue of Mammalia preserved in the Museum of the Society*, effectively a wholly new work (Waterhouse, 1838) of 68 pages (the first edition of 1828 having only 18 pages). This catalogue was updated by a *Supplement* published in the next year (Waterhouse, 1839). Waterhouse was entrusted by Charles Darwin to study and publish the report on the mammals of the *Beagle* expedition (Waterhouse, 1838–1839). He continued as Curator until 1843 when he was appointed as Assistant in the British Museum. Despite his expertise in mammalogy, and a deep interest in Coleoptera, Waterhouse was allocated to a post in the earth sciences at the British Museum.

During Waterhouse's term of office he was assisted by William Cranley who in January 1837 sorted and arranged the skeleton collection as well as setting up the King Vulture.[8] In January 1837 Cranley was preserving some of the "more interesting parts of the Giraffe" (this animal, a male which died 6 January 1837, and two others, which had died in the Surrey Zoological Gardens were dissected by Owen and were described in Owen (1839)). Two months later he prepared the skeleton of a chimpanzee, in May a wombat and in July was mounting a cheetah skeleton. Presumably all

these animals had died in the menagerie, although this is not stated. However, in Waterhouse's Report for 4 to 17 May 1837 he records his opinion that it would be cheaper to pay a fee for the preparation of each skeleton rather than paying Cranley a salary. Whether the Council agreed with this is not recorded but Cranley was still acting as preparator two months later.

Another assistant working in the Museum at this time was William Martin who appended short reports to the Curator's Report[9] stating that he had been naming and arranging the snake collection and cataloguing the turtles, lizards and amphibians. In April Martin was still naming the snake collection but was also dissecting spotted cavy. Martin is not referred to again in these reports. However, another member of Waterhouse's staff is first mentioned as "Fraser" in a January 1837 report, but by September 1839 he is referred to as the Curator's Assistant and had been invited by the Earl of Derby to arrange the Museum at Knowsley, a visit from which he returned by late October. The Earl of Derby was President of the Society at the time.

Louis Fraser[10] succeeded Waterhouse as Curator when the latter resigned in 1843, but in his turn he resigned in 1845. His service with the Society was interrupted between 1841 and 1842. After his resignation the Museum was left in the "charge of subordinate officers" (Scherren, 1905) and although the Council (*Report of Council*, 1846: 5) undertook that should events require it a superior officer would be appointed, there was clearly a financial crisis which led to no further expenditure on the collections in the Museum (*Report of Council*, 1848: 10) and by 1849 the distribution of "duplicate specimens" was actively in hand.

Note added in press. At a late stage in the publication of this paper Mrs Ann Datta most courteously allowed me to consult her newly completed biography of John Gould and as a result I can amplify details of the staff of the Museum of the Zoological Society. John Gould was appointed Curator and Preserver to the Society in April 1828. John Gilbert (1812–1845) was appointed Assistant Animal Preserver in October 1828; he left the Society's employment in September 1835. In 1830, William Charles Linnaeus Martin (1798–1864) was appointed Superintendent in overall charge of the Museum. In February 1833 Gould was appointed Superintendent of the Ornithological Department of the Museum (but at the same salary as he enjoyed as Curator and Preserver to the Society). In 1836 the Society decided to appoint a Curator for the whole Museum and George Robert Waterhouse[7] was eventually appointed, in addition to Gould, with his grand title, and Martin (who became Assistant Curator). Louis Fraser[10], who was already employed as a Clerk, then became Curator's Clerk.

SITE OF THE MUSEUM

Because specimens had been donated to the Museum virtually from the inception of the Society there was an immediate need to find accommodation for the specimens in addition to offices. Even though arrangements had been made for the menagerie to be sited in Regent's Park, it was felt that this was not sufficiently central in London for access to the offices, or the Museum. Accordingly, in June 1826, 33 Burton Street was taken for both purposes (and some live animals were kept there for a short while). Because of the speed at which new material was added to the collection, but

more importantly because the Museum was intended for public display with members of the Society and the public admitted to the exhibition on payment[11] and most of the specimens on view, the premises were quickly found to be too limited in size. In 1830 there was a proposal to erect a special building in the Gardens, 100 ft long by 40 ft broad to accommodate the Museum, library and offices (*Report of Council*, 1841) and although this plan was discussed for several years nothing came of it. By 1834 an estimate of £41,550 for the cost of the proposed building had been obtained. Possibly this high cost was a factor in the decision of a Special General Meeting of the Society on 31 May 1834 that it would be preferable to acquire premises in central London. The lease on 33 Bruton Street was given up on its expiry and in June 1836 a lease was taken on No. 28 Leicester Square.

These premises appeared to be well suited for the purposes of the Museum, having rooms and galleries lighted from the top and offering double the exhibition space (the mammal and bird displays alone occupied 460 linear feet). The house had formerly been occupied by John Hunter (1728–1793) as his home and museum. Unfortunately, these premises proved less suitable than the Council had expected; in the 1840 Report they were criticized as having limited space for exhibition, insufficient light, and were categorized as generally inconvenient. Moreover, Leicester Square was being developed by 1841 and neighbouring buildings were being demolished with consequent dust and noise and potential hazard to the collection. Although the premises were retained for a short while the collections were removed to a warehouse in Dufours Place, Broad Street, Golden Square where they were arranged "as conveniently as the confined space" allowed (*Report of Council*, 1841). In this annual report it had been recognized that the space required to maintain the Museum in juxtaposition to the Society's offices and for its use for meetings in a central part of London created a major problem. A Committee of five council members was appointed to report on the way forward, and on 20 May 1841 a Special General Meeting of the members was held to consider the "present condition and ultimate destination of the Museum and Preserved Collections". Ultimately it was agreed that a special building should be constructed within the Regent's Park grounds, and an advertisement was placed in the morning papers inviting architects to draw up plans for the Museum. The Committee finally approved plans drawn up by Mr Elmslie which offered a "chaste architectural elevation, affording at once the greatest accommodation, and requiring the least immediate outlay".

However, this was not the end of the affair as protracted delays in the negotiations with the Commissioners of Woods and Forests (who administered the Royal Parks and were thus the Society's landlord), caused the Council to reconsider the whole subject and it elected to convert the extant Carnivora House extending it by a new building on one side. This at least had the advantage that the adapted building for the Museum and the Carnivora Terrace was expected to cost less than the sum voted for the abandoned new museum building (*Report of Council*, 1842). It is interesting to note that in the next year's Report the Council was still intending to proceed with the adaptation of the old Carnivora House.

According to Scherren (1905) the work of transferring the collection was commenced in 1843 and was completed a year later. Scherren also stated that in 1843 the offices were transferred to No. 11 Hanover Square, which was leased and "the more *valuable and ornamental* portions of the Museum collections" (emphasis mine) were

placed in the Council Room. Louis Fraser presumably saw to the transfer of the specimens and their rearrangement, but he left in 1845 and with his departure the standing of the Museum deteriorated, a change which may have been reflected in the description of specimens as ornamental.

The collection was now cared for by two subordinate officers with occasional assistance. In 1847 there was a reference to rearranging the collection but by then the fine enthusiasm for the Museum was spent. The financial situation was bleak, preventing "any expenditure" on the collection (*Report of Council*, 1848) and in the next year. The Council now recognized that the maintenance of the Museum was "no longer an object of the importance which it formerly possessed" (*Report of Council*, 1850), and duplicate specimens were dispersed to several local and academic museums. Within five years the collection ceased to exist as an entity.

THE COLLECTION

Number of specimens

The Society's Museum collection grew very quickly from its foundation in 1826. The foundation collection from Raffles comprised 283 vertebrates specimens and 730 insects. In November 1829 Mr Joshua Brookes[12] claimed that the Museum comprised 600 specimens of mammals, 4,000 birds, 1,000 fishes and reptiles, 1,000 testacea (shells) and crustaceans, and 30,000 insects (Mitchell, 1929: 97). A Catalogue prepared for the Museum Committee 11 July 1836 produced what appear to be definitive figures (although they are clearly at variance with others from around this period). Mammals (mounted 573, skins 295, bottles of 48) 916; Birds (mounted 4,651, skins 12, bottles of 8) 4,681; Snakes (bottles of 474, mounted 2) 476; Tortoises (mounted 13, bottles of 16) 29; Frogs (mounted 3, bottles of 19) 22; Lizards and Crocodiles (mounted 50, bottles of 173) 213; Fishes (mounted 197, skins 112) 309; Shells (in drawers 841?, boxes of not counted 6, bottles of 27); Crustacea and Spiders (mounted 66, bottles of 121) 187; Insects (boxes of 89, nests of w[asps?] 2, bottles of 67, and the two cabinets); Radiaria, Sponges, etc (dry 341, bottles of 114, boxes of not counted 9); Preparations including horns, skeletons etc (dry 416, bottles of 225) 641. By 1840 it was said to contain 1,794 mammals (of 800 species), 5,418 birds (of about 3,000 species), 1,034 reptiles (and amphibians) and 1,260 fishes, and 386 entire skeletons and 700 mammalian skulls (Scherren, 1905: 77). However, Scherren also referred to another 5,000 birds "in reserve" and qualified the numbers of reptiles and fishes given as those on exhibition, thus implying that there were others in reserve. A list of specimens dated January 1851[13] indicated that the osteological collection amounted to 861 specimens of skeletons and skulls, that there were 775 dried fishes (mostly mounted) and 130 dried reptiles, 829 mounted mammals, 5,189 mounted birds, giving a total of 7,784 dry specimens. There were also invertebrate specimens, insects (including the extensive Raffles and Vigors collections) and spirit collections of fishes and reptiles which were not enumerated. Taken overall it was a very extensive zoological collection.

The comparatively large number of mammals, in particular their skeletons or skulls was in part due to the number of specimens which had died in the menagerie and which had been dissected and then prepared as skeletons. This means of preservation would be very advantageous in the context of the shortage of space from which the

collection suffered. These former menagerie specimens while often interesting by association (for example, the specimen of giraffe presented by King George from the menagerie at Windsor, the Bornean sun bear, *Helarctos euryspilus* (=*H. malayanus* (Raffles, 1821)) which had been kept in the menagerie of the Tower of London, and the Esquimaux dog "one of the faithful companions of our Northern Voyagers during their stay in Melville Island[14] in the winter of 1819–20") nevertheless had scientific importance mainly as anatomical specimens. Deceased menagerie specimens were from time to time dissected by Richard Owen (Hunterian Professor at the Royal College of Surgeons and honorary Prosector to the Society), and others, and parts of the animal preserved (the "Brains of Animals in Spirit"[13] are presumed to have originated in this way). Menagerie specimens once in the Museum were useful for display but their taxonomic value was low when compared to the material collected by naturalists and explorers in little-known parts of the world. These frequently included specimens of undescribed species which in time became type specimens. The collections of such field workers will be described later.

Conditions of storage

Although sustained efforts were made to house the collection adequately during the 25 years of its existence they ultimately proved insufficient for the rapidly growing collection. This was as much due to the dynamic attitude of the Museum's supporters who presented large collections, as it was to the contemporary concept of Museums in which most of the collections were on display. Conditions for the specimens were often not ideal and at times were far from convenient for the staff.

The premises at Leicester Square proved particularly inconvenient despite the enthusiasm for them expressed in the *Report of Council*, 1836, "In well arranged rooms and galleries, lighted from the top, the new Museum affords accommodation for more than twice the extent of cases that could be crowded into the rooms hitherto occupied in Bruton Street." However, there was no general heating and the Curator reported (Curator's Report 21 December 1836 (hereafter C.R.)) that central heating was in the process of installation and was nearly fit for use. In the winter of 1837–38 "the naming [of the birds] was obliged to be discontinued owing to the extreme coldness . . . the hot water apparatus being out of order" (C.R. 20 December 1837 to 11 January 1838). Clearly the heating was quite inadequate, because at the end of 1838 the Curator complained that time had been expended in "freeing the specimens from the effects of damp" and although "every possible precaution has been adopted, the Curator feels compelled to state that unless some serious repairs be effected in the premises the collection will, in his opinion, be much injured if not destroyed . . . the damp in the upper gallery arises from the faulty construction of the roof—the skylights are also much out of repair and in rainy weather admit the water freely"(C.R. 14 November to 5 December 1838). Damp appears to have been a continuing problem as nine months later the Curator proposed to have the ground floor of the Museum covered with "floor-cloth" (it was referred to as oil cloth in later reports) to keep out damp and dust "from the vaults". Also, as he observed if the floor cloth was white it would make the room much lighter than at present (C.R. 19 September to 2 October 1839). The premises were vacated in 1841 following the *Report of Council*, 1840 which spoke of "limited space", "insufficiency of light and the general

inconvenience of the premises, which interfere with that constant and unceasing care and attention which are absolutely necessary to its preservation".

The collection was moved to store at Golden Square, although some specimens were taken to Hanover Square to decorate the offices in 1843. The specimens appear to have survived their period of storage well. Unfortunately no reports by later curators are available so it is not possible to discover what conditions at Golden Square or later in the adapted Carnivora House were like.

Curation

Soon after the foundation of the Society, the collection was of considerable importance. While the larger mammals and birds were relatively well-known and thus easily identified, a large mass of material quickly accumulated which was unidentified. In its unidentified state a collection of natural history specimens is difficult to manage in any meaningful way, registration and cataloguing are pointless, vital information is absent from labels and even systematic shelving is impossible.

Raffles's material, as the foundation collection, was a partial exception to this as special efforts appear to have been made to identify it, probably partly as a result of the terms of the donation but also because of pervading enthusiasm for the newly-founded Society's Museum. As noted earlier Thomas Horsfield identified the specimens and wrote the report on the mammals, Horsfield[3] and N.A. Vigors[4] the birds, E.T. Bennett[5] the fishes and T. Bell[6] the reptiles, for Lady Sophia Raffles's memoir of her husband (S. Raffles, 1830). However, the insect collection which numbered approximately 730 specimens never appears to have been worked on despite the involvement of William F. Kirby[15] (S. Raffles, 1830: 629), and no mention was made of other invertebrates, such as the 50 crustaceans (perhaps crabs as they were described as "cancers") in the Sumatran collection (Raffles, 1822).

Some other collections, such as the 120 specimens of birds from the Himalaya Mountains presented by John Gould (*Report of Council*, 1832: 10) or the 24 birds and 7 mammals from North America collected by John James Audubon (*Report of Council*, 1836: 18) had probably been given scientific names by the donors. Other collections, such as the complete series of crustaceans collected by Hugh Cuming[16] on the western coasts of South America and the islands of the South Pacific (*Report of Council*, 1836: 19) came unidentified, and were studied by T. Bell[6] (1835, 1836). Collections such as that of Captain Foster of the *Chanticleer* and the whole of the collection formed by Captain King[17] of the *Adventure* during his 3-year survey of southern Patagonia, (*Report of Council*, 1832: 10) being general collections presumably posed problems as much of them would have required identification.

However, the mass of unidentified material had to be sorted, identified and then labelled by the Curators before the specimens could be shelved. Waterhouse in his Curator's Report 4 May to 17 May 1837 wrote "The principal part of the time of the Officers has been occupied with the Garden and Museum Catalogues, in naming various Mammalia, Birds, and Fishes. The Reptiles are also in progress. As regards the scientific nomenclature both of the Fishes and Reptiles it must be observed that it is now impossible to proceed without the assistance of Books. Great inconvenience is

also experienced in naming the Mammalia and revising the MSS Catalogue for the same reason". The same complaint emerged in a report two years later (Curator's Report 1 to 15 May 1839) "Great difficulty is experienced in naming the birds from the want of Books—The Planches Coloriées (*sic*) of Temminck is quite essential and the want of this work was felt by Mr. Gould, who stated before his departure that it would be impossible to proceed without it . . .".

While Waterhouse and his assistants (notably John Gould and Louis Fraser) struggled to identify the material in the Museum, occasional visitors were able to assist in this way when they visited the Museum. Thus, Andrew Smith[18] examined sharks in the collection in 1837 (C.R. 21 June to 5 July 1837) and later presented a collection of specimens. As a result type specimens of species of shark described by Smith were present in the Museum collection. In the autumn of 1837 Johannes Müller[19] also visited the Museum to examine the sharks with the result that 12 species were described from the collection in Müller and Henle's (1838–1841) pioneering revision of the sharks and rays. In 1838 the reptile collection was examined by Gabriel Bibron[20] who with Martin examined and named the specimens in the Museum collection and the unsorted material in the stores (C.R. 28 February to 26 March 1838). The catalogue of the reptiles in the Museum contains a number of entries against which the initial 'B' stands, and there are several notes against species names "Original of Bibron's desc[ription]". Some of these may have been type specimens although it is possible that they remained manuscript names. In the same report Waterhouse asked the Council to sanction the exchange with Bibron of 14 species of Reptiles in return for as many specimens representing new genera.

As well as identifying the material, the Curator had to label it and enter it into catalogues. An essential first move in the case of small mammals such as rodents was to separate the mixed lots into individual bottles (C.R. 18 January 1837). It is clear that while the specimens formally accessioned into the Museum were labelled and well organized there was a substantial backlog of material some of which were duplicate specimens available for exchange, others simply unidentified lots representing more than one species. The spirit material was stored in large crocks in the stores until such time as it could be worked on.

The curators in addition, had to clean the specimens in the Museum and ensure that the skins were not affected by the cold and damp. William Cranley in particular was also occupied in preparing skeletons, some of them large animals such as the lion (C.R. 21 December 1836) and a king vulture (C.R. 4 January 1837), many of which were de-fleshed, cleaned and set up as articulated skeletons. Others must have been disarticulated and some stored in oak boxes. There was a very extensive osteological collection (see p. 94).

THE COMPOSITION OF THE COLLECTION

Sources of information

As outlined already (p. 94) it is clear that the collection in the Museum was large; Scherren (1905) gave totals which indicate more than 100,000 specimens of vertebrates. The invertebrate specimens seem not to have been listed. It is difficult today

to reconstruct the extent and composition of the collection other than for mammals, as the catalogues which exist are imperfect or as in the case of the birds missing. The sources used in the following account are listed here:

Mammals

Anon., 1828 *Catalogue of the Mammalia contained in the Museum of the Zoological Society, June 24, 1828*, pp 18. A numbered list with 438 entries, of specimens giving common names, in many cases scientific names and general range. Very few of the entries have details of provenance of the specimen or the donor's name.

Anon., 1829 *Catalogue of the animals preserved in the Museum of the Zoological Society, September 1829*. This was probably intended to be a guide to the displayed collection. The mammal specimens are numbered and listed by common and scientific name, a locality (sometimes very general) is given, and occasionally details of the donor or history of the specimen. The birds are also listed with numbers but with much less detail. The catalogue is arranged according to the quinary system and was probably the work of N.A. Vigors.

[Manuscript Catalogue of the specimens in the Zoological Society's Museum] Mammalia Catalogue 5 volumes. (Volume 1 dated March 1844 and inscribed Louis Fraser Curator.) This is a listing of the mammal specimens in the Museum with details of scientific name, locality and donor. In some cases there are notes, for example "Originals of Vigors and Horsfield Zool. Journ. 4: 110" for *Semopithecus recurvus*, or "Original of Ogilby Descr. P.Z.S. 1837" for *Colobus leucomeros*, which establish the type status of the specimen. Despite the title page bearing Fraser's name this catalogue was initiated and largely compiled by G.R. Waterhouse (C.R. 2 August to 16 August 1837).

Birds

Information on the collections in the Museum has been derived from the *Reports of the Council* 1831–1857, and the Curator's Reports to the Council 1836–1839.[8] It is known that the curators prepared a catalogue (C.R. 3 April 1839) of the bird collection; "The Officers have been chiefly engaged in naming the Birds and in preparing a catalogue of those contained in the collection. The Raptores are now completed, the collection of Owls having been examined and named . . .". The Bird Catalogue is not in the Zoological Society's Archives (Ann Sylph—pers. comm.) nor is it held in the Bird Section of The Natural History Museum at Tring (F.E. Warr—pers. comm.). As a result it has been difficult to discover much about the holdings of birds in the collection even though this was the most numerous group and it contained many type specimens.

It is possible to establish some of the species which were present in the bird collection from the list published of Raffles's collection (Vigors and Horsfield, 1830) which totals 176 species (enumerated as "*In Musaeo* Soc. Zool."). There are also many references to individual birds or collections of birds given to the Society in the Curator's reports, but they are rarely listed in any detail.

Reptiles, Amphibia and Fishes

The sole source of information is a manuscript catalogue the cover of which is titled Inventory of/Reptiles Amphibia & Fishes/in the possession of the/Zoological Society of London. This is bound, height 41 × 26.5cm and written across the openings; the pages are ruled for entries with a double rule at the head and vertical rules to give (*Recto*) Date, Number, Name, Description, Country, and (*Verso*) How obtained, Where Deposited, and Remarks. These columns are not regularly used. The entries are not systematic and the catalogue seems to have been made as material was found in the collection and later, possibly, as it was received.

The catalogue of the reptiles and amphibians was prepared by W. Martin (Waterhouse's assistant curator at the time) in early 1838 (C.R. 28 February to 21 March 1838). A major input into the catalogue had been made by the French herpetologist Gabriel Bibron[20] who had visited the Society's Museum in 1838 to identify reptile and amphibian specimens.

Fifteen species of reptile were enumerated by Bell (1830) in his list of the material in Raffles's collection (with three others unnamed of the genus *Cophias* mentioned). I have not checked the MS catalogue to confirm that they were entered there.

There are also references to reptiles donated to the Museum by collectors such as Col. Chesney's Euphrates Expedition, (presented by the Commissioners for the Affairs of India in 1836 (C.R. 21 December 1836)) and to the reptiles in the Australian collection (5 species, 7 specimens) offered for sale by John Gould in 1837 (C.R. February 1837) (the birds of which, and probably the remainder were purchased). Neither of these sources are specific about the species involved.

The catalogue of fishes is contained within that listing the reptiles and amphibians. It appears to have been compiled around 1835. The Curator's Report for 2 to 16 August 1837 speaks of "Forty five species of Fishes which were not in the Museum have been properly put up and *entered in the Catalogue*" (emphasis mine) thus demonstrating its existence then. The last set of entries are all dated 1839 or 1840 and these must have been entered during those years or directly after.

Many of the entries in this catalogue contain Raffles material which had been listed by E.T. Bennett (1830: 686–694) in his catalogue of the Sumatran collection of Raffles. Bennett's list comprised 41 taxa of which 16 were newly described therein.

Other animal groups

So far as I am aware there are no catalogues surviving of invertebrate specimens in the collection which included crustaceans, mollusc shells, cephalopods, corallines, and an extensive collection of insects. There were also collections of birds' eggs and the brains of animals preserved in spirits, minerals and sea weeds (C.R. 17 January to 31 January 1833) but the extent of these collections are unknown as they were never listed in detail.

Abbreviations used in the following list are as follows:

A.R. [= Annual Report] Report of the Council, followed by year: page number.
C.R. [= Curator's Reports] see Note 8. Followed by dates covered by report.

MS Mam Cat. The 5 volume Mammalia Catalogue preserved in The Natural History Museum, Mammal Section, Department of Zoology.

MS Fish Cat. The manuscript "Inventory of Reptiles Amphibia and fishes in the possession of the Zoological Society of London" preserved in the Library of the Zoological Society.

MS Herp Cat. Refers to the reptile and amphibian section of the above Inventory.

The following abbreviations are used for animal groups, mam = mammals; herps = reptiles and amphibians; inverts = usually stands for invertebrates other than insects.

CONTRIBUTORS TO THE COLLECTION

This list of contributors to the Museum has been compiled from all sources available and discussed in the previous section. Some donations are omitted especially where they seemed relatively minor or where they were single entries in the catalogues, and the list favours names of eminence in zoology or in exploration because these collections were generally important. Following the names of the individual donors abbreviated details of the animals presented with any relevant information which is available are given. Occasionally biographical details are provided where these are available.

Abbot, Keith. Pres. herps, fishes, "numerous specimens from Trebizond" [=Trabzond, Turkey 41°N. 39° 43'E]. *A.R.* 1836: 18. At least 10 fish (MS Catalogue).

Admiralty, Lords Commissioners of,—see E. Belcher; H. Foster.

Alexander, Thomas. Pres. birds, Van Diemen's Land. *A.R.* 1844: 7.

Alexander, Capt. Pres. mam (20), birds (70), lizards (2); "all the new species from Expedition" C.R. 28.2 to 21.3 1838.

Allen, Lt. (later Capt.) William, R.N. (of Lander's Niger Expedition[21]). See Allen and Thomson (1848) with appendix on animals collected and described by Waterhouse, Martin and Gray in *ca* 1837. West Africa (Niger basin, Fernando Po) *A.R.* 1835: 16. At least 3 fish (MS Catalogue). See also Thompson, T.R.H.

Amherst, Lady. Pres. mam, "several skins of rare Mammalia including the Thar" [=Tahr, a Himalayan goat-like animal] *A.R.* 1837: 16.

Asiatic Society of Calcutta. Pres. birds, "extensive series of birds skins . . ." *A.R.* 1831: 23.

Audubon, J.J.[22] Pres. mam, birds (North America) *A.R.* 1835: 16; 1836: 18 (24 birds, 7 mam).

Bachman Rev. J. Pres. mam, birds (United States of America). "Some of these were described by himself" *A.R.* 1839: 10, *Sciurus subauratus* Bachman. Golden-bellied Squirrel. Louisiana . . . "one of the specimens referred to." At least 13 mammal specimens are listed in the Catalogue.

Barclay, R.T. Pres. herps Madagascar.

Belcher, Capt. Sir Edward, R.N.[23] Pres. mam, herps, birds. Sixty bird skins and 1 quadruped, collected on the coast of S. America and in the Pacific *A.R.* 1840: 13; 15 bird skins collected from various parts during the voyage of H.M.S. *Sulphur A.R.* 1844: 6. Fish from Loo Chao, Rio de Janeiro (MS Catalogue).

Bell, Thomas.[6] Pres. mam, herps (many). Some of the reptiles were from the West Indies (MS Herp Cat).

Bentinck, Lady William. Pres. birds, "64 bird skins from the Himalaya Mountains" *A.R.* 1834: 14; "specimens from New Holland" (not further localised) *A.R.* 1837: 16.

Bancroft, Dr E.N. Pres. fishes. Jamaica (MS catalogue). Bancroft published several papers on fishes in the *Zoological Journal* or the *Proceedings of the Zoological Society* between 1829 and 1835.

Bond, F. Pres. herp. Three *Rana esculenta* from Cambridgeshire *A.R.* 1845: 9. Mr Bond first drew attention to this population of edible frog established in Fowlmire Fen, Cambridgeshire in *The Zoologist* **2**: 393 (1843).

Bidwell, C.B. Pres. mam. Skins of 3 monkeys, skull of hippopotamus, Sierra Leone *A.R.* 1840: 13.

Blyth, Edward. Pres. mam. At least 2 specimens, one a harvest mouse from England MS Mam Cat.

Bruce, Capt. R.N. of H.M.S. *Imogen*. Pres. birds. Six skins of hummingbirds *A.R.* 1840: 14.

Brooke, James (of Borneo). Pres. mam, birds, herps, molls. Five orang utans in spirit, skulls and skeletons. Borneo *A.R.* 1842: 8; skins 39 mam, 249 birds, 1 reptile, large case of shells, from Singapore and Borneo *A.R.* 1843: 7.

[James Brooke (1803–1868), later Sir James, appointed Rajah of Sarawak, later Consul-General in Borneo and Governor of Labuan.]

Breton, Lt R.N. Pres. mam, birds, herps. Six mammals, 54 birds, 1 lizard, Van Diemen's Land [Tasmania] *A.R.* 1844: 6. "A magnificent specimen of *Thylacinus* (male)", birds, mam, Van Diemen's Land *A.R.* 1849: 8.

Burgess, Lt (20th Reg. Native Infantry). Pres. birds. Collection of skins from Upper Scind [Sind, Pakistan] *A.R.* 1848: 11.

Campbell, Major (of New Zealand Association). Pres. birds. Two skins *Apteryx australis* *A.R.* 1838: 11 [kiwi, *Apteryx* sp. the other species were not recognised for several years after this.]

Cantor, Theodore.[24] Pres. herps, fishes from India, 19 moll from Chusan. *A.R.* 1840: 13; 1843: 9. Collection labelled and catalogued C.R. 1 May to 15 May 1839. Several specimens in MS Herp Cat; 61 fish Bay of Bengal MS Fish Cat.

Chandler, Leonard. Pres. birds, 40 bird skins *A.R.* 1839: 10; 27 bird skins from Australia *A.R.* 1841: 9.

Chesney, Col.[25] (Euphrates Expedition). Pres. 1 *Trionyx* *A.R.* 1837: 11; 87 birds, 2 mam, reptiles (in spirit), several insects C.R. 21 December 1836. [*Trionyx* is soft-shelled freshwater turtle; one species is *T. euphraticus* (Daudin, 1802).]

Cox, Dr J.C. Pres. moll. Collection cephalopods in spirit from Naples *A.R.* 1840: 13.

Cuming, Hugh. Pres. mam, fish, crustaceans. Pres. complete series of Crustacea from western coasts of South America and the islands of the South Pacific Ocean *A.R.* 1833: 18–19; bats (in spirit) from Philippine Islands *A.R.* 1845: 9. At least 26 mammals described as Mr Cuming's Siberian Collection (Waterhouse, 1838 and MS Mam Cat); 2 fish from Chili, MS Fish Cat.

Detailed negotiations took place with Cuming for the Museum to exhibit the "Cuming Collection of Shells" of 6,000 species (valued at £3,000). The Society was to appoint a curator (in the first instance Mr Cuming at £200 p.a.) *A.R.* 1836: 19. This arrangement seems never to have been finalised.

Cunningham, Allan. Pres. skin and body (in spirit) of Kiwi (*Apteryx australis*) from New Zealand *A.R.* 1840: 13. See Cunningham (1839).

Cust, Sir Edward. Pres. herps, fishes, insects. Pres. 14 fishes, 10 reptiles, Lepidoptera larvae (in spirit) from Demerara *A.R.* 1840: 14. Fishes and reptiles have been mounted and are ready to be placed in the Museum C.R. 19 September to 2 October 1839. 11 fish in MS Fish Cat.

Darwin, Charles. Pres. "rich collection of Mammalia and Birds collected chiefly in South America" *A.R.* 1837: 16. Waterhouse reported that the collection had "this day" been presented C.R. 4 January 1837 and "all the specimens . . . have been labelled, and are now undergoing examination, in order that they be named . . ." C.R. 18 January 1837.

Darwin's mammal collection was identified and the new taxa named by Waterhouse (1839); at least 53 specimens were listed in Waterhouse's catalogue (1838) many of them types. See also Thomas (1906) and Waterhouse (1838–1839). The birds were identified by Gould (1838–1841). Many specimens of both groups later went to the British Museum. Some were dispersed (2 specimens of mammals—Patagonian cavy [=*Dolichotis patagonum* (Zimmerman, 1780)] and *Didelphys azara* [=*Didelphis aurita* Wied-Neuwied, 1826] are currently preserved in the collection of University College Cork (D. Hills pers. comm.; L. Ballard *in litt.* 20.4.1994)). Other Darwin material is now preserved in the Museum of Victoria, Melbourne (See p. 113). Gould later purchased Darwin birds from the Society and dispersed them to several institutions.

De la Beche, H.T.[26] Pres. fish, crustaceans. A "large collection of Fishes and Crustacea from the West Indies" *A.R.* 1834: 14.

Derby, Earl of.[27] Pres. mam, birds, insects. Pres. body of *Apteryx Australis* [Kiwi] *A.R.* 1838: 11, skins 71 birds and valuable collection of insects (1,177 specimens, 541 species) from the interior of Africa *A.R.* 1843: 7. Numerous mammals and their skeletons may have been specimens which died in the Knowsley menagerie, many specimens listed in Waterhouse (1838).

Desjardins, Julien. Pres. birds, fish. Pres. collection birds and fishes from the Mauritius *A.R.* 1836: 18. *Ca* 15 fish from Mauritius MS Fish Cat.

Dickson, Edward Dalzel[28] (and Ross, Henry James). Pres. mam, birds, herps, fish. Pres. 6 skins of mammals, 142 birds, 2 fishes, 7 birds' eggs, also 1 bird, 1 lizard, 1 scorpion, 2 mammals in spirit from Erzeroom and the Lake of Van [Turkey] *A.R.* 1840: 14, skins and skull of wild cat from Tripoli *A.R.* 1846: 5; 2 skins mammals, 11 birds from Morzouk, 9 bird skins from Jebel Mts, 22 bird skins from Tripoli *A.R.* 1844: 7; 2 hedgehogs, 2 frogs, 2 reptiles from Trebizond and 2 freshwater tortoises, 3 birds, 3 mammals, 1 *Helix* from Samsoon *A.R.* 1843: 8; fish from L. Van MS Fish Cat.

Douglas, David.[29] Pres. mam, herps. Pres. at least 20 Californian mammals listed in Waterhouse (1838); herps specimens listed in MS Herp Cat.

Drummond Hay, E.W.A. Pres. mam, herps, insects. Pres. living spiders, locusts and eggs from Tangiers *A.R.* 1840: 13. Pres. mammals, at least 2 listed in Waterhouse (1838) and herps from Morocco MS Herp Cat.

Drummond Hay, G.W.H. Pres. birds. Sixty-three bird skins, 20 nests, and birds' eggs from Tangiers (described as "son of Drummond Hay, Esq., of Morocco") *A.R.* 1841: 9.

Dundas, the Hon., Admiral. Pres. ?birds. Forty-one skins from New Holland and New Zealand *A.R.* 1834: 14.

Edmund, Esq., (no name or initial) Pres. mam, rept. Pres. *Ornithorhynchus*, Flying Squirrel Opossum, snake from Sydney *A.R.* 1844: 7.

Edmonds, Esq., (perhaps same as above) Pres. 10 bird skins from Australia *A.R.* 1845: 10.

Edward, T.W. Pres. herps India MS Herp Cat.

Egerton, Sir P. Grey. Pres. mam, birds. Bird skins from India, and a white wolf *A.R.* 1835: 16. At least 2 mammals listed in Waterhouse (1838).

Ellis, Mr. (no name or initial) Pres. 253 preserved bird skins interior of Africa *A.R.* 1832: 10.

Euphrates Expedition—see Col. Chesney.

Everett, George. Pres. 1 *Thylacine*, Van Diemen's Land 13 August 1838 *A.R.* 1839: 10; MS Mam Cat.

Ewer, Walter. Pres. mam, birds. Pres. 460 bird skins from India and 3 antelope heads *A.R.* 1843: 7; 2 mammal skins, 42 bird skins, 2 antelope heads from Himalaya Mountains *A.R.* 1844: 6.

Ewing J. Pres. tortoise Van Diemen's Land MS Herp Cat.

Farrell, James. Pres. 100+ bird skins from Himalaya Mountains *A.R.* 1838: 11.

Fisher, J.W. Pres. 2 skins *Menura superba* [= lyre bird] *A.R.* 1840: 13.

Folliott, G. Pres. 46 mounted bird skins, 1 quadruped from North America *A.R.* 1834: 14.

Foster, Capt Henry R.N. (Lords Commissioners of the Admiralty). Pres. zoological collections made on H.M.S. *Chanticleer A.R.* 1832: 10.

The *Chanticleer* cruised in the South Atlantic and around the South Shetlands in 1828–31. Foster was drowned in the Chagres River (a river on the Atlantic side of Panama) in 1831 when he fell from a canoe returning to the *Chanticleer* (Rice, 1986).

Forrester, Joseph James, K.C.V.O. Pres. birds, herps, fish, inverts. Pres. birds, reptiles, lepidoptera and echinoderms from Oporto *A.R.* 1845: 9; birds, herps, fish, molluscs from Oporto *A.R.* 1846: 5.

Frankfurt Museum (E. Rüppell). Pres. mam. Extensive collection of mammal skins chiefly from Nubia *A.R.* 1834: 15.

Fraser, Louis.[10] Pres. mam, fish. Pres. mammals and fishes from Africa, Waterhouse (1838), MS Fish Cat. Fraser was a curator of the Museum.

Franklin, Sir John. Pres. mam. Specimens collected during the expedition to Arctic North America *A.R.* 1832: 8–10. At least 1 specimen of *Canis familiaris* var *lagopus* (Mackenzie River dog) MS Mam Cat. See also Dr John Richardson.

Frembley, Lt John, R.N. Pres. birds, herps, fish, corals, zoophytes. Pres. collection of fishes in spirit and 10 skins from Gibraltar *A.R.* 1840: 13; birds from Para (1) and Gibraltar (2); corals and marine zoophytes Barbary coast *A.R.* 1841: 9; fishes from Brazil in spirit *A.R.* 1842: 8. Also pres. herps MS Herp Cat. As Capt J. Frembley pres. fishes, 11 Sandwich Islands [= Hawaii], 2 Bay of Honduras, 11 Gibraltar + 12 others of uncertain locality MS Fish Cat.

Garnett, G.H. Pres. imperfect skin *Felis Servalina* Ogilby, Sierra Leone (original of Mr Ogilby's description) *A.R.* 1840: 14.

Geneva Museum, Directors of, Exch. skins of European birds *A.R.* 1834: 14.

Gordon, A. Pres. mam, birds. Two mammals, 6 bird skins from Swan River, Western Australia *A.R.* 1839: 10. At least 1 Gordon mammal is listed in MS Mam Cat.

Gould, John. Pres. mam, birds. Pres. 120 bird specimens from the Himalayan Mountains *A.R.* 1832: 10; 5 trogon skins new to the collection *A.R.* 1839: 10; 2 skins *Ortyx parvicristatus A.R.* 1845: 10; 1 golden oriole C.R. 21 December 1836. Mammals: 2 specs bridled kangaroo *A.R.* 1842: 8; 1 spec flying phalanger *A.R.* 1843: 8; 1 spec *Myrmacobius fasciatus A.R.* 1844: 7. At least 18 mammals presented by Gould are listed MS Mam Cat.

Gould also offered for sale a collection of 27 specimens (24 species) of mammals, 522 birds (about 300 new to the collection), 7 specimens (5 species) of reptile. Most were from Australia; some of the birds were Japanese C.R. February 1837. Labelling (of this collection presumably) completed and duplicates identified to be exchanged by Gould. There were 38 parrots in the collection C.R. 15 February to 1 March 1837).

Gould's collection of hummingbirds was exhibited in a special building near the South Gate of the Gardens in 1851, although it was moved later. An entrance fee of 6d (2.5p) per head was made "which was taken by Gould" (Scherren, 1905: 106). 75,000 visitors are claimed to have seen the collection (*A.R.* 1852: 13). It was exhibited for the whole of the summer of 1852 without extra charge, then returned to him *A.R.* 1853: 11. Gould's collection of 3,860 hummingbird skins and 1,518 specimens mounted for exhibition in polygonal glass cases, was purchased by the British Museum in April 1881 after his death. Six of the original cases with specimens are preserved in the Department of Library and Information Services in The Natural History Museum, London.

Graves, Thomas, Capt. R.N. Pres. Seven bird skins from Island of Cerigo [= Kithira, Cyclades] *A.R.* 1844: 7.

Guilding, Lansdown, Rev.[30] Pres. fish >57 Caribbean, 1 St Vincent, 1 Demerara. MS Fish Cat.

Hancock Dr.[31] Pres. Fish >6 Demerara; herps several from Demerara MS Fish Cat, MS Herp Cat.

Hardwicke, Thomas [Col, later Major General] Pres. mam. More than 6 specimens listed in Waterhouse (1838).

Hardwicke material was also presented to the Linnean Society and to the British Museum (Wheeler, 1995; in prep.).

Harlan, Dr of South Carolina. Pres. reptiles. MS Herp Cat.

Probably Richard Harlan (1796–1843) author of *Fauna Americana . . . description of the Mammiferous Animals inhabitating North America.* Philadelphia (1825).

Harvey, J.B. Pres. mam, birds, herp, fish, inverts, "marine productions". Marine productions south coast of Devon *A.R.* 1836: 18; "radiata" and fish *A.R.* 1838: 11; shells, sponges etc from South Australia *A.R.* 1840: 14; quadrupeds, bird skins, snake, fish, shells, Crustacea from Australia *A.R.* 1842: 8; 17 bottles containing many valuable specimens in spirit from South Australia (by the late J.B. Harvey *A.R.* 1844: 6).

Harvey was an ornithologist, d. 26 February 1843.

Hearne, John. Pres. mam, birds, herps, inverts. A new species of *Ibis* and several other birds *A.R.* 1838: 11; a sharp-nosed crocodile, large lizard *A.R.* 1844: 7; specs bats and mice, a few shells and insects *A.R.* 1845: 9; 3 birds' skins, 6 crustaceans, 6 bottles containing quadrupeds and reptiles *A.R.* 1847: 8. All Hearne's material came from Hayti [= Haiti]. At least 4 mammals from Hearne are catalogued in Waterhouse (1838).

Hearne was described as Swedish and Norwegian Consul *A.R.* 1845: 9.

Heath, J. Marshall. Pres. mam, birds. Pres. more than 500 bird skins from Madras *A.R.* 1831: 24; very numerous collection of bird skins and quadrupeds from Madras *A.R.* 1834: 14. At least 8 mammal species are listed in Waterhouse (1838).

Hill, James. Pres. birds. Stuffed birds in 2 glazed cases from Trinidad; 7 skins and 7 nests of birds of Jamaica *A.R.* 1846: 5.

Hill, Richard.[32] Pres. skull of undescribed seal from Jamaica *A.R.* 1847: 8.

Hillier, H. Pres. 88 skins birds and quadrupeds from India *A.R.* 1834: 14.

Hinds, R.B.[33] Pres. skin of alligator from Real Llejo, west coast Central America *A.R.* 1845: 10.

Hodgson, B.H.[34] Pres. mam, birds. Pres. "upwards of" 300 skins of birds, skins and skulls of many mammals from Nepal *A.R.* 1834: 14; extensive series of birds from Nepal *A.R.* 1835: 16; 44 bird skins from Nepal *A.R.* 1836: 18.

Hope, F.W. (Rev.)[35] Pres. birds, herps, fish. Pres. reptiles and fishes (no locality) *A.R.* 1840: 13; 18 bird skins from Sultanpoa [?= Sultanpur, Utar Pradesh]. *A.R.* 1844: 6.

Hope, Miss H. Pres. 6 bird skins, 4 reptiles, 1 fish from Egypt *A.R.* 1842: 9.

India, Commissioners for the Affairs of . . . See Chesney, Col. F.R.

Ingarfield, W. Pres. specimen of *Nephrops* [crustacean] *A.R.* 1845: 10.

Inglis, Robert. Pres. at least 2 mammals (Waterhouse, 1838).

Innis, Lt Robert, R.N. Pres. alligator from Mexico. Innis is described as of H.M. Brig *Pandora A.R.* 1841: 9.

Jerdon, T.C.[36] Collected 18 bird skins from the Neilgherry Hills (presented by Hamilton Lindsay) *A.R.* 1841: 8.

Jesse, Edward. Pres. 13 bird skins and 1 quadruped from Africa *A.R.* 1836: 18.

Johnson, Edwin. J. Pres. skin of *Genetta vulgaris* Cuvier [= *Genetta genetta*] from Oporto. Johnson was described as Her Majesty's Consul at Oporto *A.R.* 1845: 9.

Jourdain, F.J. Pres. skull of Greenland whale *A.R.* 1844: 7.

Kelaart, Dr. Pres. 1 *Pteropus* [Old World fruit bat], 1 snake, 96 fishes, 2 tortoises, 1 crab, and collection of fishes in spirit from Ceylon *A.R.* 1844: 7. [Lt Col. E.F. Kelaart (1819–1860) of the Army Medical Service, served in Sri Lanka and Gibraltar (Kelaart, 1932).]

Kent, H.R.H. the Duchess of, Pres. "a small dog under a Glass Shade" *A.R.* 1841: 9. The Duchess of Kent was Queen Victoria's mother.

Ker, Alexander John Pres. body of a dugong in spirit from Penang *A.R.* 1838: 11.

Kerr, Mrs Alex. Pres. small collection of bird skins (no locality given) *A.R.* 1837: 16.

King, Captain of the *Adventure*.[37] Pres. the collection formed during 3 years survey off the southern coast of Patagonia *A.R.* 1832: 10. Specimens (>5) presented by P. P. King occur in the catalogue by Waterhouse (1838).

Knapp, George. Pres. mam, reptiles. Pres. 28 skins quadrupeds, 14 specimens of reptiles from Fernando Po *A.R.* 1839: 10; 6 skins of rare "Monkies" from Fernando Po *A.R.* 1842: 8. Knapp's name appears as a donor of mammals and reptiles in MS Mam Cat and MS Herp Cat.

Lay, E. Tradescant.[38] Pres. 10 bird skins from India and a nest from Borneo *A.R.* 1840: 14.

Leach, Dr. Pres. reptile specimen from North Africa 1832 MS Herp Cat. [This is presumed to be W.E. Leach (1790–1836) who worked at the British Museum from 1814–1821.]

Leadbeater, B.[39] Pres. more than 4 mammals listed in MS Mam Cat.

Lindsay, Mr. Pres. 56 bird skins from the Philippine Islands, "three-fourths of which are new to science" *A.R.* 1832: 10.

Lindsay, Hamilton Pres. birds from T.C. Jerdon *q.v.*

Lords Commissioners of the Admiralty—see Edward Belcher, Henry Foster.

Lowe, Rev. Richard Thomas.[40] Pres. reptiles, fishes, shells. Pres. "an almost complete series of the land and fresh-water shells of Madeira" and an extensive collection of fishes from Madeira *A.R.* 1834: 14; fishes from Madeira *A.R.* 1836: 18; fishes from Madeira "The originals of his description in Trans. Zool. soc. vol. ii" *A.R.* 1839: 10; fish and reptiles, specimen of *Ausonia cuvieri* [= *Luvarus imperialis*], and 2 snakes from Demerara *A.R.* 1841: 8; fish *Aetobatis narinari* from Jamaica in sprits *A.R.* 1845: 9.

"The fishes presented by Rev. R.T. Lowe . . . have been mounted named and entered in the catalogue" C.R. 5 December 1838 to 2 January 1839. Seventy-nine specimens of fish from Lowe are listed in MS Fish Cat, those dated 13 August, 1838 (Nos 1083–1154) include what are believed to be type specimens (see above).

Lyon, Capt. R.N.[41]Pres. herps. Reptile specimens from Mexico and South America MS Herp Cat. Mentioned as a donor *A.R.* 1831: 23.

MacLeay, Alexander. Pres. skin of *Apteryx* [kiwi] *A.R.* 1836: 18.

Macleay, George. Pres. 48 bird skins from New Holland *A.R.* 1833: 14.

MacLeay, William Sharp. Pres. mam, herps, fishes. Pres. herps from Cuba, 17 fish from Cuba, 1 from New South Wales (MS Herp Cat, MS Fish Cat). At least 3 mammals (Waterhouse, 1838).

Mansfield, Countess of, Pres. cranium of large alligator *A.R.* 1845: 9.

Marryat, Chas. Pres. herps from Ceylon MS Herp Cat; fishes (no date) from Capt. Marryat (presumed to be the same) MS Fish Cat.

Marston J. Pres. herps from Jamaica MS Herp Cat. (Note on flyleaf of this catalogue "All Mr John Marston's specimens were collected by himself in Jamaica".)

Maw, H.S., Lt R.N. Pres. herps from South America MS Herp Cat.

M'Clelland, Dr[42] Pres. freshwater fishes in spirit from India *A.R.* 1842: 8.

Mellish R.C. Pres. collection of birds' skins *A.R.* 1837: 16.

Mitchell, Sir Thomas L. Pres. mam. Skin of the Mundu *Perameles lagotis* from the Murray River *A.R.* 1844: 7.

Moore, Edward Lee. Pres. mam (including the foetus of an Esquimaux), birds *A.R.* 1842: 8; 12 bird skins and sponges from Newfoundland *A.R.* 1843: 7; mam a young harp seal and heads of 2 hooded seals from Newfoundland *A.R.* 1844: 7.

Murray, Hon Charles. Pres. mam. Skins of black bear, grisly bear and bison (3) *A.R.* 1843: 8. Charles Murray (1806–1895) diplomat and Consul-General in Egypt 1846–1853. He played an important part in sending "Obaysch", the hippopotamus, to London in 1850 for the menagerie (Scherren, 1905: 90).

Musognano, Prince of, Pres. herps MS Herp Cat.

Nelson, Lt Madras Infantry Pres. mam. Skull and horns of the gour (presumably gaur) *A.R.* 1845: 9.

New Zealand Association, Pres. herps New Zealand MS Herp Cat.

Nolan, E. (or F.) Pres. fish. At least 6 from Ceylon MS Fish Cat.

Northumberland, Duke of, Pres. mam, birds. Seven fine skins of birds of paradise *A.R.* 1841: 8; a preserved grivet monkey *A.R.* 1842: 9.

Ogilby, William. Pres. mam. At least 5 mammal specimens listed by Waterhouse (1838), his name also occurs in the MS Mam Cat e.g. *Colobus leucameros* original of Ogilby's description in P.Z.S. 1837.

William Ogilby was the Honorary Secretary of the Society from 1839 until he resigned in January 1847.

Olive, Jeremiah. Pres. bird, mam. Fifty-seven bird skins and 3 quadruped skins from Australia *A.R.* 1842: 8; 39 bird skins from Australia *A.R.* 1846: 5.

Orkney, Earl of, Pres. herp. Pres. spotted salamander *A.R.* 1843: 8.

Owen, Colonel (K.C.A.) Pres. birds. Sixteen bird skins from Oporto *A.R.* 1845: 9.

Parkinson, Mr. Pres. birds, herps. Forty-two bird skins from Pernambuco *A.R.* 1833: 14. John Parkinson Esq. C.M. is named as the donor of reptiles from Pernambuco MS Herp Cat.

Parkinson was the British Consul at Pernambuco. He presented Brazilian birds to the Linnean Society's Museum in 1826 (Wheeler, 1995).

Parnell, Dr[43] Pres. fish. Eight fish from Firth of Forth MS Fish Cat.

Parlett, C.D. Pres. bird, herps, inverts. Collection of snakes, centipedes, and bird in spirit (*Nectarinia*). Colombo, Ceylon *A.R.* 1840: 14.

Parry, Capt. Sir Edward, R.N. Pres. mam. New species of kangaroo and other animals, Australia *A.R.*1835: 16. At least 3 mammal specimens presented by Parry are listed in Waterhouse (1838).

Perrier, A. Pres. fish. Spec. of bonito (*Auxis vulgaris* of Cuvier) *A.R.* 1844: 7.

Perrier was described as H.M. Consul at Brest.

Poey, Don Felipe, Dr.[44] Pres. fish, mam. At least 1 mammal is listed in the MS Mam Cat; 39 fish from Cuba are listed in the MS Fish Cat. There is a possibility that these specimens may have included type material.

Poole, Philip. Pres. mam, birds, herps. Eleven mammals, 98 birds, 6 saurian reptiles, Travancore *A.R.* 1836: 18. Poole gave at least 3 mammal specimens to the collection (Waterhouse, 1838).

Power, Madame. Pres. birds, inverts. Thirteen bird skins, mollusca, zoophytes in spirit, Sicily *A.R.* 1841: 9.

Mme Power is referred to as a Corresponding Member.

Raffles, Sir Thomas Stamford. Pres. mam, birds, herps, fish, inverts. The foundation collection of the Society's Museum. The Appendix to Lady Sophia Raffles's *Memoir* . . . (1830) listed by species 51 mammals, 176 birds, about 41 fishes, 15 reptiles, and 320 beetles, 30 Orthoptera, 20 Neuroptera, 10 Trichoptera, 60 Hymenoptera, 40 Hemiptera, 30 Homoptera, 200 Lepidoptera and 20 Diptera (the insects were not identified to species). Waterhouse's *Catalogue* (1838) lists 74 mammals presented by Raffles, a discrepancy from the earlier figure which might be accounted for by some of the specimens having been unidentified when Horsfield (in Raffles, S., 1830) drew up his list. There is a similar discrepancy in the case of the fishes where there are 61 Sumatran specimens from Raffles listed in MS Fish Cat.

The last of Raffles's collections were lost by fire on the *Fame*.[2]

Reeves, Mr.[45] Mr Reeves of Canton is acknowledged as making donations of rare species from China without further details *A.R.* 1831: 24; 1832: 10. Thirty-six fish specimens are listed in the MS Fish Cat and at least 1 mammal in Waterhouse (1838).

Rendall, John. Pres. birds. Pres. skins of 4 man-of-war birds, 2 coursers, 1 kestril (*sic*) from Island of Bona Vista.

Rendall was described as H.M. Consul at the Cape Verde Isles. *A.R.* 1843: 8.

Richardson, John, Dr (later Sir)[46] "the Secretary of State for the Colonies having transmitted to the Society specimens of the different species, collected during the late land expedition in North America, under the command of Sir John Franklin, and the superintendence of Dr Richardson" *A.R.* 1832: 9–10. Richardson is listed as donor of 14 mammal specimens in Waterhouse (1838). A collection of birds was presented by Mr Richardson C.R. 15 Feb to 1 March 1837.

Ross, Henry James (and Edward Dalzel Dickson). Pres. birds, herps, fish, inverts from Erzeroom (see Dickson, E.D.). Also 10 birds and 1 lizard from Erzeroom *A.R.* 1843: 8.

Ross, Sir Patrick. Pres. herps. Reptile specimens from Antigua are listed in MS Herp Cat.

Royal College of Surgeons. Pres. birds. Sixty-nine skins from New Holland *A.R.* 1833: 15.

Royle, Mr.[47] Pres. birds. Various bird skins from the Himalayas *A.R.* 1835: 16.

Rüppell, Dr [Edward].[48] Pres. mam, shells. Collection of mammal skins chiefly collected in Nubia (forwarded by the Directors of the Frankfort Museum) *A.R.* 1834: 15; shells collected by him in the Red Sea *A.R.* 1835: 15.

Saffron Walden Museum.[49] Pres. mam. Skin of Harte-Beest Antelope *A.R.* 1838: 11; 2 stuffed specimens *Antilope Isabellina* and 1 stuffed *A. Grimmea* *A.R.* 1839: 10.

Savi, Professor.[50] Pres. mam., birds. Nest and 5 young birds of *Sylvia cisticola*; skins of mammals from southern Italy *A.R.* 1838: 11. Also presented reptiles from Italy MS Herp Cat.

Saye and Sale, Rt Hon. Lord, Pres. fine specimen of a peacock in a valuable plate glass case *A.R.* 1845: 9.

Schomburgk, R.H. [51] Pres. specimen of a duck from British Guiana *A.R.* 1843: 7. At least 2 mammal specimens from Schomburgk were listed by Waterhouse (1838) and at least 5 in the MS Mam Cat. This also lists a specimen of *Callithrix torquatus* purchased at the sale of Schomburgk's Guiana collection 1 July 1840.

Shaw, Alexander N. Pres, mam. Skin, skull and skeleton of a Gaur (*Bos Gaur*, Trail) [= Indian bison, *Bos frontalis* Lambert, 1804] *A.R.* 1849: 9.

Shaw, Master. Pres, herps. Seven bottles containing snakes and lizards in spirit from India *A.R.* 1844: 7.

Sibbald, Dr. Pres. herps, fishes, inverts. Donation from Dr Sibbald of Ceylon (details not given) *A.R.* 1831: 23; extensive collection of reptiles, fishes, Crustacea and molluscs, Ceylon *A.R.* 1833: 14. Sibbald specimens of reptiles and 35 fishes are listed in MS Herp & Fish Cat.

Smith, Dr Andrew (later Sir).[52] Pres. birds, herps, fish. Stuffed specimen *Cynictis Steedmanii*, 5 stuffed raptorial birds, several reptiles in spirit *A.R.* 1839: 10; a specimen of a new genus of sharks *A.R.* 1840: 14. (This specimen was probably that of *Carcharodon capensis* Smith, 1849 (a junior synonym of *C. carcharias* (Linnaeus, 1758))—the great white shark. The specimen is still extant in the collection of The Natural History Museum, London.)

Smith was engaged with the Museum's curator in arranging an exchange of duplicates of the above groups. In the summer of 1837 he was studying sharks in the Museum and was planning to present specimens of sharks of about 20 species to the Society's Museum C.R. 10 June to 5 July 1837.

Eighteen specimens of fish from Smith and several reptiles are listed in the MS Fish & Herp Cat. Smith also presented specimens to the British Museum (birds 1845.7.6; 48.3.21; 63.3.10; 72.10.4; reptiles and amphibians 1857.6.13. (Zoological Society specimens); 1858.11.25; mammals and fishes 1859.5.7. and fishes 1851.10.2.

Smith, Lieut. Thomas, 15th Native Infantry. Pres. skin of Burrhal Sheep from the Himalaya Mountains *A.R.* 1839: 10.

Solly, S. Pres. birds. Coll. of bird skins from India *A.R.* 1842: 8.

South Australian Company. Pres. mam, birds, herps. Thirty-two bird skins, 1 rat, 1 bat, 6 reptiles *A.R.* 1840: 13.

Stanger, Dr. Pres. birds, herps. Three pendent nests Western Africa; collections of reptiles in spirit, 7 bird skins from the Niger *A.R.* 1842: 9.

Stanley, Capt. Owen, R.N.[53] Pres. birds, herps. Twenty-one skins, 2 bottles of reptiles from Port Essington *A.R.* 1841: 9. Stanley was there described as of H.M.S. *Britomart*.

Stansfield, -, Esq. Pres. birds, herps, inverts. Two bird skins, some lizards, 3 *Echini*, 2 shells, Van Diemen's Land *A.R.* 1845: 10.

Statham, William. Mounted specimen of a wolf *A.R.* 1845: 10.

Stewart, Mrs Hays. Pres. birds, herps. Skin of a young garial, 4 bird skins, India *A.R.* 1845: 10.

Strickland, H.E. Pres. birds. Eleven skins of birds (new to the Collection) *A.R.* 1840: 12.

Strutt, Mr. Pres. herps. Nearly 20 species of reptiles, Berbice, Guyana.

The donor was described as a Stipendary Magistrate, and he was collecting material for a herpetological study of British Guiana *A.R.* 1853: 11.

Stutchbury, Mr [S.][55] Pres. mam, fish. Stutchbury was named as the donor of at least 1 mammal in MS Mam Cat and 3 fishes MS Fish Cat.

Swainson, W.[56] Pres. fish, herps. Swainson was named as the donor of herpetology specimens, and 14 fishes from Sicily, 1 from Brazil and 7 with no locality MS Herp Cat, MS Fish Cat.

Sykes, Col. W.[57] Pres. mam. Skin of *Canis jubata* *A.R.* 1839: 10. At least 4 mammals are attributed to Lt. Col. W.H. Sykes in Waterhouse (1838).

Taylor, J. Pres. birds. Collection of bird skins (no other data) *A.R.* 1837: 16.

Teignmouth, Lord. Pres. an eagle from Himalayan Mountains (probably a new species) *A.R.* 1838: 11.

Telfair, Mr Charles. Unspecified donation (with Boyer) from the Mauritius *A.R.* 1831: 23; *A.R.* 1833: 14; and Mauritius and Madagascar *A.R.* 1834: 14 (which refers to him as the late Mr Telfair). Telfair's name is associated with at least 10 species of mammal (Waterhouse, 1838), 95 fishes, and reptiles or amphibians MS Fish Cat, MS Herp Cat.

Templeton, Dr. Pres. inverts. Collection land and freshwater shells from Ceylon *A.R.* 1845: 9.

Templeton was described as of the Royal Artillery as well as a Corresponding Member of the Society.

Thompson, John Vaughan. Pres. mam. Presented a specimen of Irish rabbit, *Lepus cunniculus* [= *Oryctolagus cuniculus* (Linnaeus)] 13 May 1837, MS Mam Cat.

Thompson is best known for his studies on marine invertebrates; he presented a series of developmental stages of crustaceans to the Linnean Society's Museum (Wheeler, 1995).

Thompson, T.R.H. Pres. mam, birds. Pres. 9 mammals, 23 bird skins collected during the expedition to the Niger *A.R.* 1843: 8–9.

Thompson was described as Acting-Surgeon on H.M. Steam Vessel *Soudan*. See also Capt. William Allen.

Trail, Mr. Pres. herps. Specimens from Cairo donated by Mr Trail are listed in MS Herp Cat.

Tweedy, John N. Pres. herps, fishes, mam, inverts. Six reptiles, 2 fishes, 2 bats, 1 zoophyte, 2 spiders and coleopteran larva in spirit; specs of crustaceans in glass case.

Tweedy was described as the Vice-Consul at Port-au-Prince, Haiti *A.R.* 1843: 8.

Tyler, William. Pres. body of toucan *A.R.* 1845: 10.

Victoria, H.M. Queen, Pres. bird, mam. Spec. cassowary *A.R.* 1844: 6; 2 skins of silky monkey (*Midas Rosalia* Geoff.) no other data *A.R.* 1846: 5.

Vigors, N.A. [4] Pres. mam. At least 39 specimens from Vigors are listed in Waterhouse (1838).

Wakeling, Mrs. Pres. bodies of young velvet duck and black-throated diver *A.R.* 1845: 10.

Warrington, Hanmer. Pres. "donation of highest value" (nature unspecified) *A.R.* 1831: 23, *A.R.* 1832: 10; 12 skins mammals, 9 of birds, 1 reptile, 10 mammals, 2 reptiles, 10 insects, skull of hare in spirit all from Tripoli *A.R.* 1840: 14. The earliest donations are recorded from Mr Warrington, the last as from Col. Hanmer Warrington. His name appears as donor of several reptiles in MS Herp Cat.

Waterhouse, George R.[7] Pres. birds. Pres. 115 bird skins from Brazil, most new to Collection *A.R.* 1845: 9. Also presented at least 9 mammals (Waterhouse, 1838), a fish (*Lepisosteus*) and a fish's head (possibly *Belone* sp.) C.R. 4 January 1837.

Weaver, Mr. Pres. small collection of rare British insects for the Vigorsian Collection *A.R.* 1845: 10.

Whitfield, - Pres. 3 Malacca porcupines, 1 white rat?, 1 *Cricetomys*, 1 young chimpanzee in spirit; imperfect skin of *Musophaga gigantea* fron Sierra Leone *A.R.* 1840: 14.

William, H.M. King, (William IV)[58] Pres. mam. Specimen of giraffe and complete skeleton *A.R.* 1831: 23. Eighteen specimens from the King are listed in Waterhouse (1838).

Wray, John. Pres. mam., fish. Collection of skins of mammals South America *A.R.* 1840: 12; 1 fish from Brazil listed in MS Fish Cat.

Wyllie, J. Pres. fish. Collection of dried fishes from India *A.R.* 1835: 16; 45 fishes from India from Wyllie listed in MS Fish Cat.

Yarrell, William.[59] Pres. mam, fish. Four mammal specimens are attributed to Yarrell in Waterhouse (1838); 10 British, 4 Mediterranean and 11 unlocalized fishes are listed in MS Fish Cat.

DISPERSAL OF THE COLLECTION

The collection of zoological museum material had always been a major object of the Society, even if secondary to the provision of a menagerie. The inspiration for this had been that of Raffles, but the formation of its own museum was a reaction against the perceived poor conditions in the British Museum at that period. Unfortunately the very success of the Society's Museum very quickly caused a problem of adequate storage space as already discussed. Moreover, from study of the Annual Reports of the Society's Council, it seems that there had been no accurate appreciation of the capital cost of a museum collection in providing a museum building or of the regular outlay from income for materials, equipment and the cost of the salaries of the curators.

During 1840 the Council of the Society began to confront this problem and appointed a Committee to consider the future of the Museum. One of its decisions was to have a valuation made of the preserved collections for information and future guidance. J.O. Westwood and John Gould were charged by the Council to make this valuation. Their estimate amounted to the sum of £10,965. There is, however, no evidence as to the parameters they used in their valuation, whether it was valuation at sale, cost to purchase, or replacement cost—all of which would differ significantly. As Gould was regularly dealing in collections either as a vendor or purchaser it is probable that he was familiar with prices asked for small collections in London, but the role of Westwood (who was primarily an entomologist) in the valuation is obscure. Whatever the method they employed to derive their valuation, the Council of the Society was thereafter convinced that the value of the collection was £11,000, and this coloured its thinking about the future of the collection. In fact, this can only have been a notional value which, as events showed, had very little relation to real value.

As part of the discussion concerning the Society's Museum, J.E. Gray proposed to the Council that the entire collection should be presented to the British Museum and

that its maintenance should thereafter become the responsibility of that Museum. In the course of negotiations during April and May 1841, the Trustees of the British Museum offered to preserve and exhibit the whole of the collection without exception, to exempt the Society's collection from the Trustees' rule which prevented the loan of Museum specimens (provided that at least three days' notice was given) and proposed that Members of the Society were to have access to the specimens provided that the specimens were not vulnerable to possible damage. In the exchange of letters the Trustees accommodated all the points raised by the Council and in unusually amiable terms (e.g. "all the facilities . . . will, with special pleasure . . . "). However, the unfortunate valuation was fresh in the Council's memory and eventually the collection was retained with the plea that "it would be highly derogatory to the dignity of the Society and injurious to its best interests to part with a Collection, in many departments the most complete in Europe, the formation of which has been a labour of fifteen years, which has been valued in money at £11,000, but which could not be again accumulated for a much larger sum" (*A.R.* 1842: 6).

By 1850 there was an indication of a different viewpoint when the Council recorded with "pleasure the progress which has recently been made in the National and Provincial Collections and which, presenting so striking a contrast with their condition at the time when the Zoological Society was founded, renders the maintenance of our own Museum as a separate collection, *no longer an object of the importance which it formerly possessed*" (italics mine). Thus, within ten years of rejecting the offer of the Trustees of the British Museum and its decision to keep the collection, the Council had decided that the possession of a museum collection was of less importance. By the time this report was published "Many duplicates" from the collection had been presented to the museums of Norwich, Ipswich, Dover, Worcester, Lancaster and Warrington. By 1853 the Society's Council had adopted a new policy in that the display of collections of different species was no longer considered desirable but that the Museum should be devoted to the illustrations of genera only. The new building housing the collection would show "the principal generic types of the whole of the Vertebrata". The valuation of £11,000 was no longer referred to, but the emphasis was now placed on the dispersal of the "duplicates" and the perceived public good to national and provincial museums which would prove of "far greater advantage to public instruction, than could possibly result from their being retained by the Society".

In the 1856 Annual Report the Council reported that it had decided "to dispose of a portion of the contents of the Museum as favourable opportunities occur of obtaining a fair value for the specimens." Steps had been taken "to transfer to the British Museum the whole of the types of species described in the Society's publications" and to let that Museum have "such other portions of the collection by sale as were desirable for the purpose of filling up desiderata in the National Museum." The mammal, reptile, amphibian and fish specimens were presumably selected by J.E. Gray, and G.R. Gray selected the bird specimens. The sum agreed for the purchase was £500.

The sale of specimens to the Queen's Colleges at Cork and Galway (now the University College of Cork and the University College of Galway) was reported in 1856. The College at Cork paid a sum of £400 for a "considerable portion of the con-

tents of the Museum" (*A.R.* 1857), and the total received from the two colleges amounted to £700 (Galway having therefore paid £300). There is some information about the sale to Cork in that the President of the college and its museum's curator visited London to negotiate the purchase (Lynn Ballard, U.C.C., pers. comm.) and in the curator's report to the President for 1855–56 (January 1857) reference is made to additions to the zoological collection "several hundred specimens of vertebrata and skeletons". The negotiations with the Queen's College Cork were reported to the Society's Council on 31 October 1855 (J. Edwards, pers. comm.). There are 34 stuffed mammal specimens (and one alligator) in U.C. Cork today from the Society's Museum. Many of them are labelled as "Died in the Menagerie" but others were specimens given to the Museum by various donors. Amongst these are a gibbon, *Hylobates agilis* Geoffroy & Cuvier, 1821 and a pangolin *Manis javanica* Desmarest, 1822 both from T.S. Raffles's collection, a Patagonian cavy *Chloromys Patagonis* [= *Dolichotis patagonicus* (Zimmerman, 1780)] and an opossum, *Didelphys azare* [= *Didelphis aurita* Wied-Neuwied, 1826], both from Darwin's *Beagle* collection, and a specimen of Bennett's kangaroo, *Macropus bennettii* [= *M. rufogriseus* (Desmarest, 1817)] from Sydney (a menagerie specimen) several of which were type specimens (information provided by Eamon Twomey and Lynn Ballard, U.C.C. and Daphne Hills, N.H.M. London). In addition to these mammal specimens Lynn Ballard informs me that the Cork University museum also possesses 60 tropical and 27 non-Irish temperate bird specimens which may be part of the Zoological Society's collection. Unfortunately none of these specimens has identifying labels.

The minutes of the Society's Council meetings for the period 1853 to 1856 contain references to the disposal of the Museum collection (I am indebted to John Edwards for an abstract of them). These included the proposal to purchase specimens by the Queen's College, Galway (5 September, 19 September 1855), the Free Library and Museum of Liverpool (5 December 1855), and Mr J.H. Gurney on behalf of the Museum at Norwich who wished to purchase 40 mounted birds for £40 (19 March 1856). Material was disposed of to the Ipswich Museum but it is difficult to discover how much. The only specimens it is possible to trace are the skeleton of a dog-faced baboon (Ipswich Museum Minutes 5 April 1852) and a model of a young hippopotamus (Ipswich newspaper report—unidentified—dated 1 March 1852) (R.A.D. Markham—Ipswich Council Museums and Galleries, *in litt.* 28 July 1994).

The material destined for the British Museum was listed on 5 December 1855 as follows, transfer of the type specimens of mammalia and birds, and sale for £500 of 164 mounted mammals, 19 skins, 253 skulls and 4 skeletons, and 383 mounted birds and 100 bird skins. The Minutes also show that substantial numbers of specimens were sold to dealers, *viz.* 19 July 1854 287 birds to Mr Bartlett for £25, 15 November 1854 a miscellaneous collection of insects to Mr Stevens, and a collection of dead animals to Mr Bartlett for £83. In addition, some skins were probably destroyed because of their poor condition when in July 1854, Mr Yarrell, Mr Gulliver and the Secretary were to report on the state of 372 skins and destroy them if appropriate. As late as 1857 John Gould purchased the remainder of the bird skins for £40 (Mitchell, 1929: 104).

Some of the material that Gould purchased is now in the collection of the Museum of Victoria, Melbourne. I am indebted to Dr Les Christidis and particularly to Mr Ian

McAllan of that Museum for information on some of the important bird specimens in that collection. Most of the non-Australasian birds were purchased from Gould during the period 1857 to 1869 by the first curator of the Museum, Professor Frederick McCoy. Approximately 4,600 birds, and a small collection of mammals as well as Vigors's insect collection [but see later—p.115] were received during this period. Unfortunately for the most part these lack original labels and only a few specimens can be certainly determined as coming from the Zoological Society's Museum. As Ian McAllan writes, many more may be inferred "for by the end of March 1858, Gould had sent 1,400 specimens to McCoy, many of which presumably came from" that Museum.

Specimens that can be confidently attributed to the Zoological Society's Museum by Mr McAllan are as follows:

> B/9599 [Note, these register numbers have been recently allocated by Mr McAllan] ex-mount *Dacnis cayana* "coll. by Capt. Belcher R.N. Pres. by the Lords Comm. Admiralty. Coll. on the coast of South America and in the Pacific July 19, 1839".
>
> B/19600 skin (tail missing) *Embernagra platensis*. Tag 1: "Emberizoides Tem., Maldonado 1027". Tag 2: "C. Darwin Esq., Jan. 4 1837. 1027." Apparently a syntype of *Emberizoides poliocephalus*.
>
> (The date given is that on which Darwin gave his birds collected on the *Beagle* voyage to Gould at the Society.)
>
> B/19601 ex-mount *Gracula religiosa*. Tag: "8 Feb 1843. J. Brooke, Esq. Corr. Memb."
>
> B/19602 ex-mount *Megalaima rafflesii*. Labelled "Jas Brooke Esq. Corr. Memb. 8th February 1843".
>
> B/19603 ex-mount of *Psittacula krameri manillensis*. Labelled "*Palaeornis torquata* Vig. India 236. Presented by Walter Ewer Esq. 21st June 1842".
>
> B/19604 ex-mount of *Icterus icterus jamaicaii* [?] labelled as "*Psarocolius Jamacaii* Wagl. 25 "Juv" to be mounted for Museum Pres by Robt Schomburgk Esq. July, 1.1840 Guiana".

Other specimens which have possible Zoological Society Museum links include, *Nectarinia Gouldiae* Type specimen male Himalaya No. 3517; *Cyrtonyx ocellatus* from Guatemala, named by Gould from a bird in the Museum, and two specimens of *Selenidera gouldi*, described by Natterer in Gould's *Icones Avium* (1837–1838).

The material transferred to, or purchased by, the British Museum contained a large part of the collection of vertebrate specimens. For mammals there were nearly 1,500 specimens containing many of the species which were originally described in the Society's *Proceedings* mostly by the curators G.R. Waterhouse, E.T. Bennett and Louis Fraser. There were also specimens from Raffles's collections and other important collections (Thomas, 1906: 63–64). Bird specimens were accessioned in the Museum as they were received over a period of time, 50 skulls and skeletons (1850.11.22.75–95 and 1851.11.10.40–68), 403 stuffed specimens (1855.12.19.1–403) and 259 specimens (at various dates between 1857.8.4. and 1871.3.20). The 1855 accession contained the *Beagle* specimens described by John Gould (1839–1841) and

other important early expeditions and a list of 52 type specimens was given by Sharpe (1906: 514–515). Specimens of reptiles, amphibians and fishes were accessioned in a series of sometimes small collections from 1851 through to 1857, but the major collections came in 1851.8.14.1–17 (sharks), 1852.8.30.1–45 (fishes), 1852.12.11.1–16 (amphibians), 1853.11.30.1–28 (reptiles), 1854.5.4.1–20 (herpetology), 1855.12.26.250–657 (reptiles and fishes in spirit), 1857.6.13.1–185 (fish skins), 1858.4.20.1–82 (herpetology).

The only invertebrate collection from the Society's Museum that has been traced is part of Vigors's[4] insect collection (to which the British Coleoptera of S. Wilkins had been added). This collection was dispersed throughout the British Museum collection in 1859 (Anon., 1906: 597–8). The remainder of Vigors's insect collection is believed to be in the Museum of Victoria, Melbourne (I. McAllan, pers. comm. 6 May 1996).

The large and important zoological collection of the Society which had commenced with the accession of Raffles's collection in 1825 and had expanded at a striking rate was thus dispersed within 30 years of its foundation. Valued in 1842 at £11,000 it was disposed of for the sum of considerably less than £1,500 (although not all the sums received were recorded in published records). Even though the most important taxonomic material was expected to go to the British Museum there was a failure to select all such material (by the Museum's officers) as a result of which type material was dispersed, and only in the case of University College, Cork has it been possible to locate it. But the real tragedy was that, when the opportunity was offered to deposit the whole collection in the British Museum in 1841, the Society's Council, as if mesmerized by the valuation of £11,000, refused to accept this chance to secure the future of the collection for science. A little more than a decade later parts of the collection came to the British Museum but the collection was dispersed and its integrity was lost.

An even more serious loss was the failure to ensure that the specimens were fully doccumented before dispersal and that the records of the Museum were transferred with the specimens. As a result there are nearly 100 bird specimens in Cork without labels, the catalogue of the bird collection can no longer be found and reference to its data is impossible, while the Catalogue of the Reptile, Amphibian and Fish collections is still at the Zoological Society while most of the specimens are in The Natural History Museum, London.

The only manuscripts relating to the Museum which were transferred to the British Museum were the annotated catalogue of the mammal collection (MS Mam Cat of this paper) and the Curator's Reports for the period 1836 to 1839. These probably came to the British Museum as a result of the initiative of G.R. Waterhouse who left the Society's Museum to join the staff of the British Museum, not as a planned official transfer of documentation.

THE IMPORTANCE OF THE COLLECTION

At the period in which the Society's collection was commenced there were several museums in London which had zoological material which could be used for scientific study, and some had an exhibition open to the public. The earliest established was the

British Museum, but the public display so far as zoology was concerned was poor, while access to the study collection was difficult and unrewarding for a number of reasons. The Linnean Society of London, from its foundation in 1788, began to aquire a collection of specimens but it was not open to the public and access to the specimens was difficult as it was not arranged in any logical biological sequence (Wheeler, 1995). The Society's Museum promised to be different. In the first place it was restricted to animal specimens (and then mostly to vertebrates). Secondly, the proximity of the menagerie provided potential for new material as animals died. Thirdly, there was an active core of zoologists amongst the membership and the Society's officers and curators were experienced zoologists.

The Museum grew very quickly. The foundation collection from Raffles comprised 283 vertebrates and 730 invertebrates; by 1840 it was said to contain 9,506 vertebrate specimens (and more than 1,000 skeletons and skulls); by 1851 there were 7,784 mounted specimens (i.e. stuffed and on stands or in cases) plus the spirit-preserved collections and the invertebrates. Of equal importance was the quality of its content. Amassed at a time of great interest in natural history and opportunity for exploration related to commercial and territorial expansion by Great Britain, there was formed a network of men and a very few women who were in a position to obtain specimens and deposit them in the Museum. As a result the collection was enhanced by material from regions in which the animals had been little studied. Consequently many of the specimens donated to the Society (some as menagerie animals) were previously unknown to science and were in time described formally by the Curators or the Society's officers. Other important collections (Darwin's birds and mammals were an obvious example) contained many specimens which became types of newly-described species. Consequently there was a considerable number of taxonomically important specimens in the collection.

An important factor in enhancing the value of the material which came to the Museum was the appointment of Corresponding Members. Many of these persons were resident in parts of the world outside the embryonic Empire or in areas which had at most trade links with Britain. Examples of these were Julien Desjardins of Mauritius, the Rev. J. Bachmann of the United States of America and Felipe Poey of Cuba who all presented valuable material. However, the Museum benefited most from donations from British explorers, naval expeditions, colonial officials, embassy staff and military personnel whose duties or work took them to little-known regions of the world. The donors of important collections can be identified from the summary (pp. 100–111) which is arranged in alphabetical order, but some of the notable collections are mentioned here.

Asia: India—T. Cantor—medical officer; T. Hardwicke—soldier; T.C. Jerdon—medical officer; J M'Clelland—medical officer. Nepal and Himalayas—John Gould—artist and publisher; B.H. Hodgson—consular service; China—J. Reeves. S.E. Asia—J. Brooke—consular service.

South America and Caribbean: Argentina—P.P. King—naval officer; Brazil—J. Parkinson—consular official; British Guiana—R.H. Schomburgk—explorer, government official; Cuba—W.S. Macleay—zoologist.

Africa: West Africa—W. Allen—naval officer; East Africa—E. Rüppell—zoologist, explorer; South Africa—A. Smith—medical officer, zoologist; North Africa—H. Warrington—soldier (?).

North America: Arctic—J. Franklin—naval officer, explorer; J. Richardson—medical officer, zoologist; West Coast—D. Douglas—botanist, explorer.

Near East: Mesopotamia—F.R. Chesney—soldier, explorer; Turkey—E.D. Dickson—medical officer, embassy official.

Southern Europe: Madeira—R.T. Lowe—clergyman, zoologist. Sicily—W. Swainson—artist, publisher, zoologist.

Voyages: E. Belcher (*Sulphur*)—naval officer; C. Darwin (*Beagle*)—zoologist.

Many of these collectors made important donations to the Society which enhanced the standing of the Museum as one of the leading collections of vertebrate specimens in the world. Some of these donations included type specimens such as those from Andrew Smith and R.T. Lowe, other collections such as the Darwin (*Beagle*) birds and mammals became taxonomically important once John Gould and G.R. Waterhouse had identified them and published descriptions of new taxa. Likewise the officers and curators described many new species from material in the collection, E.T. Bennett for fishes and mammals, Louis Fraser for birds and mammals, Gould for birds and Waterhouse for mammals. The importance of the collection is emphasised by the visits of scientists of the period to the Museum to examine material. Amongst these were Andrew Smith and Johannes Müller independently working on sharks and Gabriel Bibron who studied the largely unworked collection of reptiles. Richard Owen, who was the honorary prosector to the Society and had priority of access to recently dead animals from the menagerie, performed most of his dissections in the Museum, but he also worked on preserved specimens.

In addition to the taxonomically important material some of the specimens were historically important as well as representing the fauna of previously unknown areas. Thus, some of the earliest specimens of kiwi (*Apteryx* spp.) were sent by collectors such as Allan Cunningham in 1840 and by the Earl of Derby from his own collection. Although at first they were all regarded as *A. australis* Shaw they played a part in the recognition of other species, such as *A. oweni* Gould, or subspecies such as that on North Island *A. australis mantelli* Bartlett (Andrews, 1987). Another little-known animal at the time (now believed to be extinct) was the Tasmanian "wolf" *Thylacinus cynocephalus* Harris, presented first by George Everett in 1838 and later by Lt. Breton in 1849. Better known species like the orang-utan *Pongo pygmaeus* (Linnaeus, 1760) represented by spirit specimens, skulls and skeletons from Borneo presented by James Brooke were important for the series of specimens for comparative purposes.

Many of the general collections received by the Museum were the first material to be collected from some of the areas represented. Collections from the Himalaya Mountains (Lady William Bentinck, 1834), the Niger basin (Lander's expedition, 1835), the Tigris-Euphrates region (Col. Chesney, 1837), California (mammals collected by David Douglas, 1838) and specimens from Haiti (J.N. Tweedy, 1843; J. Hearne, 1845–47) were all potentially important as representing faunal assemblages before local extinctions and introductions, and dense human settlements altered the fauna.

As well as forming an important scientific collection the Museum served as a valuable educational and recreational resource. This aspect of the Museum is referred to in the Council's Annual Reports.[11] Attendances were high during the years the Museum was situated in Bruton Street but the figures show a steady decline in both numbers of visitors and receipts, due possibly to the cramped conditions of the Museum. However, the number of visitors continued to decline after the move to premises in Leicester Square and the collection seems not to have been open to visitors while it was in store from 1841 to 1843. Although some of the more interesting and showy specimens were on display at the Society's offices in Hanover Square from 1843 the museum seems to have no longer attracted visitors independent of the zoological gardens. Nevertheless at the time the Museum was open to members of the Society and the public, it attracted a very substantial number of visitors in the context of the population of London at the time and means of transport available. However, these figures were dwarfed by the 75,000 people who came to see Gould's hummingbirds in 1851.

Unfortunately the haphazard and ill-judged dispersal of the collection diminished its undoubted importance. The loss of much of the documentation for the collection detracted from its scientific value. In the end only the mammal collection came to the British Museum with adequate documentation, but the birds, reptiles, amphibians and fishes had only the labels with the specimens and many of those were minimal. Of the material that was dispersed only the mammal specimens at the University College, Cork are documented with labels, and there is no written record of the contents of the transfer of these specimens (and knowledge of their survival today depended solely on the acumen and care of recent curators (E. Twomey and L. Ballard) at the College and Daphne Hills at The Natural History Museum, London who recognised the significance of the labels).

The incorporation of so much material into the British Museum collection in the 1850s was a major contribution to that collection. Had the collection not been dispersed in the way it was it would have had much greater value. For the mammal collection Thomas (1906: 63) wrote "The collection thus received numbering nearly 1500 examples forms with that of the India Museum the most important addition from a historical point of view that the Museum has ever received". Much of the value of the collections of the other vertebrate groups was lost before transfer of part of it to the British Museum, and although it was a valuable addition its importance was diminished by dispersal and lack of documentation.

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NOTES

[1] Bastin (1970) notes the arguments concerning the relationship of the Zoological Club of the Linnean Society formed in November 1822 and the Zoological Society founded in 1825. Since some of the principals involved in both bodies were the same and were members of the very small group of working zoologists in England it is hardly likely that there was no relationship. The controversy was largely a result of Mitchell's (1929) claims.

[2] Part of Raffles's later material was lost in the fire which destroyed the *Fame*, 51 miles out of Sumatra. The live animals which he was bringing back were also destroyed. (Scherren, 1905: 24).

[3] Thomas Horsfield (1773–1859). Born Bethlehem, Pennsylvania. Surgeon in the Dutch East India Company in Java (1800), later for the British East India Company in Java and Banka until 1819. Became curator of the East India Company's Museum in London.

[4] Nicholas Aylward Vigors (1785–1840). Born Old Leiglin, Ireland, 26 October; died Chester Terrace, Regent's Park. Member of Parliament 1832, 1837. Zoologist (birds and insects); collections presented to Zoological Society (insects later went to B.M. and Melbourne). Studied Linnean Society's bird collection. Strong proponent of the quinary system of classification.

[5] Edward Turner Bennett (1797–1836). Born Hackney 6 January. Elder brother of John Joseph Bennett (1801–1876) (Keeper of the Department of Botany, British Museum, 1859–1870). Surgeon. Entomology and fishes. Secretary Zoological Club of Linnean Society and of Zoological Society 1831–36. Co-author,

with G.T. Lay of fishes of Captain Beechey's voyage (published 1839) and 26 papers mostly in *Proceedings of the Zoological Society* (Greenwood, 1976).

[6] Thomas Bell (1792–1880). Born Poole, Dorsetshire 11 October; died at The Wakes, Selborne, Hampshire 13 March. Professor of Zoology, King's College London, and dental surgeon at Guy's Hospital, London. Herpetologist; he studied the reptiles and amphibians from the *Beagle* voyage and published the unfinished *Monograph of the Testudinata* (1832–1842).

[7] George Robert Waterhouse (1810–1888). Born Somers Town, London 6 March; died Putney 21 January. Curator of the Museum of the Royal Institution at Liverpool; 1836 Curator Zoological Society Museum. Mammalogist; published Darwin's mammals in the *Zoology of the voyage of the Beagle*. British Museum: Assistant in mineral branch of Department of Natural History; Keeper of Mineral and Geology Branch 1851, Keeper of Geology 1857–1880.

[8] Reports of the Works connected with the Museum 4 January 1837. This is one of a series of manuscript reports of the Curator to the Council of the Society 1836–1839. Archives of The Natural History Museum. Hereafter referred to as C.R.

[9] C.R. 17 to 31 January 1838, 28 February to 21 March 1838.

[10] Louis Fraser (fl. 1836–1866). Clerk at Bruton Street, Curator's Clerk (1839–41), later Curator at the Society's Museum (1843–46), left to become naturalist on H.M.S. *Wilberforce* on the Niger Expedition of 1841–1842. Later British consul at Whyday, West Africa 1850 (Allen and Thompson, 1848). Travelled in Ecuador and North America as collector, later a dealer in birds with shops in Knightsbridge and Regent's Park, London (see Sharpe, 1906: 355). Published *Zoologica Typica* 1849, with colour illustrations of 28 mammals and 46 birds all described as new species in the *Proceedings of the Zoological Society.*

[11] According to the Annual Reports of the Council the Museum was very popular with the public but visitor numbers quickly declined after the initial enthusiasm was spent (income from visitors to the Museum declined more severely as many visitors were "privileged" as members of the Society and entered without charge). Visitor numbers and income were not always reported but the numbers available are 1831—11,626 (£331 3s), 1832—7,134 (£154 4s), 1833—5,333 (£104 1s), 1834— 4,939 (£77 3s), 1835—4,138 (£52 11s), 1836—3,660 (£38 17s) (this excluded April to June), 1837—4,431 (£59 15s), 1839—3,716 (£31 3s), 1840— 3,901 (£28 11s). The exhibition of John Gould's hummingbirds in 1851 attracted 75,000 visitors.

[12] Joshua Brookes (1761–1833). Anatomist. Born 24 November, died 10 January in Great Portland Street, London. It is claimed that his brother kept the menagerie in Exeter 'Change and supplied him with deceased animals but there is some doubt about the relationship. He was a skilled dissector and invented a method of preserving specimens for later lectures. He built up a large museum which despite efforts to sell it entire was dispersed from 1 March 1830, the sale lasting 22 days.

[13] MSS Zoological Society of London Library. A manuscript of 8 sheets commencing "Return of the Number of Skulls in the Museum of the Zoological Society of London. January 1851". Later sheets give totals for skeletons, dried specimens of fish and reptiles, mounted mammals and mounted birds.

[14] Melville Island, ca 75°N, 115°W, this was during Edward Parry's expedition in H.M.S. *Hecla* and H.M.S. *Gripper* which overwintered in the Arctic 1819–1820.

[15] William Kirby (1759–1850). Entomologist. Born Witresham Hall, Suffolk 19 September; died 4 July 1850. Vicar at Barham, Suffolk. Wrote on the insects of Franklin's first two Arctic expeditions and published the Insects in the *Fauna Boreali Americana* (pt. 4, Insects) Norwich, 1837.

[16] Hugh Cuming (1791–1865). Born Washbrook, near Kingsbridge, Devon, sailmaker, traveller and collector of molluscs and crustaceans. He lived and worked at various ports in South America until 1826, from 1827–28 sailing his own boat the *Discoverer* to Polynesia to collect, from 1828–30 off the west coast of South America, and returned to England in 1831. He made a third voyage to the Philippine Islands, 1836–40. He was an active dealer in shells (Dance, 1986) and natural history collections in general.

[17] Captain Phillip Parker King R.N. (1793–1856). See King, P.P. *et al.* 1839 *Narrative of the surveying voyages of H.M.S. Adventure and Beagle between 1826 and 1836. . .* 3 vols, London. The insects collected by King were presented to the Linnean Society (see Wheeler, 1995).

[18] Andrew Smith's descriptions of these sharks were published in his *Illustrations of the Zoology of South Africa. . .* (1838–1850). Several of the specimens described are now in The Natural History Museum, London.

[19] Johannes Müller (1801–1858) physiologist. Co-author with F.G.J. Henle of the first systematic account of the cartilaginous fishes, *Systematische Beschreibung der Plagiostomen*. Berlin (1839–1841).

[20] Gabriel Bibron (1806–1848). Born in Paris; died Saint-Alban, Loire, 27 March 1848. Collaborator of A.-M.-C. Duméril in the masterly *Erpétologie Générale* (1834–1854). Bibron's early death at the age of 42 from tuberculosis was probably responsible for the failure to publish some of the undescribed species labelled in the Museum collection.

[21] Richard Lemon Lander (1804–1834). Born Truro, died Fernando Po. West African explorer. Visited West Africa with Lt Hugh Clapperton until latter's death in 1827; brought Clapperton's papers to England (April 1828) and edited for publication. Expedition to R. Niger January 1830 to July 1831 with brother, John Lander, on S.S. *Quorra* and *Alburka* with Lt Allen. Wounded by natives, evacuated to Fernando Po where died February 1834. Waterhouse published the mammals from Allen's donation of 1834, and Martin described at least one new species *Rhinolophus Landeri* Martin, 1838 in the *Proceedings of the Zoological Society*.

[22] John James Audubon (1785–1851). Born Haiti; died New York. Bird painter and publisher. Best known for *The Birds of America* 4 vols, 1827–1838; and *Ornithological Biography* 5 vols, 1831–1839, both Edinburgh.

[23] Capt. Sir Edward Belcher (1799–1877). Naval surveyor and collector of biological material. Assistant Surveyor to the *Blossom* (1825–1828) to the Pacific Ocean and Behring Straits. Commanded the *Aetna* on the west and north coasts of Africa (1830–1833), the *Sulphur* on the west coasts of South and North America (1836–1839) returning via the South Pacific and Singapore, where in 1840 was ordered back to China (Canton River) until 1842. November 1842 appointed to the *Samarang* and surveyed off Borneo, Philippine Islands and Formosa returning 1847. In 1852 appointed to command expedition to the Arctic in search of Sir John Franklin (distinguished "from all other Arctic expeditions as the one in which the commanding officer showed an undue haste to abandon his ships when in difficulties" *D.N.B.*).

[24] Theodore Edward Cantor (1809–). Danish by birth. Employed by Bengal Marine Survey, collected in India (mainly fishes and reptiles); later Assistant Surgeon to East India Company's forces in China and Civil Surgeon at Prince of Wales Island (Penang) 1842–1845. Presented large collection fishes, reptiles, birds, insects to India Company Museum. Fishes, at least, to B.M. in 1860. See Desmond (1982), Horsfield and Moore (1854).

[25] Col. Francis Rawdon Chesney (1789–1872), leader of the Expedition to survey the Rivers Euphrates and Tigris between 1835 and 1837 (see Chesney, 1850). The material was presented by the Commissioners for the Affairs of India.

[26] Sir Henry Thomas De la Beche (1796–1855), geologist. First Director of the Geological Survey, founder of the Museum of Economic Geology in London. He visited the family estate in Jamaica in 1824 (*D.N.B*).

[27] The Earl of Derby (Lord Edward Smith Stanley, 13th Earl) (1775–1851) had close links with the Society, being a founder Member and President from 1831–1851. Both Waterhouse (June 1837) and Fraser (September 1839) worked on his extensive museum collection at Knowsley, and the latter, in particular, owed much of his later success to the Earl's patronage.

[28] Edward Dalzell Dickson M.D. (?–1900, Constantinople). Dickson collected plants in Kurdistan. Physician at the British Embassy, Constantinople (Desmond, 1994).

[29] David Douglas (1798–1834) botanist and plant collector on the North American West coast (Desmond, 1994).

[30] The Rev. Lansdown Guilding. Born Kingston, St Vincent, W.I., 9 May 1797, died Bermuda 22 October 1831. Botanist (Desmond 1994).

[31] This is very probably John Hancock M.D. who wrote *Observations on the climate, soil and productions of British Guiana*, London 1835 (1840). Hancock (fl. 1800s–1840s) lived for 25 years in British Guiana [=Guyana].

[32] Probably Richard Hill co-author (with Philip Henry Gosse) of *The birds of Jamaica*, London (1847). The seal was the Jamaican seal, *Monachus tropicalis* (Gray, 1850) which is believed to have become extinct in about 1950.

[33] Richard Brinsley Hinds, Surgeon R.N. (*ca* 1812–1847). Naturalist and surgeon H.M.S. *Sulphur* during its surveying and scientific work around the Pacific Islands December 1835 to July 1842. Hinds edited *The Botany of the Voyage of H.M.S. Sulphur under the command of Capt. Sir E. Belcher. . . during the*

years 1836–42 London (1844), and *The Zoology of the voyage of H.M.S. Sulphur. . .* (2 vols.) London (1844–46). He wrote the section on Mollusca (1844) in the second of these.

[34] Brian Houghton Hodgson (1800–1894) was described as British Resident at the Court of Nepal. According to Sharpe (1906: 386) he resigned from the Indian Civil Service in 1843, came to England, but returned to India (Darjiling) within a year. Hodgson gave more than 2,000 bird specimens to the British Museum, as well as mammals and osteological specimens. Large collections of drawings by native artists of both birds and mammals were deposited in the British Museum and a duplicate set sent to the Zoological Society. Numbers on the drawings are said to relate to numbered tags on the specimens.

[35] Frederick William Hope (1797–1862). Entomologist and collector. Gave insect collection to Oxford 1849 and founded Hope Professorship. From 1849 travelled in Mediterranean, for the sake of his health, and studied fishes and crustaceans (*D.N.B.*).

[36] Thomas Claverhill Jerdon (1811–1872). Assistant Surgeon Madras Service 1835. Ornithologist. Published *Illustrations of Indian Ornithology* (1844), *Birds of India* (1862–64), *Mammals of India* (1867; 1874).

[37] Philip Parker King R.N. (1791–1856) Commander of H.M.S. *Adventure*. See King, P.P. *et al.* 1839 *Narrative of the surveying voyages of H.M.S. Adventure and Beagle between. . . 1826 and 1836, describing their examination of the southern shores of South America. . .* London, 3 vols. The insects collected by King were presented to the Linnean Society in 1846; mammals, birds, reptiles and fishes from Australia had been presented in 1825 (Wheeler, 1995).

[38] George Tradescant Lay (1800–1845). Naturalist on Captain Beechey's voyage on H.M.S. *Blossom* from 1825–28. Beechey's instructions were to await the arrival of either Parry's expedition in the *Hecla* and *Fury*, or Franklin's overland expedition in the Bering Strait (Rice, 1986). Lay was described as the Agent in China of the British and Foreign Bible Society in 1836 (Desmond, 1994).

[39] The Leadbeaters (sometimes spelled Leadbetters) were taxidermists of 19 Brewer Street, Golden Square, London, and also dealers in collections of specimens particularly birds and mammals. John Leadbeater (fl. 1820s) was the principal; B. Leadbeater may have been his son. A single fish from a W.B. Leadbeater is listed in MS Fish Cat.

[40] R.T. Lowe, born Derbyshire 4 December 1802, died at sea in wreck of S.S. *Liberia* (Elder Dempster Line) off Isles of Scilly *ca* 11 April 1874. Lowe was Chaplain to the English Church in Madeira 1833–47 but resigned, eventually, following a schism amongst his congregation (Nash, 1990). Lowe also gave fishes directly to the British Museum (1859–1864) and to the Cambridge Philosophical Society (the latter are now in the Zoological Museum, University of Cambridge).

[41] Lt. G.F. Lyon was in command of H.M.S. *Hecla* during Parry's expedition of 1821–23. However, this expedition was in the Arctic and these specimens must have been collected during his later service. He was elected a Corresponding Member of the Society in 1827.

[42] Presumed to be John McClelland (1805–1875), botanist, geologist and ichthyologist. His *Indian Cyprinidae*, Calcutta (1839) (first published in *Asiatic Researches* **19** (2): 217–471) was the first major work solely concerned with Indian freshwater fishes.

[43] Richard Parnell (1810–1882). Ink manufacturer, botanist and ichthyologist. He wrote *The natural history of the fishes of the Firth of Forth and tributaries*, Edinburgh 1838; published in the *Memoirs of the Wernerian Natural History Society* **7** (but also available as a book). Parnell gave large collections of fishes from Jamaica and Scotland to the British Museum in 1848; other fish material is in the Royal Museum of Scotland, Edinburgh.

[44] Felipe Poey (1799–1891) distinguished naturalist of Cuba. He published *Memorias sobre la historia natural de la Isla de Cuba*, 2 vols, Habana (1851–58), *Repertorio fisico-natural de la Isla de Cuba*, 2 vols, Habana (1865–69) and *Enumeratio Piscium Cubensium* (1875–77)—the latter was published in the *Anales de la Sociedad Española de Historia Natural*. See Norman (1938) for dates of publication of parts of these works.

Poey also gave live specimens of Cuban animals to the Society for the menagerie, e.g. a racoon which had died in the menagerie presented by Dr Poey is listed in MS Mam Cat.

Fish specimens from Poey are preserved in the Museum of Comparative Zoology, Harvard University (Howell y Rivero, 1938) and in the Zoological Museum, Cambridge University (England). Although Howell y Rivero claimed many of the M.C.Z. specimens to be types he was not aware of the existence of

Poey specimens in other collections. All available material needs to be checked to authenticate Poey's type material.

[45] John Reeves (1774–1856) was Inspector of Tea at the Hon. East India Company's establishment at Canton. He gave large collections of birds and fishes to the British Museum (see Sharpe, 1906: 449). Reeves also made a collection of Chinese fish drawings which have been discussed by Whitehead (1969).

[46] John Richardson (1787–1865), naval surgeon and later Inspector of Hospitals and Fleets to the Royal Navy, accompanied Franklin on both his Arctic expeditions. This donation is presumed to have resulted from Franklin's second overland expedition (1825–27). Richardson also had charge of the large collection of fishes at Haslar Hospital (the naval hospital at Gosport, across the harbour from Portsmouth) which was eventually deposited in the British Museum in 1855.

[47] This was probably John Forbes Royle (1799–1858), author of *Illustrations of the Botany and other branches of the natural history of the Himalayan Mountains and the Flora of Cashmere*, 2 vols. London (1833–1840).

[48] Wilhelm Peter Eduard Simon Rüppell (1794–1884) of Frankfurt-am-Main, naturalist, whose travels in the Red Sea, Arabia and north-eastern Africa resulted in several books and other publications. Rüppell distributed duplicate specimens (some of them part of type series) of mammals, birds and fishes very widely; large parts of his collection were sent to the British Museum.

Some of Rüppell's specimens appear to have come through John Gould's hands (q.v.).

[49] The surprising circumstances of a small museum in the Essex country town of Saffron Walden sending specimens of African mammals to the Zoological Society's Museum arose from their being duplicates from a large collection of African mammals and birds received in 1833. The collection was sent by Robert Dunn of Algoa Bay, in response to a request from his brother Hannibal Dunn, a founder of the Saffron Walden Natural History Society. The total cost was £492 8s 2¼d, which clearly caused a financial crisis for the Essex museum. The collection included the skin of an African elephant which, when stuffed occupied a central position in the Museum for many years (Pole, 1985).

[50] This was probably Paolo Savi (1798–1871) whose *Ornitologia Italiana*, Firenze (1876–1877) was edited by his son Adolfo Savi.

[51] Sir Robert Herman Schomburgk (1804–1865). Born Freiburg, Silesia. Explored extensively in the Caribbean, personally surveyed the island of Anegada, Virgin Islands (1831), and 1831–1835 the River Essequibo and areas around Conentyn and Berbice, Guiana. Surveyed in British Guiana in 1840 and appointed commissioner for surveying the boundary for that country 1841–1843. Knighted by letters patent in 1844. Later British consul in St Domingo 1848 and Bangkok 1857.

[52] Andrew Smith (1797–1872) entered Army Medical Department and was posted to the Cape of Good Hope in 1821. Became first Superintendent of the South African Museum in 1825 and deposited many of his earliest collections there. Left South Africa in 1837 and was stationed at Fort Pitt, Chatham, where the Army Medical Museum was sited. Smith exhibited his large personal collection in the Egyptian Hall in Piccadilly (where William Bullock's collections had been housed until 1819) as The South African Museum. The exhibition eventually closed in 1838 and was sold by auction by Stevens as "the property of a Society entitled the Cape of Good Hope Association for Exploring Central Africa". Of the 559 lots the natural history specimens were widely dispersed, the British Museum aquired some of the type specimens, other specimens went to P.J. Selby, H.E. Strickland, and Sir William Jardine (Sharpe, 1906; Kirby, 1965). After his retirement as Director-General of the Army Medical Department in 1858, Smith disposed of the last of his natural history collection, giving 296 birds, 10 mammals and 3,254 reptiles to the University of Edinburgh. Few of them survived to the 1930s, although according to Kirby (1965) 19 bird skins were still identifiable, 6 of them with Smith's handwritten labels.

[53] Owen Stanley (?–1850) later commanded H.M.S. *Rattlesnake* on her surveying voyage off the north east coast of Australia (1846–1850). The official naturalist was John MacGillivray (1821–1867) and Thomas Henry Huxley (1825–1895) was assistant surgeon and naturalist. Clearly, H.M.S. *Britomart* was an earlier command in the Australian coastal survey.

[54] Hugh Edwin Strickland (1811–1853) zoologist. Possibly best known for codifying the Rules for Zoological Nomenclature through the British Association for the Advancement of Science in 1841 and again in 1863. The Strickland code demanded a more disciplined approach to nomenclature and was very influential through the nineteenth century. It took as the starting point for nomemclature the twelfth edi-

tion of the *Systema Naturae* (1766–1767) which was responsible for a number of ambiguities until later codes reverted to the tenth edition (1758).

[55] Samuel Stutchbury (1798–1859), naturalist and geologist. Sailed as surgeon and naturalist on a commercial pearl-fishing expedition in the Pacific Ocean. Later he became curator to the Bristol Philosophical Institution (1831) and Geological Surveyor for the Colony of New South Wales. Stutchbury's collection of barnacles was of major importance to Darwin (1854) for his monograph of barnacles. See Branagan (1993) for an account of Stutchbury's life.

[56] William Swainson (1789–1855) zoologist and natural history writer. Swainson was Assistant Commissary-General to the British army in Sicily from 1806–1812 based at Messina whence he travelled widely in the island. He made large collections there and presented Sicilian fishes to the British Museum in 1816. From 1816 until 1818 he was collecting in Brazil and is said to have had 120 fishes when he returned (Natusch and Swainson, [1987]).

[57] William Henry Sykes (1790–1872) contributed a paper on mammals to volume 1 of the *Proceedings of the Zoological Society of London*, which was later reprinted with additions as *A catalogue of the Mammalia observed in Dukhun, East India* (London, 1831).

[58] William IV (1765-1837), third son of George III, brother of George IV and uncle of Victoria, who succeeded him. Duke of Clarence in 1789; served in the Royal Navy. Became king in 1830. Plant collections went to British Museum, botanical gardens at Edinburgh and Kew. The giraffe and other mammals were the residue of the Royal Menagerie.

[59] William Yarrell (1784–1856), a well-known zoologist of the first half of the nineteenth century. Published *A history of British fishes* (1835–36) and *A history of British birds* (1837–43), both going to later editions. Succeeded Bennett (note 5) as Secretary of the Society in 1836, but held office for only two years because his business commitments as stationer and newsagent in Ryder Street, St James, became pressing. Yarrell was one of the founders of the Society and continued to support it until his death. He was also active in the Linnean Society, being Treasurer from 1849–1856.

[60] The first living Thylacines were received at the Zoological Society's menagerie in 1850 from Ronald Gunn and Dr Grant (Scherren, 1905: 94).

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