

Editorial

This issue is mainly concerned with collections and collectors. It contains an account of the herbarium of James Edward Smith (1759–1828) which documents some 1,309 lichen specimens from within that herbarium. Elsewhere there are profiles of the botanist and explorer Berthold Carol Seemann (1825–1871) and the big game hunter Fredrick Courteney Selous (1855–1917).

Seeman was initially employed at Kew and then on Hooker's recommendation he joined H.M.S. *Herald* as naturalist. The *Herald* later became involved in the search for Sir John Franklin (1847) thereby enabling Seemann to collect in the high latitudes around Bering's Strait. He subsequently donated his collections of plants from Panama and from Eskimaux Land to the NHM. Seeman made his living from exploration and from writing and in 1860 the Government commissioned him to make a survey of Fiji. The plants he collected from this exploration he donated to Kew.

Selous on the other hand made his living as an elephant hunter, but later by killing African big game for museums and private collections. His association with the NHM started in 1881 when he sent the Department of Zoology a series of 144 mammals from Rhodesia. Over the next 25 years he supplied the Museum with many notable specimens which, according to Charles Fagan, considerably enriched the national collection. Several mammals including the Mashonaland eland and the *Selous sitatunga* (*Tragelaphus spekei selous*) were named after him.

In 1920 a life size bronze bust of Selous carrying his hunting rifle was erected in a recess in the wall on the left hand flight of the main staircase in the NHM. At that time he stood guard above the marble statue of Charles Darwin¹. Seven years later, however Darwin was replaced by the enormous (220 x 90 cms) bronze statue of Sir Richard Owen on a plinth of Numidian marble (96 x 88) wearing the gown of a Hunterian Professor and holding in his hand the shaft of a moa's femur.

Although it is only right that Owen, the founder of the NHM should take pride of place in his Cathedral, without the collections of such men as Seemann and Selous (and Bates, Wallace, Darwin and Huxley) it would be a far poorer place.

1 The removal of Darwin to the West side of the Central Hall and his replacement by Owen who previously had stood at the South end of the Central Hall, in 1927, led to protests that evolution was being undervalued. In 1971 the statue of Darwin was transferred to a low plinth and moved to the North Hall. The statue of Thomas Henry Huxley which had previously stood on the East side of the Central Hall (since it was unveiled in 1900) was similarly transferred to a low plinth and moved to the North Hall, next to Charles Darwin in 1971. Ironically the painting of Alfred Russel Wallace which had hung in the Central Hall of the Museum since its unveiling in June 1923 was removed in 1971 and consigned to the Spencer Gallery and is no longer on public view.

Society News

Council Nominations 2000

The following have been nominated for election to Council at the forthcoming Anniversary Meeting on May 24th 2000 (see page 1 for the Agenda).

Dr. Richard Bateman (1993) recently became Keeper of Botany at the Natural History Museum in London, having relinquished his previous role as Director of Science at the Royal Botanic Garden, Edinburgh.

His 22-year academic genealogy has taken him from applied mineralogy through Palaeozoic palaeobotany to molecular phylogenetics and speciation studies in orchids, passing through six research organisations *en route*. His favourite hobby-horses are currently (a) under-estimation of the importance of evolutionary mechanisms other than natural selection, (b) unwarranted zoocentrism in the popularisation of evolutionary biology, and (c) dangers inherent in the long-term erosion of academic freedom.

Dr. Jenny Edmonds (1975) was a student and postgraduate at the University of Birmingham. Past-President Prof. Jack Hawkes supervised her Ph.D. on *Solanum* L. section *Solanum* (Solanaceae). She continued research on the systematics of this group while holding various research posts in the then Botany Schools of the Universities of Cambridge (1968–80) and Oxford (1980–93). While at Oxford she also revised the genus *Toona* M. Roem. (Meliaceae), and worked as a consultant for the International Jute Organisation on African *Corchorus* L. and *Hibiscus* L. species, and for the RBG, Kew on *Piper* L. species in SE Asia.

Since 1993 she has been an Honorary Research Fellow in the School of Biology of the University of Leeds where she is also Curator of the Herbarium. During 1996–98 she moved the entire Leeds herbarium, then froze, re-installed and catalogued that and associated botanical collections.

She has now returned to the systematics of *Solanum sens. lat.* and is revising the family Solanaceae for the Flora of Tropical East Africa. She is a former Associate Editor of the *Botanical Journal* (1978–86) and Council Member (1984–87).

Dr. Peter Hayward (1989) is presently Senior Lecturer in Marine Biology at the University of Wales, Swansea, where he conducts courses in littoral and benthic marine ecology, leads an annual field course to the Millport Marine Station, and supervises fieldwork-orientated undergraduate honours projects. His research work is decidedly Linnean, being concerned with the taxonomy, morphology, and ecology of the marine Bryozoa, and ranging in focus from the poles to the equator.

He is the author and co-author of no less than four of the new series of the *Synopses of British Fauna on Cheilostomatous Bryozoa* (Parts 1 & 2), *Ctenostome Bryozoa* and *Cyclostome Bryozoa*. He is zoological editor of the *Journal of Natural History*, and an associate editor of the *Zoological Journal of the Linnean Society*. He is fond of natural history, gardening, and old books.

Mr. Terry Langford (1989) is an aquatic ecologist and author with a wide experience of research on the biological effects of pollution, particularly from the power industry. His early publications dealt with invertebrates in Lincolnshire rivers. His 26 years as an ecologist and senior manager in the power industry resulted in some

30 papers and two single author books.

Following early retirement he is now a visiting fellow and tutor in Environmental Sciences at Southampton University and is currently completing the first phases of his research on the ecology of New Forest streams, particularly on the role of timber debris in the distribution and abundance of fish. Two further books are in preparation on the ecology of large rivers and the ecology of forested streams. With his wife he also carries out independent consultancy work for industry, regulators and conservation bodies. He also edits the newsletters of the Fisheries Society of the British Isles and the Freshwater Biological Association.

Dr. Tim Littlewood (1992) is currently a Wellcome Trust Senior Research Fellow in Biodiversity at The Natural History Museum, London. Dr. Littlewood is a zoologist working on the evolution of parasitism in flatworms. His interests include the combination of molecular and morphological data in testing phylogenetically based hypotheses. To this end he has worked independently and with various experts on animal groups including echinoderms, fishes, and molluscs covering topics such as parasitology, physiology, biogeography and palaeoecology. Other interests include palaeontology, tropical aquaculture, and natural history illustration.

Mr. Leaford Patrick (1997), now retired, was born in Jamaica and developed an interest in the Life Sciences at an early age, plant collecting in Jamaica (Institute of Jamaica) with a special interest in grasses. He also studied zoology, particularly, marine biology. In 1956 Mr. Patrick came to England and worked at the Oxford University Museum as a technician from 1956–58.

He travelled in the USA (1961–62), subsequently (1963–1997) becoming curator in the Horniman Museum, Natural History section, where he was concerned with classification and systematics of the animal kingdom, developing an interest in the evolution of the horse and also in the evolution and development of hominids.

Dr. Liz Sheffield (1984) was a student, postgraduate and post-doctoral fellow at UCL. Since then she has been on the staff of the University of Manchester, currently as Senior Lecturer (1988), teaching principally at postgraduate level, but at undergraduate level dealing with cyanobacteria to gymnosperms, and systematics, ecology and sampling methods.

Dr. Sheffield's research interests have focused on the reproductive biology, population genetics and taxonomy of ferns, especially *Pteridium* taxa (bracken) and *Trichomanes speciosum* (Killarney Fern) eg. current English Nature/Scottish Natural Heritage-funded study on sensitivity of non-target species to the herbicide asulam.

Dr. Sheffield is Chairman and Plant Science Editor of *Biological Sciences Review*; Editor of *Annals of Botany*. She is a member of the British Lichen Society, the British Pteridological Society and the International Association of Plant Taxonomists. She is co-author of *Plant Life* in press with Blackwells.

Please remember that the Society's new telephone and fax numbers are
+(0)20 7434 4479 and +(0)207287 9364.

Our comments on William Wordsworth in the October issue did not go unchallenged. Miss Rosemary Beresford, *littérateur*, former Head of the Sidney Webb College of Education and Pro-Rector of the Polytechnic of Central London (now the University of Westminster) comments that Wordsworth's meeting with the aged leech-gatherer ("the oldest man that ever wore grey hairs") formed a part of his poem *Resolution and Independence*, which "does contain some bathetic lines but is in the main a great poem". We are very happy to accept this judgement. It has to be said that Wordsworth's reference to botany as a cure for unrequited love, also mentioned in the October issue (in *The Prelude or Growth of a Poet's Mind*, published just before his death in 1850 and occupying some 120 pages of the OUP Edition of his works), also pointed out that the anonymous botanist in question, having discovered that the lady of his choice was married to someone else and so having taken up botany "the course prescribed" – eventually died of a fever, pleading on his deathbed with the lady in the case to accept his herbarium – "...some chosen plants, / By his own hand disposed with nicest care, / In undecaying beauty were preserved..." – as a token of his esteem. A tender scene. Whether she did or not is nowhere recorded.

With three colleagues, Mr. David McClintock FLS, former Editorial Secretary of the Society, has recently published three papers on the natural history of Buckingham Palace Garden in *Lond. Nat.* 78 (Suppl.): 5–8, 27–44 and 45–48. These papers are the fruits of David's botanical interest in the Royal garden going back well over thirty years. From these studies it can be gleaned that our Patron maintains a garden of both beauty and scientific interest in the middle of a great City, something that certainly deserves our recognition.

10th July 1999 saw the first night in the Drottningholm Court Theatre, Sweden, of a new opera, *The Garden*, about the life of Linnaeus by Jonas Forssell. Dr. William Emboden FLS has sent us a critique of the opera by George W. Loomis in *Opera News* for November 1999 from which it emerges that not only was the commissioning of a new opera a rare event at Drottningholm, but the 18th century opera house was able to do full justice to a fine work about a great 18th century biologist.

A Churchill Fellowship in 1997, to promote information and communication technologies in the understanding of science, allowed Kathy Seddon FLS to visit schools in Europe from 'The Arctic to the Mediterranean'. Her objective was to set up a network of teachers who were willing to take part in an environmental monitoring scheme which used butterflies as indicators of climatic change. A web site was set up with the help of the Telematics unit at Exeter University. The site <http://telematics.ex.ac.uk/fr-bfly.htm> gave full protocol details to any prospective partners and allowed rapid exchange of butterfly and climate data by e-mail. A panel of judges representing the European Schools' Network chose the Butterfly Site for its clarity, pedagogical value and sustained success in awarding it the *Best Environmental Project and Website 1999*. Details of the award can be found at <http://www.en.eun.org/vs/environment/ecogall2/winner.html>.

The Council of Science and Technology Institutes, an umbrella organisation for around a dozen professional bodies, including those in biology, chemistry, physics and mathematics, has become the Science Council. A formal launch of the renamed body, chaired, like its predecessor, by Sir Colin Spedding CBE FLS, will take place later in

the year. Details from 20–22 Queensberry Place, London SW7 2DZ.

Our publishers, Academic Press, part of the US Harcourt publishing group, have moved from Oval Road to nearby Harcourt Place, 32 Jamestown Road, London NW1 7BY. Telephone and e-mail addresses are unchanged; the fax number is 020 7242 4253.

JOHN MARSDEN

Executive Secretary

PS: “Guido Pontecorvo: a celebration of Ponte’s life and contributions to science” will be held at the Imperial Cancer Research Fund, 44 Lincoln’s Inn Fields, London WC2A 3PX on Saturday 24th June 2000 from 11.00 – 18.00. Those wishing to attend should contact Paul Nurse at ICRF (e-mail: p.nurse@icrf.icnet.uk : fax 020 7269 3469).

Picture Quiz

Berthold Carol Seemann

The January Quiz featured Berthold Seemann (1825–1871), botanist, anthropologist and explorer who was born in Hanover on 28 February 1825. After an initial education at the Hanover Lyceum where the head master was the celebrated Grotend, one of the earliest decipherers of cuneiform writing (and whose son taught the young Seemann botany), he studied at the University of Göttingen, from which he graduated in 1844. That same year saw the publication of his first paper (*Descriptiones Plantarum Novarum vel minus cognitarum. Flora* 1844), upon which he left Hanover for good and came to Kew with the objective of preparing himself for the work of a botanical collector.

His talents soon came to the notice of the Director, W. Hooker who in 1846 recommended him to the Admiralty as naturalist to H.M.S. *Herald*, at that time employed on a surveying expedition in the Pacific.

Leaving England in August 1846, Seemann eventually reached the City of Panama only to find that the *Herald* had not yet returned to Panama from Vancouver Island. However, he seized the opportunity of what turned out to be a four month wait, to make an extensive exploration of the isthmus, collecting natural history specimens as well as studying hieroglyphics in Veraguas (see *Arch. Inst.*, 1851). This initial exploration augmented by successive visits (during the cruise of the *Herald*) enabled him to produce a most complete description of the Isthmus of Panama (see *Hooker J. Bot.*, 3 1851; *Zoologist* 10, 1852).

Having joined the *Herald* at the beginning of 1847 Seemann remained with her until the completion of her voyage around the world in 1851. Initially the *Herald* continued with the hydrological studies of the west coast of America during which time Seemann made long journeys inland. His explorations in Peru and Ecuador led him from Payta through the Peruvian deserts and across the Cordillera of the Andes to Loja, Cuenca and Guayaquil, thereby familiarizing him with a large section of the former empire of the Incas. Subsequently he traversed the western states of Mexico where he found both the Comanches and Apaches most troublesome.

At about this time the fate of Sir John Franklin’s expedition began to excite apprehension in England. Thus at the end of 1847 the Admiralty decided to send out three searching expeditions: one to Lancaster Sound, another down the Mackenzie River and a



Tecoma valdiviana

third to Bering's Strait. Ross was to command the *Enterprise* and *Investigator* (See *The Linnean*, 13(2) 7–11, 13(2) 15–16, 13(3) 26) which were sent to Lancaster Sound in April 1848, while the *Herald* accompanied by the *Plover* was directed to proceed to the Arctic by way of Bering's Strait – where Franklin was due to break free of the Arctic ice. Three times the *Herald* proceeded to the Arctic regions visiting Kotzebue Sound and then passing back through the Strait to winter in South America. On the second visit she was joined by the *Enterprise* and *Investigator*. During the course of these three voyages, Seemann availed himself of the opportunity to visit such a high latitude by making extensive collections of plants (for his description of the flora of Western Canada) and of esquimaux artifacts (for his anthropology of the Esquimaux). Then on her way to her winter quarters the *Herald* visited the Sandwich or Hawaiian Islands where, again, Seemann made extensive collections of plants (see *Hooker J. Bot.*, 4, 1852).

Meanwhile he attempted to collect all the native names of American plants for his *Popular Nomenclature of the American Flora* (published 1851).

In 1850 the *Herald* began her journey home, touching and remaining for some time in Hong Kong. Seemann's *Botany of the Voyage of H.M.S. Herald* which was published between the years 1852–57 consequently contains not only accounts of the floras of Western Canada, Panama and Mexico but also Hong Kong; it was lavishly illustrated by some 100 plates by Fitch. The year after his return, Seemann was elected a Fellow of our Society (1852).

On W. Hooker's recommendation the Admiralty requested Seemann to publish the results of the voyage and he accordingly produced in 1853 the *Narrative of the Voyage of H.M.S. Herald being a Circumnavigation of the Globe and Three Cruises to the Arctic Region in Search of Sir John Franklin* (2 vols). The animals collected on the expedition were described in a separate volume by John Richardson (see also *The Linnean*, 13(2): 7–10, 15–16).

In 1853 in conjunction with his brother W.E.G. Seemann he founded a new German botanical journal with the title *Bonplandia*. This he edited in London, but which was published in Hanover. In 1862, at the end of the tenth volume, it metamorphosed into the *Journal of Botany, British and Foreign*.

In August 1857 The American Association for the Advancement of Science held its first meeting on British soil at Montreal and invited the Linnean Society to be represented at the gathering, backing up this invitation with a free passage to America, courtesy of the Cunard Company. In the event, Dr. Berthold Seemann represented the Society travelling to New York in the *Persia*, an iron paddle steamer built in 1856 and said to be the fastest vessel afloat. Even so the crossing took ten days!

There were over 500 participants at the meeting where Seemann read a paper on "Parthenogenesis in animals and plants" (see *Canadian Nat.* 2: 305–310, 1857). After the meeting he was given free travel in America by the managers of the railroads and steamboats which allowed him to visit much of the States and to make the acquaintance of Asa Gray at Harvard.

During this period, ever mindful of the amateur botanist, he wrote several highly successful books including: *A Popular History of Palms* 1856¹, and *British Ferns at one view*, 1860. He also wrote the descriptions accompanying the 84 colour plates of *Paradisus Vindobensis* in 1858. That same year, Calsobau offered to cede the sovereignty of the island of Fiji to her majesty Queen Victoria on condition he should retain the rank and title of Tui Viti (King of Fiji). Following a report by the local British Consul that Fiji might be turned into a great cotton producing country, the Government commissioned Dr Seemann and Colonel Smythe RE to make an extensive survey of the islands before accepting their cession.

In the event Seemann and Smythe left England in early 1860 and spent over eight months exploring, collecting and investigating the customs and manners of the various cannibal tribes. Seemann communicated regularly with both the *Athenaeum* and the *Gardener's Chronicle*. These letters, which were reprinted at the time in many home and colonial newspapers, give vivid pictures of his dealings with the natives and of their customs and manners. He subsequently wrote the report *On the Resources and*

1 see for example: On the Palm of Timbuctoo. *J. Bot. Linn.* 1856: 152-155.



The cannibal's tomato, *Solanum uporo*.

Vegetable Products of Fiji which was presented to Parliament in 1861. This was published separately as *Viti: an account of a Government Mission to the Vitian or Fijian Islands* in 1862 with an appendix in the form of a catalogue of all the previously described plants. Seemann was, however, determined to produce a complete systematic flora. Thus in 1865 he commenced publication of his *Flora Vitiensis*. This elaborate flora contains not only the result of Seemann's own expedition but also those of all the previous expeditions to the South Seas including Cook's first voyage. Published between the years 1865–73 with 100 plates by Fitch the first nine parts were written and published before Seemann's untimely death; the tenth part, on cryptogamic plants, written by several authors, was published in 1873.

In 1864 he was persuaded by a private company to report on the resources of Venezuela and discovered extensive beds of anthracite on the banks of the Tocuyo River. Two years later (1866) he returned to the Caribbean for a third time to explore Nicaragua with his former fellow traveller – Captain Bedford Pim, this time at the behest of the Central American Association. Once again he wrote long letters back to the *Athenaeum* as well as to the newspaper the *Panama Star*. They contain a wealth of information on everything from natural resources to customs of the people and geography. They were reprinted in 1869 as *Jottings on the Roadside in Panama, Nicaragua and Mosquito*.

The result of these explorations was the purchase of a large sugar plantation near Panama and a gold mine at Javali, Nicaragua by an English Company, who employed Seemann as their managing director.

For the last three years of his life, he spent long periods in Nicaragua, where the climate was said to have ruined his health. He died at Javali of fever on 10 October 1871; he was survived by a daughter, his wife having predeceased him.

Seemann was a prolific author, publishing some 70 botanical papers (including *Synopsis Crescentiacearum*, *Synopsis Camellia* and *Thea* in our *Transactions*) as well as several thousand articles on general literature and politics. He was also the author of several short dramas and some pieces of music.

He was a frequent contributor to the *Gardener's Chronicle* and is said to have introduced many new plants to our gardens (through the mediation of W. Bull). These include the graceful climber *Tecoma valdiviana*, the elegant creeper or scrambling vine *Antigonon leptopus*, the grape *Vitis chontalensis* Seemann, *Psychotria cyanococca* Seemann, the candle tree *Parmentiera cereifera* Seemann, *Dracontium gigas*, *Maranta seemanni* as well as many palms including *Bactris gasipaes* and *Malorteia lacerta*.

Despite this impressive list Seemann will be best remembered for his introduction of the Boro dina or Cannibal's tomato [*Solanum anthropophagorum* = *Solanum uporo Dunal*]. This small insignificant plant (2–3 inches) he explained in his report to Parliament was cultivated in villages in Tonga, Rarotonga and Tahiti where the leaves were wrapped around human bodies before cooking. Apparently 'bokola' or dead man's flesh is extremely difficult to digest, the Boro dina assists the process of digestion. Elsewhere on the islands fluid pressed from the leaves was given to assist childbirth while in Tonga an infusion of leaves was used to reduce what we now know to be filarial swellings. The plant contains steroidal alkaloids.

Darwin and Seemann

Seemann is first referred to in Darwin's correspondence in December 1855 when he, Darwin, asks Hooker to pass on a memorandum to Seemann who at that time was working at Kew. Then, in September 1857 Darwin wrote to Hooker to ask him to thank Dr. Seemann personally for nominating him for membership of the Academy Caesarea Leopoldino-Carolina. After having received his diploma of membership to that Society he sent Seemann £1–4s to help pay for the printing of it!

Interestingly Seemann was one of the Fellows present at the July 1st 1858, Linnean Society Meeting at which the joint paper of Darwin and Wallace "*On the Tendency of Species to form Varieties: and the Perpetuation of Varieties and Species by Natural Means of Selection*" was read by the Under (Zoological) Secretary George Busk; later the Secretary, J.J. Bennett read the last three communications which included a paper "*On *Hamburia**" by Berthold Seemann (see *The Linnean*, 11(1):22; 15(2):12.). Darwin's contribution at that Meeting included the abstract he had sent to Asa Gray the previous September (1859) at about the same time as Seemann and Gray had first become acquainted. Needless to say Seemann was an instant convert to the theory of Natural Selection and soon became a regular correspondent of Gray's.

Thus in 1862, soon after returning home from the Fijian islands, he wrote to Gray on



Clue: The instigator of the Challenger voyages; had a propensity for vapour baths!

the political issue of the American Civil War pointing out that the general belief in London was that the American Government wanted a war with England for an excuse to give up the South! It was about this time that he also began to correspond with Darwin on geographical distribution, pointing out (April 24 1862) that he had adopted as his motto a phrase from Darwin's *Journal of researches* (p604): "A traveller should be a botanist, for in all views *plants* form the chief embellishment" (*Botany of the Herald 1862-57*)¹. Darwin later used information from Seemann in support of his argument that temperate northern forms could have migrated across the isthmus of Panama into South America.

Later in 1862 Darwin made additional corrections to the second German edition of *The Origin* in which he pointed out that Seemann had found on the mountains of

¹ In his letter to Darwin he agrees with his views in *Journal Researches*: 604 "without botanical knowledge it is impossible to describe scenery with any approach to correctness" (April 1862).

Panama a similar flora to that of Mexico, with forms of the torrid zone harmoniously blended with those of the temperate! Darwin also cited information taken from Seemann's *The Voyage of H.M.S. Herald* on the crossing of the wolf and esquimaux dog in later editions of *The Origin*.

Then in March 1863 in a letter to Hooker, talking about tropical plants in the glacial period, he quoted Seemann's description of *Dipterocarpus* as being present in the low mountains of Panama, pointing out that it was absurd to believe it could have developed since the Glacial era.

Finally both Wallace and Darwin used information provided for them by Seemann on island floras particularly that of Hawaii and of Fiji (see for example Wallace to Darwin, March 1868).

B.G. GARDINER

Correspondence

20. 9. 99

68, Main Street, Newmilns,
Ayrshire, KA16 9DE

Dear Editor,

Adam White (1817–1879)

The recent inclusion in *The Linnean*, volume 15 number 2, of a letter from the Society Archives by Adam White has prompted me to write to draw attention to further archival material of this Scottish naturalist in Glasgow.

Adam White, a native of Edinburgh, left his native city in 1835 to take up the position of Assistant Keeper in Natural History, under John George Children, at the British Museum, Bloomsbury, London.

He remained there until his retirement, in 1863, due to a mental breakdown brought on by the death of his first wife. During this period Adam wrote several of the early catalogues on the British Museum's zoological collections and gained a reputation as an authority on arachnids, coleoptera and crustacea. He wrote, with Arthur Adams, the Crustacea section of Adams' 1848–59 *The Zoology of the Voyage of HMS Samarang* as well as several general works including *A popular History of Mammalia, comprising a familiar account of their classification and habits* of 1850 and *A popular History of British Crustacea* published in 1857.

In 1863, following his retirement White returned to his native Scotland, first to Edinburgh and then to Glasgow where he died in 1879.

In 1931, his descendants donated material to Glasgow Museums, the donation being described in the Museum register simply as 'Drawings & Manuscripts relating to various Nat. History subjects belonging to the late Adam White.'

The first of these consists of his copy of '*A History of British Animals*' by John Fleming, 1828, bound with John Atkinson's 1820 '*A compendium of the Ornithology of Great Britain*', the latter inscribed to John Edward Gray from the author. Both of these works are heavily annotated in White's distinctive hand together with several inserts.



One of these, illustrated herewith, is an advert relating to the exhibition of a live Ant Eater and testifies to the limited knowledge at that time concerning the animal kingdom. However this is understandable when one realises that major regions of the world including Africa, India, Asia, South America and Australasia were virtually unexplored at that time. This intensity of public interest and excitement is further emphasised by Adam's note on the subject. He writes:

'In the end of Sept. 1853 I saw a large specimen alive exhibited in Broad St., St Giles, – struck with the smallness of its head – extreme length of its muzzle, from an aperture at the end of which it shot out a long black tongue – shaped like a worm into a cup with some eggs. Its fore limbs enormously thick and very short, its claws bent back in walking, compared with it, height about three feet and length (inclusive of tail) perhaps six feet – its body seemed thin – its hair long – dry – harsh! dirty grey – could erect it especially along the ridge of the back where it was long. The man bent its tail which seemed to fold upon its body as if it had a hinge at the base, the extremely long hairs with which it is covered spreading out immediately so as to cover the body – when asleep the man said it covered itself with this tail completely. A few days after it was seen that its exhibition would not pay and it was sold to the Zoological Society for £200.00' A.W.'

The second grouping consists of various notes and figures of crustacea including several original drawings made by Arthur Adams (1820–78). These were made by Adams during his time as ships surgeon on HMS *Samarang*'s voyage to the Indonesian Archipelago of 1843–46 under the command of Captain Sir Edward Belcher.

Thirdly, three original sheets of watercolour drawings, two of which are inscribed by White in pencil '*China Mr Reeves*'. Mr. Reeves refers to John Reeves (1774–1856) an Assistant and later Chief Inspector of Tea at the East India Company's establishment at Canton, China, from 1808 until his return to England in 1831. During this period he made a careful study of the natural history and resources of the country and collected numerous specimens of plants and animals which he sent back to Britain. In addition

Reeves employed native artists to make accurate water-colours of native plants and animals paying particular attention to fish during the period from 1826–31. The first sheet is not inscribed and depicts three crabs on paper without any watermark, the second sheet is inscribed '*China Mr Reeves*' and depicts two swimming crabs together with a sea-urchin, the paper watermarked '*W. King 1827*'. The third set is inscribed '*China Mr Reeves Onchidium*' and depicts four crabs beneath one of which are Chinese characters, two swimming crabs, one with Chinese characters, a lobster, a sea anemone, with Chinese characters and two views of the mollusc *Onchidium*, again with Chinese characters. The paper bears the watermark J. Green & Son 1826.

Fourthly, notes and annotated figures of Spiders which appear to have originally been arranged in a systematic order but have become disarranged since his death.

Fifthly, a few notes and annotated sheets of Coleoptera.

The last and sixth grouping held by the Museum at Kelvingrove, Glasgow consists of 439 original cyanotypes and constitutes the largest cohesive set of *British Algae* still extant, being supplemented by many additional plates. This was the first publication to be produced by means of a photographic process, part 1 appearing in 1843. The outside wrapper to part 1 bears an inscription, apparently in White's hand '*by Mrs. Atkins of Halstead Place, Kent, daughter of John Geo. Children, Esq., F.R.S. – &c &c &c, formerly keeper of the zoology in the British Museum.*' Significantly, the work is entitled '*Photographs of British Algae – Cyanotype Impressions*' and constitutes the first serious application of photography to scientific publication, predating William Henry Fox Talbot's *Pencil of Nature*.'

In addition to the White material held in Glasgow Museums a further component was discovered by accident during a visit to Glasgow University Library, Hillhead Street, Glasgow G12 8QE. Whilst looking through the works on coleoptera in the Zoology Section of the General Library, I picked up a volume by the French author Th. Lacordaire. One can imagine my surprise at finding it extensively annotated in White's hand together with numerous inserted notes and figures including corrections to illustrations of White's own species. The work in question is Th. Lacordaire, 1854–74, *Histoire Naturelle des Insectes: Genera des Coleopteres*, the Glasgow set consisting of 10 vols + Atlas bound in 16 Tomes. Its association with Adam White was confirmed by the presence of his signature on the frontispiece of volume 1. Realising the considerable scientific importance of this work I drew it to the attention of the librarian, David Weston, Keeper of Special Collections, which includes William Hunter's Library, and he immediately had the work transferred to Special Collections for safe-keeping.

I trust the above summary will be of interest to workers on the individual groups concerned but should also add that I surmise that additional White material may lie undetected in Glasgow and Edinburgh.

8.11.99

Skerries, Pintail Drive,
Blakeney Holt, Norfolk NR25 7DF

Dear Editor,

The October Picture Quiz is a photograph taken in 1849 of Professor John Lindley (1799–1865). He was elected F.L.S. at the age of 21.

Lindley was appointed in 1828 the first Professor of Botany at University College London (or rather, at the University of London as the College was then). He held the Chair for 32 years. It was a part-time appointment and Lindley engaged in many other important Botanical activities during his tenure of the Chair.

Yours sincerely,
DONALD J.B. WHITE

There was only one other correct answer to the October Quiz and this came from John Strother, University Herbarium, Berkeley, California. Ed.

22.10.99

rhld2@hermes.cam.ac.uk

Dear Brian,

I was surprised to read on page 2 of the latest *Linnean* that Rafinesque is said to have named a mere 6700 taxa and thereby can claim to have named “more than any other biologist to date”. The entomologist Francis Walker (1809–1874), who is “infamous for hastily-described taxa (almost 20,000)” (Evenhuis, N.L. 1997. *Literatura Taxonomica Dipteroorum* (1758–1930). Leiden: Backhuys), knocks him into a cocked hat. In our own century C.P. Alexander has proposed more than 10,000 names for species of cranefly (Griffiths, G.C.D., 1980. *Flies of the Nearctic Region. Volume 1, Part 1*. Stuttgart: E. Schweizerbart'sche Verlagsbuchhandlung). In such company Rafinesque is not even in the first division!

Best wishes
HENRY DISNEY

5.11.99

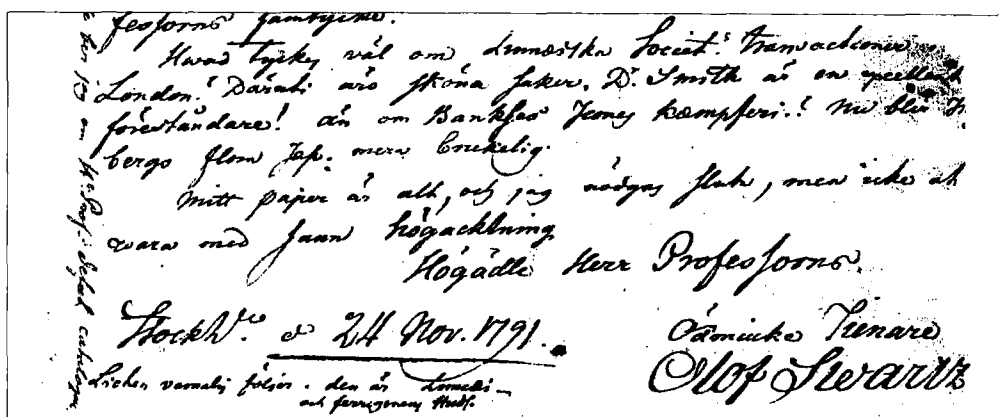
7 Highland Road, Chichester,
West Sussex PO19 4QX

Dear Brian,

Members might be interested to know that the (Cambridge collection) photograph of the 1887 Meeting of the BAAS at Manchester, mentioned by Professor A.D. Boney (*The Linnean* 13, 15–37), and showing F.O. Bower in splendid profile is reproduced on page 64 of W.A. Charlton & E.G. Cutter's recently published *135 Years of Botany at Manchester*, The University of Manchester.

Yours sincerely,
BRIAN HOPKINS

From the Archives



This issue contains an account of Smith's lichen collection. Fortuitously Per Jørgensen has been studying lichenological history when he came across this letter (above) from Olof Swartz to Martin Vahl, a student of Linnaeus (and the same age as Carolus filius) who had described at least nine new lichen species – and whose knowledge of lichens was clearly superior to that of Linnaeus.

In free translation Per informs me that the last paragraph but one reads:

“What do you think about the Transactions of the Linn. Soc. London? Dr Smith is an excellent prefect. And what about Banks' *Icones kaempferi*? now Thunberg's *Flora Jap.* will be more useful.”

The Lichen Herbarium of Sir James Edward Smith

JOHN EDMONDSON and CLAIRE SMITH

National Museums & Galleries on Merseyside, Liverpool Museum

Abstract

A project to document the herbarium of Sir James Edward Smith (1759–1828) in a computerised database has recently been launched by the Linnean Society of London. The Smith herbarium contains much historic lichen material from late 18th and early 19th century collectors, and is believed to be rich in type material. Information is presented here on the 1,309 lichen specimens within the herbarium, their collection history and provenance.

Introduction

Sir James Edward Smith (1759–1828) is not generally thought of as a lichenologist, but his collecting activities in England and Scotland at the turn of the 19th century

(Walker, 1988) have produced one of the most interesting, and best-preserved, collections of the Georgian era. His herbarium (**LINN-Smith**) was purchased by the Linnean Society of London from his widow in 1829 together with the much better-known Linnaean Herbarium (Stearn, 1988), and has since then been kept in the Society's rooms at Burlington House, Piccadilly. Although a microfiche edition of the Smith herbarium has been published by the Inter Documentation Company, the images are of little value for taxonomic study and the lichen specimens themselves have seldom been consulted despite their importance as historic vouchers and (in some cases) types.

This article describes some attributes of the lichen collections within the Smith herbarium, including a summary of the history of some of the constituent collections and their geographical provenance. It is hoped that as a result of a project recently launched by the Linnean Society, which is being carried out at Liverpool Museum's Department of Botany, this important collection will soon be better curated and more accessible to researchers. The longer-term aim of the project is to conserve (clean and reattach or package where necessary) the often fragile specimens in the collection and to make specimen data, including images, available on the world-wide web (Jarvis & Edmondson, 1998).

Collectors

From the total of 1309 lichen specimens documented, 275 are annotated with a collectors' name (see Table 1). However, from information on the donor or source of the remaining specimens it is sometimes possible to infer the identity of the collector. Although Smith's name as collector only appears on four specimens, a much larger number of specimens can be attributed to him from information inferred from locality data. One of his first published papers in the *Transactions of the Linnean Society* (Smith, 1791) was concerned with lichens; his magnum opus *English Botany, or coloured Figures of British Plants* (published from 1790 to 1814, with illustrations by James Sowerby) included three volumes of lichen text and illustrations (Smith 1803–1804).

Collection histories

The J.E. Smith herbarium contains a large number of specimens collected by other botanists whose herbaria were later incorporated into the main Smith herbarium sequence. Where the collection history is known, this has been recorded in the database. Table 2 lists those collections which have passed through an intermediate collection before being acquired by Sir James Edward Smith, and also lists the names of collection donors who cannot confidently be shown to have collected the specimens themselves. In a few cases, such as J. Pitchford, correspondence in the Linnean Society shows that Smith's opinion was sought on various lichenological matters (Smith 1832, pp. 41–44) but this is not in itself evidence that the correspondent was the collector of the specimens. In other instances, evidence can be adduced from the presence of exchange specimens in the collections of the donor; for example, there are specimens collected by Dawson Turner in the Schrader herbarium, now in Göttingen (Coppins, personal communication).

Table 1. Named collectors of lichens represented in the J.E. Smith herbarium.

COLLECTOR	No. of specimens	Date of acquisition by Smith
Abbot, Rev. Charles	1	
Acharius, Erik	1	1801
Banks, Sir Joseph (inferred)	4	
Beloe, Rev.	1	
Borrer, William	1	1806, 1811
Brodie, James	4	1804
Bryant, Rev. Henry	2	1779
Burgess, Rev. John	2	1782–1784
Commerson, Philibert	1	
Davall, Edmund	20	1791, 1802
Delessert, E.S	1	1788
Dickson, James	7	1802
Dombey, Joseph	1	
DuCros, François-Barthélemy	39	1802
Ehrhart, Friedrich	121	1802
Esper, Prof. Eugen Johann Christoph	1	1800
Favrod, Daniel-Moise	2	1802
Flügge, Dr. Johann	1	1800
Griffith, John Wynne	1	1796, 1803
Harriman, Rev. John	4	1799, 1801, 1803
Hoffmann, Prof. Georg Franz	3	1793
Hooker, Sir William Jackson	1	1806
Hudson, William	9	
Knapp, John Leonard	2	
La Billardière, Jacques Julien Houton de	1	1807
Masson, Francis (inferred)	6	1802
Menzies, Archibald (inferred)	12	1784, 1787, 1789, 1803
Micheli, Pier'Antonio	2	
Muhlenberg, Rev. Gotthilf Heinrich Ernst	3	
Neill, Patrick	1	
Pulteney, Richard	5	1793
Reynier, Louis	8	1802
Rodwell, Mr.	2	1781
Schrader, Heinrich Adolph	1	1792, 1793, 1801–1803
Schwaegrichen, Christian Friedrich	1	
Scott, Robert	2	1805
Smith, Sir James Edward	4	1781–1818
Stuart, Rev. John	1	1783
Swartz, Olof	9	1795, 1801, 1803, 1805
Thomson, Mr.	1	
Townson, Robert	1	1790
Turner, Dawson	2	1782, 1800–1807
Villars, Dominique	1	1802
Wahlenberg, Göran	2	1806
Walker, Dr John	1	1782
Winch, Nathaniel John	1	1803
Wood, Rev. William	1	1802

Geographical provenance

411 specimens are labelled more or less precisely with their sites of collection, which originated from many countries or islands of the world (see Table 3). Within these areas, locality information for specimens has been stored in the database both in its original form and in a standardised form. Thus, for example, "O=wy=hee" is interpreted as "Hawaii".

Table 2. Donors or collectors of lichens represented in the J.E. Smith herbarium.

ORIGINAL COLLECTOR	Subsequent owner(s)	Country
Abbot, Rev. C.	Sowerby, J.	U.K.
Borrer, W.	Sowerby, J.	U.K.
Broussonet, P.M.A.		Canary Is., France
Bryant, Rev. H.	Hudson, W., Lambert, A.B.	U.K.
Commerson, P.	Jussieu, A. de	Chile or Argentina
Crowe, J.		U.K.
Dantic, Mr	Reynier, L., Davall, E.	unlocalised
Davies, Rev. H.		U.K.
Dickson, J.	Crowe, J., Davall, E., Turner, D.	U.K.
Dombey, J.	Linnaeus fil.	Peru
DuCros, F.-B.	Davall, E.	Switzerland
Ehrhart, F.	Davall, E.	Germany
Esper, Prof. E.J.C.	Turner, D.	Germany
Favrod, D.-M.	Davall, E.	Switzerland
Flügge, Dr. J.	Turner, D.	Germany
Forster, E.		U.K.
Forster, T.F.		unlocalised [U.K.]
Griffith, J.W.	Sowerby, J.	U.K.
Groschke, J.T.		U.K.
Harriman, Rev. J.	Dickson, J., Turner, D.	U.K.
Hoffmann, Prof. G.F.		Germany
Hudson, W.	Lambert, A.B.	U.K.
Jussieu, A.L.		France (inferred)
Kinderley, N.E.		India (inferred)
Mackay bros.		U.K.
Masson, F.	Aiton, W., Davall, E.	South Africa, Canary Is.
Marsham, R.		U.K.
Martyn, T.		U.K.
Menzies, A.		Australia, Canada, Chile, Sumatra, Tahiti, U.S.A.
Molesworth, R.		Canada (Labrador)
Noehden, H.A.		Germany
Persoon, CH.		unlocalised
Pitchford, J.		U.K.
Ramm, de		unlocalised
Reynier, L.	Davall, E.	France, Switzerland
Rottler, J.P.		India (inferred)
Roxburgh, W.		India (inferred)
Schrader, H.A.	Turner, D.	Germany (inferred)
Schwaegrichen, C.F.	Turner, D.	unlocalised
Scott, R.	Turner, D.	Ireland
Sibthorp, J.		Greece (inferred)
Smith, C.		unlocalised
Sowerby, J.		U.K.
Steinhauer		Canada (Labrador)
Swartz, O.		Sweden
Teesdale, R.		U.K.
Tennant, S.		unlocalised
Torrey, J.		U.S.A.
Turner, D.		U.K.
Villars, D.	Davall, E.	France (inferred)
Wahlenberg, G.	Turner, D.	unlocalised
Wentworth, Sir J.		U.K.
Williams, Rev. E.		U.K.
Winch, N.J.	Turner, D.	U.K.
Wood, Rev. W.		U.K.
Woodward, T.J.		U.K.
Younge, W.		U.K.

Annotations

The collections are generally annotated with the scientific name, usually following the treatments of Acharius (1798, 1810). Over half the specimens (726) are annotated with a reference to one or other of Acharius's works, including the page number. Some of the specimens (129) bear determination slips written by Acharius, mostly with Acharius names; however none of these names appears on the list of lichen types published on the world-wide web by the Swedish Museum of Natural History (Myrdal, 1999). Unusually for specimens in Smith's herbarium, detailed habitat notes are provided for 258 of the sheets.

Historic determinations have been recorded in the database under the name of the person who wrote the label (identified from the handwriting when unsigned by the author of the determination). Table 4 lists the original names of specimens which have been annotated by Eric Acharius; modern names (when available) are given as footnotes. The catalogue number cited is that of the manuscript catalogue of the Smith

Table 3. Provenance of lichens represented in the J.E. Smith herbarium.

COUNTRY OR REGION	No. of specimens	Collectors' names
Argentina or Chile	4	Commerson, P.
Australia	1	J.J.H. de La Billardière
Canada	4	Banks, Sir J. (inferred)
Canary Is., Spain	3	Masson, F. (inferred)
England	200	A. Abbot, J. Brodie, J. Dickson, R. Harriman, W.J. Hooker, J.L. Knapp, R. Pulteney, Mr Rodwell, J.E. Smith
Falkland Is.	1	Rev. Beloe
Finland (Lapland)	2	E. Acharius, O. Swartz
France	42	E.S. Delessert, L. Reynier, J.E. Smith
Germany	61	F. Ehrhart, E.J.C. Espar, J. Flügge, G.F. Hoffman
India	4	Mr Thomson
Ireland	2	R. Scott
Italy	9	P.A. Micheli, J.E. Smith (inferred)
Netherlands	2	F. Ehrhart, J.E. Smith (inferred)
New Zealand	5	A. Menzies (inferred)
Peru	2	J. Dombey
St. Helena	3	
St. Lucia	1	
Scotland	181	J. Brodie, Rev. J. Burgess, J. Dickson, W.J. Hooker, P. Neill, R. Townson, D. Turner, J. Walker, Rev. W. Wood
South Africa	13	Masson, F. (inferred)
Sweden	71	F. Ehrhart
Switzerland	119	E. Davall, F.-B. DuCros, D.-M. Favrod, L. Reynier
Tahiti	4	A. Menzies (inferred)
U.S.A.	12	A. Menzies (inferred)
Venezuela	8	F.J. Maerter (inferred)
Wales	54	J.W. Griffith, J.E. Smith

Lichen scortinus Ach. Lichenogr.	1701.21.1
Lichen serpentina varietatis ? Ach. Lichenogr.	1690.32.
Lichen signatus Ach. Lichenogr.	1690.10.
Lichen sterilis Ach. Lichenogr.	1712.5.2
Lichen sticticus Ach. Lichenogr.	1689.7.
Lichen symphycaus Ach. Lichenogr.	1709.40.1
Lichen ulmi Ach. Lichenogr.	1693.29.1
Lichen umbrinus Ach. Lichenogr.	1689.18.
Lichen virellus Ach. Lichenogr.	1700.60.2
Lichen viridescens Ach. Lichenogr.	1694.43.
Lichen vulgatus Ach. Lichenogr.	1690.14.1
Lichen Westringii Ach. Lichenogr.	1697.7.
Opegrapha diaphora Ach.	1690.9.1
Opegrapha notha var. conferta Ach.	1690.4.2
Opegrapha notha var. spaniota Ach.	1690.6.1
Opegrapha notha var. turgida Ach.	1690.2.
Opegrapha pulverulenta var. flexuosa Ach.	1690.30.
Opegrapha siderella var. aenea Ach.	1690.26.1
Parmelia aipolia Ach.	1700.32.3 ¹
Parmelia cerina var. pyracea Ach.	1693.11.5
Parmelia cycloselis Ach.	1700.41.3
Parmelia Hageni var. springea Ach.	1693.35.3
Parmelia periclea Ach.	1693.50.3
Parmelia pulverulenta Ach.	1700.31.5 ²
Parmelia subfusca var. distans Ach.	1693.17.
Parmelia subfusca var. melioica Ach.	1693.18.7
Parmelia tunaeformis Ach.	1701.18.1
Peltidea spuria Ach.	1706.3.2
Spiroma vitiligo Ach.	1688.1.
Stereocaulon cereolus Ach.	1711.7.
Tympanii saligna Tode	1696.3.3
Urceolaria cinerea vetustior Ach.	1692.5.
Verrucaria cerasi Ach.	1689.9.3
Verrucaria faginea Persoon	1689.14.
Verrucaria leucocephala var. amphobolus Ach.	1689.4.3
Verrucaria punctiformis var. ptelaeodes Ach.	1689.10.4
Verrucaria stigmatella var. tremulae Ach.	1689.5.3

Acknowledgments

Thanks are due to the Linnean Society of London for providing a grant in support of the Smith Herbarium documentation and conservation project, and for making the specimens available on loan. We are indebted to B.J. Coppins, P.W. James, J.R. Laundon and R. Moberg for the modern determinations and also to B.J. Coppins for commenting helpfully on an earlier version of the article.

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1 *Physcia aipolia* (Humb.) Fühnrrohr (det. R. Moberg, 1974).
 2 *Physconia distorta* (With.) J.R. Laundon (det. R. Moberg, 1975 as *P. pulverulenta*).

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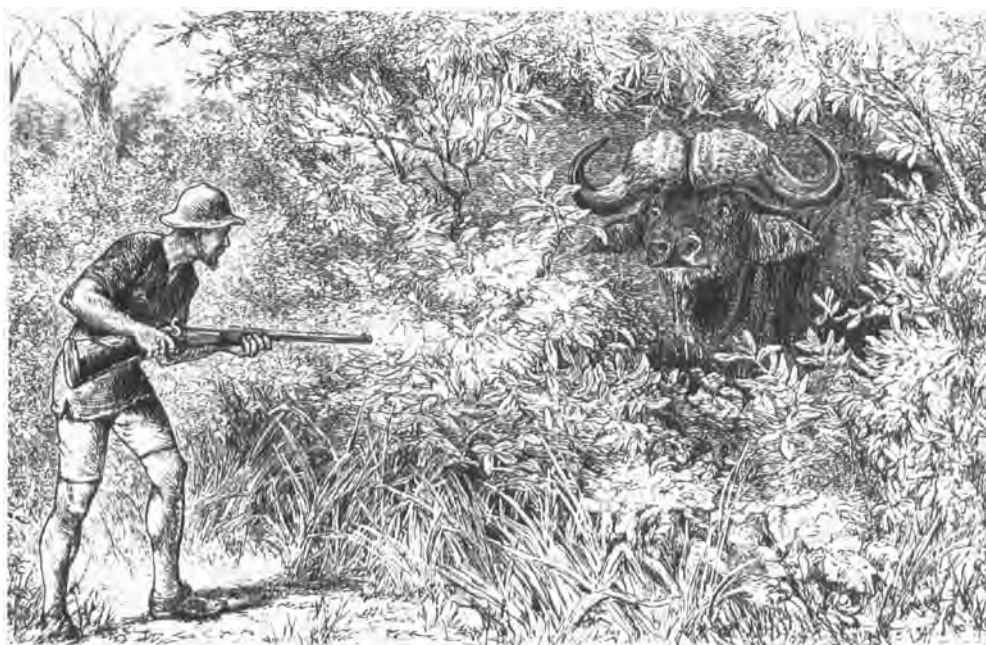
Frederick Courteney Selous

A recess in the wall beside the left hand (west) flight of the main staircase of the Natural History Museum houses a bronze bust of F.C. Selous. He is wearing a bush hat and carries his hunting rifle at the ready. Indeed, he looks rather as he appears in the plate: 'Following a wounded buffalo in thick bush' from his book, *A Hunter's Wanderings in Africa* (1881). The inscription below the bust reads as follows: 'Captain Frederick C. Selous D.S.O. Hunter, Explorer & Naturalist. Born 1851. Killed in action at Beho Beho, German East Africa 4.1.1917'. According to R.I.P. (Reginald Innes Pocock, Director of the Zoological Gardens, Regents Park), the author of his entry in the *Dictionary of National Biography* (1912–1921), Selous 'repeatedly repudiated the false praise of his friends in styling him the greatest hunter of all time; and he would have been the first to protest against the mistaken estimate of his contributions to science which led to the placing of his memorial tablet and bust alongside the statue of Darwin and the portrait of Alfred Russel Wallace in the British Museum at South Kensington'.

The bust, by W.R. Colton R.A., was unveiled on 10 June 1920. I can dimly remember my father pointing it out to me when, in 1927, at the age of six, my parents took me to the Museum for the first time. My father was particularly interested in Frederick Selous whose nephew, Gerald Selous, had been a close friend of his at Pembroke College, Cambridge, in the years before the Great War. Gerald Selous was British Vice-Consul in Saffi during the War, was awarded the M.B.E., and remained in the Consular Service throughout his career. He married a Belgian princess named Camilla and was godfather to my eldest sister Joan (now Mrs M. J. Hacon of Strete, Devon).

When I was young, my parents gave me for Christmas and birthdays a number of books including *Tommy Smith's Animals*, *Tommy Smith's Other Animals*, *Tommy Smith at the Zoo*, and so on, by Edmund Selous, younger brother of Frederick and father of Gerald. Edmund had also been to Pembroke and was called to the Bar on 17 November 1881. A field naturalist and ornithologist, he was the author of *Bird Watching*, *Bird Life Glimpses*, *Realities of Bird Life*, *Thought Transference (or What?) in Birds*, *The Romance of Insect Life* and *The Romance of the Animal World* – in addition to his numerous children's books.

The idea of being a professional elephant hunter and shooting for sport is, today, an anathema to many people. But it should be remembered that, unless controlled or able



Following a wounded buffalo in thick bush (Selous, 1881)

to migrate, elephant populations tend to outgrow the available resources and devastate their environment. Around 40,000 years ago, the large mammals of Australia and New Guinea were exterminated by human beings. The same thing occurred when North and South America were colonised, while the mammoths and woolly rhinoceros probably became extinct shortly after modern peoples expanded into Siberia. In contrast, most of the big mammals of Africa and Eurasia survived into modern times because they had co-evolved with human beings for hundreds of thousands or even millions of years. They thereby enjoyed ample time to evolve a fear of humans while our ancestors' initially poor hunting skills were slowly improving. The faunas of other parts of the world had the misfortune suddenly to be confronted by invading peoples possessing fully developed hunting skills (Diamond, 1997). Until comparatively recent times, human and game populations have maintained a balance in Africa, and it was not until the introduction of firearms that this balance was upset and game populations threatened (Cloudsley-Thompson, 1967). With the benefit of hindsight, it is easy to see that Frederick Selous, like other hunters at that time, shot far too many elephants and other game; but these were plentiful then in many regions of Africa and most people thought they would last for ever. Nevertheless, Selous never shot an animal except for a definite purpose. If he made a mistake, it lay in publishing the list of game that he shot between January 1877 and December 1880. As he himself pointed out then, 'it must be remembered.... that I was often accompanied by a crowd of hungry savages, exclusive of the men in my employ, all of whom were dependent upon me for their daily food, whilst in some of my expeditions my rifle supplied me almost entirely with the means of obtaining from the natives corn, guides, porters, etc., which better-equipped parties

would have paid for with calico, beads, or other merchandise' (Selous, 1881).

Frederick Courteney Selous was born in London on 31 December 1851. The Selous family were originally French Huguenots who settled in Jersey after the revocation of the Edict of Nantes. Annoyed at his ancestors being evicted from France, Gideon Selous, a man of violent temper, dropped the 'e' from his surname; but this was later re-adopted by his son Frederick Lokes Selous, father of Frederick Courteney and Edmund. Frederick Lokes had a successful career in the London Stock Exchange. A fine whist and chess player he was at one time regarded the best amateur clarinet player in England. His wife, Ann (née Sherborn), Frederick Courteney's mother, was also very gifted – a poet with a great feeling for and interest in plant and animal life. According to his brother Edmund, Frederick may have inherited from her his interest in natural history and travel and, from his father, his patriotism and love of truth (Millais, 1919).

At the age of nine, F.C. Selous was sent to school at Bruce Castle, Tottenham and thence, in 1866, to Rugby where he distinguished himself chiefly by his proficiency in games and his interest in birds: his list of species noted there exceeded 90, and he was a prominent member of the school Natural History Society. In August, at the age of 17, Selous left Rugby and went to Neuchâtel where he studied French and the violin at the Institution Roccolet. He also commenced his studies to be a doctor, for which profession he showed no enthusiasm. His ambition had always been to be a hunter and explorer. From Switzerland he moved to Wiesbaden to learn German.

Then, with £400 in his pocket, he travelled to southern Africa, landing at Algoa Bay in September 1871. Determined to earn his living as a professional elephant hunter, he made his way to Kimberley – only to learn that the right season of year for a trip to the interior was not due for some months. So he joined a trading expedition to Griqualand, and it was not until the following year that he finally set forth into the region that is now Zimbabwe. In those days, the country was terrorised by the Matabele and it was necessary to obtain permission from their chief, Lobengula, to enter Matabeleland and the neighbouring territories. This was given, however, and for the next ten years Selous traversed the interior from east to west, hunting elephants and trading in ivory. At the same time he acquired an intimate knowledge of the people, the animals, and the topography of the country.

Ten years later, on a short visit to England, he wrote his first book (Selous, 1881). This was illustrated by his sister Ann. (His uncle Harry Selous was also an artist, as had been his grandfather, Gideon Slous.) *A Hunter's Wandering in Africa* was widely acclaimed and reprinted five times. Its success secured for Frederick a number of commissions from museums and from dealers in big game trophies, which stood him in good stead during the following years.

When Fred Selous returned to Africa, in November 1881, it was his first intention to abandon a wandering life and become an ostrich farmer. However, he soon discovered that the market for ostrich feathers had disappeared, game was already becoming scarce in many places (Cloudsley-Thompson 1967), and the ivory trade was no longer economic. He therefore spent the next few years fulfilling orders for museums and private collections, acting as a guide to hunting and prospecting parties and exploring between the Transvaal and Congo Basin. It was probably during this period that many of the finest specimens in the Natural History Museum were procured and he made his

greatest contributions to zoology. He had always collected butterflies, but he now made a very large collection which he presented to the Cape Town Museum. It contained several new species. His explorations also resulted in a number of interesting discoveries which were published by the Royal Geographical Society in 1888. Other reports followed, the Society assisted him with grants and, in 1892, he was awarded the Founder's gold medal. His activities during these years were described in *Travel and Adventure in South-East Africa* (1893). They include an account of the treacherous attack by Mashukumbwi tribesmen in April, 1888, when his caravan was plundered, many of his followers killed, and he himself escaped with difficulty.

In 1890, Selous entered the service of the British South Africa Company. He advised Cecil Rhodes that Mashonaland should be occupied to forestall annexation by Portugal and managed to persuade him not to attack the Matabele who were very much stronger than Rhodes realised. He then acted as an intermediary between Rhodes and Lobengula and succeeded in obtaining a concession for the mineral rights of Matabeleland and Mashonaland. Rhodes accordingly appointed him chief of the Pioneers who made a road that circumvented the Matabele further west, opened up Mashonaland (now northern Zimbabwe) and secured that country for Britain. Selous left the Chartered Company in 1892 but rejoined it the following year when the Matabele war broke out.

Between 1883 and 1890, Matabele impis had been attacking most of their weaker neighbours. In 1890, they almost completely annihilated the large Mashona tribe and war became inevitable. The campaign of 1893 was brief and completely successful. Selous was attached as Chief of Scouts to Colonel Goold Adams who commanded the British southern column. This reached Bulawayo without much difficulty, although Selous himself received a bullet in the right side of his body on 2 November: fortunately it was only a flesh wound and he was not severely harmed.

The wound healed, he was discharged from hospital in Bulawayo and arrived back in England in February, 1884. On 4 April he was married to Marie Catherine Gladys (daughter of Canon H. W. Maddy, vicar of Down Hatherly, near Gloucester) to whom he had become engaged the previous spring. Fred and his wife went abroad for their honeymoon, passing through Switzerland and Italy, down the Danube to Odessa and thence to Constantinople. On their return, finding life in England rather expensive, Selous accepted the invitation of an old friend, Maurice Heaney, to manage a land and gold-mining company in Matabeleland. Gladys accompanied him – a very courageous act for those days – and they settled in Essexville, his company's farm. A wire-wove bungalow was sent, in sections, from England for them to live in.

Before many months had passed, however, the flame of rebellion spread among the Matabele, and numerous European settlers, including women and children, were murdered. Frederick took Gladys into Bulawayo for safety before returning to his farm, only to find that all the cattle had been driven away. He was not long in discovering part of the stolen herd, however, burned the kraal at which they were found, and drove them back to Essexville. He did not take them to Bulawayo because he feared that they might be attacked by rinderpest, which was epidemic at the time. But an even worse fate befell him, because Inxozan, a Matabele warrior, with some 300 of his men, appeared a few days later, burned the farm and carried off all the cattle. There was no point in staying. Throughout the second Matabele war, appointed Captain of H troop of the Bulawayo

Field Force, Selous took part in a number of engagements which he was later to describe in *Sunshine and Storm in Rhodesia* (1896). This book was dedicated to his wife Gladys, and completed after the two had returned to England.

From that time onwards Fred Selous gratified his ruling passion, big-game shooting, although more as an amateur than as a professional. He visited Asia Minor, made two trips to the Rocky Mountains, hunted in Newfoundland, in the Yukon territory of Canada and accompanied his friend Theodore Roosevelt to East Africa in 1909–10. *African Nature Notes and Reminiscences*, published in 1908, contains a foreword by President Roosevelt. Between whiles, he devoted his time to writing, birds' nesting and shooting at home. Wherever he was, he took the greatest interest in the habits and behaviour of all the animals he encountered. Keen observation, indefatigable patience and a retentive memory combined to make him a field naturalist of exceptional quality. His vast store of knowledge about the behaviour of large mammals is embodied in his accounts of hunting expeditions (1881, 1893, 1900, 1907) as well as in *African Nature Notes and Reminiscences*. The first two chapters of the latter are devoted to his views on protective colouration, and others are concerned with animal behaviour – including that of the man-eating lions of Tsavo. Selous condemned the senseless slaughter of both black and white rhinoceroses by Sir Cornwallis Harris in 1836–37 and William Cotton Oswell in 1844–53. He included photographs taken by Max C. Fleischmann on the Tana River (sent to him by President Roosevelt) showing a rhinoceros being caught and drowned by a crocodile which is invisible to the camera. A chapter on tsetse flies described their dependence upon different species of game. At his home in Worpleston he built a special museum for his numerous trophies. His personal collection was presented to the British Museum (Natural History) by Mrs Selous in 1919 (Dollman, 1921). He was a Fellow of the Zoological Society of London, but regrettably not of the Linnean Society.

A few days before the Great War began, the German light cruiser, *Königsberg* stole out of Dar es-Salaam harbour and, when Britain declared war on Germany, started raiding vessels off the coast of East Africa. She sank the British cruiser H.M.S. *Pegasus*, while her boilers were being de-furred in Zanzibar, then was driven by three cruisers of the South Africa station into the delta of the Rufigi River further south. Here she remained hidden in the mangrove swamps for 255 days until, on 5 July 1915, she was sunk by two shallow draft monitors, H.M.S. *Severn* and H.M.S. *Mersey*, armed with six-inch guns, which had been towed by tugs from Malta through the Red Sea. Her captain and crew then joined the forces of Lt Colonel (later General) Paul von Lettow-Vorbek, the talented and experienced commander of German forces in East Africa who, with 11,000 men, most of them Africans trained by a tiny cadre of German officers, held some 200,000 British troops at bay for the duration of the War (Mosley, 1963).

Ten 12.5 cm (4.1 inch) and two 10.5 cm (3.5 inch) guns from the *Königsberg* were dismantled for use as field artillery – an incredible feat of engineering – lifted by hundreds of askaris along elephant tracks and dragged on pontoons across rivers and bogs. Lettow-Vorbek put them to good use when he raided Kenya and Uganda and raised the German flag on Mt Kilimanjaro. It was whilst fighting against this force that Frederick Courteney Selous was eventually to die. When Lettow-Vorbek learned from an emissary of General J.C. Smuts (the Allied commander at the time) that one of his



FREDERICK COURTENAY SELOUS
Portrait study by Leo Weinthal – 1906.

pre-war friends, F.C. Selous, had been killed whilst fighting for the British, Lettow-Vorbek sent back a message of condolence and regrets.

In view of his knowledge and experience of Africa, Selous was naturally desperate to join up when war broke out; but his services were continually rejected on account of his age. Perseverance finally triumphed, however: he received a commission in 25th Royal Fusiliers and sailed to Mombasa to join the Legion of Frontiersmen in March 1915. He was promoted to Captain the following August and awarded the D.S.O. 'for

conspicuous gallantry, resource and endurance' in September, 1916. He had never believed that the war would be over quickly. Concerned that his elder son Freddy would be 18 in April and then sent to the front, he wrote in a letter to John Millais (published in 1918): 'If he goes out and gets killed it will break his mother's heart and mine too, if I should live to come home, and it will be the same for you and your wife if you lose Geoff'. Somewhat earlier he had written: 'If I should be eliminated it would not matter a bit as I have had my day'. In the event, Selous was shot through the head on 4 November 1917, whilst leading his company through the bush near Kissaki, against an enemy four times their strength. His son, Capt Freddy Selous, M.C., R.A.F.C., was also killed in action – on 6 January 1918, three months before his 20th birthday. (Capt G. de C. Millais, Bedfordshire Regiment, son of John Millais, was killed in action, 22 August 1918.)

Frederick Courteney Selous was very much a man of his time. Like H.W. Bates and A.R. Wallace before him, he was primarily a collector and a naturalist. Unlike them, he did not produce any novel scientific theory, nor did he pay much attention to invertebrates except for butterflies. But he enjoyed an even more exciting life than they did. His friend and biographer John Millais (1918¹) who was also a well known big-game hunter wrote of him: 'The best work that Selous did and the qualities for which the British Nation should be grateful to him are those which he displayed as a Pioneer.... in the life of any man it is character and example that count, and if Selous did nothing else, and had, in fact, never killed a single wild animal in his life, his name would still be one to conjure with in South Africa or wherever he wandered'. Perhaps he did merit that memorial in the Natural History Museum after all as well as the painting in the National Portrait Gallery!

An obituary published in *The Times* of 8 January 1917 is reproduced, with some omissions and verbal alterations, in the Preface (by C. Tate Regan) to Dollman's (1921) *Catalogue of the Selous Collection of Big Game in the British Museum (Natural History)*.

I would like to express my appreciation to Miss J. S. Ringrose, Pembroke College archivist, for much useful information, and to my sisters Mrs M. J. Hacon and Mrs H. J. Harvey for imparting their reminiscences about Gerald Selous and of events that occurred whilst I was away at boarding school.

J.L. CLOUDSLEY-THOMPSON
Islington, London

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1 Surprisingly, Courteney is wrongly spelled 'Courtenay' throughout this biography.

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Library

Visitors to the Library over the past few months will have found most available flat surfaces occupied by piles of publications. This is partly due to upheavals elsewhere in the building which meant that most of the contents of the bookcases in the Executive Secretary's office have had to be found temporary homes elsewhere. Other books are still "refugees" from their previous location which now houses the botanical monographs which were rearranged in subject order last summer. Meanwhile some welcome voluntary help with cataloguing has moved quantities of accumulated books from where they were hiding in boxes to more visible pyramids of books awaiting checking and shelving. We hope that with plans now in hand for reinstatement of cabinets elsewhere, we will soon be able to move things back into their new homes and reduce the visible piles of books and papers. Most visitors do not seem worried about the present situation, many seem to be reassured that they are not the only ones with heaps of things occupying every surface. We hope that with this added voluntary help we will gradually reduce the waiting time between receipt of publications and their display in the Reading Room.

Donations: September to end of December 1999

The items listed below were all received before the end of 1999. The 30 items presented in January and early February 2000 will be listed in the next Newsletter.

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Review

The History of British Mammals by Derek Yalden. Published 1999, T. & A.D. Poyser Ltd, 32 Jamestown Road, London NW1 7BY. ISBN 0-85661-110-7, Price £29.95.

Although a botanist by trade, and certainly not a specialist in the field of mammals, like many of the British public I maintain a certain lay-interest in this group of animals, and am thrilled when I catch sight of the occasional otter spraint on the West Coast, or the shadow of what I would like to believe is a badger as I walk in the woodlands around Edinburgh. However, where these easily recognisable elements of our natural heritage have come from, how the dynamics of their populations have changed over the millennia, and which of their cousins fell extinct by the wayside as our fauna and flora evolved, are questions which I have never seriously considered.

Derek Yalden's *The History of British Mammals* provides a delightful account of the history of the British mammal fauna since before the last glaciation, and gives a thoroughly researched overview of how, and why, it has changed over the last 15,000 years. What was the original mammal fauna like before the last ice-age? Which species have become extinct since the ice-caps receded and why? What was the role of man in forging our current fauna and what does the future hold for those mammals that are still with us? These are just some of the questions tackled by this book, and they are answered in an erudite but easy-going style. The book is a superb academic achievement, with every story thread backed up by hard scientific facts, and all sources of information given. As such, it will serve as an excellent reference work for those wishing to delve further into this field. I thoroughly enjoyed the book, and it has served to instill within me a greater sense of wonder and respect for our beleaguered fauna.

The first chapter starts the story by chronicling the earliest signs of mammals in Britain – principally fossilised teeth and jaw bones dating from the reptile dominated

Mesozoic era, 194 million years ago. The author discusses in some detail what can be inferred about these first shrew-like mammals, and details where these fossils were originally found. The chapter then chronicles the explosion in mammal diversity during the Tertiary era, including the arrival of the diminutive early horse *Hyracotherium*, and traces the appearance and disappearance of species up until the Pleistocene. Before the appearance of the ice caps over much of Britain, the climate was warm and the mammal fauna bizarre by today's terms, including as it did many animals that we currently associate with other continents such as beavers, gazelles, tapirs, rhinoceroses, pandas and hyaenas. Drawing evidence from a variety of academic disciplines, the chapter explores how the glacial era changed the face of our fauna until the end of the last (Devensian) glaciation, when ice sheets covered much of the British Isles.

The second chapter describes the type of habitats that existed when the ice sheets started to recede. These would initially have resembled tundra, although as the climate improved, birch woodlands developed, and evidence is given for the existence of these habitats. Woolly mammoths, reindeer, bears and elks were among those species now roaming the warming land. The chapter uses dot maps to show the known past and present (if not extinct) distribution of the species considered, and these are used throughout the remainder of the book. Most of the species are also illustrated by simple but high quality black and white drawings, and these are an attractive feature of the book. This chapter supplies detailed lists of the sites in Britain where the fossils have been found and compares the British fauna with the rest of Europe during the last glacial era (when Britain was still a part of continental Europe). Finally, it discusses the various hypotheses that attempt to explain the disappearance of many species in Britain, during the late Pleistocene. This discussion is not limited to Britain but places it in the context of the Pleistocene extinctions that were occurring all over the world.

The rest of the book continues the story from post-glacial times, concluding it by assessing our fauna at the present date. This main section of the book emphasises changes in the mammalian fauna primarily in relation to man's activities. Starting from the Mesolithic period, the book discusses in detail how land management changed through the Neolithic, Saxon and more modern eras, and what affect this had on the fauna. Once again, Dr. Yalden succeeds in bringing together hard evidence from a wide variety of disciplines including the analysis of pollen records, place names, social surveys and archaeology, to portray a vivid picture of how, and why, our fauna has changed. Throughout this section of the book, all extinctions and introductions are chronicled in detail. The list of extinctions is a depressing read, containing as it does such wonderful creatures as the elk, bear, beaver and wolf. The list of introductions, includes both the bizarre and relatively benign such as red-necked wallaby as well as the more widely recognised and often ecologically disastrous colonisers like the rabbit, the grey squirrel, the mink and the sikka deer. The deleterious affects of such introductions are highlighted in detail.

The penultimate chapter discusses the peculiar mammalian fauna of the islands associated with Britain. It shows how the fauna differs between the islands, and explores a number of intriguing questions, including why these islands are usually relatively species poor, and how isolation can lead to the evolution of different races – a famous example being the St. Kilda wood mouse. Ireland and its fauna feature very

prominently in this discussion.

The book closes by assessing the conservation status of our mammalian fauna today, looking both at those species that seem to be in irreversible decline like the greater horseshoe bat for instance, and those that are making an apparent recovery such as the otter. It explains the dynamics of our current fauna, and illustrates how it is dependent on current economic, political and social whims. It finally considers the cases for and against the re-introduction of species that have become extinct in Britain e.g. the beaver, and looks at the success of re-introduction programmes in mainland Europe. The author is clearly in favour of attempts to restore our ever dwindling mammal fauna to its former glory, and the book is his plea for greater endeavours to be made in conserving this threatened aspect of our natural heritage.

SAMUEL BRIDGEWATER,
Royal Botanic Garden Edinburgh

Obituary

Professor Arthur J. Cain FLS FRS

A Personal Reminiscence

"I am a bear of very little brain, and long words bother me"

This quote from A.A.Milne's children's book, *Winnie-the-Pooh*, was a favourite introduction to the very many public lectures given around the world by the late Professor Arthur Cain. It was certainly nicely gauged to command the attention of his audience from the start and perhaps also gently to deflate many of his often eminent, but over-verbose, contemporary authors on systematics and evolution. The biological world is greatly the poorer for the death of Arthur Cain in August 1999, after a long and highly productive career, characterised by immense scholarship, firstly at Oxford, then briefly as Professor at Manchester and finally as Professor of Zoology at Liverpool until his retirement. In a *Festschrift* number of the *Biological Journal* (1989, 39: 1–226), the authors of the preface, Bryan Clarke and David Parkin, noted how friends and colleagues were continually astonished by Arthur's breadth and depth of knowledge of all aspects of animals and plants and by the "sureness of his biological understanding". He was one of the greatest British naturalists of the 20th century.

I was fortunate to have known Arthur Cain since my own school days at Lawrence Sheriff School in Rugby, which Arthur had also earlier attended. Over many years from the pre- to post-war periods, several generations of boys experienced the inspirational teaching of the biology master there, the late Wilfred Kings. He had the enormous and rare ability to enthuse and interest pupils in all aspects of natural history. I remember an occasion when I could have been no more than 14 or 15 myself. A visit was arranged for the School Natural History Society to Oxford where Arthur was then established as Lecturer in Animal Taxonomy and Curator of Zoology in the University Museum. This was my first visit to the wonderland of that Museum and my first meeting with Arthur. My only detailed memory of the occasion was of returning home at the end of the day with the bus loaded down with duplicate specimens of all kinds which formed the basis

of the nascent school museum, in no small part due to Arthur's generosity.

My next encounter with Arthur was in the student/tutor relationship when I went up to Oxford to read Zoology in 1953. It was only a year after this that his seminal volume, *Animal Species and their Evolution*, appeared (1954). I still treasure my very well-thumbed and annotated copy from those days. Fortunately for modern students the book was reprinted more recently in paperback (1993). This book was certainly the biggest single influence in persuading me to what has been my own lifelong interest and enthusiasm for understanding the nature of species and their evolution. Tutorials with Arthur were at once stimulating and awe-inspiring experiences. Oxford was anyway an exciting place at that time with a group of well-known zoologists who were determined to study evolution in the field and to quantify real selection pressures. Arthur's collaboration with his great friend, the late Philip Sheppard, whom he later joined at Liverpool, resulted in their classic publications on the ecological and evolutionary genetics of the well-known, but then little understood, colour polymorphisms of the common land snail, *Cepaea nemoralis* (for example, 1952 & 1954). These studies stimulated his lifelong interest in natural selection. A recurring theme of his work was the overwhelming importance of natural selection in determining gene frequencies, and therefore the phenotypic characteristics, of animal populations. He argued very strongly for the generally overriding effects of natural selection in maintaining even often apparently trivial characters. His effective advocacy of what was more and more seen as an extreme selectionist view led over the years to many vigorous arguments and exchanges of view. Perhaps most notable and widely publicised was that with Gould and Lewontin (1979) concerning their famous paper on *The spandrels of San Marco and the Panglossian paradigm: a critique of the adaptationist programme*. Arthur's strong and continuing attacks on the ideas expressed there (1979 & 1988) are very persuasive. These papers well merit re-reading. Perhaps his fullest and most clearly advocated statement of the selectionist argument was in his essay, *The Perfection of Animals*, originally published in an obscure volume in 1964, but republished and now easily available as part of the *Festschrift* number of the *Biological Journal* (1989) mentioned above. Contrary to the attacks of some critics, Arthur never claimed that selectively neutral characters did not, or could not, exist. What he did challenge was the assumption that apparently trivial phenotypic features were necessarily selectively neutral. It is still surely hard to disagree with this view.

Arthur contributed widely to many areas of evolutionary and systematic biology. Though land snails and slugs were undoubtedly his first love and occupied him throughout his life, he also published significantly on birds, particularly parrots and fruit pigeons, earthworms and other oligochaete worms, and on plants. He even published at least one paper on insects! However, in addition to his studies on natural selection, his most lasting contributions to science will probably be his writings on the philosophy, theory and practice of taxonomy. All of his publications reflect a deep and fundamental knowledge and understanding of the history of taxonomy and systematics. His classic papers of 1958 and 1959 published in the Proceedings of our Society, were the first to demonstrate clearly the details and origins of Linnaeus' own methods and how they were further developed and transmuted by his successors, including, most notably, Charles Darwin. Together with G.A. Harrison (1958 & 1960),

he established the new term *phenetic* and helped to launch the subject of phenetics. His interest in the history of ideas in taxonomy continued well into his retirement when he was often to be found at work in the Society library. One of his last papers (1995) was an analysis and critique of Linnaeus' natural and artificial arrangements of plants.

Returning to a more personal note, Arthur was always a kind friend and unstinting in his willingness to help by spending time in university departments and institutions other than his own. I was particularly fortunate that he was a regular visitor to Cardiff during the 1960s, 70s and 80s, when he was always happy to talk to our students. He even once came on a local field course with us! My own family got to know him well and looked forward with anticipation to his visits. My elder son still remembers him as the visiting professor who taught him to roar like a lion, and my daughter, when she was very young, lost her parents in an exchange of quotes with Arthur from *Winnie-the-Pooh*, *Alice in Wonderland* and other children's classics! A high point one day was at breakfast when he suddenly produced with great enthusiasm a sandwich box, only for us to discover that it contained several live Kerry Slugs, *Geomalacus maculosus*, that he had brought back from a recent visit to SW Ireland! We, like his many other friends and family, will miss that enthusiasm and his enormous erudition.

Arthur Cain was elected a Fellow of the Linnean Society in 1950 and recipient of the Linnean Medal in 1985. We are fortunate that so many of his important papers were published in our journals.

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