

Anniversary Meeting 2001

**to be held in the Society's rooms on
Thursday, 24th May 2001 at 5pm**

1. Welcome to members and guests.
2. Admission of Fellows.
3. Apologies for absence.
4. Minutes of meeting held on 9/10/11th April 2001, which have been posted in the Society's Rooms.
5. Third Reading of Certificates of Recommendation for a Fellow *Honoris causa* (Mr. RGC Desmond) and three Foreign Members (FMLS) (Prof. LL Cavalli-Sforza (USA), Prof. HW Lack (Germany) & Dr. P Mather (Australia)).
6. Appointment of three scrutineers.
7. (a) Ballot for Members of Council (blue; see Council Nominees overleaf)
(b) Ballot for a Fellow *Honoris causa* and three FMLS (pink)
(c) Ballot for Officers (yellow)
(d) Ballot for Fellows and Associates (white)
8. Citations and Presentations of Medals and Awards
Linnean Medal for Botany: Prof. CJ Humphries FLS
Linnean Medal for Zoology: Dr. GJ Nelson FMLS
HH Bloomer Award for an amateur who has made a notable contribution to science: Dr. H Hess
Bicentenary Medal for a biologist under 40: Dr. M Wilkinson FLS
Jill Smythies Prize for botanical illustration: Mr Juan Luis Castillo
Irene Manton Prize for a PhD thesis in botany: n/a
9. Treasurer's Report for 2000.
10. Motion to Accept Accounts for 2000.
11. Appointment of Auditors for 2001.
12. Appointment of Bankers for 2001.
13. Contributions 2002.
14. President's address.
15. Vote of Thanks.
16. Result of Ballots and any casting votes.
 - A. Council
 - B. Fellow *Honoris causa* and Foreign Members
 - C. Officers
 - i President
 - ii Treasurer
 - iii Zoological Secretary
 - iv Botanical Secretary
 - v Editorial Secretary
 - D. Fellows and Associates.
16. Names of the Vice-Presidents.
17. Any other valid business.
18. Close.

Council Nominations

Henry Ernest Gee (1990) is a Senior Editor of *Nature* and a former Regents' Professor in the University of California. He is the author of two books, *Before The Backbone: View on the Origin of the Vertebrates*, and more recently *Deep Time: Cladistics, the Revolution in Evolution*. He is interested in all areas of organismal biology. He was a member of the Council of the Linnean Society 1993–1996.

Mark Dennis Griffiths (1987), Magdalen College, Oxford (BA, English, 1985), Diploma Student, RBG Kew 1987. Author and Editor. Main publications include *The New RHS Dictionary of Gardening* (1992: Editor and main contributor); *The RHS Index of Garden Plants* (1994); *The RHS Manuals* (1994–1996: series Editor and co-author); *A Century of Photographs: Gardening* (2000); *The Language of Life* (2001), and contributions to numerous journals and newspapers. Member of various committees and editorial boards at the RHS and, since January 2000, Horticultural Correspondent of *The Times*. Special interests include the history of natural history, taxonomy of cultivated plants, botanical art, botanical Latin, publishing and the flora and language of Japan.

Adrian Mark Lister (1992) obtained his PhD from Cambridge in 1981 and is Reader in Evolutionary Biology at UCL. His research interests are in Quaternary (Ice Age) mammals, especially their evolution and extinction. Member of the International Commission on Zoological Nomenclature, founder member of the Centre for Ecology and Evolution and Assistant Editor (Mammals) of *Zoological Journal of the Linnean Society*. Co-organiser of the highly successful 1999 Linnean Society meeting Evolution on Planet Earth: the impact of the physical environment.

Ernest Charles Nelson (1973) is a graduate of the University of Wales (Aberystwyth) and of the Australian National University. Dr. Nelson is an authority on Irish gardens and garden plants and was horticultural taxonomist at the National Botanic Gardens, Glasnevin, Dublin 1976–95. He is now a self-employed author and botanical consultant. His research interests include *Erica* and the history of botanical exploration. He is an honorary editor of *Archives of Natural History* and the *Yearbook of the Heather Society*.

Sandra Diane Knapp (1988) is a specialist in the taxonomy and evolution of the Solanaceae, especially the large tropical genus *Solanum*. She received her BA from Pomona College, Claremont, California and her PhD from Cornell with a thesis on the taxonomy of a large Neotropical group of solanums (*Solanum* section *Geminata* (G. Don) Walpers) under the direction of the late Michael D. Whalen. Here she realised that the only way one could be an academic and still be outdoors more than half the time was to be a botanist. She studied plant ecology for a year at the University of California at Irvine and spent nearly three of her six years at Cornell in the Neotropics collecting plants. She has collected for the Missouri Botanical Garden in Panama and Peru. She spent time at the Institute for Botanical Exploration at Mississippi State University and took up her current post at The Natural History Museum in London as one of the editors of the international project *Flora Mesoamericana* in 1992.

Editorial

This issue contains an historical article on the subject of the last issue's quiz, Cuthbert Collingwood, who was one of the persons present at the meeting of 14 July 1858 at which the Darwin/Wallace papers were read.

Following Agassiz's critical review of *The Origin* in 1860, Collingwood became convinced by the weight of evidence that Agassiz had marshalled against the Darwin/Wallace theory. Consequently he produced two papers in support of Agassiz: "On Homorphis: or organic representative form" (*Proc. Lit. Philos. Soc. Liverpool*, No. 14:181–216, 1860) and, "On recurrent animal form and its significance in systematic zoology" (*Ann. Mag. Nat. Hist.*, 6:81–91, 1860). In the first he discussed Agassiz's view that polymorphism within a species accounted for more variation than could be created by the hybridisation of domestic animals, and argued that Darwin had ignored such phenomena as the alternation of generations. In both papers he argued "that agreement of habit in widely-separated groups is accompanied by similarity of form". He sent both papers to Darwin who, in an exchange of letters, registered surprise that Collingwood had rejected his views, adding:

"I entirely agree with you that there is no more direct proof of variation being unlimited in amount than there is that it is strictly limited .. I see no essential difference between alternative generation and metamorphosis: you I presume, take some very different view. –

I forget what Agassiz says on the subject – I quite agree with you that Agassiz's Review is not in the least unfair." (14 March 1861)

The following month Darwin wrote at length to H.W. Bates (14 April 1861), and in his concluding paragraph first mentions mimetic analogies and Collingwood's assertions:

"I am glad to hear that you have specially attended to "mimetic" analogies – a most curious subject. – I hope you will publish on it. I have for a long time wished to know whether what Dr Collingwood asserts, is true, that the most striking cases generally occur between insects inhabiting the same country. – Believe me, Yours most truly obliged, Charles Darwin

Later that year (21 November 1861) H.W. Bates read his paper on mimetic butterflies before the Linnean Society. Darwin, in anticipation of the publication, wrote to Bates (25 September 1861):

"What a capital paper yours will be on mimetic resemblances. – You will make quite a new subject of it. – I had thought of such cases as a difficulty, & once when corresponding with Dr Collingwood, I thought of your explanation; but I drove it from my mind, for I felt that I had not knowledge to judge one way or the other. Dr C., I think, states that the mimetic forms inhabit same country; but I did not know whether to believe him. – What wonderful cases yours seem to be. – Could you not give a few woodcuts in your Travels to illustrate this? –

Bates, in reply (30 September 1861), first wrote about *Volucella* flies which resembled Humble bees and then, referring to mimicry in general, added:

“Dr Collingwood’s paper “on recurrent animal forms” does not touch this class of facts, either in description or explanation. All that he can say is that similar habits &c will produce analogical resemblance between species belonging to widely different families. But ours are not general resemblances as far as external appearance is concerned. But, as I have shown in the paper I mentioned to you, – the causes which produce close specific resemblances do not & cannot operate except in those forms which are already made generally similar by the operation of other causes.”

In conclusion we can say that Bates’ paper on mimicry (21 November 1861) dealt a hammer blow to theories such as Collingwood’s based on analogies.

Society News

Following the report in the January issue that receipt of *The Linnean* by Members outside Europe has not been as good as it might have been, enquiries have revealed that, despite an instruction a couple of years ago that all non-European mailings should go by air following continued complaints from Members, the instruction was not acted on by the carriers. A sizeable slice of humble pie has been consumed by those responsible and we hope that things will now improve. Staff at the Society now monitor a limited number of Members to see when *The Linnean* arrives; we are most grateful for these Members’ cooperation.

The Society has received the generous donation from the National Museums and Galleries of Merseyside of a fine 19th Century mahogany bookcase, which was formerly located in the Liverpool Museum’s Director’s office and later transferred to the Botany Department of the Museum. It is believed to date from the time of Henry Ogg Forbes ALS, Director of the Museum. The bookcase, with a frontage 9×9ft, arrived as a flatpack, and has been expertly reassembled, restored, French-polished and had keys made for its locks. It is in the Executive Secretary’s office.

The **2001 Conversazione** will now take place at the Millennium Seedbank at Wakehurst Place on **Saturday, 6th October between 3 and 6pm**. Numbers will be limited. We are most grateful to the Royal Botanic Gardens, Kew for allowing us to meet there. A booking form will be sent with *The Linnean* for July.

The Society has affiliated to the **British Association for the Advancement of Science**. Any Society Member wishing to join the Association is entitled to do so at a 20% discount. Enquiries to baas@lancaster.ac.uk or to freepost NWW 2368A, Lancaster LA1 4ZZ.

Peter Boyce FLS and Simon Mayo of the Royal Botanic Gardens, Kew share with Josef Bogner of the Munich Botanic Garden the **Henry Allen Gleason Award** for *The Genera of Araceae*. The award, an annual one, was made to Peter Boyce at *Botany 2000* in Portland, Oregon. Mr. Nigel J. Mussett FLS became an MBE in the **New Year’s Honours**. To all these we offer our congratulations.

Each year the Society offers two awards, the **Irene Manton Prize** and the **Jill Smythies Award**. The next Irene Manton Prize will be awarded for the best thesis in botany examined for a doctorate of philosophy during the period September 2000 to August 2001. It is open to candidates whose research has been carried out whilst

registered at any institution in the United Kingdom. Theses on the full range of plant sciences are eligible. The closing date for nominations, which must be made by the nominee's head of department, is **30th September 2001**. The Prize consists of a work of art to which the Society has added £1000.

The Jill Smythies Award is for published illustrations, such as drawings or paintings, in aid of plant identification, with the emphasis on botanical accuracy and the accurate portrayal of diagnostic characteristics. Illustrations of cultivars of garden origin are not eligible. It consists of a silver medal and £1000. The closing date for applications or nominations for the 2002 Award is also **30th September 2001**.

The Council has approved guidelines for the **Dennis Stanfield Awards** and for grants from the newly established **Side, Bonhote, Omer-Cooper & Westwood Fund**.

Normally, a successful proposal to the **Dennis Stanfield Fund** is for basic research in the areas of African plant taxonomy and plant ecology, providing the proposal is clearly circumscribed, achievable within defined time limits, and possesses a realistic budget. It will have well-focused aims and objectives with specific outputs. Proposals showing evidence of collaboration with other individuals and organisations will be favoured.

For grants from the **Side, Bonhote, Omer-Cooper & Westwood Fund** the following guidelines apply:

1. Support is offered for proposals for sound research in systematic biology with achievable objectives, or special features of the publication of that research, e.g. artwork.
2. The total sum available is normally £7–8000.
3. Individual grants do not normally exceed £3000.
4. Grants do not support any aspect of conferences, meetings or expeditions, including attendance.
5. Grants do not support the normal processes of undergraduate/post-graduate courses, but are available for unforeseen or extra-curricular activity.
6. The Society particularly welcomes proposals or recommendations from Fellows.

The closing date for applications for the Dennis Stanfield and Side Bonhote Omer-Cooper & Westwood awards is 31st March; in the case of the Dennis Stanfield Award, every even-numbered year.

The Society would be very grateful if Members could make these awards more widely known. Further details are available from the Society.

The millennial year proved to be good for plumbers in the Society, if no-one else. We are fortunate in having access to excellent skilled support here. Some £7000 has been expended on plumbing in 2000, including a new sewer pipe for the flat; the picture overleaf shows the lead pipe which has caused innumerable blockages and floods in the flat and Library; the flattened cross-section (which caused the blockages) and a spectacular crack in the pipe (which caused leaks into the Library) are clearly visible. Two plumbers and a carpenter took two weeks to remove the lead pipe and replace it with a plastic one and very well, too. Our Victorian forebears did not have all the answers. The downstairs gents' loo also had difficulties and a new valve had to be fitted. Incidentally, in 1999 we fitted a controller which, when the gents' loos have not been used for 20 minutes, turns off the water supply. We believe this simple device,



The bent and broken lead pipe which has now been replaced.

costing some £350 to purchase and install, is saving half our (metered) water bill, or nearly £1000pa. We have also fitted a sump pump in the boilerhouse, the lowest point in our building. Should the boilerhouse flood, a pump automatically attempts to empty it into a drain and also disconnects the electricity and gas. If the water level continues to rise so that water overwhelms the boilers, they will, hopefully, have cooled enough not to sustain severe damage. With the routine vicissitudes of damaged toilets, sticking ball valves and routine maintenance, it all adds up.

The **Freshwater Biological Association** is holding its Annual Scientific Meeting at Royal Holloway, University of London under the general title Making Freshwater Science Work. e-mail Sarah Gee at sage@fba.org.uk or write to the FBA at The Ferry House, Far Sawrey, Ambleside, Cumbria LA22 0LP.

Members' attention is drawn to **EURECO '02**, the IX European Ecological Congress at Lund University, Sweden, 27 July–1 August 2002. The general theme of the Congress is Trends in Ecology, with four umbrella themes, species interactions, spatiotemporal scaling and hierarchy of processes, disturbances, and interfaces. Preliminary registration and further information at <http://www.eurecol.org> or by e-mail to infoeureco2002@eurecol.org.

The Programmetric and Remote Sensing Societies have merged into the **Remote Sensing and Programmetric Society**; their first joint annual meeting is on 12–14 September 2001 here in London entitled Geomatics, Earth Observation and the Information Society. More from rss@nottingham.ac.uk or write to the RSPS Office, School of Geography, University of Nottingham, University Park, Nottingham NG7 2RD.

In Praise of Toadstools



In 1974 when Toadstools were generally considered as interlopers to be destroyed, Suzanne Lucas set out to prove their beauty and interest. She published two volumes of her paintings, "In Praise of Toadstools", acquired by universities and botanical institutions throughout the world, and has been invited twice to show part of her work at the Linnean Society's meetings. Her paintings were awarded no fewer than 13 Royal Horticultural Society's Gold Medals between 1975 and 1988. Now there is to be a unique presentation of 336 paintings in conjunction with the Annual "Flowers & Gardens" Exhibition of the Society of Botanical Artists.

It is possible that this unique collection might be for sale in entirety to an interested Institution or private collector. For further information, including book sales, please contact Suzanne Lucas FLS, BMS, PRMS, FPSBA, HSF, Hon Director ASBA (USA), Hon SWA, Hon MAA, Hon MASF, Ladymead, Manor Road, Mere, Wiltshire BA12 6HQ. Tel 01747 860311

**The Exhibition will be held at the Westminster Gallery
Central Hall Westminster, Storey's Gate, London SW1H 9NH.**

**Entrance is free. If you would like a Private View Invitation for May 10th please contact the Executive Secretary, SBA,
1 Knapp Cottages, Wyke, Gillingham, Dorset SP8 4NQ.
Telephone +44 (0) 1747 825718**

The Exhibition runs from May 11th to 20th, opening from 10am to 5pm each day, late night opening until 7pm on 17th May. Toadstool Exhibit closes 1pm 20th May

Professor John Parker, Director of the **Cambridge University Botanic Garden** writes to say that he is delighted to report that the Plant Systematics course organised in the summer of the past two years will run again in 2001 self-funded. This is a course which the Society has supported in the past and feedback from participating Members has been excellent. We, too, are pleased that the course will be able to continue. Details can be found in the flier with this issue.

The **Charles Darwin Trust**, four of whose five trustees are Fellows – Professor Bryan Clarke FRS, Professor Keith Thomson, Professor Steve Jones and Mr. Stephen Keynes – has issued a statement of its plans. The Trust has announced that it is seeking an architect to design an innovative educational facility, The Charles Darwin Centre, devoted to exploring the importance and development of evolutionary theory and its broader implications. The new Centre will be close to Down House in the village of Downe, the home of Charles Darwin (1809–1882) where he wrote *On the Origin of Species*, first published in 1859. For more information, please contact Stephen Keynes FLS, Trustee and Secretary of the Charles Darwin Trust, 14 Canonbury Park South, London N1 2JJ, and great-grandson of the great man.

The three aims of the Trust are to foster critical and provocative thinking on evolutionary and biological issues; to accelerate the communication and utilisation of new research; and to inspire younger generations to focus on evolutionary thinking and contribute to scientific innovation. In the USA, a recent poll conducted by the National Science Board notes that a majority of Americans reject the fact that humans developed from earlier species; in fact, only 9% believe that Man developed over millions of years from less advanced forms of life and that God had no part in this process. Eighty percent of Americans believe that creationism should be taught in US schools. Evolution is considered as undesirable an issue as gun control. In some states, notably Kansas and Kentucky, evolution is not taught in schools at all. In Louisiana, many teachers are reported to be in favour of creationism. Apparently “the monkey mythology of Darwin is the cause of permissiveness, promiscuity, pills, prophylactics, perversions, abortion, pornotherapy (what’s this? - Ed.), pollution, poisoning, and proliferation of crimes of all types” according to a Supreme Court judge in Georgia. Phew! What, we wonder, does the judge make of fossil *Cirripeda*? Or climbing plants? Or earthworms? Surely something subversive there? No? Well, in the light of these comments it is reassuring that Michael Shermer, author in 1997 of *Why People Believe Weird Things: Pseudoscience, Superstition and Other Confusions of Our Time* (New York: Freeman), has recently been elected a Fellow. He is the Editor of the *Skeptic* magazine and has already offered the Society a **Baloney Detection Kit**. It looks like we might need it if, as seems invariably the rule, US fads trickle into this country some time after their birth on the other side of the pond. By the time George III had signed the original Charter of the Society in 1802, the damage had been done. More can be found in **Moore R. 2000** The revival of creationism in the United States. *J. Biol. Education* **35**: 17–21.

JOHN MARSDEN

Picture Quiz

Cuthbert Collingwood (1826–1908)

The January Picture Quiz (17(1):15) featured yet another of our Fellows who was present at the reading of the Darwin/Wallace papers on 1 July 1858.

It has been established that Cuthbert Collingwood was born at Christchurch, Hampshire on Christmas Day 1826, the fifth of six sons of architect and contractor Samuel Collingwood and his wife Frances, daughter of another Samuel Collingwood, printer of Oxford University. The Collingwoods were a Greenwich family possibly related to Admiral Collingwood (1750–1810). Cuthbert sought to make a career in natural history but at that time the only hope of such work was via medicine, botany being then a necessary part of the training. He matriculated in 1848, graduating BA (Oxford) in 1849, MA in 1852, B.Med. in 1854 and M.R.C.P. (London) in 1859. He also studied in Paris



where in 1851 he “attended the courses of M. Richard at Paris and some of the herborisations of Adrien de Jussieu” (Collingwood, 1868b) and from November 1855 until May 1856 he was in Vienna. In his manuscript *Personal Reminiscences* (1) he stated that he was studying under Professor Ernst Brucke, Professor of Histology at the Allgemeine Krankhaus, but gave no details of the courses he was taking.

Parallel to his medical studies he continued his natural history interests. In Oxford he attended three courses on geology, palaeontology and mineralogy given by the Very Reverend William Buckland of whom he wrote in 1907: “My very first geological instructor. His lectures very unconventional”. In the summers of 1848 and 1849 he attended the lectures of J.H. Balfour in Edinburgh and wrote affectionately in his manuscript:

“The time of my attending the Botany Lectures at the Botanic Gardens of that University was one of the pleasantest times of my life. I believe I was a favourite pupil of Dr Balfour’s and took his prize. He was a general favourite of his large class, and his lectures were very interesting and well illustrated. But Botanical Excursions were also delightful, and took place every Saturday during the summer session. He was a tough, wiry little man, and went among his students by the name of “Woody Fibre” and our walks were never too much for him. Many a pleasant ramble about Scotland have I taken on these occasions, from the near neighbourhood of Edinburgh with the old ruined castles and combes to more distant places, such as Aberdeen, the most distant point we attained to, so as to return the same day. Tantallon Castle, Craigmillar, the Bass Rock, with its myriads of Solan Geese, and other sea-birds, and many other places did we visit. On one occasion we were out three days, rambling over the picturesque Clova Mountains, above Kirriemuir (Thrums) and filling our vascula with choice and rare Alpine plants.”

On his return to Greenwich, Collingwood became the Honorary Secretary of the Greenwich Natural History Club which in 1859 published, *The Fauna of Blackheath and its Vicinity. Part I. Vertebrate Animals, being the First Report of the Zoological Committee of the Natural History Club*. Although Collingwood's name is not on the title page he is known to have prepared this First Report.

Collingwood's first post was a short-lived appointment as Clinical Clerk at Guy's Hospital, London in 1858. There he worked under Dr Thomas Addison who was then investigating what became known as Addison's Disease (1). However, in the same year, Collingwood became Lecturer in Botany at the Royal Infirmary Medical School, Liverpool, and from 1859 was also Physician at the Northern Hospital in the same city. He was proud of his position as Botany Lecturer and had his inaugural address (May 1858) privately printed for distribution (Collingwood, 1858). In 1862 he accepted the invitation of the School of Science (also of Liverpool) to be Lecturer in Vegetable Physiology and Botany.

In Liverpool Collingwood's natural history interests blossomed. He became friendly with J.B. Edwards (a chemist) and got to know local naturalists. At this time there was in Liverpool a number of dedicated marine biologists (2) including John Price, a teacher, whose special interest was nudibranchate molluscs. These lovely animals were also studied by Collingwood whose field-notes of the explorations by him and his companions of the shores of the Mersey and Dee make fascinating reading today. How they set out at 4am "to catch the tide" at Hilbre (3); how on a bitterly cold February day he and Edwards went to see what the Dingle rocks might yield, but Edwards fell in! "So we fished him out and went home."

The British Association for the Advancement of Science (BAAS) recognised the value of the work done by this group and in 1860 awarded a grant of £5 towards the cost of dredging in the Mersey estuary to investigate the marine fauna. The committee appointed to organise this project comprised J. Gwyn Jeffreys (4), Higgins, Collingwood and Byerley. Though much was achieved, only a preliminary account was ever published (Collingwood & Byerley, 1862); the promised "fuller and more complete record" did not materialise. Comparison of the fauna recorded by the group with that of the present day, taking Hilbre as an example, shows what changes have taken place. The fauna was richer in Collingwood's time and this is well shown in the nudibranchiate molluscs, a well-worked group. In the early part of the nineteenth century (up to 1866 when Collingwood left Liverpool) 23 species were recorded from Hilbre; in 1937–1941 only twelve species were found (N. McMillan) and in 1978–80 only six species (Craggs, 1982: 151–152).

Collingwood gave enthusiastic support to the infant Liverpool Naturalists Field Club (founded 1860), whose field trips were so popular that the number of members taking part soared into the hundreds. Indeed, Collingwood feared that the numbers participating might become unmanageable.

From the opening of the Liverpool Free Public Museum in 1853, T.J. Moore (the first Curator), fostered contacts with the numerous sea-captains then sailing out of Liverpool. He urged them to collect natural history specimens for the Museum and so persuasive was he that between 1853 and 1871 no fewer than fifty-two captains donated material, sometimes in considerable quantity. Collingwood also tried to encourage

collection of natural history specimens for the Museum and in 1861 read a paper to the BAAS in Manchester on “A scheme to induce the Mercantile Marine to assist in the advancement of science by the intelligent collection of objects of natural history from all parts of the globe”. This appears to have been the basis for the “manual of instruction” that the Literary and Philosophical Society of Liverpool, in 1860, recommended be drawn up.

Collingwood was anxious to extend his marine researches into tropical waters. A Greenwich family friend, John Williams Reed, was a captain in the Navy and somehow the idea arose of Collingwood going on one of Reed’s surveying cruises as unpaid surgeon/naturalist. He wrote to J.D. Hooker asking for his support, but Hooker declined on the plea that he was a botanist and not a zoologist. Nevertheless, he wrote praising Collingwood’s ability and enthusiasm to Captain Hall (*in litt.* 7 February 1866) secretary to the First Lord of the Admiralty.

As Collingwood was already a correspondent of Darwin it was natural for him to consult Darwin before going to China (5):

“I am shortly going out to the East in the capacity of Naturalist (unpaid) in the “Rifleman” surveying vessel; with my friend Captain J.W. Reed we shall proceed overland to Hongkong & first do some business among the reefs in the China Sea, & I hope also to have opportunity of collecting among the islands of the East Indian Archipelago.

I naturally turned to the “Journal of Researches” by yourself, & also to the problems held out for solution in the “Origin of Species” & I should be sorry to go without having first communicated with you.

I very much regret to hear from Dr Hooker that your health is so very poor at present I can hardly hope for a personal interview with you, but should you wish to make any communication or suggestion, I should receive it with the greatest respect and pleasure & I should be very glad of any hints which your experience may enable you to give me.

My time is now limited & although I could not move in the matter, I find myself now within little more than 3 weeks of starting on my journey.

I shall have to come down to Liverpool for a few days to wind up my affairs there & then I shall be able to devote the rest of my time in preparation for my voyage.”

(15 February 1866)

To this Darwin replied the following day:

“I am very sorry that the state of my health & your short time will prevent us meeting. You have my cordial good wishes & success in every way. As I do not know the Malay Arch. or coast of China I have no special suggestions, nor indeed any general ones of any novelty, but I may mention a few points which I shd. myself especially attend to if I were going myself on the expedition. Enquire after & search any caverns in the Malay Arch. for fossil bones and all recent deposits for the same. If you have the means nothing would give more valuable results than deep sea dredging in the Tropics. If you ascend any moderately high Mts. & are acquainted with glacial action, it would be well to observe on this subject. If you fish in open ocean for minute surface animals, look out for seeds, & attend to all occasional means of distribution. Domestic animals have generally been neglected by travelling naturalists. Their history, peculiarities, & care taken in breeding

them ought to be attended to. I may add one little point which I have been surprised has been so rarely noticed, viz. are the gestures & expression of countenance under various emotions with real savages the same as with us?"

The adventure began when "by the Marseilles mail" Collingwood set out on February 16 1866 and reached Hong Kong on April 20th to join Captain Reed's ship *H.M.S. Rifleman*, but found that she would not be ready to sail for some time. However, he joined *H.M.S. Serpent* under Captain Charles Bullock and shared his cabin. Captain Bullock made him welcome and was both kind and helpful.

The China Sea cruises are well described in Collingwood's book *Rambles of a Naturalist on the Shores and Waters of the China Sea: observations in natural history during a voyage to China, Formosa, Borneo, Singapore etc. made in Her Majesty's vessels in 1866 and 1867* (1868). Certainly Collingwood did all he could to make the results of his cruises available to the scientific world by his numerous notes and papers in various journals as well as in his book. The birds were reported by Swinhoe (1870) and some birds, with molluscs and other invertebrates, were given to Liverpool Museum in 1870, although few have survived.

As for his favourites, the nudibranch molluscs, Collingwood tried to ensure that his finds were adequately published (Collingwood, 1868a; 1879b; 1881). He had consulted Hancock who replied that he might use Kelaart's drawings of tropical nudibranchs (see Pethiyagoda & Arachchi, 1997: 227–228). Kelaart had died in 1860 and his drawings were in Hancock's possession. The latter gave them to Collingwood who, in 1900, gave them and his own drawings, 95 in all, to the Linnean Society of London. However, after all his efforts, when Pruvot-Fol (1935) revised Collingwood's nudibranch species she reduced many of them to synonyms.

Planarian specimens, collected by both Kelaart and Collingwood, were recorded by the latter (Collingwood, 1879a). The China Sea crustaceans were entrusted to Spence Bate, and Collingwood claimed (1868b) that the following new names were erected by Bate – *Spongaceter* n.gen. p.125 footnote; *Melia grossimana* p.150; *Sphaeropoeia Collingwoodii* p.250 footnote. Plants from Pratas Island were sent to Kew and are recorded in *Flora Malesiana* (van Steenis, 1950) which gives the itinerary of the China Sea voyages, adding "from the book it could not be derived whether botanical collections were made".

After Collingwood's return in 1868 from his China Sea cruises he tried to obtain a post as a scientist; he was medically qualified and held a Ministry of Education Diploma in Animal Physiology and Zoology, Botany and Vegetable Physiology, yet his applications for scientific posts were unsuccessful.

Cain (1984) has pointed out Collingwood's sound work in establishing and admirably arguing "that agreement of habit in widely-separated groups is accompanied by similarity of form" (Collingwood, 180b: 86), in other words, adaptive convergence. "But it would be 'adaptive similarity' only to Collingwood" (Cain, *in litt.* 26 October 1997). Collingwood clearly recognised the importance of his idea for his statement (quoted above) was underlined.

In his manuscript memoir of 1907 (1) Collingwood wrote of Darwin: "I knew him personally and by correspondence. I had one or two very long and interesting letters

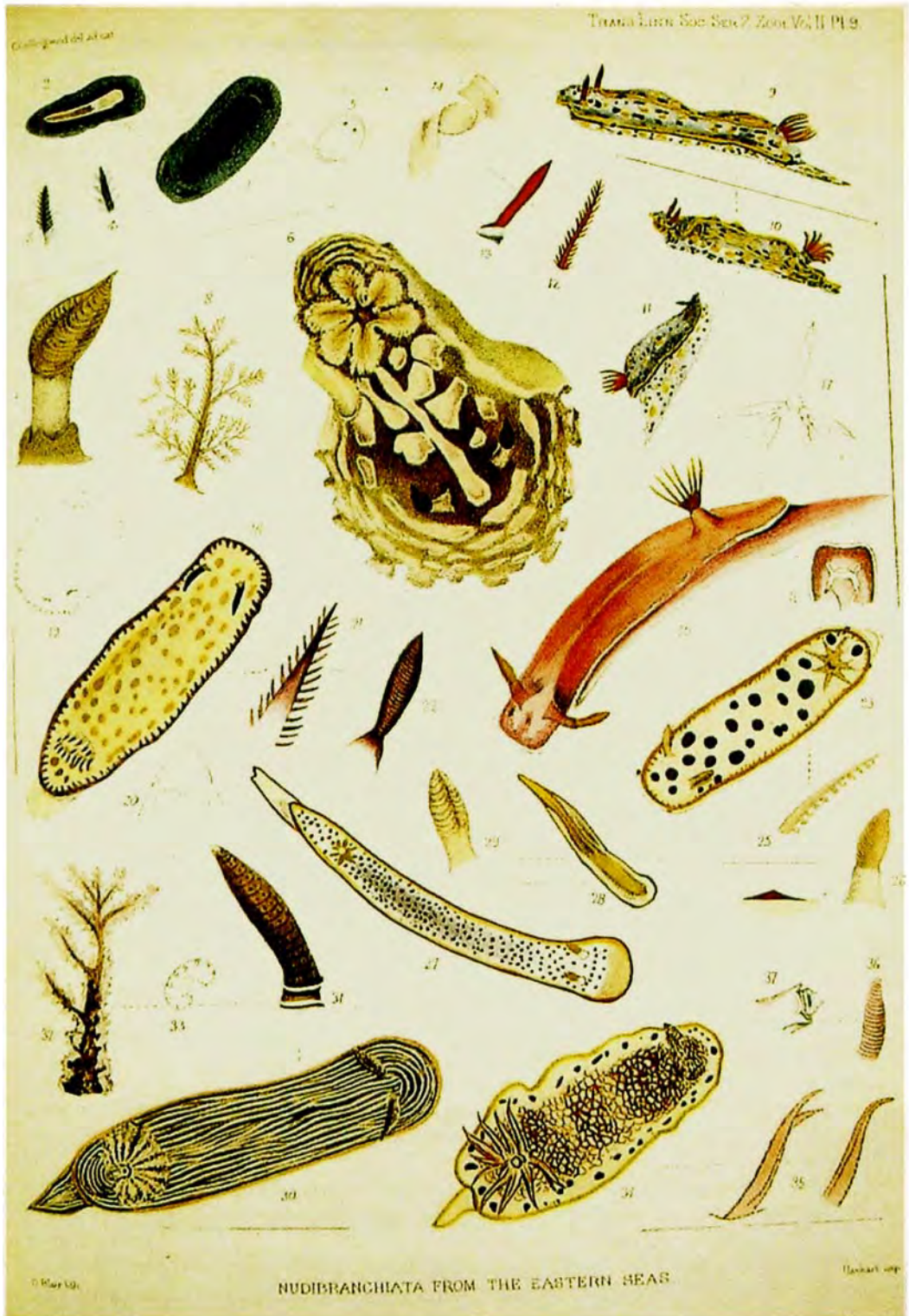


Illustration from Collingwood (1881).

from him, one of which I subsequently sold for two guineas". This letter of 14 March 1861 is reproduced here for its interest.

"I am much obliged for your long letter, as I always like to know how naturalists view the subject. I feel not a shade of surprise at your entirely rejecting my views; my surprise is that I have been successful in converting some few naturalists Botanists, Zoologists, & Geologists. In several cases the conversion has been very slow & that is the only sort of conversion which I respect. I entirely agree with you that there is no more direct proof of variation being unlimited in [erased] amount than there is that it is strictly limited. In a new and corrected Edit. of the Origin, which will appear in about a week or two, I have pointed this as emphatically as I could. I did not formerly explicitly say this (but indirectly in several places) because I thought it was obvious. The manner in which I wish to approach the whole subject, & in which it seems to me it may fairly be approached, I can best illustrate by the case of Light. The Ether is hypothetical, as are its undulations; but as the undulatory hypothesis groups together & explains a multitude of phenomena, it is universally now admitted as the true theory. The undulations in the ether are considered in some degree probable, because sound is produced by undulation in air. So natural selection, I look at as in some degree probable, or possible, because we know what artificial selection can do. But I believe in Nat. Selection, not because I can find in any single case that it has changed one species into another, but because it groups & explains well (as it seems to me) a host of facts in Classification, Embryology, Morphology, rudimentary organs, Geological succession & Distribution. I have no space to discuss the many points alluded to in your letter, I cannot see such perfection in structure as you do. In the new Edit. I have attempted to explain how it is that many live forms have not [erasure] [erasure] progressed to a higher grade of organisation.

I did not allude to the very curious subject of "alternate generations", because I did not, & do not yet, see, how it has any special bearing on my views. I look at alternate generations, as not essentially differing from various stages in any one individual larva a form of formation being merely added at some stage.

Under this point of view I see no essential differences between alternate generations & metamorphosis: you, I presume, take some very different view. I forget what Agassiz says on [the] subject. I quite agree with you that Agassiz's Review is not in the least unfair. He misunderstands me a good deal.

His "categories of thought", "prophetic types" & his views on classification are to me merely empty sounds. To others they seem full of meaning.

I received several months ago, & thank you for, a very curious pamphlet on representative forms (or some such title) which interested me very much.

[P.S.] I am much pleased about and grateful for the sentences which you kindly copy from a recent letter from Agassiz. I once met him, & was charmed with him."

The reference in the above letter to "a very curious pamphlet on representative forms" is to Collingwood's paper on "Homomorphism or organic representative form" (1860a). However, the percipient Collingwood, who clearly had grasped the basic idea, remained a staunch supporter of Agassiz. He (Collingwood, 1861b) strongly supported Agassiz's stand (1860) against the Rev. H.H. Higgins (1861) clergyman and excellent

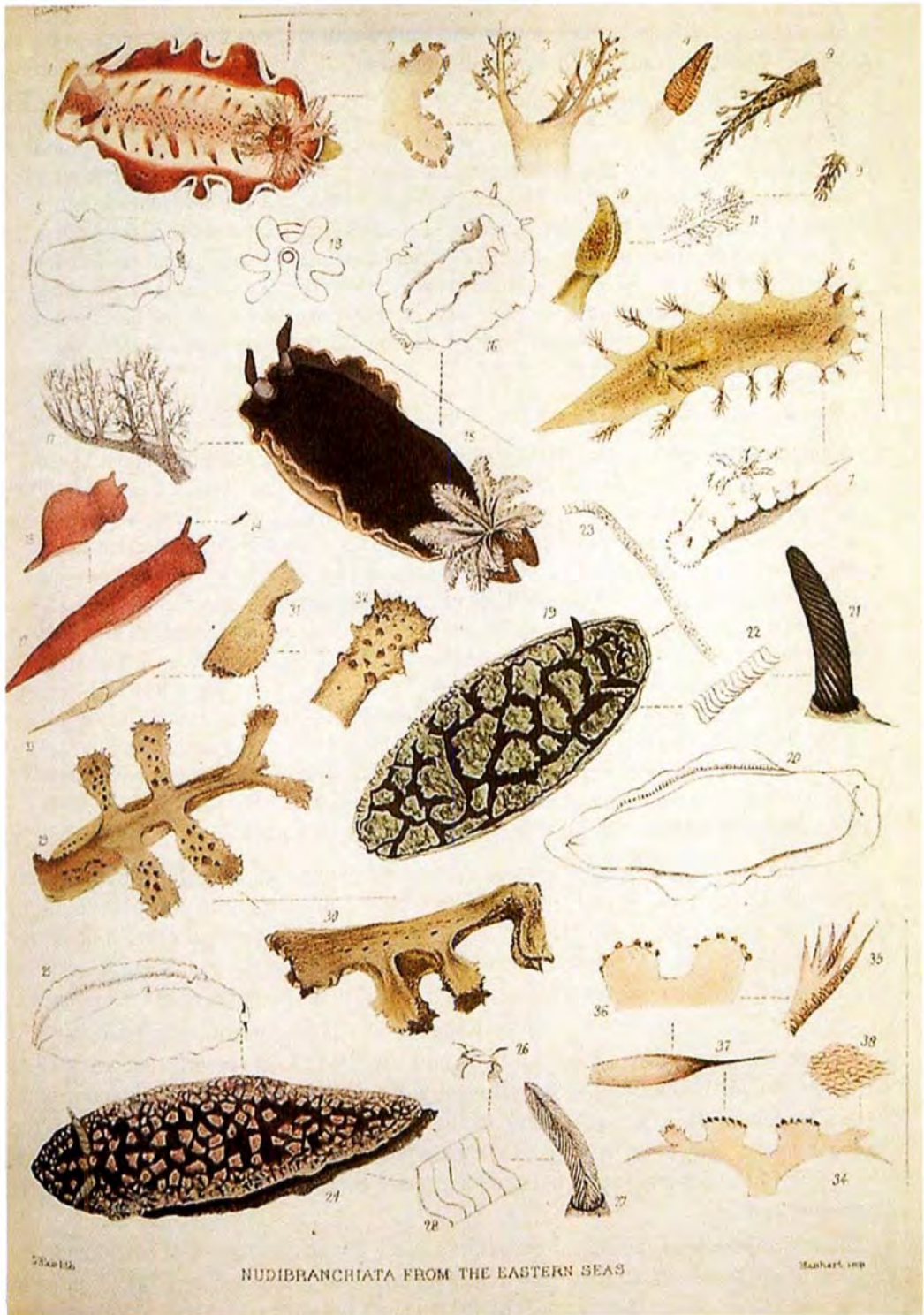


Illustration from Collingwood (1881).

naturalist, at a meeting of the Literary and Philosophical Society of Liverpool on 10 December 1860. Presumably his religious opinion (7) set him against Darwinism.

In his manuscript *Personal Reminiscences* (1907) Collingwood wrote to Agassiz:

“I was the medium of correspondence, of the nature of a reconciliation between him [Darwin] and the eminent Swiss-American naturalist, Louis Agassiz, whose views were always anti-Darwinian. Agassiz had been charged with something like discourtesy to Darwin, in a paper he published in America. I defended Agassiz and received from him a gratifying recognition of my writing. Agassiz told me that he had a great respect for Darwin, and I had the satisfaction of personally representing the former’s views to the latter, with which Darwin was greatly pleased. But I am not a Darwinian, and believe that his theories will some day be superceded and neglected to give place to a much deeper and more philosophical theory of Creation.”

Later correspondence from Agassiz (dated 28 May 1861) (8)

“I wish I had time to discuss a few points of your letter this week, but it is out of the question as I am horribly pressed with work which admits of no delay. I therefore will only thank you most heartily for your kind letter & enclosed papers. The topic I wish to allude to is my conviction that there exist no varieties in nature & what are called so are only individual peculiarities. But it will require many pages simply to set forth this view accurately & I do not know how much labor to establish it among zoologists. I have made collection with special reference to this question including an average of [a] thousand specimens of each species to ascertain what the word variety & variation so constantly used by naturalists may in reality mean. My great respect for Mr. Darwin’s high achievements & admirable scientific investigations do not blind me to the fallacy of his theory and it pains me to feel that it is utterly untenable & I believe very mischievous. All I am willing to concede of it is that it is very ingenious. But in our day that amounts to nothing & the assumption that it explains a host of facts has been shown futile in so many other exploded theories that it means very little in my estimation.”

Between 1854 and 1881 Collingwood produced two books, as well as many papers on natural history; the Royal Society lists forty of his papers in the *Catalogue of Scientific papers 1800–1900* (1867–1925). A review in the journal *Land and Water* (Anon, 1868: 3760) was written (at the request of the editor Frank Buckland) by Collingwood himself and published in full according to his personal reminiscences (1).

Although his early interest in birds dwindled in 1872 he produced a book on bird migration *The Travelling Birds*. Mullens and Swann (1917) remark that after 1872 Collingwood abandoned ornithology for religious studies! Nevertheless he continued to be a Fellow of the Linnean Society and in 1875 he hoped to become a Fellow of the Royal Society. However, writing to the entomologist H.T. Stainton on 27 February 1875 he described how he had been unsuccessful owing to some technicality having been overlooked.

His membership of the Royal Societies Club (“I was the very first member to be elected”) kept him in touch to some extent with scientific matters. This club, founded in 1897, was “a sort of scholarly social club numbering among its members R.E. Baddard, Sir William Buller, H.O. Forbes, F.W. Harmer, John Murray (of Challenger fame) Lionel Rothschild, Nansen and Saville-Kent (Williams, 1990). Thus his interest in natural history persisted, even if in a rather attenuated form.

In 1869 Collingwood married Clara, daughter of Lt. Col. Robert Moubray and widow of David Henry Lee, a Calcutta merchant. Mrs Collingwood died, aged only forty-one, in Switzerland in 1871. They had no children but there was a step-daughter, Amy Florence, the child of Mrs. Collingwood's first marriage.

After his wife's death Collingwood travelled extensively, having become financially secure by this time. His adopted daughter, Katie companioned him on his travels; prior to 1927 "adoption" was merely informal fostering and of no legal significance (Mrs. I.S. Mackenzie, *in litt.* 28 Dec. 1999). Katie married a Mr Dunn and went to live in Canada. There were no children.

In 1901 Collingwood settled in Paris (at No. 272 Boulevard Raspail) until 1907 when he returned to London. He died on 20 October 1908 in his eighty-second year, and was buried in Nunhead Cemetery, Southwark, London.

ACKNOWLEDGMENTS

Special thanks are due to Dr Janet Browne who put me in touch with Mrs Brigit Sanders who has generously allowed me access to her Collingwood papers; to the authorities of Liverpool Museum for permission to quote from Collingwood letters in their archives; to Adrian Norris of Leeds Museum for help in trying to locate the Collingwood shell collection; to the Linnean Society of London for permission to publish the photograph of Cuthbert Collingwood and to Gina Douglas, the Linnean Society's Librarian for information on Collingwood's membership; to Dr Adrian Allan, Archivist of the University of Liverpool, for information on Collingwood's Liverpool years; to the late Professor A.J. Cain for help and encouragement throughout this work on Collingwood. Collingwood's letters to J.D. Hooker were made available by courtesy of the Royal Botanic Gardens, Kew. Three letters between Collingwood and Darwin in the Cambridge University Library (DAR 161) are quoted courtesy of the Syndics of Cambridge University Library; a letter from Darwin to Collingwood in the British Library (No. 37725:6-9) is quoted courtesy of the British Library and Mr G.P. Darwin. Sixteen letters from Collingwood to H.T. Stainton were made available by the authorities of the Natural History Museum, London; a letter to Collingwood from Agassiz is quoted by permission of the Museum of Comparative Zoology, Harvard University. Owner(s) of the Agassiz letter have not been traced and I apologise if I inadvertently infringe upon such rights.

NORA McMILLAN

NOTES

1. Cuthbert Collingwood's manuscript "Personal Reminiscences", compiled 1907 (held by Mrs Sanders).
2. Isaac Byerley (1814-1897), James Baker Edwards (? - 1900), the Reverend Henry Hugh Higgins (1814-1893), Thomas John More (1824-1892), John Price (1801-1887) and Richard Tudor (1898-1880).
3. Hilbre, a small island off the Cheshire coast, famous for its rich nudibranchiate molluscan fauna and much studied by naturalists (see Craggs, 1982). The Dingle Rocks are rocky bluffs on the Liverpool shore of the Mersey estuary, once favoured by local naturalists but now polluted by oil.

4. John Gwyn Jeffreys, F.R.S. (1809–1885). Welsh lawyer and British authority on European Mollusca: author of the standard *British Conchology* (5 vols. 1862–1869).
5. Letters, Cuthbert Collingwood to Darwin 15 February 1866; Darwin to Collingwood 16 February 1866; Collingwood to Darwin 20 February 1866, at DAR 161 Cambridge University Library; none is individually numbered.
6. These Spence Bate names have not been found in the *Zoological Record*.
7. Collingwood became and remained a devoted New Churchman (Swedenborgian).
8. Letter, Agassiz to Collingwood, 28 May 1861. In Museum of Comparative Zoology Archives, Harvard University.

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Clue: Wallace's agent in London.

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From the Archives

Letter of recommendation from Charles Darwin on behalf of James Murie who figured in the last *Linnean* 17(1):21. The letter is in the hand of an amanuensis but the signature is genuine.

Down,
Beckenham, Kent.

April 2nd 1872

My dear Sir,

I have much pleasure in expressing my high estimation of your great knowledge, as shown by your various publications, of the comparative anatomy of ~~the~~ all the higher animals. I cannot speak with respect to your knowledge of physiology, but as an intimate acquaintance with structure in all its details is of such manifest importance in this respect, and as you have proved your accurate powers of observation, I cannot doubt that

You would be well fitted for the
 Chair of General & Comparative
 Physiology of the Royal Veterinary
 College; and I hope that You may
 be successful in obtaining it.

Believe me my dear Sir

Yours sincerely

Ch. Darwin

so
 D. Muir

Correspondence

Teddington, Middx

16.10.2000

Dear Brian,

When last I wrote to you I committed the unforgivable taxonomic crime of identifying a specimen without seeing it. Following your clue, I misidentified Daniel Oliver as W.J. Linton, without seeing a picture of either! However I think I am on firmer ground in identifying the October picture (*The Linnean* 16 (4):10) as William Swainson (1789–1855). He took over the quinary system from its inventor William Sharp Macleay, when the latter emigrated to Cuba. The system fell into disrepute, and Swainson moved to New Zealand in 1840. His name is commemorated in Swainson's Thrush (*Catharus ustulatus*), and he is probably best remembered as a zoological illustrator, among the earliest to use lithography.

Best wishes,

JIM GREEN

31.10.2000

South Molton, Devon
e-mail: roncairs@eclipse.ac.uk

Dear Brian,

No doubt you will receive numerous letters identifying William Swainson, the subject of your Picture Quiz in the recent issue of *The Linnean*. However, having mentioned him in a paper on the history of malacology, which used that part of his correspondence now in the Society's archives, I consider that I should at least comment on our famed quinarian. With the wealth of material available in the library, your follow-up article will have been written ready for publication in the next issue.

As various members of the Linnean Society (members of the Zoological Club) were among the strongest supporters of that system, you will have all the principal original references available. Adrian Desmond's comment on 'The Quinarian Circle' [1985, *Hist. of Science*, 23:153–85] refers to many of these interesting and vehement responses. When seeking information on Quinarianism, I used several of the later references available in the society's library: Nicholson (1894), Winsor (1976); Di Gregorio (1982); Ospovat (1981), Rehbock (1983) and Farber (1985). However, the papers by David Knight (1985, 1986) are undoubtedly the best assessment of Swainson's contribution and abilities. Nora McMillan in her article for the DSB (1976) agreed with Newton & Gadow (1896:35) who expressed the view that Swainson's 'indefatigable pursuit of natural history and conscientious labour on its behalf deserve to be off-set against the harm he unwittingly caused by his adherence to the absurd quinary system'.

Gunther (1900) completely disregarded Swainson's work in Ichthyology, considering it merely as a 'literary curiosity' (p. 23). Knight (1986:280) concluded that Swainson's use of external characters when dealing with molluscs 'led to his "malacology" being in fact conchology' as it relied more on the shells than the creatures within them. But he acknowledged (p. 281) that his drawings depicted characters without 'prejudice or distortion' and that Swainson attempted to produce 'fine art' in his zoological illustrations. In fact, virtually all references to him recognise his artistic and lithographic skills. Knight (p. 228) summarised Swainson's continual dilemma and misfortunes, recognised that he was a bold generaliser with a writing-style that was frequently contentious and whose real problem was his belief of his own social status. He also argued that Swainson saw himself as a philosophical naturalist rather than as the talented artist and illustrator he really was.

Farber (1985:57) concluded that Swainson's career was characterised by great hopes and great frustration, with numerous possibilities that always seemed to result in dead-ends. These were usually due to Swainson's behaviour or strong opinions. Various reasons have been given for his involvement with this quinarian method of classification, but it certainly did not endear him to other members of the 'Zoological Club'. Once they had established the Zoological Society, his criticism of the formal conduct of their meetings, where discussion was forbidden, would have further antagonised them. His views on the decline of science in Britain (1834) and the success of the French (1840) would also have aggravated others in establishment circles. Yet

another example of his disagreeable attitude is revealed in correspondence with Broderip, one of his mentors, who collaborated on Swainson's *Exotic Conchology* (1821). Their friendship was probably never re-established at the original cordial level.

In 1840, frustrated by his lack of opportunity and success in Britain, following the loss of his first wife, Swainson decided to emigrate to New Zealand with most of his family. Misfortune remained with him, for his family goods, collections, library and drawings had to be transported in three different vessels (Parkinson, 1984). Some goods were sent to a property on which he was swindled and were only recovered later. The third ship sank en-route when approaching Table Bay, South Africa; many of his goods were lost and those that were salvaged were sold at the Cape.

Details of his later life in Australasia can be found in papers by P. Parkinson (1984) and D.J. Galloway (1978). Eventually, in 1851, after obtaining little recognition for his scientific endeavours in the Colony and failing to get any redress after another of his properties suffered depredations, he went to Australia. For three years Swainson conducted botanical surveys for the Governments of Victoria, New South Wales and Tasmania. Later, in 1902, this was condemned as 'reckless species making' that 'stands unparalleled in the annals of botanical literature'. His son William John Swainson in a letter (ATL, 5th Nov. 1872) wrote: "it is certain that our father's emigration to New Zealand was the greatest mistake of his life . . . and that the sacrifice of all his early life and favourite pursuits, I can only characterise it as a succession of disappointment and misfortunes from beginning to end."

The history of the surviving material and other relics from the collections and library is recorded in Parkinson's paper. Swainson's second wife, who became estranged from most members of the family, destroyed much of his correspondence and personal effects. Fortunately, remnants that were later acquired by other members of the family are now in various New Zealand institutions. He also mentions the surviving letters that were sent to Hooker at Kew in 1872, subsequently sold to the Linnean Society for £50 in 1900, and listed by Gunther in his calendar (*Proc. Linn. Soc.*, cxii, 1900:25–61). Nora McMillan has dealt with the history of his shell collections (1980) and together with W.O. Cernoorsky (1979) the drawings held in New Zealand, although some ornithological drawings have since been found at Cambridge (Parkinson, 1984: note 40).

Whether any of this will be of any use to you, I have no idea, but at least I've tried to help. As an alternative perhaps you'll use the engraved portrait of an older Swainson in his *Treatise on Malacology* (1840) in your article.

Yours sincerely,
RON CLEEVELY

7.10.2000

Bridgnorth, Shropshire

Dear Brian

Geology and the Border Squires

This article by R.W.D. Fenn and J.B. Sinclair brought back many memories of Palaeozoic stratigraphy in the fifties, particularly of lectures and field work from Bristol University under the aegis of Prof. W.F. Whittard and Dr. Scott Simpson. I remember particularly the sad end of the industrious Salter.

The article and your editorial were both immensely interesting, but neither brought out the well known later resolution of the basic problem by Charles Lapworth of Birmingham University. This is recounted by A.K. Wells (1948) and involved naming the disputed strata (the top of Sedgwick's Cambrian = the bottom of Murchison's Silurian) after another Welsh tribe to give us the present Ordovician System.

Yours sincerely

JOHN PACKHAM

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2.01.01

Tennyson 5022, South Australia
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Dear Brian,

I have just read the latest *Linnean*, October 2000, and was interested in the letter entitled: Alfred Russel Wallace – a Welshman.

In this letter the author states that “Wallace lived in Neath from 1841 to 1848 never to return again to Wales”. This is not so. In fact he did return in 1904 at the time he was writing the chapter on Neath in *My Life*. There is a letter to his son William dated July 1st 1904 and another dated, July 5th 1904 giving Will information on how to get to Neath and arranging to meet there.

It is assumed that Wallace did go, although I have no record of the actual trip. A small section of one of these letters is shown in my book: *The Forgotten Naturalist. In Search of Alfred Russel Wallace*. It is one of the black and white photographs and rather hard to read.

Also in *My Life* vol 1 p26 Wallace states: “In the year 1883, when for the first time since my childhood I revisited with my wife and two children, the scenes of my infancy.” He goes on to mention Usk and Llanbadock where he was born and a visit to Usk Castle. He comments further: “.....everything seemed to me exactly as I knew it of old, and neither smaller nor larger than my memory.....” Unfortunately things seem to change faster now.

I always enjoy reading *The Linnean* and felt this needed comment.

The Welsh certainly have not forgotten Wallace, and in the bibliography of my book I mention two further references written by Welshmen, other than the one mentioned.

Eaton, George (1986) *Alfred Russel Wallace. 1823–1913. Biologist and Social reformer. A Portrait of his life and Work and a history of Neath Mechanics Institute and Museum.* W. Whittington Ltd., Neath.

Morgan, Elfed (1978) From Alphon Nedd to Rio Negro. The formative years of Alfred Russel Wallace. *Transactions of the Neath Antiquarian Society*, pp. 69–78.

Finally I would like to add my support to the proposed Museum at Greys in Essex. I have written to the Society in the past suggesting that his birthplace in Wales could possibly be a Museum. It is in private hands and in a good state of preservation, but a bit too far away perhaps. There is a lot of memorabilia that needs a home before it is lost or scattered. Let's hope we do not have to wait too long.

Yours sincerely

JOHN WILSON

Going Wild at Midsummer

Imagine a midsummer day when children all over Britain are seeking out the wild flora and fauna that lives in their locality and making some sort of record according to their abilities. Lying on the grass peering through a hand lens at minute invertebrates, examining the cracks in walls for mosses and spiders webs and weed seedlings, walking along woodland paths noting the ferns and wildflowers growing on either side, or collecting pond water and viewing *Daphnia*, *Cyclops* and *Vorticella*.

That day will be Backyard Biodiversity Day, 21st June 2001, organised by Action for Biology in Education and the Chelsea Physic Garden in partnership. Fellows of the Linnean Society are closely involved, and the Society has helped with start-up funds, as did the Systematics Association. Sir Ghilleen Prance PPLS, thinks it is an excellent idea. He said: "21 June 2001 will be an important day for biodiversity when so many schoolchildren throughout the country take a few minutes to observe nature. I am sure this will be a learning experience for each person and that it will have a long term effect on care for nature in the future."

ABE is an educational charity that had its beginnings within the Linnean Society, but became an independent organisation in 1996. Its mission is to promote an interest in biological sciences at all levels of education, but efforts are mainly directed at the primary school child, where lifelong interests are beginning to develop. That is why Backyard Biodiversity Day is targeting the 9–12 year old (though older and younger children are not excluded). It will be a day when children of that age will be encouraged to celebrate the variety of life and spend a few minutes looking for, observing and recording wild fauna and flora in places that are less than a mile from home or school. The 'backyard' can be gardens, school grounds, local open spaces, woodlands, nature reserves or even seashores. What is important, though, is to have accompanying adults helping and guiding the children.

It is hoped that many Fellows of the Linnean Society will want to participate and introduce the next generation to the fascinating forms and behaviours of common, humdrum species as well as the more exotic. Those who have young children, or

grandchildren, may be interested to take them out on June 21st, or on one of the three following days, to help them look for wildlife. It doesn't have to be a long or arduous expedition – just 15 minutes round the field, into the park or up and down the road and, of course, in the back garden. A few snapshots, a mini nature diary, a drawing, even a tape recording will be a record of what was seen, heard touched or smelt. ABE has even produced a folder of ideas for activities to help people get started wherever they are located.

If they have no children or grandchildren to take out on a wildlife 'safari' near home, Fellows are invited to spread the word, or to consider offering local schools access to some facilities for observing wildlife.

To give children a reason for keeping a record of what they did, ABE is offering to display the best entries on the *www.biodiversityday.org* website. Also on the website, for those who like using computers, will be a list of ten common plants and animals to look for and record. Records will be collected on a webKe form and results displayed for all to see. The reason for using common organisms, not rare or endangered ones, is to give as many children as possible a chance of success in finding one or two. Each organism will have associated information pages.

One purpose of Backyard Biodiversity Day is to stimulate children's natural curiosity to an extent where they will continue their exploration of the living world of their own accord – both at micro and macro levels. It is hoped that, as they grow older, they will develop an understanding of how biodiversity contributes to the sustainability of the planet and also, that some will eventually hatch into tomorrow's taxonomists, systematists, ecologists and conservationists. Another purpose is to give teachers – particularly those in primary schools, a reason for discovering the living world with their pupils and to give them confidence in doing so, for many lack the skills and knowledge which Fellows of the Linnean Society take for granted.

ABE is lucky to be working with the Chelsea Physic Garden on this initiative. The support and enthusiasm received at all levels cannot be over-estimated. The Garden is providing not only some financial support, but also person time and a venue for a special Biodiversity Day event on 21st June. The project is moving forward with the nation-wide interest of many organizations and individuals, and an endorsement from the international Biodiversity Observation Year secretariat who have expressed their excitement at the idea behind the project. Chris Baines, the wildlife writer and broadcaster summed it up when he said: "The beauty of local wildlife is that it is living right under our noses. It's easy to enjoy, and with very little effort we can give it a helping hand."

VIRGINIA PURCHON
Honorary Secretary of
Action for Biology in Education

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The Best Laid Schemes Gang aft A’Gley: Retirement and other Plans of a Regius Professor of Botany, 1919–1925

Part 1

Introduction

This paper describes the interactions and intrigues, mainly involving Professors Bower and Bayley Balfour, over the successions to three vacant Botany Chairs in the period 1919–1922 (Aberdeen, Oxford and Edinburgh) and in 1924, Glasgow, this last involving Bower alone. The person most under pressure was W.H. Lang, Bower’s protégé since 1896, a palaeobotanist who comes across as a diffident, unassuming individual, who above all wanted to carry on quietly in his laboratory, but felt duty bound to accept the pressures from his seniors. In the end he won!

The objective in writing this account was the feeling that it would do no harm for younger, present-day academics to realise just how powerful were the Regius Professors appointed in the late Victorian era, and how much their influence extended beyond their Departments and Universities.

At the commencement of the academic session at Glasgow University in October 1920, the Regius Professor of Botany, F.O. Bower, was 65 years of age and entering on his 35th year in the Chair. He was no doubt hoping for a less exacting year. October 1919 had brought a record influx of 611 students to his Department, a number inflated by the inevitable post-war ‘bulge’ following demobilisation. His close friend and colleague, I. Bayley Balfour, Regius Professor and Regius Keeper of the Royal Botanic Garden in Edinburgh and King’s Botanist in Scotland, had similarly experienced a large influx of 500 students (1); his comment on Bower’s number was ‘611 – By Jove!’. Both kept a firm grip on their respective Departments, and would allow no outside interference. As will be shown, retirements from two botanical Chairs were arousing considerable interest in 1919 and 1920. Both were equally determined that when their time came they would have a major say in whom would be their successor. The choice of the above title will be seen to be justified in the following narrative.

1. Preliminary thoughts on retirement

When Bower was appointed to the Glasgow Chair in 1885, albeit unwillingly and under heavy pressure from Sir Joseph Hooker and W.T. Thiselton-Dyer, his appointment was made ‘*ad vitam aut culpam*’, namely, for life as long as there was no serious misdemeanor of an unspecified nature (2). Despite his reservations, at the time there were attractions for candidates from south of the border for vacancies in Scottish Chairs. Teaching programmes often occupied only one term in an academic session; additional emoluments to the basic Salary came directly from fees paid by students, and the pension schemes were non-contributory. By 1890 the salary arrangements had been modified to a more stabilised system; in the following decade the teaching programmes were to develop on a wider basis although the pension schemes remained unchanged. It was not unknown for professors to hold on to appointments until well advanced in years, sometimes to ‘die in harness’. In 1944 Sir D’Arcy Wentworth Thompson still

occupied the Chair of Natural History at St. Andrews in his 84th year, after 60 years of service. He died, still in post, in 1948 (3). There is evidence from 1918 onwards in correspondence between Bower and William Henry Lang, Barker Professor of Cryptogamic Botany at Manchester University, that the former's thoughts were edging towards plans for retirement. Their association was of long standing. Lang had entered Glasgow University in October 1889 as a medical student. Impressed by Bower's lectures in his first year, he had graduated B.Sc. in Botany and Zoology in 1894, and then qualified M.B. and C.M. in 1895.

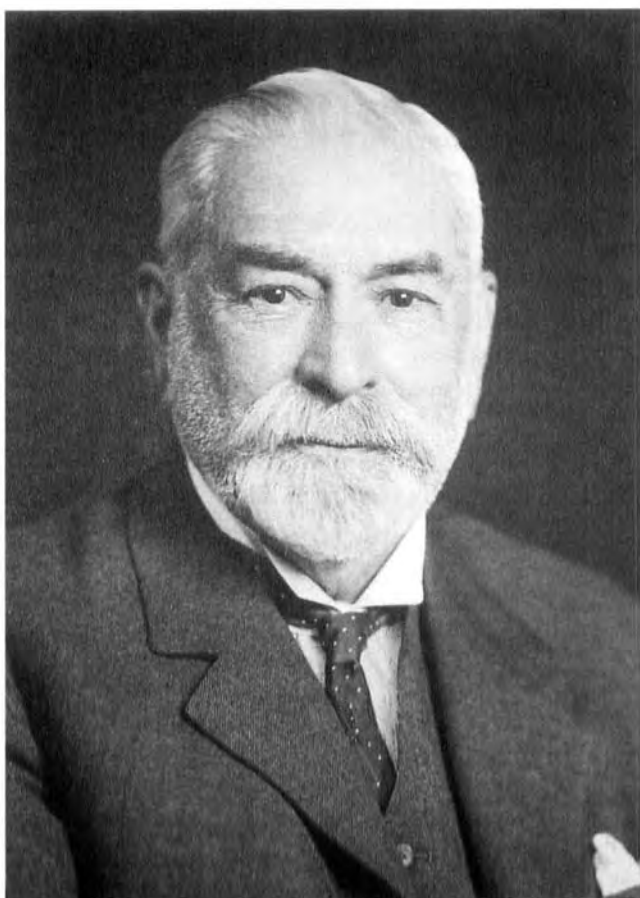
Lang did not enter medical practice, but was appointed Assistant to Bower in the same year as he qualified and then became Senior Assistant in 1896. In that same year D.T. Gwynne-Vaughan was appointed Assistant, the three forming a 'triumvirate' as recognized by themselves and other colleagues (4). Gwynne-Vaughan left Glasgow in 1907 to become Head of the Botany Department at Birkbeck College in London, then Professor of Botany at Queen's University in Belfast 1909 – 1914, and then at University College, Reading in 1914. He died prematurely from phthisis of the right lung in September 1915. Lang had progressed from Senior Assistant to Lecturer in 1901, having been awarded his D.Sc. in 1900. His researches on fern alternation of generations, fern prothalli, apogamy and apospory had been carried out mainly in the Jodrell Laboratory at Kew during vacations and time free from teaching. In 1901 he had travelled to Ceylon and the Malay Peninsula on a collecting expedition for liverworts, another research interest. Whilst Gwynne-Vaughan had been the first of the 'triumvirate' to leave Glasgow, Lang had made an earlier attempt to find his academic 'billet' in his application for the Chair of Botany at Trinity College, Dublin, but the appointment had gone to E.H. Dixon. His second chance came in 1909 with his appointment to the Barker Chair. He was elected F.R.S. in 1911.

Throughout his long life Bower had a deep respect for Lang's scientific insight. This respect was ably summarized in October 1921, when Bower was approached by W. Bate Hardy, who was taking 'soundings' on behalf of the Science and Industrial Research Department of the Government regarding a suitable successor to Sir David Prain, who was retiring from the Directorship of Kew Gardens. Bower's comments covered six leading botanists (5). In his opinion, Lang 'was the biggest man of them all.... primarily a philosopher, the best scientific head of them all, impressive in manner, forcible in thought, capable in business'. However, with Lang being such a dedicated research man, the overall running of 'a big show like Kew' would not be to his taste.

Some indication of Bower's forward planning in relation to retirement is to be found in a letter to him from Lang dated 23 December 1918. Lang refers to 'A settlement for at least two years for the Glasgow department But sometime freedom and books will get the upper hand !'(6). The implication is that Bower was unlikely to formulate any definite plans before 1920–1921.

2. Autumn 1919: the Aberdeen Episode and the Oxford 'Imbroglia'

September 1919 was the month in which academic events elsewhere were to disturb the calm of Lang's research domain in Manchester. S.H. Vines, Sherardian Professor of Botany at Oxford, wrote to Bower on 9th September intimating that he was resigning from the Chair at the end of the year (7). In a subsequent letter (18th September) he



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expressed some anxiety about the succession, asking Bower whether he had any 'inspiration' on this – 'I do not know young men' (8). On that same day J.W.H. Trail, Regius Professor of Botany at Aberdeen, died suddenly following a serious operation. At the end of the month the Principal of the University, Sir George Smith, wrote to Bower asking for his advice on a suitable successor – 'I know you will have some influence with the Secretary of State for Scotland in the appointment of his successor' (9). Immediately on receipt of Vines's letter Bower wrote to Balfour, and they started to weigh up the possible candidates for the Oxford Chair. As expected, Bower put forward Lang's name; Balfour, replying in a letter dated 12th September, commented – 'You forget Farmer – it would not surprise me if he went. I should like to see him back in research. As a Magdalen man he may be tempted' (10). J.B. Farmer at that time was Professor and Director of the Biological Laboratories at the Royal College of Science in London. He had been Balfour's star pupil when the latter was Sherardian Professor 1884–88. Farmer had been a Demonstrator under Balfour in 1887, and was elected to a Fellowship of Magdalen College in 1889, becoming Assistant Professor at the Royal

College in 1892. The Sherardian Chair carried with it a Fellowship at Magdalen and Directorship of the Botanic Garden. Balfour had also expressed his conviction that A.G. Tansley of Cambridge would also be a candidate, but he would not stand a chance (11). His letter of 12th September pressed Bower for more information – ‘What of Lang for Oxford?’.

Lang’s attention at that time lay in a different direction, as perhaps indicated by a passing comment from Balfour in a letter to Bower (22nd September): ‘Yes – Lang for Scotland for Scotland’s sake!’ (12). Under Bower’s prompting Lang was giving serious consideration to the Aberdeen vacancy. His Scottish credentials were impeccable, by birth, education and earlier academic experience. At the time also his main research was carried out in Scotland. After Gwynne-Vaughan’s death in 1915 he had taken his place in joint research with Robert Kidston, working in the latter’s study-cum-laboratory at Clarendon Place in Stirling. They were studying the fossil plant remains from the Rhynie Chert bed in Aberdeenshire (4 *ibid.*). *Rhynia* had been described in a joint paper in 1917, and they were now deep in their studies on *Hornea* and *Asteroxylon*. The joint papers of Kidston and Lang are regarded as epic milestones in studies on plant evolutionary history.

All available evidence suggests that Lang was giving serious consideration to the Aberdeen vacancy. Sir David Prain, an Aberdeen graduate, wrote to Bower on 15th October expressing some puzzlement over the procedures in appointments to ‘Crown’ Chairs. Should he be involved in the process, Bower’s letter to him regarding Lang ‘will be most useful’. Should the Secretary of State succeed in getting Lang to go to Aberdeen ‘.. my old University will have good reason to be grateful to him!’ (13). Lang visited Aberdeen in early October. He expressed his views to Bower in a letter dated 15th October (14). He had spent 2 days in Aberdeen – ‘Some people put rather too much interpretation on my visit – that is their business – I was a “disinterested interested” visitor!’. The Botany Department was then in Marischal College, at some distance from the Botanic Garden which was close to the older King’s College. There were plans to move the Department to the Botanic Garden but Lang was not too sure about the advantages of such a move. He had ‘very grave doubts whether conditions would be really favourable’ for him to do good work at the University. He was also concerned about the ‘geographical and spiritual isolation’ of the University, and about the climatic conditions. However, if he were to go to Aberdeen it would be ‘the first step to continuing in Scotland – and for the reasons we have discussed’. Bower’s motives in pressing the possibility of the Aberdeen Chair are clear – with Lang occupying a Regius Chair in Aberdeen a later translation would be well assured. It is also clear from Lang’s comment that the Glasgow succession had been well to the fore in the thoughts of both of them. Balfour was similarly pressing Bower to ensure Lang’s candidacy, as stated in a letter of 9th October – ‘If Lang goes for it he should lose no time in preliminaries. He can inform the Secretary of State for Scotland that he is a candidate and that he will submit a statement of qualifications and experience at a later date’ (15).

With all the uncertainties about the Aberdeen Chair to contend with, Lang was at the same time having presented to him the possibilities of the Oxford Chair. J.B. Farmer wrote to Bower on 23rd September stating that his own line on the Oxford Chair was not yet clear, and that he would be seeing Vines within 14 days. Farmer was 54 years of age,

and in his opinion Lang (45 years) was the best of the younger men in having 'a fine philosophical outlook that should go down well at Oxford'; he also thought that Lang was 'much too good for his present place' (16). In a letter to Bower already mentioned (14 *ibid*) Lang referred to a letter he had received from Farmer, in which the latter asked to be informed if Lang was interested in the Oxford Chair – Farmer would thoroughly approve of his candidacy. Lang also referred to a letter he had received from A.G. Tansley asking whether he was interested in the Oxford Chair, for which Tansley had practically decided to apply. Lang had told Farmer that the matter was 'under consideration', and had told Tansley that he would be informed if anything was 'definitely decided'. Lang confessed to Bower his diffidence regarding the appointment. He was unfamiliar with that type of University although with the Botanic Garden he could visualise better conditions for his experimental work on plant morphology. These pressures regarding Oxford had resulted in the 'dice being loaded against Aberdeen'. No further mention is made of the Aberdeen Chair. W.G. Craib, an Aberdeen graduate, was appointed in 1920 to the Regius Chair at Aberdeen. Since 1915 he had been Lecturer on Forest Trees in Balfour's Department; prior to that he had been Assistant Curator of the Herbarium in the Royal Botanic Garden in Calcutta from 1907, and from 1909 Assistant on India at Kew.

Farmer wrote to Bower on October 13th stating that it was almost certain that he would not move from London. Of Lang, although he had 'obvious interests in Scotland he would seem to me the one outstanding personality of what we must now call the younger generation'. Regarding the relationship between the Chair and Magdalen College – 'I have already been in contact with those who unquestionably will influence the result'. His letter concludes (17):

'I think it is very important in a post such as this that we senior botanists should, if we possibly can, all pull together, and so maintain the high traditions which have always marked us out from other branches of science.'

In a letter from Balfour already mentioned (15 *ibid*) reference was also made to the news that Farmer '.. is not disposed to leave London. This surprises me. It leaves Lang with a wide option in my opinion. I suppose Aberdeen will be filled first!'. S.H. Vines wrote to Bower on October 16th thanking him for his letter about Lang – 'I do not know as much about him as I should – I hear good reports of him at all hands' (18). Vines also reminded Bower that the election of his successor would be open to all, and that there was not as yet an official announcement of the intending vacancy. In the quiet of Oxford Vines seemed to be totally unaware of the background activity in progress, although it had all stemmed from his letter to Bower of September 9th.

With his sights now focused on Oxford (or, perhaps due to others helping to focus his sights in this direction), Lang had written to a number of botanists asking for their honest opinions of his suitability for the Sherardian Chair. He wrote to Bower on 20th October with summaries of viewpoints that he had received from D.H. Scott, Farmer, and F.W. Oliver, Quain Professor of Botany at University College, London. Scott was a member of the Board of Electors for the Chair; his somewhat non-committal reply 'There is no harm in saying that one thinks of you as among the suitable candidates – I expect there will be a good field' was perhaps no more than could be expected from a

member of the Board of Electors. Farmer had replied by assuring Lang that there would be no difficulties in an 'outsider' adjusting to life in Oxford, and reminding him that the Chair carried with it a Magdalen Fellowship. According to Lang, Oliver had sent 'an inspiring and frank reply'. He himself was not 'in' for the Chair, but that on considering either Tansley or Lang 'butting their heads against the dense wall of Oxford' regarded Lang's fate as being the less serious should he be chosen. In any case Lang would have a 'possible escape route' later on if necessary (a somewhat obvious hint at the Glasgow option). Finally Oliver advised him to 'Bargain hard before you accept!'. Lang's letter to Bower concluded:

'My general feeling, amounting to a preliminary decision, is to put in an application and leave the result on the knees of the Gods i.e. the Board of Electors. Whether I am "taken or left" I shall be content' (19).

Meanwhile Balfour had written to Bower, also on October 20th, announcing an 'unexpected complication' (20). He had learned that F.W. Keeble was to be a contender for the Oxford Chair – 'Keeble is a serious rival for Lang at Oxford'. At the time Keeble, an 1891 Cambridge graduate, was Director of the Gardens of the Royal Horticultural Society at Wisley and serving as Controller for Horticulture for a Government Body, the Board of Agriculture. His previous professorial experience had been with the Botany Department at University College, Reading from 1907–1914, in which post D.T. Gwynne-Vaughan had been his short-lived successor. Keeble had also been Editor of the *Gardener's Chronicle* since 1908; he had been elected F.R.S. in 1913, and made C.B.E. in 1917. Balfour's letter continued:

'We all thought he was fixed up with official life at a big sacrifice alike to himself and Science. It may be that he is now finding disillusionment. I know nothing definite but what I say is first hand'.

Bower thoroughly approved of Lang's decision. Lang wrote to him on October 25th acknowledging Bower's note of approval, and stating that he had written to Farmer changing 'preliminary' into 'definite'. He had also written to S.H. Vines (21). He quoted from Farmer's reply – 'I hope very much that you will see your way to put in for that Chair. I feel quite certain that you would discharge the duties better than anyone else I know, and I think I may claim to know all the possible field'. Lang also referred to Keeble's apparent move – 'about whom your news is interesting'. He confessed to feeling 'a certain detachment' from the affair, perhaps a little frightened and disinclined to 'pull up roots in comfortable labs'. He paid tribute to his wife, who, 'with greater courage was prepared to endure all things'.

Throughout this sequence of possible moves and attendant uncertainties, Lang had kept his colleague, F.E. Weiss, fully informed. Weiss, the professorial head of the Botany Department at Manchester, worked closely with Lang and valued highly his research expertise; Weiss had similar research interests in palaeobotany. Whilst he would not have stood in the way of any move by Lang, he had seemingly kept the Council of the University fully informed. The outcome was described by Lang in a letter to Bower dated 29th October (22). The University Council had expressed their desire that Lang should remain at Manchester. Accordingly it had been decided to increase his salary to equal that which he would have received at Oxford, that his

professorship should become a Research Chair, and with teaching restricted to Senior Honours students. As Lang explained to Bower, this offer materially altered the situation. The advantages of a Research Chair, with the opportunities to advance Science without the bothers of organization, which, with manipulation and Botany, would be the lot of the Oxford appointee, brought him to the strong conclusion not to move from Manchester. The prestigious nature of the Oxford Chair was not to him of great importance – he confessed to having all the prestige he required in ‘the opinions of his botanical friends’. He awaited Bower’s reply; he had also written to Farmer.

Bower’s reply came almost by return, written on the same day that he received Lang’s letter. Lang’s reply to this is dated October 31st (23). He accepted Bower’s assessment of a ‘balanced situation’. The latter had suggested that Lang should keep his options open in that he might receive an invitation to the Oxford Chair without need of a formal application. Lang had expressed concern on the moral aspects of the situation. If he were to apply for the Oxford Chair and then be rejected how could he then accept the offer from the University Council at Manchester. He had therefore decided not to apply and so risk ‘the bird in the hand for one in the bush’. The Board of Electors at Oxford could be relied on to choose a suitable candidate. He also made the passing observation that an invitation to the Chair would not pose such a moral question. This last seems to have been significantly misinterpreted by Bower as a statement of intent. Lang’s letter concluded:

‘All this sort of writing must look like a ‘swelled head’, but I never felt so clear-sighted in my life’.

Bower’s reply urged Lang to reassess his attitude to the Chair’s potential, but Lang again (8th November) made it clear that he would not proceed further, having already informed the University Council at Manchester that he was not making any application for the Oxford Chair. He regarded the over-estimates of his powers, as expressed through the kindness of his friends, to be balanced by his own self-knowledge. At 45 years of age he would now occupy the only morphological research Chair in the country, with a stipend close to that of a major Chair which had an additional administrative load. He would take no further action (24). A following letter (17th November) indicated that both Farmer and Balfour had written in similar vein to Bower after being notified of Lang’s decision, but Lang again confirmed that he would not leave Manchester ‘under any circumstances at present’. He also reported that a serious misinterpretation of his intentions seemed to have emanated from Cambridge, based on remarks made by Bower, that whilst Lang was not applying for the Oxford Chair, he was running as a ‘veiled candidate’. This he could not be, and under no consideration now would he leave Manchester (25).

This idea of a ‘veiled candidature’ had seemingly arisen following an aside made by Bower on a visit to Cambridge, based on his misinterpretation of Lang’s moralizing on the difference between making an application and receiving an invitation in the light of the offer made by the Manchester University Council (23 *ibid.*). Balfour similarly seemed to have got the wrong idea. In a letter to Bower (15th November) he referred to a recent meeting with Lang in London, and that the position was ‘He won’t apply for Oxford – Manchester has put in a bid. But if invited he will go. Farmer is introducing

him to Warren. I hope all will be well!’ (26). This information is so much at variance with Lang’s views at the time that one can only regard Balfour’s report as being a similar misinterpretation to that of Bower. The reference to a projected visit with Farmer for Lang to meet Sir Thomas Warren, President of Magdalen College, is equally puzzling. Lang makes no reference to such a projected visit with Farmer. Perhaps another misinterpretation – Farmer may have earlier informed Balfour of his intention to effect some such an introduction at Magdalen, as earlier mentioned (17 *ibid.*).

Bower’s reply to Lang on the matter of the ‘veiled candidature’ (18th November) revealed that the source of the Cambridge idea had probably been in a chance remark he had made to A.G. Tansley (27). Tansley had referred to Lang no longer being a candidate, whilst he himself had applied for the Chair. With reference to Lang’s withdrawal, Bower had replied ‘But that does not necessarily settle the question’, without going into any further detail. Bower was here basing his remark on his misinterpretation of Lang’s moralizing, his assumption being that Lang would treat an invitation more seriously. Bower concluded that Tansley had misunderstood the implication of his comment in a somewhat derogatory way:

‘That anyone who knows you should on that account imagine you a party to an intrigue of the nature of a veiled candidature seems to me derogatory to you, and I don’t feel very flattering to me to be supposed to be in it too... But I cannot for the life of me see why such a perverted idea should make you take a decisive stand of “after this Oxford nohow” though must sympathize with your sensitiveness on this point... I see no reason why Oxford should lose the advantage of your help because someone also misunderstood your position in rather a derogatory way.’

Bower also wrote to Balfour explaining the situation. The outcome was that Lang was reinforced over his decision not to leave Manchester, as again he felt it necessary to inform Balfour. The two ‘elder statesmen’ were thoroughly nonplussed by both Farmer and Lang rejecting any move to Oxford – a feeling well expressed by Bower in a letter to Balfour (19th December) (28):

‘But how strange that your best pupil and my best pupil, for very diverse reasons, both held aloof. Who would have thought that 15 years ago. We shall have to talk it over!’

Farmer also expressed his views to Bower (15th December) – ‘The Oxford job is a queer imbroglio – there is no outstanding person now that Lang has decided not to enter’ (29).

There seems to have been no end of surprises for Balfour over the ‘imbroglio’. He informed Bower on 30th November that he had been summoned to a meeting of the Board of Electors for the Oxford Chair. He had served on the Board some years ago but had assumed that his term had ended long ago (30):

‘I can only hope that my ignorance has not landed me in indiscretion thro’ talking and commenting on possibilities, I too may be a victim of a Cambridge misinterpretation. Well if so I am in good company with you and Lang!’

A.C. Seward, Professor of Botany at Cambridge, was also on the Board of Electors. He had written to Bower on 15th October – ‘The Oxford Chair is interesting – I am on the Board of Electors – where you ought to be’ (31), a viewpoint shared by other senior botanists, and probably by Bower himself. His exclusion was probably due to Balfour’s

membership – at the time of Seward’s letter Balfour himself did not know that he was an Elector. The Board of Electors made their decision on December 18th 1919; Balfour immediately sent a telegram to Bower with the result summed up in three words, namely, ‘Keeble the man’ (32).

The Oxford affair had one further surprise for Lang, as he stated in a letter to Bower dated 18th December (33):

‘There is a divinity that shapes our ends. Oliver has agreed to put his name forward... Oxford could therefore get the ideal appointment... To me this seems perfectly splendid!’

F.W. Oliver had earlier offered Lang the ‘inspiring and frank reply’ when the latter wrote asking advice on his suitability for the Oxford Chair (13 *ibid.*). The decision, however, had been made on the very day he wrote to Bower, and when he learned of this he expressed his strong disappointment over the choice of Keeble (23rd December):

‘One can only marvel and suspect that sufficient weight had not been given to forecasts of the botanical and non-botanical Oxford component. It seems regrettable that Oliver should have been pressed to consider it’ (34).

Throughout the flow of correspondence in September and October the impression is that Lang was to some extent a reluctant potential candidate for both Chairs. Aberdeen as a stepping stone to Glasgow would have entirely suited Bower’s retirement plans. The Oxford Chair might have been viewed in the same way. Alternatively there could have been another underlying reason for the encouragement given by both Bower and Balfour. For both of them the Chair held a particular significance. In 1884 Balfour had been appointed Sherardian Professor, moving to Oxford from the Glasgow Chair. Bower, at that time Lecturer in Botany at the Normal School of Science in South Kensington, had also applied for the Oxford Chair, and had later found out that he had come second to Balfour in the opinion of the Electors. He had then succeeded Balfour at Glasgow. In 1888 Balfour had left Oxford for the joint Professorship and Keepership at Edinburgh, an appointment he had always wanted, and in which he truly ‘came into his kingdom’. In 1919 he was 66 years of age, in poor health, and rarely moving far from the confines of the Royal Botanic Garden. As he remarked to Bower in a letter already mentioned, ‘I have no particular influence these days’ (14 *ibid.*). To see a distinguished plant morphologist established in such a prestigious botanical Chair would guarantee a continuing recognition of the discipline to which both had devoted their lives. Again, did they also hope to see Lang following the same career path as Balfour had done in 1888: ‘Yes – Lang for Scotland for Scotland’s sake!’.

Perhaps our sympathy should lie with Lang having all these various pressures exerted on him. As he stated to Bower when the turmoil of the ‘Oxford imbroglio’ was behind him, his own work was his ‘lifeline’ (30th November):

‘I can contemplate a translation to Glasgow (if it is distant enough) with some naturalness but there is a definite sense of relief in abandoning thoughts of Oxford. Here, for the present, I am a round man in a round hole, newly smoothed and widened, which is useful!’ (35)

Keeble’s occupation of the Sherardian Chair was to yield one further surprise; in October 1921 Bower had been approached for information on senior botanists as possible successors to Sir David Prain at Kew. His reply (26th October) had included

the comments on Lang already quoted (5 *ibid*). He had included Keeble in his list of assessments. He described him as a very clever man but a bit of a 'farceur' regarding his science. He had done good work during his professorship at Reading and in his editorship of the *Gardener's Chronicle*. He had, however, failed to 'galvanize' Oxford, and Bower doubted that he had the necessary 'ballast' for Kew. He also referred to Keeble's 'social qualifications – perhaps too strong for steady work'. This last point was also raised by J.B. Farmer, writing to Bower on 30th November 1921 (36). Farmer referred to a rumour the 'feminine influence' was at work regarding Prain's successor, and that the rumour was playing about Keeble's name – 'Mrs. Asquith is an old friend'. Farmer considered that it would be a 'hideous scandal' if A.W. Hill, Prain's Deputy at Kew, was not appointed. Hill was a widely travelled botanist who, after 15 years at Kew, thoroughly knew the Garden set-up. Farmer asked Bower to make sure that 'no wrong moves were made'. Balfour, on hearing the rumour, wrote to Bower (22nd January 1922), describing it as 'amazing news – I rather resent Keeble's proposal to chuck Oxford after the business we had getting him there' (37). Whether there was any factual basis to the rumour is unknown, but it certainly moved rapidly around the botanical 'Establishment'. In the event A.W. Hill was appointed to the Directorship at Kew in 1922. Keeble was knighted in the same year.

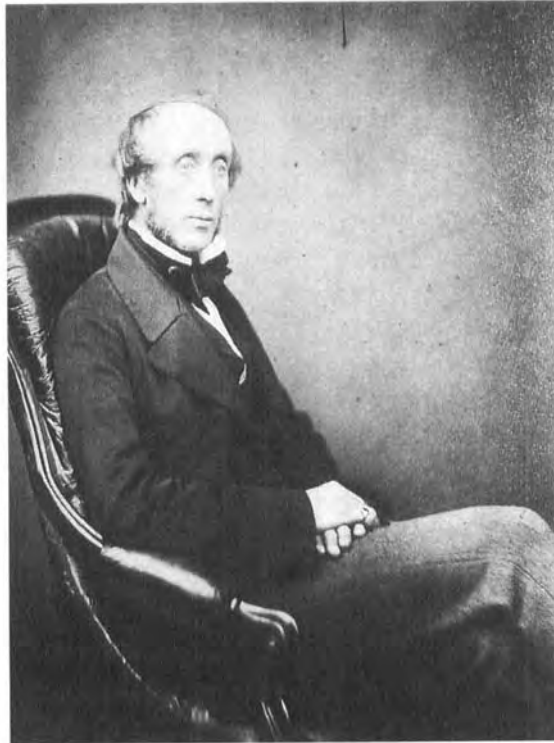
3. The Edinburgh Interlude: 1921–22

October 1921 seems to have been an eventful month in another direction. In 1920 Balfour had been knighted K.B.E. – for his services to Botany in Scotland. As he stated to Bower on receipt of the latter's letter of congratulation, the honour validated the claim of the Royal Botanic Garden in Scotland to have equal recognition with Kew. The letter included – 'our friendship has been an asset of my life dearly prized and all that you say comes home with the force of that' (38).

Balfour's health continued to decline through 1920 and 1921. In October 1921 he informed Bower that he intended to retire, and in reply to Bower's response to the news expressed his feelings on their long friendship (19th October 1921):

'Of the many pangs attendant, none is more poignant than the severing of our co-partnership in the work of developing and maintaining Scottish Botany. The feeling you express of confident mutual alliance is mine as strongly as it is yours. Our aims and aspirations have been consistently one and I think we may each of us fairly claim that Botany is in a much sounder state in Scotland than it was in the eighties when we commenced its reconstruction'. (39)

For both, the Edinburgh succession became a matter of prime importance. However, for the first time in their long association, their views on this matter did not coincide. Bower wasted no time in contacting Lang, and once again the peace of the Manchester laboratory was to be disturbed. Acting on Bower's advice, Lang wrote to the Principal of Edinburgh University, Sir Alfred Ewing, asking for details of the intending vacancy. From the outset the dual nature of the appointment was a matter of concern for him. As he explained to Bower (10th February 1922) if it was the Chair alone he would enter as a candidate 'for all I was worth' but the addition of the 'Garden side' was an added complication, and so he decided to do nothing more over the matter (40). His conclusion had been reinforced by the rumour that there might be an 'approved



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successor' in the field. Whilst Bower had initially made the moves to ensure Lang's candidature, on reflection he had come to agree with the decision, as seen in the pencilled notes he had appended to Lang's letter. In these he noted that whilst Lang was 'the biggest man we all know – there was the risk of sacrificing the best to officialdom – the whole question was fatally fouled by retaining the dual post'. A subsequent letter from Lang (20th February 1922) confirming his earlier decision, agreed that the 'Edinburgh environment was attractive', and concluded with the comment 'it looks like Glasgow being the last temptation' (41).

Bower had been approached early in February 1922 by another senior botanist asking his support for an application for the Edinburgh vacancy. This was H.H. Dixon F.R.S., Professor of Botany at Trinity College Dublin, Director of the Botanic Garden and Keeper of the Herbarium, a combination which made him a strong candidate, as Bower stated to Sir Alfred Ewing. However, there remained the matter of an 'approved successor'. Balfour was strongly supporting his Deputy, William Wright Smith. Wright Smith was an Edinburgh graduate in Arts who had first entered teaching but had subsequently studied Botany, Zoology and Chemistry and been made Balfour's Assistant in 1902. His botanical interests now came foremost and he was appointed to take charge of the Government Herbarium in the Royal Botanic Garden in Calcutta in 1907, becoming Director of the Botanical Survey of India in 1908, returning to

Edinburgh as Balfour's Deputy in 1911. Balfour was well aware of the strength of Dixon's candidature, and wrote a strong letter in support of Wright Smith (13th February 1922) in which he stressed Wright Smith's standing as a systematic botanist, his outstanding contributions to botanical teaching, and his extensive expertise in the administration of the Botanic Garden (42). Balfour's testimonial was probably crucial as far as the Secretary of State for Scotland was concerned and Wright Smith was duly appointed to the joint post. Balfour, commenting to Bower on the three front runners for the Edinburgh appointment (Lang, Dixon, Wright Smith) conceded that they were all 'good men', but that whilst Wright Smith's work was less well known of the three, he was 'brilliant and a man of culture' (43). Whilst Bower had given his strong support to Dixon after Lang's withdrawal he wrote to Wright Smith offering his congratulations and hoping that the close co-operation between Glasgow and Edinburgh would continue. Wright Smith in reply (19th April 1922) referred to the serious deterioration in Balfour's health during the previous twelve months. He also expressed the view that he would have welcomed a separation of the two posts, especially had Lang been appointed to the professorship (44).

The one person somewhat taken aback by the appointment was H.H. Dixon. On 22nd April 1922 he informed Bower that he had been 'Greatly Surprised' at the result of the Edinburgh appointment. He had thought that for such a prestigious position a man of solid achievement or one of great promise would have been selected. Edinburgh, with a large staff, laboratories and gardens offered opportunities for research work of such magnitude that 'its scientific output should almost equal that of the rest of the British Isles put together'. He hoped that such resources would be fully utilized in future (45). Which viewpoint rather underlines Balfour's earlier statement that Wright Smith was little known outside the Botanic Garden. Wright Smith was to remain in the dual post for 34 years until his death in December 1956. He was to be knighted in 1932 and elected F.R.S. in 1945. By coincidence Balfour had occupied the joint post for 34 years, as had also his father J. Hutton Balfour ('Old Woody Fibre') from 1845–1879. After Wright Smith's death the division which Lang would have welcomed took place, with a separate Regius Professorship established in 1958. From Bower's point of view, however, in the process Lang had clearly indicated the prospect that Glasgow would beckon more strongly at some future date.

There is a sad postscript to the 'Edinburgh Interlude'. The deterioration in Balfour's health noted by Wright Smith had its origins in the war years when, as Bower described in the obituary, there had been a 'cruel personal loss at the front'. Almost immediately after Wright Smith's appointment Balfour left Edinburgh for the milder southern climate of Courthill, near Haslemere. His intention on retirement was to write a history of the Royal Botanic Garden, but he died on 30 November 1922 – St. Andrew's Day. Bower's obituary concluded (46):

'He had worn himself out in the service of others. That wonderful and elastic fibre had been strained beyond limit. Already in the summer of 1922 the silver cord was loosed and the golden bowl broken'.

A.D. BONEY

To be concluded in the next issue when the archive references will be included.

Library

The heaps of uncatalogued books in the Library Annexe have diminished slightly due to help with cataloguing from Dr Alan Brafield but with a constant flow of new material coming in it is sometimes difficult for visitors to appreciate that this week's pile is not the same as that they saw last week! Minor building and electrical work in two of the basement stores has resulted in re-plastered lower parts of the outer walls and some new lighting, all of which help to provide better conditions for storage and retrieving journals. Meanwhile work has continued on installing new water mains: this should be finished soon and we do seem to have lost the drips from the old pipes. We are now thinking about ways in which the East Basement stores could be re-shaped to give more space and better conditions for journal and archive storage.

A list of recent donations to the end of 2000 follows. We are now gradually cataloguing the materials received from the estate of the late B.E.Smythies. These are not being listed here as most are older material and would take a lot of space but they will all receive a "Provenance" card in the catalogue and will be listed in the Accessions register.

Donations: September – December 2000

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| R. Angus | Brauer, A. ed., <i>Susswasser fauna von Mitteleuropas, Insecta Coleoptera: Hydrophilidae, Heliophorinae</i> . By Robert Angus. 149 pp., illustr., Berlin, Spektrum Acad. Verlag, 1992. |
| J.L. Cloudsley-Thompson | Clark, William C. & Munn, R.E. eds., <i>Sustainable Development in the Biosphere</i> . 491 pp., figs, Cambridge, Cambridge University Press for IIASA, 1986. |
| Columbia Univ. Press | Balick, Michael J., Elisabethsky, Elaine & Laird, Sarah A. <i>Medical resources of the tropical forest, biodiversity and its impact on human health</i> . 440 pp., illustr., maps, figs, New York, Columbia University Press, 1996. |
| G.W.H. Davidson | Smythies, Bertram E. & Davidson, G.W.H., <i>The birds of Borneo, 4th Edition</i> . 853 pp., col. Illustr. maps, Kota Kinabalu, Natural History Publications (Borneo), 1999. |
| English Nature | Laffoley, D. d'A. & Bines, T., <i>Protection and management of nationally important marine habitats and species</i> (English Nature Report 390) 20 pp., map, Peterborough, English Nature, 2000. Laffoley, D. d'A., <i>Historical perspective and selective review of the literature on human impacts and the marine environment</i> . (English Nature Report 391) 20 pp., Peterborough, English Nature, 2000. Laffoley, D. d'A. (& others), <i>Nationally important marine seascapes, habitats and species</i> . (English Nature Report 392) 17 pp., Peterborough, English Nature, 2000. Laffoley, D. d'A. (& others), <i>An implementation framework for the conservation, protection and management ...marine</i> |

- wildlife in the UK*. (English Nature Report 394) 29 pp., Peterborough, English Nature, 2000.
- B.J. Ford Ford, B.J., *Institute of Biology, the first 50 years*. 135 pp., illustr., London, Institute of Biology, 2000.
- R. Fortey Fortey, R., *Trilobite! eyewitness to evolution*. 284 pp., illustr., New York, A. Knopf, 2000.
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- Friday, Laurie & Harley, Basil, *Checklist of the flora and fauna of Wicken Fen*. 112 pp., frontisp., map, Colchester, Harley Books, 2000.
- Salmon, Michael A., Marren, Peter & Harley, Basil, *the Aurelian legacy, British butterflies and their collectors*. 432 pp., illustr. some col., Colchester, Harley Books, 2000.
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- A. Farjon INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE, *2000 IUCN red data book of threatened species* edited by C. Hilton-Taylor, 61 pp. + CD-ROM, maps, figs, Gland, IUCN, 2000.
- J. Kinnear & M. Martin Kinnear, J. & Martin, Marjorie, *Nature of Biology I & II* 545 pp. & 540 pp., col. illustr., Milton, Qld., John Wiley/Jacaranda Press, 2000.
- H.W. Lack Lack, H. Walter, *A garden for eternity, the Codex Liechtenstein*. 343 pp., col. illustr., Bern, Bertelli, 2000.
- T. Morris Drakeford, Tony & Sutcliffe, Una, *Wimbledon Common and Putney Heath, a natural history*. 222 pp., illustr. some col., maps, London, Wimbledon and Putney Common Conservators, 2000.
- R.M. Payne Rayne, R.M. *The flora of roofs*. 22 pp., Norfolk, privately, 2000.
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- C. Tancin McVaugh, Rogers, *Botanical results of the Sessé & Monciño expedition (1787-1803) VII: a guide to the relevant scientific names of plants*. 626 pp., Pittsburgh, Hunt Institute, 2000.
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Obituary Cyril Astley Clarke

Professor Sir Cyril Clarke K.B.E., F.R.S., Fellow *Honoris Causa* of this Society and holder of the Linnean Medal, died on 21st November 2000, aged ninety-three. His name will be well known to readers of *The Linnean* as the author of a number of contributions on gene frequencies in moths. There is an interesting connection between this work and his distinguished career in medicine.

Cyril Clarke was brought up in Leicester, from which he was evacuated a few miles into the country during the First World War, for fear of zeppelin attacks. There he was educated by a governess who implanted in him a life-long interest in the Lepidoptera. This became a major influence on his future work. Another was marriage to his wife Frieda (Féo) in 1934, who shared his enthusiasm for both lepidoptera and dinghy racing.

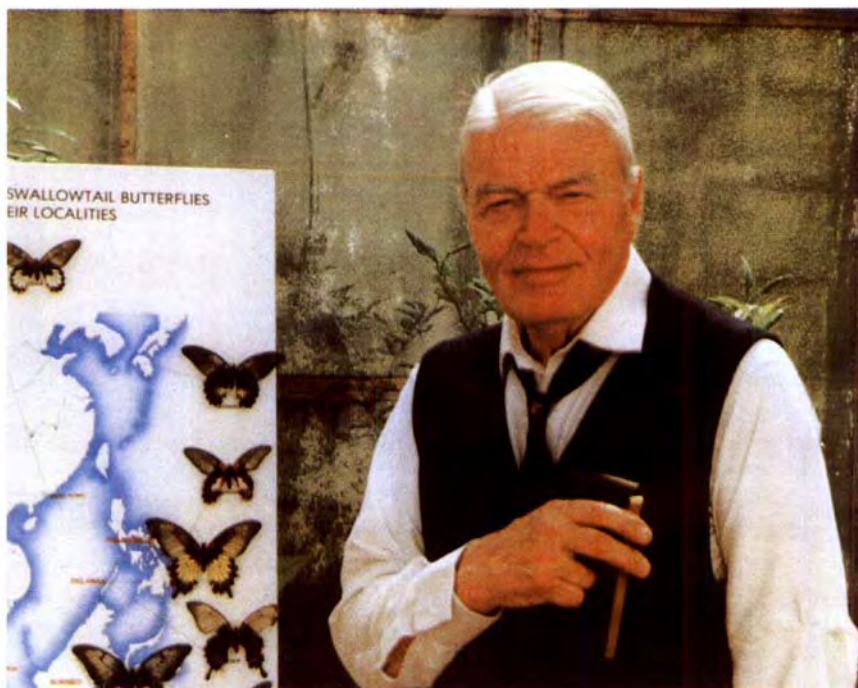
After studying Natural Science in Cambridge and medicine at Guy's, Clarke followed a medical career. During the Second World War he was a Surgeon Lieutenant in the Royal Navy, serving in Britain and Australia. In 1946 he became a consultant in a Liverpool hospital and subsequently Professor of Medicine at Liverpool University, from which he retired in 1972. He was in Liverpool when he came into contact with the person who, with his wife, had a major impact on his scientific career.

Clarke's introduction to Philip Sheppard arose through a common interest in butterflies. Mimicry in butterflies played an important part in the history of ideas about evolution and inheritance. An argument developed at the end of the 19th century as to whether complex mimetic patterns could evolve under natural selection, since imperfect mimicry might be more useless than no mimicry at all. Punnett felt that they could not, and that similar patterns reflected phylogenetic relatedness, Poulson and Hale Carpenter argued that they could. The evolutionary model was put on a firmer

basis in the 1930s by R.A. Fisher and E.B. Ford who in different ways argued for the development of super-genes composed of closely linked loci determining different features of the mimetic pattern. These would be inherited together and have expressions influenced by the genetic backgrounds in which they operated. Sheppard, in Oxford in the 1950s, was much influenced by these ideas and wished to carry out experimental studies. Clarke was expert at breeding the species concerned, and had developed skill in hand pairing the insects, allowing controlled crosses to be achieved. Cooperation started when Clarke answered an advertisement placed in an entomological journal by Sheppard, who wanted swallowtail pupae. Later, Sheppard became Professor of Genetics in Liverpool and in a series of papers the two of them demonstrated conclusively the validity of the super-gene model. In several species of mimetic swallowtail butterfly the patterns could be broken down into separate components controlling different aspects, such as fore- or hind-wing colour, colour of abdomen and presence or absence of hind-wing tails. Crosses between geographically distant races exhibited breakdown of the dominance found within races. This demonstration greatly advanced our understanding of the structure and evolution of the genome, and has parallels in systems such as MHC in human genetics.

At first, much of the butterfly work took place in glasshouses in the Clarkes' garden. The early 1960s was a period when the importance of genetics to medicine became very apparent. The structure of DNA had been elucidated, Down's Syndrome had been shown to be due to a genetic abnormality (a non-disjunction), the importance of blood groups in relation to transfusion and surgery was obvious and possible associations of blood groups and disease were being investigated. With the backing of E.B. Ford and Dame Janet Vaughan, Cyril Clarke was instrumental in persuading the Nuffield Foundation to establish a Unit of Medical Genetics in Liverpool University Department of Medicine to promote research and teaching. He became its Director, and butterfly genetics continued on the roof of the medical building. On the medical side, Clarke and Sheppard collaborated on a number of projects. The one which was a spectacular success concerned the Rhesus system, also determined by a super-gene. Many children of Rh positive fathers and Rh negative mothers tend to suffer from haemolytic anaemia due to maternal immunization. Research by the Liverpool team elucidated the reason for this and led to their devising and refining an effective method of prevention, which is now standard practice. Besides research, Clarke's administrative and committee skills did much to promote a flowering of medical genetics throughout the country in this period. The parallel interest in insect and human genetics is evident in his book *Genetics for the Clinician* (Blackwell), first published in 1962.

Clarke and Sheppard also studied melanic polymorphism in peppered moths, surveying the frequencies from Liverpool to north Wales and carrying out experiments on differential predation of the different forms by birds. A programme of annual sampling of moths was started in the Clarkes' garden on the Wirral, where the moths were particularly abundant. The frequency of the black form was over 90 per cent in 1959 when sampling commenced. Every generation from then on has been sampled, following the decline to less than 10 per cent in what is one of the best recorded longitudinal studies of gene frequency in any species in the wild. This work has permitted a wide variety of analyses, to examine relative fitness change, emergence



Open Day at the Nuffield Unit butterfly house, University of Liverpool 1989.
Photo courtesy of Stephen Clarke.

time of the morphs, association with measures of atmospheric pollution and the influence of moonlight on flight. During the course of the survey some specimens of the normally day-flying scarlet tiger moth came to the light traps. They were descendants of insects in an artificial colony established by Sheppard nearby to study another case of genetic polymorphism. The Clarkes were able to examine this for a further series of years when it was relatively abundant. Once again valuable results were obtained. I did not always agree with the conclusions drawn with respect to either species, but they were always stimulating and often provocative. This could also be said of some of his medical views; thus he did not believe there was a causative relation between smoking and mortality, somewhat surprising in a past President of the Royal College of Physicians. Above all, he was a pragmatic investigator, quick to make pertinent observations and to see their uses. Official records of particulate smoke levels are somewhat sporadic, making them difficult to relate to changes in melanic frequency in peppered moths, so the Clarkes considered an alternative index involving wind direction, the coat colour of their white spaniel dog and the condition of the washing. This and similar stories from other parts of his life are told in a lively memoir written by Sir Cyril when he was eighty-eight (Clarke, 1995). The list of mimicry papers below is incomplete, but gives an idea of the range and depth of that work, while contributions on peppered moths and tiger moths (one of them an address as President of the Royal Entomological Society) cover the population monitoring work by this practical scientist of extraordinarily wide accomplishment.

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