

## Editorial

June this year marked the 50th Anniversary of the D-Day landings on the beaches of Normandy. Six months prior to this event, with the war already turning in favour of the Allies, the Council for Promotion of Field Studies (now the Field Studies Council) was established on 10th December 1943. Coincidentally, 1943 also witnessed the foundation of our series of identification guides: *Synopses of the British Fauna*.

In March 1992 exactly 49 years later, the Field Studies Council agreed not only to publish but also to market this Linnean series for us. In the intervening years several different publishers had found the series barely viable but, true to its mission of "Environmental Understanding for All" (Stanbury, 1987) the FSC has stepped into the breach and appropriately marked their 50th Anniversary (and that of the *Synopses*) with the publication of *Marine Planktonic Ostracods* last September.

In one of the articles in this issue Dr John Crothers the new editor of the *Synopses* explains how this has come about.

This issue also contains an article on Nicolai Vavilov's relations with British scientists, passed to me by Professor J D Hawkes. At the same time we are also publishing a photograph showing Vavilov as a young man, in the hope that it may stimulate some of our older Fellows who met Vavilov to provide further information on the visits to Britain made by this famous geneticist and plant breeder.

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### SYSTEMA NATURAE

The green beetle grades the grass blade  
 Millimetre by millimetre,  
 Guides the gaze  
 Upwards and out  
 To the tree.  
 To species  
 Through synonym  
 Through genotype  
 To genus.  
 To family  
 To superfamily  
 To order.  
 To class  
 To phylum  
 To kingdom.  
 To life.  
 Dizzied,  
 The eye descends  
 To the powdered, granulated, emerald weevil,  
 Its antennae waving,  
 Its elytra bright.  
 All learning is little  
 And therefore dangerous.  
 There is too much to be grasped.

ALISDAIR ASTON

## Society News

### HIH Prince Hitachi of Japan (new Honorary Member)

HIH Prince Hitachi has graciously accepted Honorary Membership of the Society; he has indicated his wish to be recognised as a cell biologist who is involved in the comparative histology of human and lower vertebrate tumors, rather than an embryologist involved in cancer research, as was stated in the motion put to the Anniversary Meeting. He is additionally Honorary Patron of the Japanese Association for the Protection of Birds.

In the Queen's Birthday Honours List, the immediate Past President, Professor John Gregory Hawkes received an OBE for his services to botany. The Society offers its warmest congratulations and is delighted that the citation included the words *President of the Linnean Society*.

Professor Hernando Garcia-Barriga FLS has been awarded the second Richard Evans Schultes (FMLS) Award for his work in ethnobotany. Professor Garcia-Barriga, from Bogota, Colombia, visited London in 1989 to be admitted to the Society and presented the Society's Library with three volumes of his ethnobotanical works, from which it was apparent that he had early realised the importance of plant medicines for the majority of the world's peoples who would not, for generations, be able to afford the products of Western drug companies. We offer our congratulations to one of our most distinguished Fellows.

Colombia features in a sadder event – the death of Gerardo Reichel-Dolmatoff FLS. Each year he would exchange his house in Colombia for a bijou residence in St. Clements, Oxford, whence he would descend on the Society's rooms. His was a commanding presence – he stood well over six feet tall – and he embodied all that is good in the patrician, which he most certainly was. Deciding that Europe had little to offer in the thirties (who can blame him?) he moved to Latin America and stoically bore the vicissitudes of financial and political instability for fifty years. He was delighted to be able to attend the Annual Regional Meeting at York last year, where he gave a paper, which he knew would be one of his last. He travelled uncomplainingly there from Oxford in a small car packed with other people's luggage and did all the rounds of that marvellous meeting. A few weeks before his death, the Society received a postcard from him in Belem, on the other side of the continent to which he had given his life's work in ethnology. It was the one last trip down the Amazon. They don't make them like that any more.

The 15th June saw the Society's *Conversazione* coincide with the first of the rail strikes. Three quarters of those due to attend did so, as did eight of the nine exhibitors. What might have fallen flat turned out a jolly good evening and thanks must go to all those who made the effort. Particular thanks go to Mrs. Kay Fairfax, who performed miracles with flowers from Covent Garden, delivered by Mr. John Parmenter, better known perhaps as Mr. Gina Douglas! Any members who paid, but were unable to come because of the travelling difficulties, are being offered their money back. Please contact the office if you have not already done so.

### Zoological Secretary

Under Bye-Law 10.2, the Executive Secretary had received by 25th August 1994 the names of two nominees, who will need to contest the single vacancy on Council before they can be considered for election as Zoological Secretary. Mr Brian Ford has been nominated by Council, and Dr Sara Churchfield has been nominated by Dr. P.E. Ahlberg, Dr. J.A. Clack, Dr. M.I. Coates, Dr H.E. Gee, Dr. D.S. Ingram and Dr. C. Patterson. The elections will take place on 17th November at 4.30pm.

Earlier in the year, the Royal Society hosted a meeting for learned societies to examine the European dimensions of their subject areas. Amongst those attending was Professor Paolo Fasella, the Director General within the EC for research. Unlike many societies, there are no exact parallels between the Linnean Society of London and other mainland European societies (although there certainly are Linn(a)ean Societies with rather different rôles). Should the Society take on a more consciously European stance? Council has decided that it should and the first result of this decision is a meeting in Leiden, The Netherlands, on 14-16th May 1995 entitled *Systematics Agenda 2000 – The Challenge of Europe*. The meeting is being organised by two Fellows, Dr. David Cutler of Kew and Dr. Pieter Baas of the Rijksherbarium at the University in Leiden. The aims include raising the profile of systematics in Europe to enable coordinated applications for support to major agencies, who might consequently appreciate the importance of systematics, the identification of centres of excellence, improved intra-European collaboration and improved prospects for personal mobility within Europe. Clearly the hope is for a Europe-wide enhancement in funding for systematics. This meeting follows one earlier in the year (9 – 10th February), entitled *Present Progress and Future Prospects in Studying the Taxonomy and Distribution of the Flora of NW Europe*, which is a joint meeting with the BSBI, organised by the current President of BSBI, Dr. Franklyn Perring OBE FLS. Details of other meetings of the Society into the New Year can be found on the back cover of this issue.

Other meetings we have noted include two at the International Mycological Institute, Bakeham Lane, Egham, Surrey TW20 9TY on *Modern Techniques in Identification of Bacteria and Filamentous Fungi*, on 31st October – 11th November and on *Identification of Aspergillus and Penicillium Species* on 21st – 25th November. On 2nd – 5th November, there is a practical course on *Principles and Applied Aspects of Production Ecology* in Wageningen, The Netherlands (EERO, PO Box 182, NL-6700 AD Wageningen, The Netherlands). The International Organization of Plant Biosystematists is holding its Sixth International Symposium in Tromsø, Norway from 29th July – 2nd August on *Variation and Evolution in Arctic and Alpine Plants* (VI IOPB-Symposium, The Bergius Foundation, PO Box 50017, S-104 05 Stockholm, Sweden). Members attention is also drawn to an International Conference on the *Value and Valuation of Natural Science Collections* at Manchester University on 19 – 21 April 1995, which the Society is supporting, although it coincides with a Society meeting at Kew on *The Evolution of Plant Architecture*. Natural science collections

have scientific, cultural and monetary values. The conference will explore the nature of these various values and will reflect the experience of those involved in the care and use of such collections. Contact Charles (Bill) Pettitt, Keeper of Invertebrates, Manchester Museum, University of Manchester, Manchester M13 9PL. E-mail: C.Pettitt@man.ac.uk, tel: 061 275 2666, fax: 061 275 2676. These dates (19 – 21st April) also mark a meeting of the Systematics Association in Cardiff, at which two former Presidents of this Society, Professors Claridge and Hawkes, will be speaking on the topic *The Units of Biodiversity: Species in Practice*. Contact Prof. MF Claridge FLS, School of Pure and Applied Biology, University of Wales, Cardiff CF1 3TL.

Advance notice is given of a meeting on 25 – 29th March 1996, *The Bamboos*, which seeks to embrace the taxonomy, anatomy, physiology, tissue culture, genetics and ecology of these plants. The organiser is Dr. Geoffrey Chapman FLS, who can be contacted at Wye College, Ashford, Kent TN25 5AH, by those interested in contributing to the meeting.

The Oleg Polunin Memorial Fund exists to give assistance (usually up to £500) to individuals or organised expeditions to undertake botanical/biological fieldwork abroad or in the UK. Write to the Headmaster, Charterhouse, Godalming, Surrey GU7 2DJ.

The Royal Geographical Society is to merge with the Institute of British Geographers from January 1995. The merged Society is to be called the Royal Geographical Society (with the Institute of British Geographers). Details from either Society at 1 Kensington Gore, London SW7 2AR.

The RGS is a favoured venue for meetings in London of those concerned with biological conservation, including the Linnean Society, which has enjoyed some successful meetings there. The RGS is happily taking a strong line on biodiversity conservation, for which members of the Linnean Society must be grateful, so it was good to see their support for *Belalong: A Tropical Rainforest*, which is a study by the Earl of Cranbrook FLS and David S. Edwards. Details from Nigel Winsor at the RGS, above.

The Society has also received a copy of *Implementing Environmental Management*, one of whose authors is John Cairns FMLS, with a note stating that the low cost of this book (\$7) precludes any advertising or promotion. Orders from UCE&HMS, Attn. Barbara Falls, 1020 Derring Hall (Mail Stop 0415), Virginia Polytechnic Institute and State University, Blacksburg, VA 24061, USA.

The Society has been grateful to receive a donation of £1000 from the Golden Bottle Trust, which will go towards supporting younger members within the Society.

Mr. B. E. Smythies FLS has augmented the Jill Smythies Prize Fund with £17,333 in memory of his wife, who died in June.

It is regrettable that members could not be given more notice of a meeting held in July at Lincoln entitled *Arcady Transposed*, which was a 4-day survey of Anglo-Australian Landscape. It featured an *Opera Gastronomica* at £35 and a session on the impact of Handel's music on the first European settlers in Australia. Sheep may safely graze, perhaps?

Some members may recall Mr. Martin Forejt, from the Czech Republic, who has worked in the Library during the past four summers. In 1991, Martin embarked on a

degree course in the UK at Liverpool John Moores University in Information Science, for which he had to find every penny towards his fees and sustenance. On 19th July, he graduated with first class honours and the prize for the best student.

#### *The Society's Grants*

The Council has made the following recommendations to NERC in support of Taxonomic Publication:

Dr. M. E. J. Fitzpatrick £337 for discussion of dinoflagellate cyst species from the Turonian of southern England.

Mr. S. K. Haslett £700 for photography and other costs to describe and illustrate the radiolarian fauna of the eastern equatorial Pacific.

Dr. R. W. Ingle £500 for illustrations in connection with a revision of *Shallow Water Crabs* and preparation of *Shallow Water Lobsters* in the *Synopses* Series.

Dr. J. Kathirithamby £1000 for work on the taxonomy, fine structure and molecular phylogenetics of Strepsiptera (Insecta).

Mr. O. Morton FLS £500 for illustrations in connection with the publication of a distribution of marine algal flora of Northern Ireland.

Dr. A. C. Pont £300 for illustrations connected with a taxonomic revision of the European *Sepsidae* (Insecta, Diptera).

Mrs. R. Wise FLS £800 for illustrations connected with the production of *The Endemic Plants of the Granitic Seychelles, a Portrait of a Vanishing Flora*.

Dr. S. R. J. Woodell £500 towards illustrations for the *Flora of Oxfordshire*.

The total of these recommendations is £4637, and the recommendations have been accepted by NERC.



Claire Dalby receiving the Jill Smythies award 1994 from the President.

It was agreed to support the following grants from the Bonhote Fund:

Mr. T. Crompton £300 towards a visit to Russia to consider the possible adaptive significance of *Drosophila* retrotransposons.

Prof. R. S. Thorpe FLS £200 towards a study of dangerously venomous snakes in Thailand.

The Society's grants were not advertised this year (although the NERC Grants for Taxonomic Publication were). To do so would have consumed nearly one third of the funds available for distribution, so much have interest rates and company earnings shrunk in the past couple of years. It has been decided to place a smaller advertisement for grants for research early in 1995 for the 31st March deadline. Any help which members can give in spreading knowledge of the Society's grants, details of which are to be found in the List, would be most welcome.

#### *Dennis Stanfield Awards*

In 1994, 27 valid applications were received, similar to the number in 1992. It was agreed by the panel set up to recommend grants for 1994 that the following awards should be made:

£1000 to Dr. Phanel Oballa, of the Kenya Forestry Research Institute, for work on Evaluation of Genetic Diversity and Reproduction Potentiality of *Populus ilicifolia* for Conservation. This money is to be used for fieldwork associated with the project and also a contribution towards the chemicals required.

£1000 to Dr. I. O. Fasidi, of the University of Ibadan, Nigeria, for work on Studies on *Volvariella esculenta*. This money is to be used for the purchase of a Spectronic 21 and also a contribution towards the chemicals required.

£500 to Dr. Shakkie Kativu, of the University of Zimbabwe, for work on Biosystematic Studies in *Asphodelaceae* of the Flora Zambesiaca Area.

The Dennis Stanfield Fund has received £6000 under the will of Mrs. Nancy Stanfield, the widow of Dennis Stanfield, who died late in 1992. The Fund continues to benefit from royalties due on *The Trees of Nigeria* (£149.51) through the generosity of Dr. R.W.J. Keay CBE FLS.

We welcome the following new members in 1993:

Hani Abu Sbaih, Rodney James Ailes, Timothy Allen, John D Anderson, Daniel Frank Austin, Frederick William Baker, Donald Burton Baker, P Balakrishna, Robert Charles Baldwin, Henrik Balslev, Richard Mark Bateman, Derk Max Blouw, Leon Brimer, Gail Linda Rowat Bromley, Anthony Terence Buffery, Arthur Hugh Bunting, Colin James Burrows, John Cairns Jr (FMLS), Laurie Hing Man Chan, Chariton Charles Chintiroglou, John Aitken Clarke, Paul Frederick Sinel Cornelius, Paul Alan Cox, Giovanni Cristofolini, Marshall Crosby, Clifford Charles Davy, Penelope Dawson-Brown, Gordon Colin Dickson, Annie Duncan, Roy William Dearnley Fenn, Francis Egerton Ferns, Estrela Paula Das Figueiredo, Ernesto Foldats, Maurice Curtis Foster, Victor James Furay, Maurice Garretts, William Micheal Goulding, David Edward Green, Karen Ann Gresty, Jillian, Duchess of Hamilton, Martin James Head, Michael Ernst Heinrich, Judith Drusilla Hutchinson, Robert Huxley, Kieran George

John, Katherine Kaye, Gillian Mary King, Steven Lee, Geoffrey Lees, David Paul Lindfield, Lynn Margulis, Pavol Martonfi, John Maskrey, Alan William Meerow, Christopher John Mettam, Richard Miller (FMLS), Paul Mitchell, David Moore, Munir Munir, Margaret Ann Munro, Norman Myers (*Honoris causa*), Christopher A Norris, Henry Francis Oakeley, Sieglinde Ott, Roderic Dugald Page, Ravi Parkash, John Stewart Parker, Roland Neil Perry, Barbara Pickersgill, Muhammed Tahir Rajput, Juergen Riess, Donna Irene Rispoli, David McLean Roberts, Tom Jones Roberts, Alex David Rogers, Vidhisha Samarasekara, Jeremy Byron Searle, Barbara Sibanda, Anna Birgitta Sillen-Tullberg, James Brodie Sinclair, Peter William Skelton, Erik Francois Smets, Andrew B Smith, John Herbert Sparks (*Honoris causa*), Ivan Stancioff, George W Staples, Andrew Starrett, Glenn William Storrs, Attila T Szabo, Hans Ingemar Temrin, Andrew Kenneth Tickle, Kevin John Tilbrook, Sue Dale Tunnicliffe, Carlo Violani, Margot Walker, Christopher Walker, Spencer Watts, Kathie Way, Philip John Whitfield, Michael Wilkinson, Robert Stansell Williams, Paulo Gunter Windisch and Samuel I Zeveloff.

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*From the Archives*

Letter found inserted in copy of "*Animal sanctuaries in Labrador*" an address presented by Lt. Colonel William Wood FRSC before the Second Annual Meeting of the Commission on Conservation at Quebec, January 1911, published by the Commission of Conservation of Canada:

21 Sept 1911

To A.R. Wallace Esqr.

59 Grande Allée  
Quebec

Dear Sir –

I am taking the great liberty of bringing to your notice a mere amateur's address on "*Animal sanctuaries in Labrador*" which has just been published by the Commission of Conservation here. It is under separate cover, OHMS.

Though my work as an author is with very different subject matter I have always delighted in natural history, and I have been an equally delighted reader of your books ever since I was a boy at school in England in the '80s.

It is simply infuriating to see the sheer wanton destruction that is going on here. As nobody seems to be trying to see the subject as a whole I ventured to step into the breach and – with what results, I don't know. I have often sailed and paddled about the Lower St Lawrence, and been out with the natives, and so seen things from the inside.

There is, on the whole, much less than the truth in my address. I could have made it much stronger. The Nascaupas have been vitiated by the whites and are the most shiftless and destructive Indians we have. Then, the members of the Audubon societies who get the collecting craze are almost as bad as the Newfoundland fishermen. The

Director of Education in New York wrote to me reporting one “scientific gentleman” who took 369 clutches of eggs this summer “for scientific purposes”! Politics are another trouble. No one who votes for the provincial or Dominion party in power is even punished.

Curiously enough I got very strong letters of encouragement from the two men most influential on such subjects in the public eye, one on each side of the line, both on the same day. Mr Roosevelt, who, as you doubtless know, was chiefly instrumental in establishing 34 sanctuaries during his terms, is very enthusiastic about the possibilities of Labrador. Lord Grey, whom I have often talked the matter over with, is equally so; and has promised to take the first opportunity of saying something pertinent in public.

Mr Roosevelt quoted from “The World of Life” to reinforce his argument. Needless to say I was a convert before – May I say without impertinence, that your conception has shown me, better than anything else, how the great brutes(?) of science, religion and art must meet at the top, though they have all been climbing up different sides of the hill!

I apologize for trespassing on your time in a matter on which I am no scientific expert.

I have so little time that I cannot hope to do much. But by collecting information from all quarters and making a digest of it for the Conservation Commission in 1912, I hope to be able to hand over to them then the first sketch of the materials for a working hypothesis.

I beg to thank you for many happy hours spent in the company of your books, and to remain, with the greatest of respect,

Faithfully yours  
William Wood  
(Lt Colonel R.O., C.M.)

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1840's

65 Oxford Terrace, Hyde Park

Dear Mr Bennett

I shall not be in town when the Linnean Society dinner takes place, so I cannot join the festivities. I have been in bed a week; & in the house a longer time with violent cold & cough, & am going out of town to avoid the genial spring weather of England. If there is any memory more touching than another of all those which remain to me of 12 years stay in the south, it is this – that I never used a pocket handkerchief in those halcyon days – whereas now life seems to me but one great noseblowing from “day til night, – from night to morn”.

Believe me, yours sincerely,

Edward Lear

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*Picture Quiz*

The July Picture Quiz (10(2):7) figured the British zoologist John Edward Gray (1800 – 1875). Although his father was a pharmacist he belonged to a family which claimed John Ray as a collateral ancestor and had included many naturalists. Samuel Gray III was a seedsman in Pall Mall, London in 1680, while his grandson and great grandson, Samuel Gray IV and V continued the tradition, trading with Holland and importing flowers, roots and particularly mustard seed (which they subsequently ground). Samuel Gray V (1739 – 1771) was more than a seedsman – for he also translated Linnaeus's *Philosophia botanica* (1751) into English for James Lee's *An Introduction to Botany*.

Born in Walsall, the family eventually moved to Brompton, London near the Queen's Elm Public House. From here John Edward attended the School of Anatomy and Surgery run by Mr Taunton in Hatton Garden and Maze Pond (1816) and later St. Bartholomew's Medical School (under the tutelage of John Abernethy). During these years as a medical student (1817 – 1823) he spent much of his time helping his father with his *A Natural Arrangement of British Plants* (2 vols: pp1002, 1821), a revolutionary work which espoused the natural system of classification, while rejecting Linnaeus's artificial system and criticising his nomenclature. John Edward Gray apparently compiled the bulky synoptical, systematic part (possibly with the assistance of Richard Salisbury). Unfortunately, as well as rejecting the sexual system the book failed to mention James Edward Smith as the author of Sowerby's *English Botany* (referring to it merely as Sowerby's). When in the following year (April 1822) John Gray was proposed as a Fellow of the Linnean Society, he was rejected by a large majority. His certificate had been signed by A.H. Haworth (a member since 1798), N.A. Vigors, J.F. Stephens, Joseph Goodall (Provost of Eton College), Richard Latham, Edward Griffith and R.A. Salisbury, nevertheless he was blackballed as a result of lobbying beforehand by J.E. Smith's over-sensitive friends. That it was the omission of Smith's name (and the disrespect shown thereby to the President of the Society) that caused these die-hard Linneans to reject Gray is attested to in a letter of 4th May, 1822 from the Librarian, A.McLeay to J.E. Smith. Haworth (a co-founder of the 'Zoological Club') was so incensed at what he called "an unjust and underhand

combination to crush a young naturalist", that he added a codicil to his will – that his collection of British Lepidoptera (being the types of his *Lepidoptera Britannica*) previously left to the Society, should be sold! As W.Stearn commented "the Society never again repeated such a shabby business".

The text of the earlier numbers of *English Botany* had been furnished gratuitously by George Shaw (1751 – 1813), Gray's predecessor in the British Museum. However, as the work became more noticed, Sowerby arranged for J.E. Smith to provide the descriptions of each new plate paying him the princely sum of a guinea for every description, which must be considered as one of the best paid pieces of botanical writing (especially when considered together with Rees' *Cyclopaedia* to which Smith was simultaneously contributing).

According to Gray, Smith never forgave him, for when he was engaged on his monograph on the *Cyprædae* he wrote to Smith asking if he might be allowed to see three specimens in the Linnean collection. Smith apparently did not reply but when he (Gray) asked Sowerby to make the request on his behalf, Smith replied that "the Linnean shells were not arranged, but any of Mr Sowerby's friends might see them except Mr. Gray."

Piqued by his rejection, Gray turned his attention to zoology – "it stirred up my spirit of resistance and I determined to leave the medical profession and devote myself to the study of natural science". He quickly became secretary of the Entomological Society and was also present at the first meeting of the Zoological Club on Wednesday, 27th November 1822. Unfortunately for him, at the second meeting of the Club it was agreed that only Fellows and Associates of the Linnean Society were eligible for membership!

Gray's antipathy to the Linnean Society was further exemplified in 1836 when he helped to found the Botanical Society of London and also became its first President (the initiative coming from Daniel Cooper, A.L.S.). The Society, however, proved not to be a serious rival to the Linnean and struggled on until 1859, by which time Smith and his touchy friends had long passed away and Gray had condescended to join the Linnean Society. Gray's second certificate was written out by the President Thomas Bell and signed by him and by Richard Owen, W.W. Saunders (Treasurer), John Meirs, W.J. Hooker, J.D. Hooker, George Bentham, J.J. Bennett (Secretary), John Richardson, G. Baily, Samuel Stevens (Wallace's agent) and Thomas Moore. He was elected on April 7th 1857 and eventually served on Council.

As a young man he became passionately involved in many social issues of the period including the emancipation of slaves and sanitary reform. But in 1824 he was offered a temporary job in the British Museum to prepare a catalogue of Reptiles, and here he remained for the next 48 years. He was a natural Museum employee and between 1824 and 1863 produced 497 papers, while a privately printed list of *Books, Memoirs and Miscellaneous Papers* (Gray, 1875) enumerates some 1,162 publications. This ceaseless flow of publications earned him both fame and notoriety.

His interests were not only confined to zoology for he was a strenuous opponent of the decimal system of coinage and the Metric system of measurement and was the first person to suggest (1834) a uniform rate of letter postage to be prepaid by means

of stamps. He was an advocate of Sunday opening of Museums and other facilities for visitors and played an active rôle in educational reform (serving on the Committee of Management (1838) which later became the Department of Education) as well as the treatment of the insane.

Elsewhere, his strenuous endeavours to improve the National Collections, often in face of great opposition and frequently at his own (wife's) expense, deserve the highest praise – and for this he was honoured by a doctorate from the University of Munich.

In later life he returned to the studies of his youth and in 1864 published a *Handbook of British Waterweeds or Algae* (with his wife's assistance); and in 1866 issued an unpublished fragment by his former mentor, R.A.Salisbury entitled *The Genera of Plants* being an early experiment in natural classification.

Though strongly outspoken his generosity, integrity and industry gained him general respect.



Clue: Joseph Hooker referred to him as a 'translucent character'.

There were several correct answers including William Stearn, David Allen and Peter Dance.

*“On this day, the sun glowing on the morning beach made us feel good. It reminded us of Charles Darwin, who arrived late at night on the Beagle in the Bay of Valparaiso. In the morning he awakened and looked ashore and he felt so well that he wrote, “When morning came everything appeared delightful. After Tierra del Fuego, the climate felt quite delicious, the atmosphere so dry and the heavens so clear and blue with the sun shining brightly, that all nature seemed sparkling with life.”*

*Darwin was not saying how it was with Valparaiso, but rather how it was with him. Being a naturalist, he said “All nature seemed sparkling with life,” but actually it was he who was sparkling. He felt so very fine that he can, in these charged though general adjectives, translate his ecstasy over a hundred years to us. And we can feel how he stretched his muscles in the morning air and perhaps took off his hat – we hope a bowler – and tossed it and caught it.”*

Question 1. Which novelist was writing about Darwin?

Question 2. Where was the beach alongside which the novelist was moored?

A small prize is offered for the first three correct solutions.

The Editor welcomes other such puzzles for inclusion in future editions.

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## Correspondence

Botanical Research Institute of Texas,  
509 Pecan Street,  
Fort Worth, Texas, 76102

26.1.94

Dear Editor Gardiner,

This is just to convey my congratulations on and thanks for such a fine newsletter. The 1st no. of vol. 10, just received, renewed my intention to write and say this. There is a fine array of articles and all were enjoyable and interesting. The biographical piece on Gwynne-Vaughan by A.D. Boney was a model in its kind and I look forward to more in a similar vein. G-V was of some interest to me in regards to his expedition to Malaya, rather than for his formal work in anatomy and paleobotany, but also for the insights into the university environment of the period. The piece by G. Kennedy on *The Naturalist at Law* was fascinating; I hope to locate some of the books by Freeman and enjoy them myself. In short, well done all round.

I look forward to future issues!

Yours sincerely,  
Benjamin C. Stone

The University of Queensland,  
Brisbane 4072

24.5.94

Dear Brian,

It is unfortunate for science when a book receives negative press unrelated to its aim and content. In this regard we question the bias throughout Rayner's gratuitous review (*The Linnean* 10(1): 66-69) of the book on the recently-developed Recognition Concept of species edited by Shane McEvey and specifically subtitled "Collected writings" of H.E.H. Paterson. The *ad hominem* "insights" offered by Rayner on Paterson's role in the development of the RC do not accord at all with our experience as research associates of Hugh Paterson during his ongoing development of the RC. Indeed, Paterson's dedication of his collected works to his graduate students complements his specific acknowledgment of their contribution in most of his papers.

Surprising, too, is Rayner's willingness to denounce an as yet unpublished collection of papers that impinge on the RC; some of his justification hinges even on one of the editors not having been a student of Paterson. It may therefore be germane to put on record that Rayner himself has never been formally associated with Paterson in his work, only having arrived on the scene after the RC was sufficiently well developed to be the subject of a review paper given at a conference in September 1982 and published in 1985.

Furthermore, Rayner's instruction to Paterson's readership to ask "where is the concept now?" rings hollow when Paterson's further developments of the concept, listed below, and which were too late for McEvey's edition, are consulted.

We thus question Rayner's aim in twice publishing his unsolicited offerings (an edited-down version of the same piece appears in the *South African Journal of Science* (vol.89, p 314), and believe that a further, scientific, review of Paterson's collected writings is warranted in a future edition of *The Linnean*<sup>1</sup>.

PATERSON, H.E.H. 1993. Variation and the specific-mate recognition system, pp.209-227, in *Perspectives in Ethology*, Volume 10: *Behavior and Evolution* eds P.P.G. Bateson *et al.* Plenum Press, New York.

PATERSON, H.E.H. 1993. Animal species and sexual selection, pp.209-228, in *Evolutionary Patterns and Processes* eds D.R. Lees & D. Edwards. Academic Press, London.

TURNER, A. & PATERSON, H.E.H. 1991. Species and speciation: evolutionary tempo and mode in the fossil record reconsidered. *Geobios* 24: 761-769.

Yours sincerely

Gimme Walter

N. Caithness

P.E. Hulley (Rhodes University)

D.M. Lambert (University of Auckland)

C.R. Pavey

M. Coetzee (SAIMR-Johannesburg)

M. Centner

R.M. Hunt (SAIMR)

S.L.O'Neill (Yale University)

H. Spencer (University of Otago)

<sup>1</sup> The Review published in *The Linnean* was unsolicited and I intend to pursue the Recognition Concept further in a later issue. Ed.

Department of Plant Science,  
University of Tasmania,  
Hobart, Tasmania 7001

12.6.94

Dear Prof. Gardiner

With some hesitation I write concerning the picture quiz in the January edition of *The Linnean*. I hesitate because I didn't believe I would ever actually recognise anyone in these illustrations. However, I am sure that the photo on page 8 is of George Bentham (1800 – 1884), who should be recognisable to any Australian botanist. I am probably one of many who have recognised this photo, but I will still gain some satisfaction if I am correct.

Thank you for the wonderful job you have done with *The Linnean*. I enjoy receiving it very much.

Yours sincerely  
Robert S. Hill

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### **The Linnean Society of London, Field Studies Council and The *Synopses of the British Fauna***

Is it a co-incidence that FSC and the *Synopses* both celebrated their 50th Anniversaries in 1993? In either event, it was in the best possible way for, in September that year, FSC Publications issued No. 48 in the New Series, *Marine Planktonic Ostracods* by Martin Angel. It marked a significant advance in the provision of identification guides in this Country, bringing together, in a most practical manner, the expertise of two important traditions.

#### **The Society**

It was at a General Meeting of the Linnean Society, held in Burlington House on 11th March 1943, that T. H. Savory presented his *Synopsis of the Opiliones* (Harvestmen). After discussion, the President announced “that the Society intended to publish it as the first of a series of ecological fauna lists”.

The stimulus to initiate a series of identification guides was part and parcel of a much greater natural history movement in the country. It also produced the Council for the Promotion of Field Studies, the *New Naturalist* series of books, the Nature Conservancy, National Parks and many other important initiatives in the field of environmental education and conservation (Berry, 1987).

No sensible plans for nature conservation could be made unless the wealth of our flora and fauna could be listed, and the broad patterns of its distribution established. There was already a widespread knowledge of wildflowers, butterflies, fish and birds in this country, with appropriate books. Invertebrate animals (apart from the Lepidoptera) were another matter. Field identification guides simply did not exist for most groups – and no commercial publisher could see a market for them.

It was to counter that imbalance that the *Synopses of the British Fauna* were established. Douglas Reid, a biology master at Harrow School, became the first editor and eight volumes were produced between 1944 and 1949. Editorship passed to

Professor H. R. Hewer around 1954 and the range of titles had been extended to 14 by 1960 (see Kermack, 1986). Only available from Burlington House, sales were small and effectively confined to Fellows of the Society. Few others knew that they existed.

Those in-the-know, however, valued them dearly. When I joined the staff of Dale Fort Field Centre in 1963, John Barrett (the Warden) suggested that I obtained copies of all those still available as quickly as possible: which I did and I have them before me as I write.

By the mid-1960's, the zoologists on Council considered that the *Synopses* were in need of updating and extending. From their deliberations emerged the *New Series*, edited by Dr. Doris Kermack of Imperial College. "The Committee considered changing the series title but decided that, although rather old-fashioned, it was an accurate title and there was a lot to be said for honesty. The *Synopses* are not popular field guides, their individual coverage is too limited: neither are they taxonomic treatises or monographs, they are more superficial." They "try to bridge the gap between the two types of work." (Kermack, 1986). No.1 of the *New Series*, *British Ascidians*, appeared in 1970.

The Estuarine and Brackish Water Sciences Association was also contemplating a series of identification manuals in the 1970's but a most successful negotiation between the two bodies resulted in a single series with joint editorship. Thus, from No. 13 onwards (published in 1979), all volumes were jointly edited by Richard Barnes for EBSA and Doris Kermack for the Linnean Society.

As well as having more enthusiastic and vigorous editors, the *New Series* differed from its predecessor by utilising a commercial publisher. As a result, they became more widely known and appreciated. However, Academic Press, and all their successors:— Cambridge University Press, and Dr Wm Backhuys with E. J. Brill or Universal Book Services, found the series barely viable. The volumes' limited appeal and their small print runs were ill-suited to companies with high operating costs and a remit to show profits within 6 months. All sought to increase the price per copy — CUP even shifted into hard back form — and economised on publicity. Such a trend, whilst doubtless making financial sense to the publisher, was contrary to the primary purpose of the *Synopses* — widely distributed practical identification guides, available at prices that students could afford (Kermack, 1991); by 1990 the books were too expensive and, once again, virtually unknown except to Fellows and members of ECSA<sup>1</sup>.

Most of the *Synopses*, published to date, have described marine invertebrate groups, but no group will be excluded except insects. The Royal Entomological Society has embarked upon a massive *Handbook for the Identification of British Insects* and there is no point in our attempting to duplicate any part of that work. However, the freshwater representatives of any group will not be excluded from the appropriate *Synopsis* simply because the Freshwater Biological Association might include a key to 'their' representatives in one of their *Scientific Publications*.

<sup>1</sup> The Estuarine and Brackish Water Sciences Association (EBSA) changed its name to Estuarine and Coastal Sciences Association (ECSA) in 1989.

The *Synopses* reached the end of an era in 1991, when Dr. Kermack retired as the Society's editor and I was appointed in her place. Negotiations were opened with the Field Studies Council and a contract was signed in March 1992 whereby FSC Publications will produce and market the series in future.

### **Field Studies Council**

The Council for the Promotion of Field Studies (CPFS), formed in 1943 but activated in 1946, dropped its staff in at the deep-end when it came to the problems of identifying invertebrate animals. Students came to the newly-established Field Centres for taxonomic enlightenment. Unlike amateur naturalists, who are free to select their own chosen group of animals (or plants) to study, ecology field teachers must deal with the fauna and flora as they find it.

Faced with the impossibility of identifying any but the commonest of marine invertebrates, John Barrett (initial Warden of Dale Fort Field Centre) enlisted the help of Professor C. M. Yonge (a key figure in CPFS until he moved to Glasgow) to write *Collins Pocket Guide to the Seashore*. The combination of practical teacher and academic expert produced one of the most important books of its period, authoritative but not highbrow. "Each author has freely emended and, it is their united opinion, improved the work of the other" says the acknowledgements (Barrett & Yonge, 1958).

John Sankey (Warden of Juniper Hall Field Centre) worked with Professor Cloudesley-Thompson to produce *Land Invertebrates* in 1961, partially in support of his *Field Biology* (1959). It is to John Sankey that the first formal link between FSC and the *Synopses* belongs: *British Harvestmen* (Sankey & Savory, 1971 ; later revised as Hillyard & Sankey, 1989).

*Field Studies*, the journal of the Field Studies Council, commenced publication in 1959 under the editorship of Professor A. R. Clapham. Established to collate papers relating to FSC sites and activities in an easily accessible form, it has included keys for the identification of invertebrate animals in all volumes, commencing with Hopkins (1959).

### **Aids for Identification in Difficult Groups of Animals and Plants**

It was Charles Sinker (Warden, Preston Montford Field Centre (1957 – 1973: Director, Field Studies Council, 1973 – 1983) who conceived the AIDGAP Project in 1976 – surely, FSC's greatest contribution to user-friendly identification guides. Too many published keys were unworkable for the beginner, either because of their layout, terminology, or the assumptions they made about the reader's knowledge of the group concerned. The faults of existing keys were analysed and more appropriate guides were published. To date, 21 titles have appeared, mostly in *Field Studies*.

From his own experience with grasses (Sinker, 1975) and water plants (Haslam, Sinker & Wolseley, 1975), as well as from managing the development of Margaret Redfern's keys to stream invertebrates (Redfern, 1969; 1975), Charles conceived the idea of user-evaluation, as well as specialist refereeing, before publication.

Thus, a Test Version of each key is prepared, and several hundred copies are circulated around Field Centres, Research Laboratories and to other relevant people. The resulting comments are assembled by the AIDGAP co-ordinator (Dr. Anne



Bebbington 1977-1981: Dr. Stephen Tilling, from 1981) who has the delicate task of persuading the author to modify his/her magnum opus.

### Synopses and FSC

With the AIDGAP keys, offprints from *Field Studies*, and the *Occasional Publications of the Field Studies Council*, FSC Publications is successfully marketing some 250 titles via its Postal Sales organisation and Field Centre shops.

FSC thus offers the *Synopses Series* a much better marketing system (within the British Isles) for low-cost books / booklets on limited-interest academic topics.

The former publisher (Dr Wm Backhuys/ Universal Book Services) had developed an extensive European sales network, and FSC Publications have negotiated with him to act as their overseas agent both for *Synopses* and selected AIDGAP keys.

Society publications will carry advertising leaflets, from time to time, promoting the latest *Synopses* on one side and AIDGAP keys on the other – in much the same way that the British Ecological Society Bulletin carries a leaflet for its *Ecological Issues* series (published by FSC) and AIDGAP.

Where appropriate, the keys prepared for the *Synopses* will be AIDGAP-tested before publication – and may be issued separately if class sets are considered a likely possibility. The first example of this will be the second edition of *Synopsis No.6, Land Snails*, by Professor R. A. D. Cameron. A Test Version of the keys will be available in 1994.

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J. H. CROTHERS  
Field Studies Council at Nettlecombe Court

SYNOPSIS OF THE BRITISH FAUNA (NEW SERIES)  
 EDITED BY Doris M. Kermack, R. S. K. Barnes and J. H. Crothers

The *Synopsis of the British Fauna* are illustrated field and laboratory pocket-books designed to meet the needs of amateur and professional naturalists from sixth-form level upwards. Each volume presents a more detailed account of a group of animals than is found in most field guides and bridges the gap between the popular guide and more specialised monographs and treatises. Technical terms are kept to a minimum (and a glossary is usually provided) so that the books are intelligible to readers with no previous knowledge of the group concerned.

1. *British Ascidians* R. H. Millar
2. *British Prosobranchs* Alastair Graham  
(2nd. Ed.) *Molluscs: Prosobranch and Pyramidellid Gastropods* Alastair Graham
3. *British Marine Isopods* E. Naylor
4. *British Harvestmen* J. H. P. Sankey and T. H. Savory  
(2nd. Ed.) *Harvestmen* P. D. Hillyard and J. H. P. Sankey
5. *British Sea Spiders* P. E. King
6. *British Land Snails* R. A. D. Cameron and Margaret Redfern
7. *British Cumaceans* N. S. Jones
8. *British Opisthobranch Molluscs* T. E. Thompson and Gregory H. Brown  
(2nd. Ed.) *Molluscs: Benthic Opisthobranchs* T. E. Thompson
9. *British Tardigrades* C. I. Morgan and P. E. King
10. *British Anascan Bryozoans* J. S. Ryland and P. J. Hayward
11. *British Freshwater Bivalve Mollusca* A. E. Ellis
12. *British Sipunculans* P. E. Gibbs
13. *British and Other Phoronids* C. C. Emig
14. *British Ascophoran Bryozoans* P. J. Hayward and J. S. Ryland
15. *British Coastal Shrimps and Prawns* G. Smaldon  
(2nd. Ed.) *Coastal Shrimps and Prawns* G. Smaldon, L. B. Holthuis and C. H. J. M. Fransen
16. *British Nearshore Foraminiferids* John W. Murray
17. *British Brachiopods* C. Howard, C. Bunton and Gordon B. Curry
18. *British Anthozoa* R. L. Manuel (revised)
19. *British Planarians* Ian R. Ball and T. B. Reynoldson
20. *British Pelagic Tunicates* J. H. Fraser
21. *British and Other Marine and Estuarine Oligochaetes* R. O. Brinkhurst
22. *British and Other Freshwater Ciliated Protozoa Part I* Colin R. Curds
23. *British and Other Freshwater Ciliated Protozoa Part II* Colin R. Curds, Michael Gates and David McL. Roberts
24. *British Nemerteans* Ray Gibson
25. *Shallow Water Crabs* R. W. Ingle
26. *Polyclad Turbellarians* S. Prudhoe
27. *Tanaids* D. M. Holdich and J. A. Jones
28. *Free-living Marine Nematodes Part I* H. M. Platt and R. M. Warwick
29. *Siphonophores and Verellids* P. A. Kirkpatrick and P. R. Pugh
30. *Euphausiid, Stomatopod and Leptostracan Crustaceans* J. Mauchline
31. *Earthworms* R. W. Sims and B. M. Gerard
32. *Polychaetes: British Amphinomida, Spintherida and Eunicida*  
J. D. George and G. Hartmann-Schröder
33. *Ctenostome Bryozoans* P. J. Hayward
34. *Cyclostome Bryozoans* P. J. Hayward and J. S. Ryland
35. *Millipedes* J. Gordon Blower

36. *Halacarid Mites* J. Green and Miranda Macquitty
37. *Molluscs: Caudofoveata, Solenogastres, Polyplacophora and Scaphopoda*  
A. M. Jones and J. M. Baxter
38. *Free-living Marine Nematodes Part II* H. M. Platt and R. M. Warwick
39. *Chaetognatha* A. C. Pierrot-Bults and K. C. Chidgey
40. *Pseudoscorpions* Gerald Legg and Richard E. Jones
41. *Entoprocts* Claus Nielsen
42. *Freshwater Ostracods* P. A. Henderson
43. *Marine and Brackish Water Ostracods (Superfamilies Cypridacea and Cytheracea)*  
J. Athersuch, D. J. Horne and J. E. Whittaker
44. *Polychaetes: Interstitial Families* W. Westheide
45. *Polychaetes: British Phyllocoideans, Typhloscolocoideans and Tomopteroideans*  
Fredrik Pleijel and R. P. Dales
46. *Commensal and Parasitic Copepods Associated with Marine Invertebrates (and whales)* V. Gotto
47. *Copepods Parasitic on Fishes* Z. Kabata
48. *Marine Planktonic Ostracods* Martin V. Angel
49. *Woodlice* P. G. Oliver and C. J. Meehan
50. *North-West European Thecate Hydroids and their Medusae* Parts 1 and 2 Paul F. S. Cornelius

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## Beagle Eyed?

The early morning of Friday, 16th June saw the Executive Secretary on the Berlin Hauptbahnhof embarking on the 0824 train to Vienna, first stop Dresden where, from 25th March to 26th June, the Deutsches Hygiene-Museum staged an exhibition *Darwin and Darwinism*. Joining 35,000 other visitors to this, the best attended exhibition ever in the former East Germany, it was good to see pride of place accorded the Society's original portrait of the great man by Collier, believed to be the only portrait for which he sat (or stood). Copies of our portrait, some by Collier himself, are to be found elsewhere in clubs, galleries and at Darwin's home at Downe, where, on 14th June 1995, we are planning the *Conversazione*.

The exhibition has been reviewed in *Nature* (26th May) and copies of the 265-page book (in German with English summaries) of the exhibition are in the Society's Library. It includes a chapter by Dr. Jürgen Riess FLS entitled *Charles Darwin and the Theory of Evolution*. The exhibition sought to put Darwin's seminal observations in the context of the time, which, despite its formality, produced other original thinkers in biology, such as Mendel, the subject of another chapter by Dr. Reiss in the book. *Weisman, von Baer, von Nägeli and Wallace*, all of whom (and many more) featured in the exhibition. The influence of a succession of earlier biologists and social thinkers – Linnaeus, Buffon, Goethe, Lamarck and, of course, Erasmus Darwin was graphically illustrated. Supporters and opponents of *The Origin of Species* are widely represented in the exhibition, together with the evidence – skeletons, drawings and artefacts – by which they sought to advance their causes. Ernst Haeckel unsurprisingly is writ large here. Some were less than scrupulous, witness the Piltdown fiasco. Some hilarious cartoons have been well chosen to provide light relief.

And we can look back on Piltdown with a laugh. A few reputations may have suffered posthumously, but that is all. Much less amusing are the misuses of Darwinism. The most serious manifestations of these were in totalitarian states, such as the USSR and

pre-war Germany. The gruesome activities of the Third Reich have been well documented over the years since the 1939 – 45 war; those in the USSR have been less exposed to public scrutiny, so the detailed look taken by the exhibition at biology in the Russian dictatorship was most revealing. With an excellent track record of biological research from the 18th Century, Wolff, von Baer and many others had placed Russian biology in the first rank; given Marx' admiration for Darwin, the post-Revolutionary regime could have had worse starts in biology, particularly in genetics and evolution. The names of Timofeef-Ressovsky (who was elected an FMLS in 1981, two months after his death!), Dobzhansky and Vavilov are noteworthy in this connection.

It did not last. Soviet biology was hijacked by the charlatan Lysenko, who in 1929 advanced his version of Lamarckism at an applied biological congress in St. Petersburg. It was what Stalin wanted to hear (good party members beget even better ones....) and in succeeding years those who opposed this travesty of biological thought, for which no sound evidence was ever produced but which was categorised as useful and close to the people, were imprisoned and worse. Lysenko's 35-year reign of terror over biological sciences ended with the fall of Krushev in 1964. Russian biology has not recovered.

There were, of course, movements in many countries, including Britain, in support of *social Darwinism*. It was good to see William Booth and his Salvation Army cited in opposition to the weakest to the wall view. *Check the Seeds of Hereditary Disease and Unfitness by Eugenics* is the caption of a poster of a heavy featured agricultural worker of which Stalin might well have been proud. It was promulgated by the Eugenics Society<sup>1</sup> in London in 1930. At least some saw through it all. In 1938, J.B.S. Haldane could not conceive (*sic*) of the Medical Officer for the Cities of London and Westminster toddling round to Buckingham Palace to urge, nay, compel reproductive restraint on a pedigree with a long and documented history of genetic disease. Of course not! This same Haldane, who would have been less than amused to find himself wholly ignored by the exhibition, was tardier to condemn Lysenko, finally nailing his colours to the mast ("I am a Mendelist-Morganist") in 1949, by which time Soviet biology had all but been destroyed. It all depends whom you see as your friends.

The monstrosities perpetrated in the name of science by totalitarian regimes (Japan escapes censure, or even mention, in the exhibition) have had their downside for science ever since. Whilst the incidence of biochemically characterisable inherited disorders, such as sickle cell disease and dwarfism, cannot be denied, the idea that behaviour might have an inherited component has proved harder for some to stomach, particularly given the brutality meted out to criminal families in the latter half of the 19th Century and the earlier part of this one, which played no small role in the legalisation of eugenics in some parts of the world in the 20's and 30's. Perhaps a better balance is now being achieved although, given the immense potential of modern biology for both human happiness and misery, biologists, above all, might note the high price of liberty.

JOHN MARSDEN

<sup>1</sup> Founded by Galton; ironically Highgate Cemetery (with Marx' tomb) is just two miles to the north of today's Galton Laboratory! Ed.

## The scientific relations of Nicolai Vavilov with British scientists.

Nicolai Vavilov had scientific relations with British scientists throughout all his professional career, beginning with his first visit to England in 1913. A number of his important works, particularly a large edition of "The Law of Homologous Series in Variation" [*Journal of Genetics* 1922, 12(1)], were published in Great Britain.

The goal of his first visit to England (after graduation from the Petrovsky Agricultural Institute in Moscow in 1911) was to work under William Bateson. He continued his work in the John Innes Institute in Merton with the theme begun in Moscow on the immunity to fungus diseases as a physiological test in genetics and systematics, exemplified in cereals [*Journal of Genetics* 1914, 4 (1)]. He also worked on this theme for some time under Prof. R. Punnett and R. Biffen in Cambridge. At the beginning of 1914 Vavilov had begun to work in London University (University College) and the Kew Gardens Herbarium and library.



This photograph shows Professor N.I. Vavilov as a young man (4th from the right standing) at a Conference which took place in 1913 or 1914. It is believed to be in England, possibly at Cambridge or the John Innes Institute, then at Merton. If any Fellow can identify the place, occasion and participants, would they please contact either Prof. Jack Hawkes or The Editor. Very many thanks.

After his forced return to Russia because of the beginning of the first World War he continued to consider himself a disciple of Bateson and was proud of this. During his first stay in England he had already entered into close scientific and friendly relations with several scientists: C. Darlington, J.B.S. Haldane, R. Punnett and R. Biffen. After returning to Russia he maintained contact with British scientists by correspondence. In his letter to Bateson, October 5, 1922 he wrote "Merton and its inhabitants are so dear to me that I can not but take a warm interest in everything that concerns my English friends". In this letter he also mentions that in 1922 he visited Bateson in Merton with Prof. Yushevsky after his return to Europe from America. In Bateson's letter to him of January 11, 1924 Bateson said "I was of course much pleased to hear from Issaev that your Society of Naturalists had elected me". In the same year Bateson was elected a foreign member of the Russian Academy of Sciences.

In his letter of March 11, 1925 Vavilov informed Bateson that he had returned from a hard and dangerous journey to Afghanistan. He wrote: "I have several weeks ago returned from Afghanistan where I stayed for over six months. It was not easy to gain access to Afghanistan as the conditions of travelling this year were not very favourable on account of various military obstacles. Nevertheless, my journey was rather successful. I have visited all the country, all its agricultural districts, have crossed Hindukush four times, have even seen Kafiristan and have collected a great many specimens of plants".

In 1925 Bateson visited Leningrad and Moscow in connection with the celebration of the Bicentenary of the Russian Academy of Sciences. In his letter from Leningrad to his wife Beatrice dated September 5 1925 he wrote that Vavilov's collection "has seeds of 13,000 varieties of wheat etc. in perfection". His journey was a wonderful affair: "in Hindukush (he) reached Bermian<sup>1</sup> rock dwellings etc.". In Bateson's following letter of September 10 also from Leningrad, was written: "I am glad I came, I have learnt some new things and above all I am glad to have seen Vavilov's work and installation which is really good and must develop into a fine institution if he gets his chance".

In 1926 Vavilov came to England to obtain visas for several countries of the Mediterranean, Near East and Africa and also to organize expeditions to these countries. He included visits to the libraries of the British Museum and the Ministry of Colonies and Science. In the book *Five Continents* (to be published in English in the USA next year) he wrote "With the help of friends in London, especially Dr. Daniel Hall, the prominent British agronomist and the previous Director of Rothamstead Station, we obtained visas for Palestine and Crete". In Reading University Vavilov had close scientific relations with Prof. J. Percival, with whom he exchanged wheat samples. In his letter to Percival of December 3, 1927, he wrote: "Thank you very much for the wheat samples that you have sent me from Burma and Kashmir and for the copies of your works".

In 1930 Vavilov visited England again before his long trip to North and Central America and Mexico. During this stay in England he participated in the Vth

<sup>1</sup> Bamian

International Botanic Congress in Cambridge, August 16 – 23, and read a paper on “The Linnean Species as a system”. He also participated in the International Horticultural Congress in London and read a paper on “Wild Progenitors of the Fruit Trees of Turkestan and the Caucasus and the Problem of the Origin of Fruit Trees”. In the following year (1931) my father came to England again, arriving by air, to attend the Second International Congress of The History of Science and Technology (June 29 – July 3). The chief of the Soviet delegation was Nicolai Bukharin, the famous political leader who subsequently fell out of favour with Stalin and was arrested and shot in 1938. At the Congress Vavilov delivered a report on “The Problem of the Origin of the World’s Agriculture in the Light of Recent Investigations”. In this report he showed that the World Center of Origin and Diversity of cultivated plants, discovered by him, corresponded to the area of the origin of the world agriculture.

His last work (before his arrest) was published in England: “The New Systematics of Cultivated Plants” (in the book “*The New Systematics*”, J. Huxley Editor, Clarendon Press, (1940).

The first Vavilov Obituary was published in 1945 in *Nature*. The authors were the geneticist Cyril D. Darlington and the cotton breeder S.C. Harland who worked in the John Innes Institute in 1939 – 1953. Both authors were close friends of Vavilov. The obituary was written with great emotion. In it they spoke about the importance of Vavilov’s activities for plant industry and breeding. I quote from the obituary: “In theory Vavilov marked the first great advance on de Candolle and in practice he laid the foundation of all future improvement of crop plants. His own potato collection, for example, led to the establishment of the British Empire Potato Collection on which potato breeding is now being based in Britain and elsewhere”. At the end of the obituary Darlington and Harland wrote: “But though in later years he was thought little of by the Soviet authorities his fame abroad steadily increased”.

In 1942 the Royal Society elected Vavilov a foreign member not knowing that at the time he was in prison in Saratov (the town on the Volga River). In 1948 Sir Henry Dale sent a letter to the President of the Soviet Academy of Sciences (at that time the President of the Soviet Academy was the physicist, Sergei Vavilov, Nicolai Vavilov’s brother, my uncle). This letter was published in *The Times* and later in the newspaper *British Ally* in Moscow. In this letter Sir Henry Dale declared that he is cancelling his honorary membership in the Soviet Academy of Sciences in connection with the repressions of Vavilov and other geneticists and also in connection with the crushing of Soviet genetics after a meeting of the Lenin Agricultural Academy in August 1948 organized by T. Lysenko. From this letter we know also that the Royal Society applied to the Soviet Academy and the Soviet Government many times asking about the fate of Nicolai Vavilov but did not receive an answer.

Interest in the scientific and social activity of Vavilov and his outstanding personality came not only from British scientists, but also from British journalists and writers.<sup>1</sup> In my home library the book “*Soviet Science*”, written by a well-known British popular science writer J.G. Crowther, is preserved (Kegan Paul Trench, Trubner & Co. Ltd.,

<sup>1</sup> The Linnean Society held a conference in 1987 to commemorate the centenary of his birth (*Biol. J.*, 39(1) Jan. 1990).

London, 1936). This book was presented by Crowther to my father. In it some pages were devoted to N. Vavilov and he had written: "The President of the Lenin Academy of Agricultural Science is Professor N.I. Vavilov, one of the most remarkable men in the Soviet Union, and the whole world. His charm and gifts of leadership, energy and intellectual power make everyone his friend, and his great achievements have secured universal admiration. He is not yet fifty years old. In spite of the enormous number of persons and the amount of business that pass under his consideration, he remembers almost everyone and their needs and always has sympathetic and encouraging advice for them. He habitually sleeps very little and yet without nerves or exhaustion". Crowther met Vavilov in Moscow and Leningrad in 1935.

In conclusion I must thank Mrs. Rosemary Harvey the archivist of the John Innes Centre for giving me the copies of W. Bateson's letters to his wife.

PROFESSOR YU. N. VAVILOV,  
Lebedev Physical Institute,  
Russian Academy of Sciences, Moscow.

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### **A little known Bulgarian biological connection surveyed at the Linnean Library collection**

When last November, on the occasion of a Bulgarian poetry reading held in the Society, I exhibited with the kind permission of our Librarian and Archivist Gina Douglas, some Bulgarian periodicals and books from our Library Collection, very few present were aware of the valuable information they concealed. For example, *The Bulletin for Natural History of the Royal Institutions*, Sofia, of which we have a complete set, running from 1928 until 1943, is an invaluable source for the study of the establishment and initial history of the Natural Sciences in Bulgaria.

The acquisition of the first part of the set is recorded on the 28th of December 1933. In the Minute book of the Library Committee on Thursday 7th December 1933 is documented, that the committee "considered application for an exchange of Publications, received through Mr. R. Winckworth with the Institutions Royales d'Histoire Naturelle, Sofia." Mr. R. Winckworth, (1884 – 1950), was at the time a librarian and assistant secretary of The Royal Society and communicated this information to the Linnean Society, probably as a part of his professional duties. It was in 1932 – 33, that the Royal Society revised its Library Policy and set up new guidelines oriented more towards publications on historical subjects, rather than periodicals, in consideration of the fact, that "there are many libraries in this country, which cater for the more or less restricted field of pure and applied science" (Council Meeting, 13 June 1933). This seems to have been the reason for Mr. Winckworth presenting the initial set of the *Bulletin* to just such a specialised library. Further, the Linnean Library Committee "resolved to offer both Journals of equivalent dates for the *Bulletin*, and also resolved to thank Mr. Winckworth for his donation of Vols.1 – 6 of that *Bulletin*".

Mr. R. Winckworth, MA, FZS, FCS, FRGS, FMS, was elected a Fellow of The Linnean Society on the 7 March 1935, being a "Gentleman attached to the study of



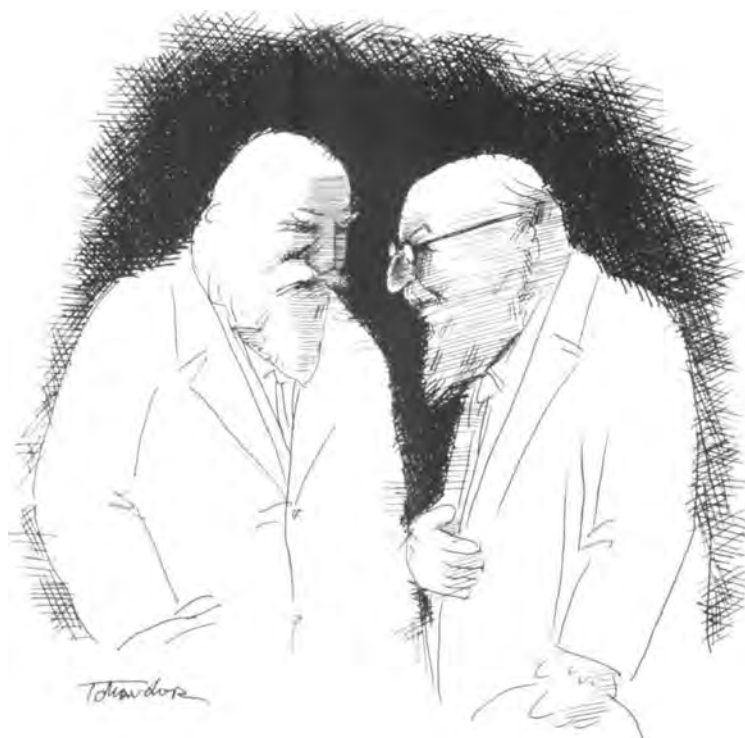
Natural History, especially Marine Biology, including the study of Mollusca”; he was a Vice-President and Member of Council from 1945 – 1947. He was a world authority on Mollusca, author of a universally accepted nomenclature *List of the Marine Mollusca of the British Isles*, and had a complete collection of British marine shells, which unfortunately, was partly destroyed during the blitz over Liverpool in 1941, having been donated just two years earlier to the Liverpool Public Museums. Along with proposing several generic and trivial names, Winckworth also had a number of species named in his honour. The encyclopaedic side of his character found expression in his interest in Alphabets, Sanskrit, and Freemasonry. One of our Fellows Tom Pain, has vivid memories of his high academic standards, which he experienced as a young scholar when his papers were “torn apart” by Winckworth then editor of the *Proceedings of the Malacological Society*. The possible link with the Bulgarian Royal Institutes, as an analogous society, was within the international scope of The Royal Society, and the acquisition of the *Bulletin* seems to reflect this, as well as Winckworth’s highly praised interest in comprehensive academic libraries, bibliography, and personalia.

For obvious reasons the Bulgarian Royal Institutions’s *Bulletin* has been ignored, as a study source in Bulgaria for the last 50 years, so their discovery here, fascinated the Bulgarian visitors, when they saw them in the exhibition. They also attracted the attention of our Fellow John Feltwell, in particular a picture showing Tsar Ferdinand of the Bulgarians, “discussing entomological questions” with Lord W. Rothschild which epitomized the international aspect of the Royal Bulgarian Institutions. A copy of this picture was forwarded to Dr Miriam Rothschild who informed us that it had been published in *Dear Lord Rothschild* with the caption, “Both men used to laugh at the same jokes”. Dr Rothshild was interested to know “what had happened to the wonderful Royal Botanic gardens in Evsinograd”, which Lord Rothschild used to visit with such pleasure, and as she revealed, enjoying not only the Royal Palace comfort, but the “simple style of the gardener’s cottage”, which was apparently more suited to his preferences.

The famous Royal Botanic Gardens in the summer Royal residence Evsinograd, were completed in 1912 with the private subsidies and patronage of the Tsar. The magnificent natural setting of the Gardens, descending to the shores of the Black Sea, soon became the novelty of the day among European botanists and naturalists. Here, along with many rare plants, were to be found “every rose and lilac, grown in France”. Tropical plants were cultivated in the greenhouses and the giant waterlily *Victoria regia*, acclimatised successfully. The Tsar himself had collected many of the plants for the Gardens, particularly the exciting collection of Alpine plants and wild orchids, which he loved.

The Gardens were seen again by members of the Royal family, after almost half a century in exile, when in August 1993 Tsaritsa (Queen) Joanna, and Knyagina (Princess Royal) Maria-Louisa with her husband paid an historic visit on the occasion of the ceremony to re-inter the heart of the late Tsar Boris in the Cathedral Church of Rila Monastery. Sadly, the reconciliation of the Royals with their favourite gardens, was accompanied by exclamations of surprise, such as “here used to be”, and “there was”, recalling from their memories the valuables that had disappeared into the mist of totalitarian misconceptions. The Gardens were a tribute to the various scholars who

had been gathered together and inspired by a remarkable man of historic calibre, committed to putting Bulgarian science on the world map: Ferdinand Saxe-Coburg-Gotta. This Gentleman, considered to be the “cleverest of the most clever Saxe-Coburgs”, ascended to the Bulgarian throne as Prince in 1889, swearing to consider “the Greatness and Fame of our country our solemn duty”. His reign as Tsar, (the title acquired by the Bulgarian Christian Monarchs in 913 as equivalent to the Byzantine Emperor) from 1908 to 1918, was marked with dedicated work, highlighted with dramatic triumphs and overshadowed by ironic defeats.



Artistic impression of the two men who “used to laugh at the same jokes” and “discussed entomological questions”.

In addition to his state duties, he had a keen passion – Nature; as a boy he already collected flowers and butterflies; in his teens he became a member of the Ornithological Society as a consequence of rearing an unknown species of bird and in his adopted country he found a paradise waiting to be discovered. This passion represented one of the distinguishing features of the eminent house of Saxe-Coburg-Gotta. The ancient blood of the Nobles of the North German towns of Coburg and Gotta today flows in the veins of most European Royal Dynasties, including the House of Windsor, and there are several examples of this phenomenal passion for nature.

A man with an encyclopaedic, enduring mind, Tsar Ferdinand is credited with the foundation of the Natural Sciences of Bulgaria at the turn of the century; building on the interest generated as early as the Xth century in John the Exarch’s Book on Cosmology “Shestodnev”, he provided the opportunities for science to flourish. The Royal Natural History Museum was founded in 1889, with the richest collection in

the Balkans, together with the Royal Science Library, and the Royal Zoological Garden in Sofia. It took a decade from 1890 to 1912 for the Royal Botanic Gardens on the Black Sea, in Sofia and in Rila Mount to get established as sites of great horticultural interest. Completed in 1905, the Royal Entomological Institute contained the most comprehensive collection in the Balkans with 2000 species, represented by 120,000 examples. The Royal Biological Centre in Varna, was also completed in 1905, offering advanced facilities for marine research. These six institutes comprised the Bulgarian Royal Institutions.

The Royal Institutions, were engaged in the fundamental work of exploring Bulgarian Nature and aimed to have every species described and recorded for the benefit of scholars and as a contribution to world science, consequently most of their publications were bilingual. According to another principle, the *Bulletin* preferred to publish “original scientific works, exploring the Royal Collections” or those “related to the Fauna, Flora and Stratigraphy of Bulgaria”. The first works, on Nomenclature came out in 1891, giving comprehensive guidance on *Flora Bulgaria*, a *Fauna Bulgarica* was planned for later.

Bulgarian and foreign scholars were given encouraging patronage by the Tsar for pursuing valuable research and study. Dr. I. Bouresh, director of the Royal Institutes and editor of *The Bulletin*, arranged an exclusive Botanical trip to the most interesting spots in the Balkans, including The Holy Mount Athos, which, due to its strict monastic rules, was rarely exposed to such secular events. The Princes Boris, and Kiril were trained early to explore Nature and were sent on Botanical trips in Northern Africa. Erich Keleler, the founding director of the Vienna Prater, was a long serving special scientific adviser, and explorer to the Royal Bulgarian Institutions. All the institutions, publications and research, were maintained with private subsidies from Tsar Ferdinand, who inherited the immense wealth of his French grandfather Louis-Philippe, as well as the legendary treasure of his Hungarian grandmother.

The Tsar himself travelled widely to study the flora and fauna of Bulgaria, and in 1927 and 1928 visited Africa and South America. He never travelled without a vasculum and entomologist’s net, even during his many military expeditions. During the siege of Adrianopolis in 1913, for example, he made several botanical discoveries. The greatest excitement, however, was the discovery of unknown species, among which was the butterfly *Dolitis apollinus thracica*, until then known only in Asia Minor.

Tsar Ferdinand’s private collection of insects consisted of 1778 species of butterflies, represented by 4000 examples; this was later supplemented by his acquisition of the famous Count Amede Aleon’s collection of 4016 Coleoptera species, and P. Milliere’s 2821 Lepidoptera species, all now kept in the Vienna Coburg Palace.

His scientific interests were coloured by his original character – he was known strongly to dislike artificially bred animals and plants; he kept birds in his bedroom; he was interested in trees affected by lightening; on Palm Sunday, he never failed to plant a willow tree, (which he greatly loved), as a Holy Orthodox Symbol; at the consecration of Sofia Cathedral, he saw a butterfly struggling in the dome – after the service, he had it captured, and set it free.

Recognition of Tsar Ferdinand’s commitment to Natural Science (which was

continued enthusiastically by his successor Tsar Boris III), was world-wide. The French Society d'Acclimatation, awarded him the Grand Medaille Geoffroy St. Hilaire, he received the Honorary Membership of the German Dendrologische Gesellschaft, and of the German Ornithological Society, while Boris was given the title Honorary Doctor of the University of Sofia.

The crowning recognition are the various species, named in honour of both father and son, including – *Haberlea ferdinandi-coburgi*, *Jnrinea tsar ferdinandi*, *Ophrys speculum ferdinandi-coburgi*, and the whole genus *Borisia* from the Philippine islands – *Borisia hachisuka*, *Borisia demistomi* (Tsar Boris's tree-bubbler), *Borisia nigriapitatus aflinis*, *Borisia copitoli*.

From our Correspondence archives it is evident that King Boris's Institutions were in contact with Dr. Richmond Wheeler, FLS. A letter of thanks addressed to him from the Director of the Royal Institutes, Dr. Iw. Buresch dated 4th Dec. 1939, conveys the appreciation of Tsar Boris for receipt of a copy of *Deaths among Butterflies*, saying, that "His Majesty has read it with great interest and has ordered a copy to be included in his private library".

Dr. Richmond Wheeler, (1939-1948) elected a fellow on 2 March 1939, shared the same passion for butterflies; he published on the subject and his collection was partly donated to the British Museum, together with some dragonflies, including two new species – *Morthonagrion arthuri* and *Gomphidictinus wheeleri*. The Entomological "connection" seems to have been quite strong and beneficial.

One honour seems not to have been destined for Tsar Boris, who died prematurely in 1943 – that of becoming a Fellow of The Linnean Society of London. The Society's Archives have a copy of the Assistant Secretary's letter, dated 27 Dec. 1939 to Dr. Richmond Wheeler, FLS, who had suggested the election of King Boris as an Honorary Member of The Linnean Society. The letter documents that "it was decided that at the present time it is unadvisable to take steps to elect any new Honorary Members".

However, the Society has recently been visited by young members of the Bulgarian Royal Family, and the first Bulgarian fellow has already been elected. The then Bulgarian Ambassador to the Court of St. James, John Stancioff, was elected on the day of the Exhibition of Bulgarian Books and Periodicals at The Linnean Library – 5 November 1993, as a gentleman, "attached to the study of Natural History, especially Botany, and Bulgarian-Balkan Alpine Flora". He is a descendant of a family long serving the Bulgarian Royal Diplomatic Court, and his grandfather, Dimitar Stanciof, was the first Chargé-d'Affaires in Britain after the Liberation of Bulgaria in 1878.

Hopefully, the future will revive the little known Bulgarian connection, which was once praised by the well-known gardener – Miss Ellen Wilmott. While reporting on the Botanic Garden being planned by Tsar Ferdinand on the Bulgarian Aegean coast, she described the aspirations of the Kew Director, W. J. Bean, who, she was certain, "would be interested in contacts with Bulgaria, where so many fine things are to be got". We should bear in mind that at that time, the unique Valley of Roses near the biggest European rock relief, the 7th century, 40sq.m. Madara Horseman, was well known, but the 5000 BC World's Oldest Gold Treasure of Varna, near the Royal Botanic gardens, was yet to be discovered.

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EKATERINA DIMITROVA

## Behaviour Pleiotropism: an association between tame behaviour and coat colour

*"Some instances of correlation are quite whimsical: thus cats which are entirely white and have blue eyes are generally deaf"* (Charles Darwin, 1859).

A recent experiment has re-opened the question of whether the unusual behaviour of animals with certain mutations which change the colour of their hair is caused by linked genes or is a pleiotropic effect. It should be noted that it is "strictly inaccurate to speak of a 'behavioural gene'; behaviour is an epigenetic consequence of the interaction between the chemical gene products themselves and the environment in which these products mix" (Berry, 1989). Pleiotropism or pleiotropy has been defined as "used of a gene that has more than one, apparently independent, phenotypic effect" (Lincoln & Boxshall, 1987). It is an important phenomenon because it may shed light on the metabolic pathways underlying gene action; for example the "mottled" mutation in the mouse causes pale coat colour and tremor, both due to a "primary defect in copper transport" (Hunt, 1974).

Clyde Edgar Keeler and Helen Dean King noted that a nonagouti sub-strain of the Norway or brown rat *Rattus norvegicus* (Erxl.) derived from wild ancestors, was "already tame by nature" (Keeler and King, 1942). This mutation removes the yellow pheomelanin from the hair-tips replacing it with eumelanin, making the pelage a uniform black (Searle, 1968). Keeler crossed a wild male rat to females of the "Wistar Albino" domesticated strain which is homozygous for nonagouti, piebald and albino; performed psychological tests on the F<sub>2</sub> generation and stated that "two holding tests, four emergence tests and an annoyance test gave similar results indicating the greater

wildness and savageness of animals bearing a gray coat compared with those having a black coat" and "the writer is inclined to believe that pleiotropy not linkage accounts for these effects" (Keeler, 1942). Later, a single black-coloured wild-caught rat was given to him and he found that it was "silent, slow and cringing. It ...never offered to bite" (Keeler, 1951). He crossed wild red foxes *Vulpes vulpes* with triply mutant ranch-bred ones and bred the backcross generation; finding that animals homozygous for two or more mutations (one being nonagouti) could be approached more closely than the others (Keeler, Mellinger, Fromm and Wade, 1970).

P.L. Broadhurst studied "pure lines" of rats produced by inbreeding, making a "diallel cross" to study the behaviour of F<sub>1</sub> hybrids between six lines. Each animal was scored for the distance it ran in an arena, and the number of faecal boluses it dropped, the assumption being that nervous animals would move less, but defecate more than "tamer" ones. He found that the ambulation scores showed an "unequivocal" picture of "an additive polygenic system with a low degree of dominance, and a relatively high heritability"; the defecation scores suggesting "an additive polygenic system with some degree of dominance and a moderate heritability" (Broadhurst, 1960). His colleague John Wilcock's review of "single gene experiments" paid considerable attention to "the Keeler-King Hypothesis .... that the major gene nonagouti (a) is a 'domestication gene' which is more than any other factor responsible for the tameness of the laboratory rat", but criticised the methodology of Keeler's tests. The conclusion was that "many of the demonstrated behavioural changes do indeed turn out to be trivial or at best psychologically unexciting" and that "the advantage of the biometric approach is that it deals with the important factors which mediate normal behavioural variability" (Wilcock, 1969).

A study of a population of wild rabbits *Oryctolagus cuniculus* on Skokholm island, Pembrokeshire containing a number of black individuals, found that while these are "presumably ... more easily seen and caught by birds", they are "less timid than normal animals and thus spend less time in their burrows", so "the disadvantage of conspicuousness is compensated by their extra feeding time" (Berry, 1977).

Some Norway rats collected from the wild proved to be heterozygous for the nonagouti gene. Their grey and black offspring were tested in jumping-stand, open-field and food-novelty trials as well as for their reactions to an experimenter's gloved hand. The "nonagouti rats were significantly easier to approach, capture and handle than their agouti sibs, but the differences between agouti and nonagouti animals for the other variables studied were not significant" although "the responses of the rats in the present study were more intense than in Keeler's investigation". However, "it has not been determined whether the effects of the nonagouti allele on behaviour are mediated by pleiotropism or gene linkage" (Price and Cottle, 1987). This work shows the need for using very similar experimental procedures before stating that one's results refute or confirm those of another worker.

In theory it should be easy to distinguish two linked genes from a single pleiotropic mutation; in the first case recombinant individuals should be found, in the second they should not. This is difficult to demonstrate in behavioural studies where group scores have to be used, since recombinant animals may not be detected. The "Keeler-King

Effect” has been found in rats from four sources, and in rabbits and foxes – and in each case the nonagouti colour was combined with the “docile” or “unwary” behaviour. It seems unlikely that a number of polygenes would remain together for hundreds of generations. If there is a behaviour gene linked to nonagouti it must be very close, otherwise it would have recombined to produce some instances where the agouti individuals were the tamer. This supports Keeler’s suggestion that the altered behaviour results from pleiotropism.

There is also evidence of a connection between mutations affecting melanin and changes in reproductive behaviour. Nonagouti sheep *Ovis aries* in Iceland produced significantly more lambs out of season than those with the “tan” allele (Dyrmundsson & Adalsteinsson, 1980). A mutation increasing eumelanin in the plumage of feral pigeons *Columba livia* is associated with a prolongation of the breeding season (Murton, Westwood & Thearle, 1973). The Arctic Skua *Stercorarius parasiticus* has two colour-phases; the pale phase is more aggressive but dark phase males tend to complete their courtship earlier, and so may be at a selective advantage in certain parts of their range (Berry and Davis, 1970).

Mutations which increase the amount of phaeomelanin in the pelage might be expected to make animals more aggressive. One called orange-tan in the Deer-mouse *Peromyscus maniculatus* is correlated with aggressive behaviour towards human handlers, animals homozygous for it “are particularly unafraid, ...many females attacked the fingers or forceps whether litters were present or not.... Occasionally, males made unprovoked attacks” (Egoscue & Day, 1958).

The mode of action of these genes upon melanin synthesis seems unclear, but some may act by way of hormones. It is also possible that mutations which affect an animal’s “mood” act through hormones. Unfortunately there seem to be few biochemical studies of the nonagouti gene. An assay of the hormones in agouti and nonagouti rats bred from wild ancestors or in closely related inbred lines, might perhaps shed light on a mechanism by which genes affect behaviour.

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GORDON BRUCE RITCHIE

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## Library

Student helpers have again been cleaning and polishing the back runs of the European journals and have just completed moving the journals from Norway and Denmark back to rejoin the rest of Scandinavian journals beneath the Geological Society on the other side of the courtyard. Although these had been cleaned a few years ago, building work and cabling for the new fire protection had give them a surface "patina" of grit and grime. Because of this it was decided to give a thorough clean to the remaining European journals stored in the same corridor and as this goes to press we are cleaning journals from Italy, Spain, Portugal, Luxemburgh, Switzerland and Austria. Some minor rearrangement will be made and then we will continue by finishing off the German journals which will be accommodated in the newly cleaned shelves.

Space has again limited the list of accessions to donations. Most of the recent purchases have now been catalogued so we can generally locate them both in the main card catalogue and by using a simple search for a key word on the computer used to produce the catalogue cards.

Fellows are reminded that there will again be a book sale before Christmas. We have disposed of most of the remainder of the unwanted items from the previous sale so all donations are welcome and we hope to be able to offer you a "new selection" for your pre-Christmas shopping. The sale will be on **17th November: please deliver donations at least three days beforehand.**

*Donations from April to July 1994*

- Dr. Gunnar Broberg Nordenstamm, B. & others, eds. *Carl Peter Thunberg, Linnean, resanar, naturforskare, 1743-1828*. 191 pp., illustr., some col., maps, Stockholm, Atlantis, 1993.
- Brooklyn Bot. Gdn. NEW YORK, Brooklyn Botanic Gardens, *Ferns wild things*



- make a comeback in the garden*, by C.Colston Burrell. 112 pp., col. illustr., New York, Brooklyn Botanic Garden, 1994.
- Dr. D.B. Baker Westrich, Paul, *Wildbiener-Schutz i Dorf und Stadt*. 23 pp., col. illustr., Karlsruhe, Arbeit. Naturschutz, 1985.
- J. Burton Dombrowsky, Robert Ritter von, *Pasarile Romaniei* (Vol. 1). 434 pp., illustr., some col., Bucurest, Fund. Reg. Pent. Lit. & Arta, 1946.
- Prof. J. Cairns Cairns, John (and others), *Implementing integrated environmental management*. 137pp., Blacksburgh, Virginia Poly., 1994.
- Chapman & Hall Benton, M.J. ed., *The fossil Record:2*. 885 pp, London, Chapman & Hall, 1993.
- Dr. J. Cortes [CONFERENCES] Gibraltar, September 1993, *Jornadas de estudio y conservacion de la flora del campo de Gibraltar*, (Almoraima No.11). 249 pp., illustr., map Gibraltar, 1994.
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- Field Studies Council Field Studies Council, *Keys for the identification of Land Snails in the British Isles* by R.A.D. Cameron (AIDGAP test version). 65 pp., illustr., Preston Montford, Field Studies Council, 1994.
- Prof. J. Gascoigne Gascoigne, John, *Joseph Banks and the English Enlightenment*. 324 pp., illustr., Cambridge, CUP, 1994.
- Dr. H. Goerke Goerke, Heinz, [*Linne*] (Text in Japanese), translated by Akira Kajita. 251+31 pp., illustr., Tokyo, Hakushin-sha, 1994.
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- Jill Duchess of Hamilton Barthelemy, Guy, *Les Jardiniers du Roy, petite histoire du jardin des plantes*. 295 pp., illustr., Paris, 1979.
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- Neave, Christiane, *Rueil-Malmaison*. 112 pp., illustr., maps, Champfleur, 1983.
- Nisbet, Anne-Marie, *French navigators and the discovery of Australia*. 87 pp., illustr., maps, Sydney, Univ. of New South Wales, 1985.
- Schembri, Patrick J. & Sultana, Joe. *Red Data book for the Maltese Islands*. 142 pp., col. illustr., Malta, Dept. of Information, 1989.
- Searle, Suzette. *The rise and demise of the black wattle bark industry in Australia*. 42pp., illustr., Yarralumla, CSIRO, 1991.
- Wandsworth Borough Council, *Battersea Park herb garden*, Information Booklet No. 1. 21 + 2 pp., Wandsworth, Borough Council, n.d..
- Prof. J.G. Hawkes Chi, Hua-Tsou. *The embryology, reproductive morphology and systematics of Lecythydaceae*. (Memoirs, N. York Bot. Garden No. 71). 110 pp., illustr., New York, New York Botanic Gardens,
- Prof. D.L. Hawksworth Hawksworth, D.L. ed., *The identification and characterization of pest organisms...proceedings of the 3rd workshop ... ecological foundations for sustainable agriculture*. 501 pp., illustr., Wallingford, CAB, 1994.
- Prof. P-M. Jørgensen Ryvarden, Leif, ed. *Norges planter*. 4 vols., col. illustr., Aarhus, J.W. Cappelens, 1993 & 1994.
- Linnean Society Pike, A.W. & Lewis, J.N., *Parasitic diseases of fish*. 251 pp., illustrs., Tresarth, Samara Publishing, 1994.
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- Mammal Society, *The red squirrel*, by John Gurnell. 16 pp., illustr. some col., London, Mammal Society, 1994.
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## Book Review

**Microscopic Life in Sphagnum.** Marjorie Hinckley. Illustrated by Peter Hayward and Diana Herrett. Naturalists Handbook No 20. Richmond Publishing Co Ltd., 1993. ISBN 0 85546 291 4 Paper. (£7.95), ISBN 085546 292 2 Hardcovers. (£13). pp 64 with many colour illustrations.

This booklet is the 20th contribution to the series of Naturalists Handbooks edited by S.A. Corbet and R.H.L. Disney. According to the series editors, the series is intended to “provide what an investigator needs to make novel discoveries about local plants and animals – a clear introduction to what is already known about the natural history of each group, highlighting topics on which further research is needed”. This booklet does all these things, superbly illustrated with clear line drawings and coloured illustrations. Genera and species of groups of organisms associated with different species of sphagnum are described throughout the book and are listed at the end of the book.

The usefulness of this book is to provide a student or amateur naturalist with a means of identifying invertebrates or algae which he/she may have observed during a study of this plant group to have some special association with it. Alternatively, sphagnum may be used as a means of collecting certain species in a defined habitat to facilitate a broader study of other life-forms. Excellent drawings and a comprehensive book list are provided to lead to further information about the organism. The result therefore is a means of introducing an unfamiliar lifeform to the observer and a lead to a means of studying it further. This is the aim of this series and this issue has provided the means of achieving this.

E.W. FOX.

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