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THE PHYCOLOGIST

The Newsletter of the British Phycological Society

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Editor:
Bruce Osborne

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Editorial

This edition of The Phycologist has several enclosures and is packed with important information, none more so than the details of our annual flagship event, the **BPS Winter Meeting** held this year at the **University of Birmingham** between the 5-8 January 2000 and organised by a BPS stalwart, **Barry Leadbeater**. **Michael Guiry** will give the Founders lecture, on terrestrial green algae in Galway City. There are special sessions on Algae and the Water Industry, Calcification and Restoration of Aquatic Ecosystems. All of the titles and authors of presentations are included on pages 4-8 and you should bring this programme with you to the meeting. To register for the Birmingham meeting complete the separate form enclosed and send it as soon as possible to Barry at the address given.

Enclosed with this edition is a subscription renewal form (You were forewarned!). This also needs to be completed and sent to the new membership secretary, **Murray Brown**, at the University of Plymouth, without delay. Remember this form needs to be completed by all members, irrespective of their status, as this information is being used to update our database. It would also be helpful if any impending or known changes in address/affiliation are reported to the membership secretary at the same time.

In the historical corner section **Don Boney** recounts some of the earlier controversial exchanges about the origin of land plants between, among others, A. H. Church, F. O. Bower, A. G Seward and A. G. Tansley. Church's belief that the ancestral form was a large green alga, with structural similarities to the brown algae, was always controversial and is not consistent with contemporary evidence. Whilst his forthright approach was often resented and the deficiencies of his theory acknowledged, Church's scientific originality was still recognised to the extent that both Seward and Bower supported his election to the Royal Society! I wonder if such magnanimity was ever that widespread or even exists in the present, highly competitive, scientific climate.

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HISTORICAL CORNER

A.H. Church's 'Thalassiophyta' and the Immediate Aftermath

In 1919 A.H. Church, then 54 years of age and Demonstrator in Botany at Oxford, published a lengthy 98-page paper entitled 'Thalassiophyta and Subaerial Transmigration'. The paper had been rejected by the leading botanical journals in Britain and, in an extended form, by Cambridge University Press. It appeared as Botanical memoir No. 3, one of a series of memoirs published by Church at his own expense through Oxford University Press. In his own words, these memoirs were intended 'to demonstrate that Oxford Botany is not wholly dead and done for'. 'Thalassiophyta's' theme was on an epic scale – the conquest of land by plants. The purpose of this article is not to discuss the memoir in any detail, but to summarize the reactions of senior botanists as expressed in their correspondence. These sources are more candid than published reviews. The memoir remains an incident in the history of Phycology that gave rise to much debate and several heated exchanges.

In 1908 F.O. Bower, Regius Professor of Botany at Glasgow, published a major work under the title *Origin of a Land Flora*. In 1918 Church informed him that his forthcoming memoir was 'nothing more than a counterblast' to the 1908 book. At the same time he informed Bower that his book was ' . . . . the only work of English Botany with any brains in it'. According to Church, other theorists dealing with the subject, including Bower, (collectively called the 'subaerial botanists') were all looking backwards from the land plant to water. For Church, 'The beginnings of Botany are in the sea'. In order to theorize on the transmigrants, which led on to the land flora, the starting point must be with the marine algae – the crucial stage.Those unfamiliar with Church's memoir will find it heavy going. Bringing together all relevant data up to 1919, combined with the need to be concise because of the costs involved, resulted in long, sometimes intricate, sentences, packed with information, and with footnotes, often extensive, of similar complexity. Bower's book is eminently readable and more leisurely by comparison, but he had 727 pages in which to develop his theory based on 'the facts of alternation'. It is enlivened by the occasional somewhat non-scientific passage. For example, archegoniate plants ' . . . retain with remarkable pertinacity the awkward and embarrassing mode of fertilisation through the medium of external fluid water' (p. 245). For Bower, archegoniate plants originated from green filamentous forms in shallow fresh water or at the upper levels of the seashore. The evolution of the sporophyte, the dominant phase in many land plants, followed with the need for a method of propagation not dependent on water. For Church, with regard to the transmigrants, 'the inexplicable fact is that they appear to have been a green starch-forming series of parenchymatous organisation'. Neither the brown nor red algae passed on to a 'higher autotrophic land form . . .of those algal forms which attempted to do so, no trace remains', although *Chara* 'may show some suggestions'. Hence the origins of the transmigrants lay in a more highly organised starch-forming green algae of considerable size, as well as being organised structurally like the larger brown algae.

Church was under no illusions regarding the reception his theory would have with the 'subaerial botanists'. As he explained to Bower, 'I quite expect you to drop on it, and shall be pleased with any slating it can get'. It is in the subsequent correspondence in 1919 and 1920 between some senior botanists and Bower that the nature of the 'slating' become apparent. The most trenchant criticism came from J.B. Farmer, Professor of Botany at the Royal College of Science. To him the memoir was 'Certainly clever but spoilt by a pontifical mode of expression'. However, Farmer seems to have misread a crucial part of the memoir, in that he questioned whether highly specialised forms of large brown algae could have 'remodelled themselves' as transmigrants, since the green algae must have been the forerunners – as was emphasized by Church. Farmer accused Church of 'continuously substituting teleology for causality – there was too much emphasis on moulding by the surroundings and too little on the possibilities inherent in the organism itself'. Finally, Farmer castigated Church for being 'obsessed with the Grand Epic' and of having an 'offensively egotistical standpoint throughout – nothing in dogmatic theology nearly approaches it!'

The redoubtable Dame Helen Gwynne-Vaughan, fresh from her war service as Commandant of the Women's Royal Air Force in France, at that time head of the Botany Department at Birkbeck College, and a leading mycologist, joined in the assault. As she wrote to Bower 'if it be a "new heaven" it is certainly as speculative as the old one'. She accused Church of possessing 'a pathetically low idea of other people's common sense' for daring to assume that *Sphaerotheca* was primitive because of its single ascus – 'Are his views on Pteridophytes as bad? If so he cannot survive!' Church had included the Fungi in his memoir since, while they lacked affinities with existing marine algae, 'it may be certain that they were originally derived from forms actually existing in the sea'. (His first published paper in 1893 was a short account of a marine fungus). R.C. McLean (Cardiff) accused Church of 'drifting very close to the "tosh" line! W.H. Lang (Manchester) found that he had 'not much appetite for Thalassiophyta – not improved by data spaced with shear gaps'; and in a subsequent letter 'his case is both weaker and stronger than he thinks'.There were some messages of support. D.H. Scott, the palaeobotanist, was pleased with the memoir and considered that it should be good enough to stand on its own merits. A.C. Seward, Professor of Botany at Cambridge, whilst agreeing that Church's memoir was largely based on an hypothesis, continued in his letter to Bower, 'but so must any such speculation be and I feel that he has dealt very ably with the problem tackled . . . there is a stimulating "fascination" in his speculations throughout, perhaps because they do not rest upon any solid foundation in fact'. However, such *'ex-cathedra'* statements offered no comparison with Bower's 1908 book.

In his correspondence with Bower on the matter Church repeatedly emphasized that his prime interest lay in the sea – 'I am not much interested in the Land Flora – that is left to your province. My domain stops with the sea'. Between 1901 and 1904 he had published 6 papers on phyllotaxis, again independently. As he pointed out to Bower when first mentioning his 'counterblast' to *Origin of a Land Flora*. 'it started from phyllotaxis – the latter being hopelessly unintelligible when considered from the land plant alone – like everything else in the plant it was invented in the sea and inherited. It explains the origin of the leaf (in the sea) and the origin of the root (in the sea)'. This seeming obsession with the sea would seem to require some explanation for one who had spent his past 28 years in Oxford! He had been born in March 1865 in Plymouth, and his schooling was in South Devon. At 16 he became a pupil-teacher. A small legacy in 1885 enabled him to enrol at University College, Aberystwyth, where he graduated in 1889. Aberystwyth was then known as 'the College by the Sea' – walk across the road and climb down some steps and you are in the upper fucoid zones. His Oxford career started in 1891 when he was awarded a mature scholarship at Jesus College. A paper published in 1898 on *Cutleria multifida* described some work carried out at the Plymouth Laboratory of the Marine Biological Association. Of his 24 publications in the 1919-1921 period, six were on algae, mainly marine representatives. The sea had been very much part of his younger background – perhaps an influence never forgotten. In later years the plant kingdom as a whole became his 'domain'.

What became of the 'Thalassiophyta'? One protagonist who remained an active supporter throughout his long life was the late professor E.J.H. Corner F.R.S. He had first discovered the memoir as a VIth form student at Rugby and thereafter it became a constant companion. The theory formed the basis of his own Durian Theory on the origin of the flowering plant tree, and received further expression in his book *The Life of Plants*. In his memoir Church quoted some 70 references in the series of footnotes. These cover a broad canvas (including Genesis 1.29!!), including some from the 1916-1919 period. One notable absence is reference to a 1916 New Phytologist paper by F.E. Fritsch entitled *'The algal ancestry of higher plants'*. At the time Fritsch was 37 years of age and Head of the Botany Department at East London College (later to become Queen Mary College). In the paper he described the significance of the heterotrichous condition as a potential evolutionary line from which the alternation of generations in higher plants may have diverged. He returned to this theme in a 1921 *New Phytologist* paper with direct reference to 'Thalassiophyta'. In Vol. 1 of his *Structure and Reproduction of the Algae* (1935) he refers to Church's 'ingenuous hypotheses'. Bower remained circumspect in his comments. In his 1934 *Primitive Land Plants*, a revision and updating of his 1908 book, he refers briefly to Church's theory, pointing out 'how widely theoretical views may differ where the facts are deficient' – a point which applied equally well to his own. He continues 'in default of consecutive fact the

enunciation and support of any theory must needs depend upon balance of probability, and the balance may be variously struck by different minds'. With all the wealth of data that has built up since Church's time, the balance of opinion now favours green algae, similar to extant *Chara* and growing in damp mud, as the probable forerunners of the transmigrants. *Fritschiella tuberosa*, first described in 1932, whilst not itself in the direct evolutionary line leading to higher plants, does demonstrate the potential of an advanced heterotrichous condition.

A.G. Tansley, the ecologist and Professor of Botany at Oxford 1927 –1937, considered that Church had most of the characteristics of a genius. If part of the O.E.D. definition is applied, namely, '..an instinctive and extraordinary capacity for imaginative creation, original thought, or discovery', and despite the fact that 'Thalassiophyta' and the gigantic parenchymatous green algae have not withstood the test of time, the forerunning definition rather suggests that there may have been some truth in Tansley's summing up. There is evidence that some senior botanists were of the same opinion. In December 1919, when the memoir was beginning to send its shock waves through the botanical world in Britain, A.G. Seward was circulating amongst them the certificate recommending Church's election to Fellowship of the Royal Society. Bower, with others, duly added his signature. J.B. Farmer, writing to Bower in February 1921, whilst agreeing with the latter's views on Church's foibles, namely, 'his offensive way of producing his stuff', and, 'the odd manner in which he underrates the knowledge of everybody else', despite all this, 'there was a strong feeling in his favour', particularly through his work on phyllotaxis. Church was elected F.R.S. in 1921. Which episode speaks well for the integrity of those involved. Whilst they resented Church's mannerisms, and profoundly disagreed with his theories, they were nevertheless prepared to recognise his scientific originality.

A.D. Boney

THE BIRMINGHAM WINTER MEETING

PROGRAMME

Wednesday 5 January

14:00-19:00 Registration in Chamberlain Hall

19:00 Poster Session in Chamberlain Hall

Lucy A. Ball , S.C. Maberly & J.A. Raven	The importance of CO_2 on the spatial and temporal distribution of chrysophytes in lakes.
Berry L.S. & C. Brownlee	Investigations into the Route and Energetics of Calcium Uptake in Coccolithophores.
Choi, H.G. & T. A. Norton	Nutrients and germling competition between Ascophyllum nodosum (L.) Lejol. and *Fucus vesiculosus* (L.)
Mark R.Clegg, S.C. Maberly & R.I.Jones	Effect of irradiance on the behavioural ecology of freshwater phytoplanktonic flagellates.
Joanne Chinner, K.Roger Wood, & Barry S.C. Leadbeater.	Virus infection in a field population of *Ectocarpus fasciculatus* (Phaeophyceae)
S. Coelho, J. Rijstenbil, M.T. Brown & Isabel Sousa-Pinto	Stress induced by irradiance and dehydration on photosynthesis, active oxygen production and growth in *Fucus spiralis* embryos.
Franklin, D.J., A. Muehlig-Hoffman& D.J.S. Montagnes	Temperature-induced changes in diatom morphology: implications for predicted sinking rate
Gayle Harris , R. Geider & D. Scanlan	Physiological, biochemical and molecular responses of the photosynthetic apparatus of two Prymnesiophytes, *Emiliania huxleyi* (Lohmann) Hay & Mohler and *Phaeocystis* sp. to changes of irradiance

Holmes, M. J. & J. Brodie	Preliminary observations of population structure and life history of *Porphyra dioica* (Rhodophyta)
R.G. Hooper & A. Whittick	The occurrence of *Kurogiella saxatilis* Kawai in Eastern Canada.
Humble A.V & C.Brownlee	Detection and characterisation of calcium binding proteins in both high and low calcifying cells of *Emiliania huxleyi*
J. Jander, A. Fyson & D. Hepperle	*Nannochlorum* nov. sp., a new picoplanktonic chlorophyte from an extremely acidic mining lake in Lusatia, north-eastern Germany
John, D.M., B.A. Whitton, A.J. Brook & P.V. York	The Freshwater Algal Flora of the British Isles
A. Kraberg	Mechanical limits of the epiphyte loads which can be sustained by the seaweed *Ascophyllum nodosum* on shores of varying exposure
Adam Mellor, John Berges, Matthew Dring.	Removal of heavy metals from industrial effluent by macroalgae
Nielsen H. D., Brown M. T. & Brownlee Cs	Effects of copper on early development and growth in the *Fucus* zygote
A. Prathep & T. Norton	Seasonal growth of *Osmundea pinnatifida* (Ceramiales, Rhodophyta), an algal forming turf from the Isle of Man, British Isles.
L.J. Poole & J.A. Raven	A seasonal study on the ascorbate concentration in *Ulva lactuca*
Raven, J.A.	A juvenile but absorbing tale of macroalgal pigmentation
Geraldine Reid	The *Gyrosigma* (Bacillariophyceae) of Lake Baikal, Siberia
Sherlock, D.J. & Raven, J.A.	Carbon dioxide/oxygen interactions in photosynthesis of marine red algae with and without CCMs
J.M. Snelgrove & M. Wilkinson	Development of Toxicity Testing Using Seaweeds
Emma Wells & Martin Wilkinson	Biodiversity of Intertidal Seaweeds I. Species Richness in Relation to Environmental Parameters in Northern Ireland.
Martin Wilkinson, Ian Titley, Clare Scanlan & Emma Wells	Biodiversity of Intertidal Seaweeds II. Reassessment of Shores on Orkney 25 Years after the British Phycological Society Field Meeting.

Session A: Thursday 6 January 1999

Special Sessions on (1) Algae and the Water Industry -Restoration and (2) Rehabilitation and Bioremediation

Time	Session A	Title
09:00	Barry Leadbeater	Introduction:
09:10	Rachael Dils & Simon Leaf Environment Agency	Aquatic eutrophication in England and Wales: a management strategy
09:30	Mark Scott Environment Agency and SEPA	A eutrophication control action plan - Bittell Reservoir
09:50	Simon Leaf & Rachael Dils Environment Agency	Eutrophic standing waters and mesotrophic lakes habitat action plans: progressing the UK biodiversity action plan.
10:10	John Eaton Liverpool University	The renewed growth of charophytes in Hickling Broad
10:30	COFFEE	
11:00	Nick Everall & Stuart Crymble Severn Trent Water Ltd	Bioremediation of an industrialised river to aid treatment for potable use

11:20	Les Markham & Bernadette Ryan - Severn Trent Water Ltd	The rehabilitation of a lowland eutrophic reservoir for water supply
11:40	Martyn Kelly Bowburn Consultancy	Eutrophication monitoring using diatoms: lessons from the last five years
12:10	Jan Krokowski & Sarah Pritchard Environment Agency	Cyanobacteria and the environment: monitoring and managing incidents
12:30	Dong LF, Nedwell DB, Underwood GJC & Sage A., Essex University	Environmental limitations of phytoplankton in the Conwy and the Deben estuaries
13:00	LUNCH	
14:20	Perkins, R.G. & Underwood, G.J.C. Essex University	Partial recovery of a pumped storage reservoir resulting from managed bottom-up nutrient control and unmanaged top-down control through macrophyte growth.
14:40	Francisco JL Gordillo, Graham Savidge & Matthew J Dring Queen's University, Belfast	Potential use of brown seaweeds to remove inorganic nitrogen and phosphorus from waste waters
15:00	Adam Mellor, John Berges & Matthew Dring Queen's University, Belfast	Removal of heavy metals from industrial effluent by macroalgae.
15:20	Deborah Stephen, Brian Moss & David Balayla Liverpool University	Future influence of global warming on freshwater quality – maybe?
15:40	Brian Moss and others Liverpool University	Future influence of global warming on freshwater quality – maybe not?
16:00	COFFEE	
16:30	Alan Howard Reading University	The vertical migration of *Microcystis:* a computer simulation
16:50	Stephen Maberly, Julie Parker & Colin Reynolds IFE Windermere	Stability and resilience, capacity and turnover: restoration of Windermere, by phosphate stripping.
17:10	Robert Willows & LM Pope Environment Agency	Algal modelling in the Environment Agency
18:30	DINNER	
20:00	Trevor Norton	Pioneers of Science Diving

Session A: Friday 7 January

Time	Speaker	Title
09:00	Erica Young	Modulation of active inorganic carbon uptake efficiency in response to environmental conditions.
09:20	L.J. Poole, J.E. Kubler & J.A. Raven	The use of inhibitors to investigate the cost of a changing light environment to *Ulva lactuca.*
09:40	Richard J. Geider & Tracy Anning	Redfield revisited: variations in the N:P ratio of phytoplankton.
10:00	Margaret Davey & Richard J. Geider	Photosynthesis, flavodoxin and iron in the diatom C. *muelleri.*
10:20	Karl A Abel & J A Raven	Reactions of the unicellular green alga, *Chlamydomonas reinhardtii,* when grown in a low osmolarity medium.

10:40	M.J. Dring, A. Wagner, L.A. Franklin, R. Kuhlenkamp & K. L,ning	Seasonal and diurnal variations in UV-B and UV-A irradiances at and below the sea surface at Helgoland (North Sea) over a 5-year period.
11:00	COFFEE	
11:45	**Michael D. Guiry**	**FOUNDERS LECTURE: Terrestrial green algae in Galway City: dogs, humans and weather.**
13:00	LUNCH	
14:30	Jacco Kromkamp & Christiane Barranguet	Deriving primary production rates of microphytobenthos from photosynthetic electron transport.
14:50	Forster, R.M., Honeywill, C., Paterson, D.M. & Kromkamp, J.C.	Use of portable fluorometers for *in situ* measurement of biomass and photosynthesis in intertidal sediment communities
15:10	Perkins, R.G., Underwood, G.J.C., Hanlon, A.R.M., Consalvey, M. & Paterson, D.M.	Rhythms of microphytobenthic primary production in intact biofilms measured by fluorescence and ^{14}C radiotracer uptake
15:30	COFFEE	
16:00	ANNUAL GENERAL MEETING	
19:00 for 19:30	CONFERENCE DINNER	
21:00	CEILIDH	

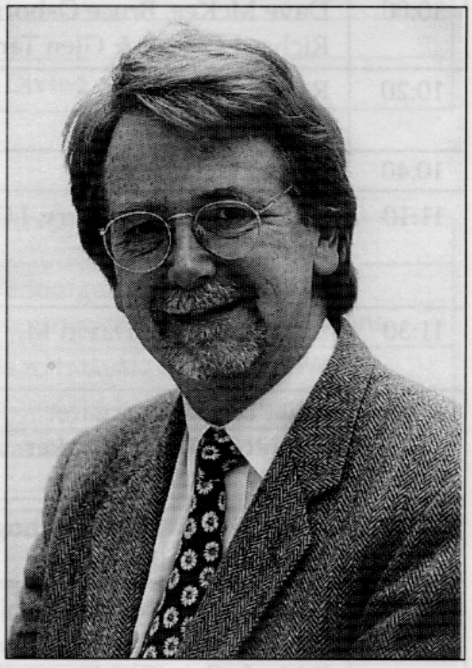
Session A: Saturday 8 January
Including the Special Session on Calcification.

Time	Speaker	Title
09:00	Colin Brownlee	Does coccolithophore calcification have a (metabolic) function?
09:20	Jeremy R. Young & others	Calcification in coccolithophores - the relationship of biomineralisation modes to life-cycles and large scale evolution.
09:40	Taylor A.R. & C.Brownlee	Calcium Transport in Coccolithophores
10:00	Dave McKee, Bruce Osborne, Richard Geider & Glen Tarran	Calcification and the optical properties of *Emiliania huxleyii* cultures.
10:20	Raven J.A.	Significance of calcification for algae and for geochemistry
10:40	COFFEE	
11:10	K. J. Harper, J. D. Parry, J.G. Day & R. J. Smith	Development of Hip PCR cyanobacterial typing technique: Analysis of diversity of picocyanobacteria in Esthwaite Water.
11:30	Eileen J. Cox & David M. Williams	Exploring the relationships among some naviculoid diatoms with a stauros.
11:50	Juliet Brodie, Margaret Steentoft, & Gary Barker	Morphological and molecular observations of Atlantic European gracilarioid species (Rhodophyta, Gracilariales)
12:10	René Groben , Martin Lange & Linda K. Medlin	rRNA probes for identification and characterisation of marine phytoplankton with an emphasis on toxic algae.
12:30	J.H. Best, J.S. Metcalf, S. Pflugmacher, C. Wieg F.B. Eddy & G.A. Codd	Cyanobacterial lipopolysaccharide toxicity and effects on the detoxification enzyme glutathione S-transferase.

Session B: Saturday 8 January

Time	Speaker	Title
09:00	Browne, K. L., Dring, M. J., Roedde, R. S., Pouligny, D. S., & Heath, P. L.	Rope cultivation of *Palmaria palmata* in Trondheim Fjord, Norway and Strangford Lough, Northern Ireland.
09:20	Dixon, N.M., Leadbeater, B.S.C., & Wood, K.R.	A field study on the dynamics of a virus infection in *Ectocarpus fasciculatus*
09:40	Alice Jennings, James Callow & Maureen Callow	Chemical cues for *Enteromorpha* settlement.
10:00	Per Hyenstrand	Factors influencing the success of pelagic cyanobacteria – experiences from field enclosure experiments in Lake Erken, Sweden
10:20	G.M. Kennaway & J.M. Lewis	Transmission electron microscopy of *Alexandrium* cysts: an exercise in patience.
10:40	COFFEE	
11:10	Wong, J.P.K., M.E. Callow, B.S.C. Leadbeater, N.C. Everall & S.P. Crymble	Maintenance of Water Quality in Secondary Storage Lakes
11:30	Dodge John D.	Dinoflagellate blooms in two S. Worcestershire ponds
11:50	Clarkson N, Jones K O & Young A J	Modelling of a continuous algal production system for predictive control.
12:10	Shubert, L.E., Rusu, A., Bartok, K. , Dubbin, B. & Purvis, O.W.	Biodiversity of edaphic algae colonising metal rich sites.
12:30	Fyson, A., O. Totsche, J. J & B. Nixdorf	Characterisation of algae from extremely acidic mine lakes in Lusatia, north-eastern Germany

FOUNDER'S LECTURE



Many of you will be familiar with the work of Michael Guiry and his key studies on the taxonomy and development of red macroalga, many of which are associated with the west coast of Ireland. For the Founders lecture Michael intends to talk about a rather neglected area of green algal ecology, namely the distribution of species in terrestrial habitats, focussing specifically on the environs of Galway City. Textbook interpretations of the distribution of algae/cyanobacteria virtually always have them submerged within aquatic systems and fail to point out that they may be a major component of a number of terrestrial situations, including man-made and natural ecosystems, particularly soil environments. To give a taste of his forthcoming talk the title and abstract are reproduced overleaf.

Terrestrial Green Algae in Galway City: Dogs, Humans and Weather

In the axiomatic dampness of the west of Ireland, particularly in the narrow, medieval streets of Galway and its burgeoning suburbs, green algae quietly colonise all manner of surfaces. Members of the Prasiolacaeae are particularly common, notably in areas that, one way or another, receive excess nutrients. *Rosenvingiella polyrhiza* and *Schizogomium murale*, which are rather closely related, occur frequently in areas affected by 'rain splash' and run-off, but are also found on corners, posts and concrete surfaces 'marked' by dogs and some other two-legged animals. Closer to the sea *Prasiola calophylla* and *P. crispa* occur in similar situations and the best population of the latter is in a secluded, shady alley near a very popular pub, An RóisÌn Dubh. *Prasiola* stipitata is confined to man-made stone breakwaters on the tops of boulders where sea birds roost during high tide. Galway also harbours a particularly striking member of the Trentepohliaceae, *Physolinum monile*, otherwise known mainly from tropical/ subtropical forests, is found in abundance on west and south-west facing walls of buildings often on basic substrata that dry out slowly. As white was a favourite colour for houses in Galway until relatively recently *Physolinium* was very obvious and became known colloquially as the 'red fungus', a taxonomic outrage. The DNA sequnces of these algae do, however, indicate some quite unexpected relationships. Architects and designers do need to actively consider the effects of such algae when working on buildings in such areas.

NEW MEMBERSHIP SECRETARY

After an extended period as membership secretary **Laurence Carvalho** finally (?) stood down as membership secretary. Laurence has clearly invested a considerable amount of time in the Society, not only as membership secretary, but also behind the scenes he was an invaluable member of the BPS council. Our current database is largely a consequence of his efforts. Although **Debora Iglesias-Rodriguez** was initially pencilled in for this post it was thought that her current location in the US might cause some difficulties as far as dealing with the membership was concerned. Debora has, however, expressed her willingness to be involved in the BPS and is clearly enthusiastic about her role in the Society as a Council member. Council has instead agreed to appoint **Murray Brown**, of the University of Plymouth, to this position. Murray is well known within the Society and has previously been an ordinary member of Council.

IT'S AUCTION TIME AGAIN

As usual an auction will be held during the 48th annual winter meeting of the BPS at the University of Birmingham on 5-8 January 2000. All proceeds from the auction support our student members (e.g. travel to meetings when presenting a paper or poster, attending algal courses at field centres). Fortunately, the auctions have been successful in the past, because a variety of interesting and valuable phycological items were donated. Also, there were many generous persons who bought the items (sometimes through fierce bidding). Continued success will rely on

your generosity, especially the donation of phycological artefacts, such as books, pictures, artwork, reprints, etc. To date, we only have a few items for auction, such as some matted and framed prints from the Freshwater Algae book, some original artwork by **Tony Fogg** and possibly some "algal inspired" silver jewellery. Please scour your office now and find some items to donate. If you are not attending the meeting, please send the items with someone who will be attending or post them to **Maureen Callow**, School of Biosciences, The University of Birmingham, Birmingham B15 2TT. Your generous donation will be recognised in a future issue of The Phycologist. Don't delay, act today and help support our student members.

For more information contact
Elliot Shubert, e.shubert@nhm.ac.uk, or
Maureen Callow, m.e.callow@bham.ac.uk.

FRESHWATER ALGAL FIELD COURSE
KINDROGAN FIELD CENTRE, SCOTLAND

A freshwater algal course will be conducted at the Kindrogan Field Centre (operated by the Scottish Field Studies Association) in the scenic Scottish highlands from the 29 July to 5 August 2000 by **Eileen J. Cox** and **Elliot Shubert** (Department of Botany, The Natural History Museum, London). The area around Kindrogan has many different kinds of habitats (streams, rivers, ponds, lochs and bogs) supporting a diversity of freshwater and subaerial algal species. During last year's course, over 300 taxa, representing ten divisions, were identified. The course is designed for advanced undergraduate students, postgraduate students, biology teachers, those in a professional capacity who need to further their knowledge of freshwater algae, and others interested in freshwater ecosystems. Participants will receive both field and laboratory experience. The cost of the course is 370 GBP (approximately 592 USD), which includes accommodation, meals and tuition. The nearest mainline railway station is Pitlochry, which is on the London Kings Cross-Edinburgh-Inverness route. Participants will be met at Pitlochry by Kindrogan staff. An international airport serves Edinburgh.

STIPEND SUPPORT FOR FIELD COURSE

- Stipends are available for student members of the British Phycological Society and they are encouraged to apply for support for assistance with the course fees. Please send a typewritten request with the following information: **1.** Name, address, telephone number, fax number and E-mail address. **2.** Brief C.V., such as Education (Institution, Degree, Date, include work in progress and expected completion date) and papers/ posters and/or papers published. **3.** Details of the course. **4.** Confirmation that you are a member of BPS, or a completed application form. **5.** A letter of support from your supervisor. **6.** Statement of the costs, indicating the sum requested from BPS, as well as resources available to the applicant. **7.** Send applications to the Chairperson of the British Phycological Society Algal Affairs Committee: **Brian Moss**, School of Biological Sciences, Derby Building, University of Liverpool, Liverpool L69 3BX, UK. **8.** The deadline for receipt of applications and letters of support is no later than 1 March 2000. Consult the BPS home page at

http://www.qub.ac.uk/ bb/jbpage/ bpshome/bps.htm or **The Phycologist 53, August 1999.**

- Graduate students who are members of the Phycological Society of America are eligible for financial support to attend a phycology course at a field station from the Hannah T. Croasdale Fellowship.

- In addition, one outstanding student applicant may be eligible for a British Ecological Society stipend. For more information and an application form contact: Ms. Hazel Norman, BES, 26 Blades Court, Deodar Road, Putney, London, SW15 2NU, UK

For a brochure describing Kindrogan Field Centre: (Location, facilities, courses and booking form)

Contact
Kindrogan Field Centre,
Enochdhu, Blairgowrie,
Perthshire PH10 7PG, UK
Tel. +44(0) 1250 88 12 86
Fax. +44(0) 1250 88 14 33
E-mail: kindrogan@aol.com
Website:
http://www.econet.org.uk/kindrogan

For specific information about the course, contact Dr L. E. Shubert
e.shubert@nhm.ac.uk

TWO STUDENTS VIEWS OF THE COURSE

I have a very good impression of the Freshwater Algal course held at the Kindrogan Field Centre, 17-24 July 1999. What an amazing place! I am very glad that I participated in this course. I identified many new algae from different freshwater habitats. I didn't know that many species of algae were present until we made a microscopic examination. It was very enjoyable working with living algae. Now I know how to identify live diatoms. It is really a fantastic "game"! This is what I needed for my daily work. The Tutors were very friendly and competent. They managed to work with each of us and gave us useful instructions and lectures. It was absolutely fascinating that I could work with people from different countries. One week wasn't long enough, because we had too many things to see and too many ideas to share with each other. I can only write, thank you, but it doesn't express everything I feel.

Elzbieta Wilk-Wozniak, Institute of Freshwater Biology, Polish Academy of Sciences, Kraków, POLAND.

Earlier this year I had the opportunity to attend the Freshwater Algal course (17-24 July 1999) organised by Drs Eileen Cox and Elliot Shubert of the Natural History Museum. The Kindrogan Field Centre provided relaxing surroundings in which to work and socialise and despite being a week of intensive learning there were opportunities to enjoy the beautiful scenery of the Scottish Highlands. Other participants included scientists, students and enthusiastic amateurs from around the world with a wide range of experiences and research interests to share.

The course had a practical bias and focused on personal development of identification techniques through use of taxonomic keys and by applying morphological knowledge acquired during lectures. Consequently, a large amount of time was devoted to microscope work; samples were collected from a variety of habitats during field trips to local sites, including an essential sampling stop at the local distillery!

In addition to the lectures there was an

introduction to light microscopy, botanical nomenclature and informal discussions on ecology, photomicrography and experimental techniques. Having focused on these topics for a week, I have returned with greater phycological knowledge, better recognition of many algae and greater confidence in identifying live samples to species level. These skills will benefit my research and facilitate the identification of taxon outside of the chrysophyte group on which I am currently working.

I could not conclude without mentioning the infamous algal charades; participation is compulsory, escape from Kindrogan before undergoing physical contortion to manifest oneself as *Scenedesmus*, *Pediastrum* or some other algal form is impossible. It was an experience not to be forgotten and yet probably one that most would like to, except there is photographic evidence. At least the group confirmed in the minds of the resident geologists and staff that phycologists are truly weird and for those wishing to attend next year, bring your wellies and textbooks, but leave your "phycological inhibitions" behind!

Many thanks to the course organisers and funding bodies (my attendance was made possible by a British Phycological Society stipend with additional funding by the Freshwater Biological Association).

Lucy Ball, Freshwater Biological Association, Ambleside, Cumbia, UK.

SPACE IS LIMITED

Please note that the course will be limited next year to 12 registrants on a "First Come, First Serve" basis. To ensure a place on the course you must complete the Kindrogan Booking Form and include a non-refundable deposit of 50 GBP (cheques only, in Sterling, payable to the Scottish Field Studies Association). Applications should be sent to the Kindrogan Field Centre. When the course is filled, unsuccessful applicants will have their deposit returned. Students who wish to secure a place for the course (regardless of stipend support) must send a booking form and deposit to Kindrogan Field Centre.

THE JUBILEE COMMITTEE

The Jubilee Commitee (**Juliet Brodie, Eileen J. Cox, Chris Gibson, Janet E. Kubler, Trevor Norton** and **Elliot Shubert**) is planning several activities to commemorate the 50th anniversary of the founding of the British Phycological Society in 2002. We will be producing an A1 colour poster on algae for distribution to schools, colleges and universities, pending financial support from a corporate sponsor. Also, we will be publishing a collection of stories (anecdotes) and pictures relating to the history of the Society, particularly the role that women have played in the development of phycology in the British Isles. Lastly, we will produce a CD-rom containing information about algae. This will be distributed to teachers so they will have easy access to resource material on algae for the classroom. We are open to ideas and suggestions from BPS members, which will assist us in completing the above projects.

For futher information contact Elliot Shubert (Chair, Jubilee Committee) Department of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD, UK. E-mail: e.shubert@nhm.ac.uk.

ROYAL IRISH ACADEMY

PRAEGER COMMITTEE FOR FIELD NATURAL HISTORY

Special millennium grants up to a maximum of IR£1,000 each, supported by the Praeger fund of the Royal Irish Academy, are available for fieldwork relevant to the natural history of Ireland. Grantees need not be based in Ireland.

Applications are particularly welcome from amateur natural historians. Grants should be considered as a contribution to the cost of the project. Importantly, grants cannot be made in support of undergraduate or postgraduate student programmes, or for any part of the applicants' professional work.

A representative set of any material collected must be deposited in the National Museum, Dublin, the National Herbarium, Dublin, the Ulster Museum, Belfast, or any other recognised institution in Ireland.

Application forms, which should be returned by 15 February, and further information are available from:

Sara Whelan
Praeger Committee
Royal Irish Academy
19 Dawson Street
Dublin 2
Ireland
Tel. +3531676422
Fax. +35316762346
E-mail: admin@ria.ie

MORE NEW MEMBERS

1. Lynda Goff, University of California, Santa Cruz, USA.
   Goff@cats.ucsc.edu

2. Katie Harper, Biological Sciences, Lancaster University.
   k.j.harper@lancaster.ac.uk
   Microalgal ecology, systematics and molecular biology.

3. Tony Jones, Division of Life Sciences, King's College, London.
   Anthony.Jones@kcl.ac.uk
   Freshwater algae (Oscilllatoria danica).

4. K.-H. Linne von Berg, Botanisches Institut, University of Köln, Germany.
   Klinne@novell.biolan.uni-koeln.de

5. Shigeto Otsuka, Department of Applied Biological Chemistry, University of Tokyo.
   Shigeton@mba.nifty.ne.jp

6. Francisco Pedroche, Depto Hidrobiologia, CBS, UAM-Iztapala, Mexico D. F., Mexico.
   Ffp@xanum.uam.mx
   Macroalgal systematics.

7. Anchana Prathep, Port Erin Marine Laboratory, University of Liverpool, Isle of Man, UK.
   Anachan@liv.ac.uk

8. Dan Franklin, Port Erin Marine Laboratory, University of Liverpool, Isle of Man, UK.
   Danf@liverpool.ac.uk

9. Sarah Pritchard, Scottish Environmental Protection Agency, East Kilbride, UK.
   Sarah.Pritchard@SEPA.org.uk

10. Alison Taylor, Marine Biological Association, Plymouth, UK.
    Arta@pml.ac.uk

1999
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Dr M. D. Iglesias-Rodriguez

Addresses

1. Professor R.J. Geider
Department of Biological Sciences
University of Essex
Colchester
CO4 3SQ
E-mail: geider@essex.ac.uk
Tel.+44(0)1206873312
Fax.+44(0)1206873416

2. Dr J.A. Berges
School of Biology and Biochemistry
Queen's University of Belfast
BT9 7BL
E-mail: j.berges@qub.ac.uk
Tel. +44(0)1232335859
Fax.+44(0)1232236505

3. Dr M. T. Brown
Department of Biological Science
University of Plymouth
Plymouth
PL4 8AA
E-mail: mtbrown@plymouth.ac.uk
Tel.+44(0)1752232910
Fax. +44 (0)1752232970

4. Dr B.A. Osborne
Botany Department
University College Dublin
Belfield
Dublin 4
Ireland
E-mail: Bruce.Osborne@ucd.ie
Tel. +35317062249
Fax. +35317061153

Instructions for Contributors

Copy which is submitted for publication in 'The Phycologist' should be concise and informative. Articles should be scientifically sound, as jargon free as possible and written in a readable scientific magazine style. **Unless absolutely essential references should not be included**. All types of relevant material will be considered, these include job advertisements, scientific reports, book reviews, news items of topical interest, meeting announcements, grant awards, promotions, appointments, profiles of eminent phycologists and obituaries. If you are interested in submitting material that does not fall within any of these broad categories, or you are unsure of the appropriateness of a potential article, then contact the editor. Suggestions for future articles or a series of articles are welcomed.

Copy should be submitted, preferably, on disc (ms word for windows) and the editor reserves the right to edit the material before final publication.

Submission of Copy and Deadlines

Copy should be submitted to: Dr Bruce Osborne, The Phycologist, Botany Department, University College Dublin, Belfield, Dublin 4, Ireland, Tel. +35317062249, Fax. +35317061153, E-mail: Bruce.Osborne@ucd.ie.

Deadlines are January 31 for the April Issue, May 31 for the August issue and September 30 for the November issue

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