

BRITISH

PHYCOLOGICAL

SOCIETY

NEWSLETTER

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NEWSLETTER

Commencing with this issue the Newsletter  
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Information for the next Newsletter should reach  
the editor by May 31st 1980 for publication in  
July 1980.

This is YOUR Society's Newsletter and it should  
concern YOU. If it doesn't then change it.  
How? You could try sending an article or a  
note of some kind for inclusion. Try reading the  
last item in this Newsletter for some ideas of  
what to send. Even if you can't send an article  
or news item please DO fill in the questionnaire  
enclosed with this Newsletter and sent it with  
or without further comment to the editor AS  
SOON AS POSSIBLE.

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## SOCIETY ANNOUNCEMENTS

Membership List. A membership list will be issued with the next Newsletter in Summer 1980. If there are any alterations in your address please notify the Membership Secretary:-

Dr Chris Happey-Wood  
UCNW  
School of Biology  
Memorial Buildings  
Bangor LL57 2UW  
Wales

Subscriptions will increase from 31st January 1980 as a result of a decision at the last AGM. The new rates will be

Full membership	£10.00
Student membership	£ 7.50
Retired membership	£ 7.00
Associate membership	£ 2.00

Subscriptions from overseas members can be accepted in American dollars from next year but it will be necessary for members paying this way to add one dollar on to the dollar equivalent of the subscription in order to cover bank charges levied in the U.K.

Events Co-ordinator. Following the resignation of Dr Martin Wilkinson as Field Meetings Secretary, on taking up the editorship of this Newsletter, there was a lively discussion at the last AGM concerning the scope of the Field Meetings Secretary's remit. As a consequence Dr Brian Whitton has taken on the job of coordinating various events which the Society might sponsor - not just field meetings but special symposia, workshops, teach-ins etc. Brian has started his duties by persuading various members to run several field weekends, rather different from the established field meetings. Please read about these planned for 1980 in the Forthcoming Meetings section of this Newsletter and let the organisers know of your interest NOW.

Anyone with ideas of any kind for pycological events they would like to see the Society organise should contact the Events Coordinator:

Dr Brian Whitton  
Dept of Botany  
Science Laboratories  
South Road  
Durham  
England

Mapping Scheme. Dr Trevor Norton, and the Biological Records Centre have produced a Preliminary Atlas showing distribution maps of 15 common British Seaweeds and also a map showing the localities from which distribution records have been received so far. The latter shows that there is still plenty of scope for people who want to put their seaweed records into the mapping scheme for seaweeds of the British Isles. Trevor anticipates being able to map 100 species usefully in 5 year's time if records continue to flow. Anyone who would like information about the mapping scheme or a copy of the Preliminary Atlas should write to the mapping scheme coordinator:

Dr Trevor Norton  
Dept of Botany  
The University of Glasgow  
Glasgow  
G12 8QQ  
Scotland

### FORTHCOMING MEETINGS

Following are details of the first five field meetings to be arranged under the auspices of the events coordinator, Dr Brian Whitton.

Field Weekend and Workshop	<u>Macro-algal communities in marine monitoring and management</u>
Location	Millport
Organiser	Mr J. Clokie, University Marine Biological Station, Millport, Isle of Cumbrae, Ayrshire
Dates	Evening of Friday 15 June - evening of Sunday 15 June 1980 or morning of the 16th, whichever is the more convenient for travel
Accommodation	Can be arranged at the Station
Other Costs	A charge will be made to cover costs of field transport and other expenses
Number of Participants	About 15
Aims	To discuss ways in which macro-algae can be used to monitor marine communities. Material will be examined both on site and in previously collected samples from communities affected by a thermal effluent, diesel oil, freshwater, sewage, on-shore structures, and lug-worm digging. Photic limit indicators will also be available for examination. The meeting will be in the form of a workshop and should interest people with practical problems, as well as those concerned with the general biology of marine algae. Biologists from Water Authorities and River Purification Boards are most welcome.

Laboratory and accommodation facilities are excellent at Millport. If you would like to attend this weekend or want more information, please contact Julian Clokie.

Field weekend	<u>Freshwater algae: ecology and field techniques</u>
Location	Aberystwyth
Organiser	Mr A.K. Jones, Department of Botany and Microbiology, School of Biological Sciences, Aberystwyth SY23 3DA
Dates	Main working days - 5 and 6 July 1980, but Friday 4 and Monday 7 can also be included; it is expected that most people will arrive on the Friday evening and leave early on Monday
Accommodation and costs	Accommodation can be arranged in a university hall at a (provisional) cost of about £9 per day full board. It may also be necessary to make a charge for travel to field sites during the weekend. It may be possible to arrange a concession of 25 - 50% reduction on rail fares if enough people make a firm request in advance to Alvin Jones

Numbers of Participants Preferably 15, but up to 20 can be accommodated

Aims To bring people together informally to compare and share methods for sampling, field experiments and identification of freshwater algae. It is hoped that people interested in phytoplankton or stream and river algae will come. Probably everyone will work together on the Saturday, but they go off in smaller parties on the Sunday. Aberystwyth is an excellent centre for a wide range of algal communities

If you would like to attend the weekend or want more information, please contact Alvin Jones.

Field Weekend Rivers and reservoirs of South Wales

Location Cardiff

Organizer Dr K. Benson-Evans, Department of Plant Science, University College, Cathays Park, Cardiff

Dates Evening of Friday 12 September - evening of Sunday 14 September or morning of the 15th, whichever is the more convenient for travel

Accommodation Can be arranged in university hall of residence, providing that sufficient warning is given

Number of Participants 15-18

Aims To bring together people interested in freshwater algae who would like to have a chance to look at a wide variety of sites and talk about their work; it is hoped to include a couple of informal lectures during the weekend.

If you would like to attend the weekend or want more information, please contact Kathryn Benson-Evans.

Field Weekend Freshwater greens: taxonomy and general biology

Location Reading

Organiser Dr A.J. Brook, c/o Department of Zoology, University of Reading, Reading, Berks

Dates Evening of Friday 26 - evening of Sunday 28 September 1980; some people may wish to stay until the morning of the 29th

Accommodation Can be arranged in a university hostel, providing that sufficient warning is given

Number of Participants preferably 12-16

Aims To make brief field visits to sites around Reading, especially the gravels to the south, and to study samples for their green algae. There should be plenty of opportunity to collect Chlorococcales and desmids, but participants may also wish to bring some of their own materials.

If you would like to attend the weekend or want more information, please contact Alan Brook. (Should you wish to phone him, it would be better to contact him at the University College at Buckingham - 028024161)

Field Weekend Algae in Polluted Estuaries

Location Edinburgh

Organiser Dr Martin Wilkinson, Department of Brewing and Biological Sciences, Heriot-Watt University, Chambers Street, Edinburgh EH1 1HX

Dates During Summer 1980; dates to be fixed to suit likely participants; perhaps to follow from or precede the IPS meeting in Glasgow at which there may be an estuarine session

Accommodation Can be arranged at Heriot-Watt University residences

Number of Participants About 15

Aims To bring together people with an interest in the algae of the unique environment of the mid- and upper reaches of estuaries. It is anticipated that the weekend could be just as valuable to freshwater or marine algologists who want to learn about a new environment as to established estuarine workers; or to young workers on estuaries who are finding the taxonomy too difficult and need someone to talk to about it! Field visits would be made to domestic and industrially polluted sites on the Clyde, Forth, Carron and Avon estuaries among others.

Anyone who would be interested should contact Martin Wilkinson as soon as possible, preferably giving dates when not free in Summer 1980.

The Tenth International Seaweed Symposium will be held from 11-15 August 1980 at Gothenburg, Sweden.

Details from:

Xth ISS Secretariat  
Marine Botanical Institute  
University of Goteborg  
Carl Scottsbergs Gata 22  
413 19 Goteborg/Sweden

The International Phycological Society is to hold a meeting at the University of Glasgow from 19-22 August 1980. If you wish to be included on the mailing list for the First Circular please notify:

Professor A.D. Boney  
Dept of Botany  
The University of Glasgow  
Glasgow G12 8QQ Scotland

### ICSEB-II and the Phycological Society of America

ICSEB is the Second International Congress of Systematic and Evolutionary Biology which is sponsored by the Society of Systematic Zoology and the International Association of Plant Taxonomy in cooperation with other national and international organizations. (The first congress was held in 1973 at the University of Colorado).

The Phycological Society of America meeting will be held in conjunction with the Canadian Botanical Association/L'Association Botanique du Canada and the Botanical Society of America from 12-16 July at the University of British Columbia, Vancouver, Canada. The usual contributed paper and poster sessions will be scheduled as well as several symposia. A marine field trip is planned and the timing is dependent upon tides (which are not scheduled, as yet!). Information concerning the PSA meeting can be secured from:

Dr Janet Stein  
University of British Columbia  
Dept of Botany  
2075 Westbrook Mall  
Vancouver B C  
Canada

Information regarding the ICSEB-II, which is scheduled 17-24 July, is available from Professor G.G.E. Scudder, Department of Zoology, University of British Columbia, Vancouver V6T 1W5. At present 12 half-day symposia are scheduled plus several specialized symposia and contributed papers and poster sessions. One long range field trip is scheduled before and after the Congress and several one day trips will be held during the Congress.

### Sixth Symposium on Living and Fossil Diatoms

The Symposium will be held from September 1-6, 1980 at the Hungarian Geological Society in Budapest, Hungary. Scientists working on the morphology, ecology, biostratigraphy and taxonomy of Living and Fossil Diatoms are invited to attend the symposium and to present papers or demonstrate their work. Deadline for abstracts, March 1, 1980. For preliminary registration and submission of titles of contributed papers mail to Dr Marta Hajos, Hungarian Geological Survey, Budapest, Post Box 106, Hungary 1442.

### XIII International Botanical Congress

To be held in Sydney, Australia, 21-28 August 1981.

Registration and General Enquiries: Dr W.J. Cram, Executive Secretary, XIII International Botanical Congress, University of Sydney, N.S.W. 2006, Australia.

### Section 10. Marine and Freshwater Botany

[Chairman Section 10 Committee Professor H.B.S. Womersley, Department of Botany, University of Adelaide, South Australia, 5000].

The section will meet throughout the Congress, and will give the opportunity for symposium and paper sessions on a variety of phycological topics as well as on seagrasses and mangroves. It is anticipated that papers to be presented verbally will be selected but that all other papers offered can be tabled as abstracts or full accounts by the authors; poster displays can be arranged.

The following topics have been suggested, and the Committee will welcome comments on these or suggestions for other topics, as well as on the field trips listed below.

New concepts in algal morphology and taxonomy, including ultrastructural and biochemical aspects.  
Sexual reproduction in the algae.  
Structure and dynamics of algal communities.  
Role of algae in tropical reefs.  
Antarctic phycology.  
Seagrasses and their biology.  
Productivity of algae, seagrass and mangrove communities.  
Algal biogeography, with emphasis on the southern hemisphere.  
Algal utilisation in the southern hemisphere.  
Diatom taxonomy and biology.  
Taxonomic concepts in blue green algae.  
Fossil algae.

It is hoped that concurrent sessions can be kept to a minimum. Some marine and freshwater sessions may run concurrently, and it is hoped that some sessions can be presented so as to give the majority of phycologists the opportunity to attend.

Proposed field trips include:

1. Pre-congress to the Great Barrier Reef, probably to Heron Island, including also seagrasses and mangroves. Likely duration: 1 week.
2. Post-congress to Melbourne and around the coast to Adelaide, for Australian endemic marine taxa. Likely duration: 8 days.
3. Sydney to Melbourne for freshwater localities. Likely duration: 6 days. [This could be a pre-congress trip].
4. Several 1 day trips will be available during the Congress, including:
  - (a) To C.S.I.R.O. Division of Fisheries and Oceanography at Cronulla, with a probable boat trip for seagrass beds etc.
  - (b) To Botany Bay, for mangrove, seagrass and algal communities.
  - (c) To a coastal rock platform.
  - (d) One or more trips to freshwater habitats.

3rd International Congress on the History of Oceanography

22-26 September 1980 at Woods Hole, Mass., U.S.A. Details from:

Professor Daniel Merriman  
Yale University  
298 Sperry Road  
Bethany  
Connecticut 06525  
U.S.A.

Second International Symposium on Microbial Ecology will be held

7-12 September 1980 at the University of Warwick, Coventry, U.K. Contact:

Dr Madilyn Fletcher  
Dept of Environmental Sciences  
University of Warwick  
Coventry CV4 7AL

Course on Estuarine Biology

The Estuarine and Brackish-Water Sciences Association is organising a training course on estuarine biology to be held at Heriot-Watt University in March 1980. The course is aimed primarily at industrial and Water Authority/River Purification Board staff and follows on from the success of the Association's first course, last year, on estuarine hydrography. Further details from the organiser:

Dr Martin Wilkinson  
Dept of Brewing and Biological Sciences  
Heriot-Watt University  
Chambers Street  
Edinburgh EH1 1HX Scotland

REPORTS OF MEETINGS. The following two reports of meetings of interests to phycologists have been sent in by Drs Lund and Bolton to whom we are very grateful.

Second International Workshop of Active Phytoplanktologists

The workshop was held at Kastanienbaum in the laboratories and under the auspices of the Swiss Federal Institute for Water Resources and Water Protection (EAWAG) from 21-27 August, 1978.

There were two main activities. Those participants who had attended a previous workshop in Austria and arranged to do comparative plankton counts, evaluated the results obtained and discussed plans for future work. When not so doing they joined the other participants who were identifying algae or their parasites in samples collected on visits to lakes and pools before or during the meeting. Identifications of diatoms, in general, were not made because only uncleaned frustules were examined nor was any detailed study made of blue-green algae for which there is another series of workshops. The taxonomy and identification of coccoïd green algae formed a major centre of interest.

The success of this valuable workshop was due largely to the prior arrangements made by Dr H.R. Bùrgi, his hard work during the meeting and the facilities and support given by EAWAG. EAWAG supplied free transport and a cheap but good lunch was available at their Kastanienbaum institute. In view of the high costs of almost everything in Switzerland, these subsidies were much appreciated. Through the kindness of the Director and the good offices of Dr H. Ambùhl a visit was paid to EAWAG's headquarters at Dübendorf, where, apart from the opportunity to learn something of its manifold activities, considerable interest was shown in the collection of micrographs, records and notes of the late Dr F. Nipkow.

At a final informal session the future of such a workshop was discussed. It was agreed that another should be held in 2-3 years; that there should not be any formal organisation and that informal contact would be maintained through Dr Bùrgi. Problems involved in the organisation of such meetings and their content was also aired.

J.W.G. Lund

Symposium: The shore environment, methods and ecosystems.

Portsmouth 3-5 April 1979.

A symposium at which 27 papers were presented under the general title 'The Shore Environment : Methods and Ecosystems' was held at Portsmouth Polytechnic with the sponsorship of the Systematics Association, N.E.R.C., the British Council, and the B.P.S. The meetings was attended by around 100 people from 12 countries who, although phycologists were most in evidence, represented a wide spectrum of interests.

The opening lecture by Dr J.R. Lewis was a personal view of the objectives of studies on the shore environment, and emphasised the need to move increasingly from static to dynamic aspects; Dr Lewis's words of caution on the use of the new methods of data recording, retrieval, and analysis admirably set the scene for many of the presentations and resultant discussion.

The papers were grouped under five headings, although the range of scope and content must have made such a procedure difficult. The section 'ecosystems and their classification' included presentations on classification

of sublittoral epibenthos by K. Hiscock and R. Mitchell, phytosociological studies on Mediterranean algae by E. Coppejans, and the use of a permanent quadrat method in salt-marsh algal dynamics by P.J.G. Polderman. A synthesis by G.R. South, R. Hooper, and A. Whittick of many years-worth of data on the marine algae of insular Newfoundland was interestingly presented by Dr Whittick. A review of estuarine algae and their environment by M. Wilkinson, although proving difficult to adequately summarise in the time allotted, will undoubtedly prove an invaluable contribution in the published volume.

The section 'ecological relationships between groups of organisms' provided information on a wide range of littoral fauna; free-living nematodes by H. Platt and R. Warwick, invertebrate epiphytes of marine algae by P.J. Hayward, fish/algal relationships by A. Wheeler, and foraging techniques and community structure by R. Hughes. The intended opening paper in this section, presented later, on the concept of the niche in the intertidal by J. Price was thoughtfully presented, and many look forward to perusal of the published version.

The third section entitled 'the biology of ecologically significant groups of organisms' comprised four varied and interesting papers. A. Fletchers stimulating ideas on lichen interactions on the seashore were followed by R.L. Fletchers assessment of algal fouling communities on floating structures. After lunch W.F. Farnham discussed studies on introduced aliens in the marine flora of southern England (with mercifully little mention of Sargassum muticum) and K. Ldning summarised his excellent work on the control of algal life history by temperature and daylength. Dr Ldning should be commended on his command of both the English language and the British sense of humour.

Section four on the application of sampling, recording and numerical techniques began with a useful presentation by D. George on photography as a marine biological research tool, followed by a stimulating description of remote sensing and field sampling of mudflat organisms by M. Coulson, J. Budd, R. Withers and D. Nicholls. Two papers followed on the collection and analysis of sublittoral data by D.M. John et al. (read in the authors' absence) and R. Earll. The use of numerical methods was then discussed with respect to chalk-cliff marine flora by I. Tittley and K. Shaw, and a simple ordination method for the analysis of intertidal vegetation suitable for the instruction of students presented by G. Russell. This latter theme was continued in an entertaining description by W.E. Jones of field teaching methods in shore ecology.

The final session on 'monitoring or surveillance : the concept of base-line studies of organisms and environment' began with an impressive description of a large-scale survey of the rocky-intertidal biota of Southern California by M. Littler, memorable for the excellent use of visual aids. The resources involved in this study contrasted markedly with the next presentation on changes in intertidal ecosystems after major reclamation work by J. Clokie and A.D. Boney which included numerous ingenious research strategies, not least the acquisition of experimental grazing organisms by barter for alcoholic beverages! A biological exposure scale was then described by D.H. Dalby following which the final papers were concerned with large-scale monitoring schemes; on the north Wales coast by W.E. Jones and his team, and a conservation survey of the littoral zone of the British coast by H. Powell, S. Knight and R. Mitchell.

Jim Price, David Irvine and Bill Farnham are to be congratulated on their faultless organisation of this interesting and varied symposium. A symposium volume is to be published under the sponsorship of the Systematics Association.

John J. Bolton

We have also received a combined report of a study tour in India and of the Symposium on Marine Algae of the Indian Ocean from Elizabeth Percival and Richard MacDowell. Once again we are grateful for the time taken to prepare the report for the Newsletter.

We spent from January 6th to February 10th 1979 in India under the auspices of the British Council and the Indian Council of Industrial Research. Much of our time was spent in the State of Gujrat where we attended and took part in a Symposium on Marine Algae of the Indian Ocean Region at the Central Salt and Marine Chemicals Research Institute at Bhavnagar. At which there were 129 participants of which 30 came from 20 different countries. The Symposium was divided into: 1. Survey, Distribution, Ecology and Taxonomy of Marine Algae, 2. Biology, Physiology and Cultivation of Algae, 3. Chemistry and Biochemistry of Algae, 4. Pharmaceutical and Feed from Marine Algae, 5. Energy, Fertilizer and Industrial Applications, 6. Utilization of Marine Algae for the Improvement of Coastal Areas. Special lectures by invited speakers were given on (a) Sulphated polysaccharides of Phaeophyceae, structure, biosynthesis and function, (b) Antibiotics from algae, (c) Biofertilizers from algae, (d) The seaweed industry, (e) Seaweed research in 1980. The papers are to be published in a single volume and should therefore shortly be available to Phycologists.

After the symposium, during some 10 days, we had detailed discussions with the individual algal research workers at the Institute in an attempt to clear up many of the difficulties they had experienced in isolating alginates, agar and carrageenan from the various species of seaweed growing on Indian coasts.

While in Gujrat we visited the coastal regions including Porbander, Dwarka and the Marine Biological Research Institute at Okha. At the latter the following valuable projects are in progress (i) The acclimatisation in a series of tanks of local marine fish to brackish water in order to stock the inland pools, (ii) The sale for a few paise of 100g packets of powdered dried fish to the local poor people to enhance the protein in their diet, (iii) Experiments on the exploitation of Indian species of Sargassum growing locally at Sikka on the gulf of Kutch.

We also visited the Textile Institute of Research Association and the Cellulose Products factory at Ahmadabad. At the former some algal research is in progress and at the latter agar and alginates are manufactured from Indian seaweeds.

We flew to Goa which we found a delightful state, having many marine inlets and largely unspoilt countryside and forests. As guests of the Institute of Oceanography at Dona Paula we spent a most interesting time. Besides studying local algae, every aspect of marine biology and oceanography is being investigated. They are also very proud of the recently installed cyclone detecting radar which has a 500 mile radius and which we were able to see working. We visited several of the coasts in Goa where a very large variety of seaweeds are to be found, but none in very large quantity. At one of the most attractive beaches there were large numbers of "Hippies" who we were told spend every Winter there!

From Madras we had a rather tiring 18 hour journey by train to the southernmost part of India. Although travelling first class the journey was far from comfortable, and to anyone contemplating this journey I recommend a light sleeping bag and blow-up pillow as a necessity. There is a marine algal station at a small village called Mandapam. This is on the edge of the gulf of Mannar. It is here that the largest quantity of

seaweeds on the coasts of India are to be found. Of the brown seaweeds the major genus is Sargassum and of the red, Gelidiella acerosa. Although we did not see them we understand Hypnea species can be found in some abundance. We visited the coastal region between Kilakkarai and Ervadi. We saw culture experiments in the sea, by Cellulose Products, of Gelidiella acerosa. This raises many problems, since besides requiring a rocky substrate, this weed only grows in the shelter of other algae making harvesting difficult. We were very surprised to find that the site has to be watched continuously since indiscriminate harvesting of seaweed on this coast by local inhabitants is permitted for sale to merchants. We saw many examples of this in progress.

The lasting impression we have of all the coastal regions of India that we visited was the very wide range of species of seaweeds, many of which we had never seen before, rather than a very large quantity of any one species such as Macrocystis pyrifera on the coasts of California or Ascophyllum nodosum on the rocky coast of Scotland.

We also visited the Universities at Madras and Benares, and Technical Institutes at Bombay, Madras and Delhi where we gave lectures and were impressed by the research in progress, much of which had direct bearing on India's needs.

We met a wide variety of interesting Indian scientists and their families, made many friends, and found the whole visit a fascinating experience. To any one who has the opportunity to visit India, particularly at that time of the year when the weather is perfect - blue skies and sunshine and not too hot - we would say grasp it with both hands, visit as many places, particularly away from the large cities, and see as many people as possible.

Elizabeth Percival and Richard McDowell

#### FROM THE PRESS - the Monster Superweed

The editor would be grateful to receive any press-cuttings relating to phycology so that we could have a regular feature on these. To start the ball rolling here are some extracts from the Guardian (10/8/79) about a "350 foot-long brown monster" called "superweed". It is, of course, about the French plan to grow Macrocystis in the Bay of Biscay.

"Scientists at the Marine Biological Association in Plymouth are fearful that the seaweed may seed itself and spread across the Channel to Britain.

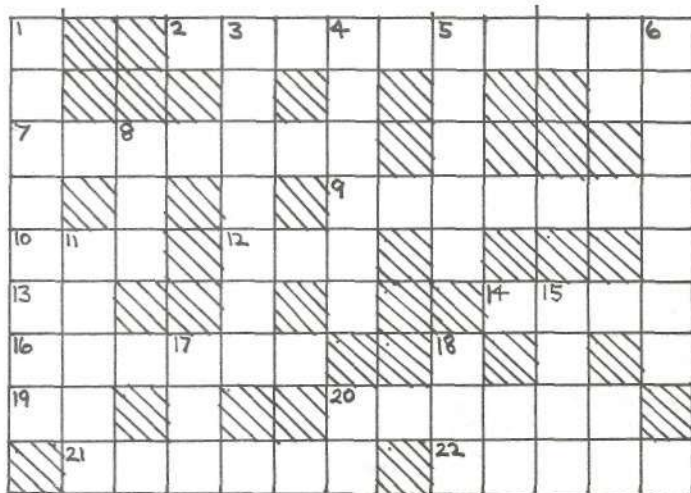
Scientists can envisage a Sargasso Sea off Brighton pier with tides flowing the wrong way and sewage-filled rivers being stopped up in their estuaries.

After warnings from the association, two Government Departments have now appealed to the International Council for the Exploration of the Sea to put pressure on the French government. Devon County Council has asked the European MPs for Devon and Cornwall to enlist the support of the Parliament at Strasbourg."

"In experiments at Roscoff in Brittany the French grew the kelp to 45 feet in one summer on a concrete block in the sea. But the French government has agreed to suspend the work for one month."

CROSSWORD

Allan Pentecost has very kindly sent in our first Phycologist's squasword. Who is going to let me have a second one for the next issue?



Clues down

1. Quadriflagellate, often found in Sphagnum (8)
3. Colourless euglenoid (7)
4. This plant has plenty of connections (6)
5. It's green, exquisite and slender but it usually stinks.  
Long fossil record (5)
6. With one of these, some algae can Dodge obstacles (7)
8. Freshwater habitat. Often the home of (1.) (3)
11. Getting it down to this isn't too bad, but the next stage beats a lot of us (5)
15. This sometimes falls off and is sufficiently elusive to have kept microscopists busy for years (4)
17. Hormone initials (3)
18. Some algae produce this but unlike some of us, they know when to stop (5)
20. Measure of basicity (2)

Clues across

2. Gibbon and Shirer would probably approve of this structure (3,7)
7. 5-C sugar alcohol (7)
9. People have tried destroying algal blooms with them (7)
10. Ovum (3)
12. Some phycologists are graded so (3)
13. refer (2)
14. ---ococcus Cyanobacterium (4)

continued on next page

Clues across continued:

16. Ink, solves sticky problems (6)
19. Dinoflagellate genus suggests this element (2)
20. Further chemical digression. -----um. Hard metal and hardly suitable for media (6)
21. Storage product of Cryptophyceae (6)
22. Some pit connections are this shape (5)

#### RESEARCH REQUEST

Lesley Phelan, a graduate student working on the marine and estuarine Prasiolales in Britain, would be really grateful to receive preserved or fresh material of this group from any part of the world. Please send to:

Miss Lesley Phelan  
Dept of Brewing and Biological Sciences  
Heriot-Watt University  
Chambers Street  
EDINBURGH EH1 1HX

#### RECENT PUBLICATIONS OF INTEREST TO PHYCOLOGISTS

The Biology of Algae and Other Verses.

R.A. Lewin, 1978.

Boxwood Press, Pacific Grove, California. \$ 3.95

Modern Approaches to the Taxonomy of Red and Brown Algae.

Edited by D.E.G. Irvine and J.H. Price, 1978.

Academic Press, London. ISBN 0 12 374050 9 £26.30

Environmental Role of Nitrogen-fixing Blue-Green Algae and Asymbiotic Bacteria.

Edited by U. Granhall.

Liber Trgek, Stockholm, Ecological Bulletins no. 26 \$ 26.40

Introductory Phycology.

F.R. Trainor, 1978.

John Wiley, New York. ISBN 0 471 881902 £12.25

Biology of Seaweeds: Level of Organization.

A.R.O. Chapman, 1979.

Edward Arnold, London. ISBN 0 7131 2759 7 £5.95

Algen: Einführung in die Phykologie.

C. van den Hoek assisted by H.M. Jahns, 1978.

Goerg Thieme Verlag, Stuttgart. DM26.80

Biological Surveillance of Water Quality.

Texts of papers presented under a session of this title at the 1977 meeting of the British Association for the Advancement of Science at the University of Aston in Birmingham. Published by the University and available directly price £2.00 (inc. post) from:

Dr J.G. Hughes  
Dept of Biological Sciences  
Aston University  
Gosta Green  
Birmingham B4 7ET  
United Kingdom

BRACKISH-WATER ALGAL GROUP

Martin Wilkinson has written to a number of phycologists around the world with a view to establishing a register of worker's interests in brackish-water algae and to forming some type of discussion group for the exchange of ideas on estuarine and other brackish-water work through a newsletter or meetings/workshops during other phycological gathering. Those persons who replied will shortly receive the collated views of all those who replied. In the meantime anyone who is interested and did not receive a letter is now invited to notify their interest and their views on such a group to:

Dr Martin Wilkinson  
Dept of Brewing and Biological Sciences  
Heriot-Watt University  
Chambers Street  
EDINBURGH EH1 1HX  
Scotland

Answers to Crossword on page 12

down. 1. Carteria, 3. Astasia, 4. Volvox, 5. Chara, 6. eyespot,  
8. bog, 11. genus, 15. hair, 17. IAA, 18. fat, 20. pH.

across. 2. gas vacuole, 7. ribitol, 9. viruses, 10. egg, 12. SSO,  
13. re., 14. Chro(ococcus), 16. Indian, 19. Au, 20. platin(um),  
21. starch, 22. torus.

POSITION AVAILABLE

Dr Klaus Lüning, Biologische Anstalt Helgoland (West Germany) is seeking a marine botanist with an interest in cultivation of macroalgae for a research program on influence of environmental factors on growth and reproduction of various kelp species. The position is for three years and will be filled up at the BAT IIA level: about 3300 DM per month. A Ph.D. is required and applicants should send a curriculum vitae including reprints of published papers and 3 letters of recommendation to: Dr Klaus Lüning, Biologische Anstalt Helgoland, Meeresstation, 2192 Helgoland, West Germany. Closing date: 1 October 1979.

Phytoplankton Course for Experienced Participants

Offered by            Department of Marine Biology and Limnology, Section  
                         of Marine Botany, University of Oslo.

Place                    Biological Station, Drøbak, Oslofjord.

Duration                3 weeks (21 July - 9 August, 1980)

Participants            Candidates with a Ph.D., M.Sc. or B.Sc. degree or  
                         equivalent, and with experience from phytoplankton  
                         work (species identification, cell enumeration by  
                         microscopy)

Number of  
Participants            12

Programme              Training in identification of marine planktonic algae  
                         with emphasis on use of identification literature  
                         and light microscopy.

Course leaders         Grethe Rytter Hasle, Jahn Thronsen

Further information and an application form may be obtained by writing  
to:

Professor G.R. Hasle  
Department of Marine Biology and Limnology  
Section of Marine Botany  
University of Oslo  
P O Box 1069 Blindern  
Osle 3  
Norway

Applications should be submitted by 15 February, 1980.

BRITISH PHYCOLOGICAL SOCIETY  
NEWSLETTER CONTENT QUESTIONNAIRE

In order to make this Newsletter what you would like it to be the editor needs your views on its content. Please indicate with a tick your degree of interest in each of the headings below. Then please add any other headings you think should be included in the Newsletter. Feel free to add any views whatsoever on a separate sheet, if necessary. Finally, PLEASE DO let the editor have anything that might be of interest, no matter how trivial or how different from what has conventionally been included.  
 (\* below indicates new headings. Please consider particularly if you can supply something for these).

Name \_\_\_\_\_  
 (can be omitted if you wish to be anonymous)

	Should be in Newsletter	Not bothered	Should NOT be in Newsletter
Forthcoming meetings			
Jobs Vacant*			
Jobs Wanted*			
Reports of Meetings			
Reports of Research in Progress			
Reports of Study Tours			
Book Information			
Information on obscure reports*			
Membership List			
Trial Keys			
Personal News of Members*			
New Techniques*			
Letters to the Editor*			
Crosswords/Poetry etc*			
Research Requests			
Thesis titles of graduating students*			

Any other suggested headings:

Please mail to Martin Wilkinson, Department of Brewing and Biological Sciences  
 Heriot-Watt University, Chambers Street, Edinburgh EH1 1HX, Scotland. Thank you.