

M. Wilkinson
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British Phycological Society NEWSLETTER

DECEMBER 1972

NEWSLETTER NO: 4

1972/73 WINTER MEETING.

The next Winter Meeting will be held at Royal Holloway College (University of London), Englefield Green, Surrey. Two and a half days will be devoted to papers and discussions. The meeting will take place in the Chemistry Department and accommodation will be available in an adjacent College Hall of Residence for the nights of the 2nd, 3rd and 4th of January. Dr. E. Percival has kindly agreed to act as local secretary.

The 21st A.G.M. of the Society will take place during the Winter Meeting.

SUBSCRIPTIONS FOR 1973

These are due on January 1st and the Hon. Treasurer will be pleased to receive them in advance of this date.

The rates are as follows:-

Full Membership £3. or \$ 8.00.

Student Membership £2. or \$5.50.

Part Membership £1. or \$3.00. (Not receiving the 'Journal').

Subscriptions should be sent to Dr. A. F. Marker, F.B.A., River Laboratory, East Stoke, Wareham, Dorset. BH20 6BB.

NEWSLETTER.

The Editor will be pleased to receive articles, letters, details of meetings etc., for publication in future numbers of the Newsletter. More Correspondents from all parts of the world are still needed.

NEXT ISSUE.

Articles, notes etc. for inclusion in the next issue should be sent to the Editor of the Newsletter, (Ian Tittley Dept. of Botany, British Museum (Natural History) Cromwell Rd, London, SW7 5BD.) not later than March 31st 1973. The next issue will be published and circulated during April 1973.

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FIELD MEETING IN ORKNEY. To be held sometime during August 1973.

The meeting will be centred at Kirkwall from which the old and beautiful island of Orkney will be explored. Orkney is quite different from nearby Shetland which was visited by the Society a few years ago. It also possesses some of the most interesting archeological sites to be found in Britain and it is planned to visit some of them. The main purpose of the meeting is the collection of seaweeds, but members with other interests are welcome to participate.

For full particulars please contact:

Dr. T.A. Norton
Department of Botany
The University
Glasgow. W.2.

OBITUARY

Stephen John Goodband, B.Sc., Ph.D.

Friends and acquaintances of Steve Goodband will be shocked and saddened to learn of his death by drowning in a yachting accident. After taking his B.Sc. in Botany at Liverpool he became a Research Assistant at the Northern Polytechnic, London, working on the development and taxonomy of species of Sphacelaria. He obtained the Ph.D. of the University of London for this work, and subsequently became a Lecturer in Botany in the Department of Biological Sciences of the University of the West Indies, St. Augustine, Trinidad, where he continued to work on the algae, taking a special interest in the role played by coralline algae in reef-building. He was shortly to have undertaken a UNESCO-sponsored survey of the research activities of marine biological stations around the Caribbean when his promising career was so tragically cut short at the early age of 29.

That he should have died by drowning is perhaps the more tragic because he was a good swimmer, powerfully built and indeed an all-round athlete, playing a prominent role at University, Polytechnic and in Trinidad in rugby and cricket, particularly the former, for which he represented Trinidad and was Chairman of the National Coaching Committee.

He is survived by his wife and small son, to whom we offer our deepest sympathy.

JOINT MEETING WITH PROTOZOOLOGISTS AT CAMBRIDGE - 7 - 8 April 1972

Society members Drs. Green, Hibberd, Leadbeater, Leedale and Professor Manton presented papers at a joint meeting with the British and Scandinavian Sections of the Society of Protozoologists at Christ's College, Cambridge. All of the contributions were on algal ultrastructure and aroused much interest in spite of the extremely rapid pace of delivery necessitated by the total presentation time of 75 minutes. Members of the Society from the Natural History Museum and Cambridge Culture Centre swelled the number of phycologists attending the symposium.

D.J. HIBBERD.

RESEARCH IN BENTHIC ALGAE IN THE NETHERLANDS.

During a meeting on December 14th, 1968, in Groningen a "Working group for the study of the systematics and ecology of benthic algae" was established; all Dutch phycologists are members of this group. It aims at stimulating and co-ordinating the study of both the systematics of benthic algae in the widest sense as well as their ecology (including the study of vegetation) by adopting among other things a common research programme. This programme consists of the following two projects:

- a. Monographic studies on algal taxa (species, genera, families, or subdivisions of these) as contributions to a future critical flora of Western Europe. Such a flora, of course, is an international project which can certainly be realized within a few decennia by the joint efforts of the west European phycologists and the co-operation of other algal specialists.
- b. The ecology of poikilohaline algae. Due to the physiographic conditions along the Dutch coast it is expected that a specific Dutch contribution in this field of research can be made.

Naturally several research subjects which are in progress at present do not fit within the programme.

The working group has already carried out an inventory of the current phycological work in the Netherlands. The results were presented in a report "Onderzoek aan benthische algen in Nederland" which was distributed in 1970 within the Netherlands. As much of the information contained in this report may also be of interest outside the Netherlands, it was decided to draft a report in the English language. The present paper can be regarded as a condensed and revised edition of the 1970 report.

At present in 5 institutes in the Netherlands investigations are carried out on benthic algae, viz. in the Plant systematics dept. of the Botanical Laboratory of the Rijksuniversiteit, Groningen; the Plant taxonomy dept. of the Biological Laboratory of the Vrije Universiteit, Amsterdam; the Rijksherbarium of the Rijksuniversiteit, Leyden; the Delta Institute for Hydrobiological research (Royal Dutch Academy of Sciences), Yerseke, and the Hugo de Vries Laboratory, Municipal University, Amsterdam.

1. In the Botanical Laboratory of the Rijksuniversiteit, Groningen, the following subjects are being studied under the supervision of Professor Dr. C. van den Hoek.

- a. Life-cycles of Rhodophyta (Acrosymphyton purpuriformum, Scinaia complanata, Halymenia floresia, Nemastoma dichotoma and Nemalion helminthoides by Mrs. A.M. Cortel-Breeman and C. van den Hoek), Phaeophyta (Elachista stellaris by J.B.W. Wanders, Giraudia sphacelarioides by Miss A. Faber, Sphacelaria furcigera by F. Colijn and L.H. Smitt, Giffordia duchassaingiana by L.H. Smitt) and Chlorophyta (tropical Pilinia species by C. van den Hoek).
- b. Taxonomic revision of Cladophora of the East American coasts (C. van den Hoek).
- c. Analysis of the algal vegetation of the coast of Curacao, Netherlands' Antilles (C. van den Hoek, Mrs. A.M. Cortel-Breeman, F. Colijn and J.B.W. Wanders).
- d. Taxonomic revision of Bryopsis in Europe, life-cycles, bio-systematics (H. Rietema).
- e. Classical and molecular taxonomy of Cyanophyta (T.T. Stam). This investigation is being carried out with 13 strains of Schizotrix calcicola sensu Drouet.
- f. Microscopic and submicroscopic morphology and taxonomy of "H-algae" of the classes Chrysophyta, Xanthophyta and Haptophyta (J. van der Veer).

RESEARCH ON BENTHIC ALGAE IN THE NETHERLANDS -Contd.

- g. Production ecology of the Waddenzee; the role of benthic diatoms (F.Colijn).
2. In the plant systematics dept. of the Biological Laboratory of the Vrije Universiteit, Amsterdam, the following investigations are being conducted under the supervision of Dr. M. Vroman.
 - a. Analysis of the marine algae of the Netherlands' Antilles and description of the algal vegetation (M.Vroman). Coupled with this various investigations have been carried out on the morphology and taxonomy of the collected species, in particular on the Rhodophyta (Coelothrix irregularis by T.G. Kommes Pterocladophila hemisphaerica by Miss E. Kerhof; various Ceramiaceae by R. de Jong).
 - b. Hydrobiological investigations in Botshol, a broad near Abcoude (prov. of Utrecht) (M.Vroman). Floristic work on diatoms (D.Meyer) and floristic-ecological work on Characeae (Miss W.J. Haarsma, R.A. Gremor and H.R. Murris).
 - c. Ecology and periodicity of Chlorophyta in fresh water (Conjugales, CEdogoniales, Chaetophorales), mainly carried out in Botshol and in a broad near Kortenhoef (prov. of Utrecht) (H. Fillebrand).
 - d. Culturing of the fresh-water algae Chaetophora incrassata and Pleurocladia lacustris (M.Vroman and many collaborators).
 - e. Taxonomic research on Ulothrix and Formidium (Chlorophyta) (G.N. Lokhorst).
 - f. Vaucheria species of the brackish environment; taxonomy, ecology (J. Simons).
 - g. Life-cycles and taxonomy of Acrochaetium species (W.J. Borsje).
 - h. Ecology and life-cycle of some dominant species of the Monostroma-Dumontia association, in particular of the Phaeophyta Petalonia fasciata and Scytosiphon lomentaria (Miss J.G. Roeloveld).
 - i. Species composition and environment of the algal mat of beach plains on the island of Schiermonnikoog (Miss P. Vreugdenhill).
3. The following investigations are being conducted at the algological department of the Rijksherbarium, Leyden, under the supervision of Prof. Dr. C. den Hartog.
 - a. Taxonomic, geographical and ecological research on poikilohaline algae (C. den Hartog). The present work is mainly concerned with the salt tolerance and the non-genetic adaptation (Acclimatization) to various salinities of Bangia (R. Geesink) and Blidingia (Miss L.E. Ulenberg).
 - b. Composition, structure and dynamics of the algal vegetation on salt-marshes, and along brackish waters (temporarily or permanently cut off from the sea) (C. den Hartog, V.N. de Jonge, P.J.G. Polderman and H. Noordeloos).
 - c. Taxonomic revision of the European representatives of the Sphacelariales (Phaeophyta) (V.F. Prud'homme van Reine).
4. At the Delta Institute for Hydrobiological Research, Yerseke, the following investigations on benthic algae are in progress.
 - a. Ecology of benthic Chlorophyta and Cyanophyta in the contact zone between land and water, in particular on salt-marshes and along brackish ponds (P.H. Nienhuis). This investigation is centred particularly on Rhizoclonium and comprises: biosystematics of Rhizoclonium; relation between development of Rhizoclonium and some environmental factors in conditioned cultures, analysis of the environment in which Rhizoclonium occurs; phytocenological relation of Rhizoclonium to coexisting algae, musci and angiosperms; dynamics of the Rhizoclonium vegetations.

RESEARCH ON BENTHIC ALGAE IN THE NETHERLANDS - Contd.

- b. Description of algal communities of salt-marshes, intertidal sand-and-mud flats, estuarine tidal marshes and banks of inland waters (P.H.Nienhuis).
- c. Distribution and ecology of Fucaceae in the south-western part of the Netherlands (P.H.Nienhuis).
- d. Distribution and ecology of Ceramiales in the south-western part of the Netherlands (P.H.Nienhuis).
5. The phycological work carried out in the Hugo de Vries Laboratory, Municipal University of Amsterdam is restricted to: -
Taxonomic, geographical and ecological research on the Desmids of the Netherlands (P.Coesel and Mrs.A.Ellis-Adam).

I acknowledge with great satisfaction the co-operation of the members of the working group without whose help this report could not have been completed nor brought up-to-date.

Prof.Dr. C. Den Hartog.
Rijksherbarium
Schelpenkade 6.
Leyden - The Netherlands.

1972 SUMMER FIELD MEETING, DUNBAR.

Twelve members of the society, all from the U.K., attended this field meeting. Although the town of Dunbar itself may not be considered the most attractive of towns on the East Coast of Scotland, many of the localities visited during the weeks' stay were certainly attractive both scenically and from a phycological point of view. In all seven shore localities were visited in the Counties of East Lothian, Berwickshire and Northumberland.

Of particular interest was the classic Sharper's Point site at Berwick-upon-Tweed, for it was in the neighbourhood of this headland that Batters made large collections on a number of occasions. Several members of the party undertook sublittoral investigations and spectacular finds which included Cutleria, Euthora, Halarachnion, Brongniatella and Bonnemaisonia were made at Petticowick Bay near St. Abbs Head, a spot with a high reputation as a diving site. By contrast the saltmarsh at Tynninghame near Dunbar and the River Tweed at Berwick offered interesting alternative habitats.

Mr. B. Paddock and Miss P. Simms made a large number of diatom collections which included plankton trawls, freshwater and marine habitats. The Cyanophyceae of freshwater, brackish and marine habitats were investigated in detail by Dr. B. Whitton.

Excellent laboratory facilities at Dunbar Secondary School were placed at our disposal, and we would like to thank the Caretaker for locking and unlocking doors at all times of the day and night !

Finally, our thanks to Dr. Trevor Norton for his efforts in organising another successful field trip.

IAN TITTLE.

XVIII CONGRESS OF THE INTERNATIONAL ASSOCIATION OF LIMNOLOGY,
LENINGRAD, August 19th - 26th 1971.

A record number of over 300 participants gathered in Leningrad, U.S.S.R., for the 18th Congress on this truly interdisciplinary science, the first return meeting of the International Association of Limnology to be held in the U.S.S.R. since the third Congress in 1925. A total of 34 nations were represented and the British contingent numbered 22 of whom 4 were phycologists.

Sessions consisted of 4 plenary where 13 major papers were read and 6 concurrent where 288 30-minute papers were read which were divided as follows; regional limnology (32 papers); applied limnology (30); primary production and phytoplankton (27); INTECOL symposium on interactions between land and water (27); fish biology and fisheries (25); parasites and fish productivity (23); benthos (21); general limnology (18); zooplankton (16); hydroaceteorology (15); ecology of aquatic organisms (14); reservoirs (12); paleolimnology (11); microbiology (10); and hydrochemistry (7). Ten of the papers read were from Britain (a contribution/attendance ratio of almost 1 : 2 !). The subject division, though somewhat arbitrary demonstrates the breadth of the field covered and any further analysis clearly is not possible. The Conference Proceedings are to be published probably in 1973.

The Conference, as apparently is usual in Leningrad, was held in the Tavrichesky Palace, an ideally arranged building for meetings of this size. The Palace contains one large conference hall and many small meeting rooms. Its location however, demanded transportation to and from hotels twice daily - though the fit could take advantage of a pleasant riverside walk and the relatively traffic-free streets. Considering the numbers and varied interests and nationalities of the participants, the general organisation of the meeting must be rated exceptionally good. In particular, the siting in the main and most palatial hall of a pigeon-hole system for communication between members and the dissemination of conference literature. A vast and varied continuous cold buffet, and interpretation facilities provided an obvious focal point for the general discussion so valuable at such a gathering, and also for recovery from the phrenetic to-ing and fro-ing between simultaneous sessions.

Language problems provided the greatest single obstacle to the enjoyment of the meeting since over 80% of the papers were in a language other than English and 20% of these were in Russian. Simultaneous translation facilities in the main conference hall for all the plenary sessions, and for a proportion of the simultaneous sessions, helped to alleviate the situation, although failure of contributors to provide translators with manuscripts and the inherent complexity of the material, often resulted in complete breakdown.

Accommodation for non-Russian-speaking participants was in the Leningrad, a new concrete and glass multi-storey tourist hotel, pleasantly situated on the bank of a tributary of the Neva (note-worth for its clear water and rooted vegetation !) and providing panoramic views of the city. It is, however, very much out of style with the remainder of the city both in its materials and proportions (hardly any other buildings are more than three storeys high).

The legendary beauty of the city is well founded, and the conference organisers had arranged visits to most places of tourist interest, including of course, the Hermitage Palaces and Museums, and also to the now reconstructed palaces in the suburbs of Pushkin and Petrodvorets; as demanded by the nature of the Congress, the potentialities of Peter the Great's aquatic booby traps in the gardens of the latter were full investigated! A special ballet performance was also presented, and there was a full social programme for guests.

XVIII CONGRESS OF THE INTERNATIONAL ASSOCIATION OF LIMNOLOGY -

Contd.

Visits were also arranged to various libraries and research institutes in and around Leningrad, including the main station of the State Hydrological Institute. Members were also encouraged and assisted to arrange visits privately.

Four post-congress scientific excursions were arranged - to Lake Baikal, Lake Onega, the Upper Volga and to Lake Sevan and the Black Sea Coast. The Baikal trip naturally attracted by far the largest numbers (about 200) but as might have been anticipated, travel to such spectacular parts was not without its difficulties. The excursion, at first almost cancelled due to unprecedented Siberian storms appeared beset with almost every inconvenience which can assail the modern traveller, though the unanimous opinion of the participants was that it was all well worth the effort.

I took part in the Sevan excursion which was based on the ancient city of Yerevan, where, in addition to more limnological pursuits, there were opportunities to see the excavations of the Urartu hill fortress of Eberuni with its impressive views of the distant snow-capped Mt. Ararat, and other sites of historic and religious importance in the Ararat Valley. Lake Sevan, the 'worlds largest mountain lake' (1416km²) is important as the sole source of irrigation for the Ararat Valley, for its hydro-electric power and its trout fisheries. Limnologically, its greatest interest lies in the effects of the deliberate (sic) lowering in level (now halted) to reduce the calculated annual evaporation of 1200 million m³. During the excursion to the lake, visits were made to the Hydrological institute at Sevan and one of the four fish hatcheries; the culinary excellence of the Sevan Trout was also demonstrated! The ascent into the Caucasus also provided the welcome opportunity to cool off from the unaccustomed, (after the cool, clear climate of Leningrad) 90+ temperatures of Yerevan.

Return to England was made via Moscow where the speed and commercialism of the capital contrasted sharply with the tranquility of an autumnal Leningrad.

D. HISSARD.

UNDERWATER PHTOGRAPHY OF BRITISH MARINE ALGAE.

Colin Doeg has received a Kodak award to enable him to photograph underwater, and in colour, species of British Marine Algae. Mr. Doeg is being advised by Society members. The resulting collection will be administered by the B.P.S., but housed at the British Museum (Natural History) where it will be available for inspection.

For this work Mr. Doeg is using a Bronica single lens reflex camera fitted with a 50 mm wide angle lens (which will focus to 10 inches) and Kodak Ektachrome Z and High Speed Ektachrome roll film. The camera is within underwater housing.

As Chairman of the British Society of Underwater Photographers Mr. Doeg would be pleased to place the expertise of members of that Society at the disposal of the B.P.S. Members who require advice on underwater photography should contact Mr. Doeg at 109, Elsie Rd, London. S.7.11.

ROCK POOL UNDERWATER PHTOGRAPHY

For those who intend to pursue this subject further Mr. Doeg recommends the use of a twin lens reflex camera housed within a water-tight box with porthole at the front. This apparatus may

Rock Pool Underwater Photography - contd.

safely be lowered into shallow rock pools. For the best results the camera would be fitted with a wide angle lens which will reduce to a minimum the amount of water between the porthole and the subject.

Optimum illustrations of rock pool flora will be obtained during June when the sun is at its highest, thus offering maximum illumination. A light-meter reading is essential and this can be obtained by placing the meter in a Kilner jar or within the camera housing. High speed Ektachrome or Ektachrome X films should be used; these films will not require any special processing.

SEB/BPS JCINT MEETING.

Dundee, July 1972

This highly successful meeting was attended by 175 members, with the BPS represented by 45 members. Twentysix papers on phycological topics were given at three joint sessions:-

1. Physiology and the fine structure of algae.
2. Primary production.
3. Algal physiology and biochemistry.

All the sessions were well supported with many SEB members joining for parts of each session. There was also the opportunity to look over the newly opened building of the Department of Biology, and to discuss with the phycologists at Dundee various aspects of the research in progress.

A reception by the University was given on the second evening of the meeting, and a Conference dinner on the third evening. Excursions to various places of interest (including one very well supported - which visited a distillery !), occupied the Wednesday afternoon. The great success of this meeting was entirely due to careful forward planning, and the thanks of the Society must go to Professor Stewart and to Dr. Janet Sprent, who most efficiently carried out the difficult task of being Local Secretary for both Societies.

A.D. SCHEY.

OBITUARY.

Professor Heinrichs Skuja 8.9.1892 - 19.7.72.
Professor Skuja was born in Rājori Latvia. He graduated at the University of Latvia, Riga, in 1929 and subsequently received his Doctor's Degree in 1943. He later became an Ass. Prof. at the University. In 1944 Prof. Skuja moved to Upsala University, Sweden, taking up the post firstly as Research Ass. and later as Ass. Professor. In 1953, he received an Honorary Doctorate from Upsala University. He retired in 1961. Prof. Skuja undertook research in the fresh water algae of Latvia, Sweden, Burma, and Marine Algae of Latvia and Sweden. A full obituary will appear in a later issue of Svensk Botanisk Tidskrift.

PROPOSAL FOR A BOTANICAL RECORD.

A questionnaire circulated by me in Great Britain prior to the 10th International Botanical Congress, in Edinburgh, indicated substantial support for a botanical equivalent to the Zoological Record.

Neither Biological Abstracts or Excerpta Botanica provide an adequate service for botanists. Hence, in recent years, the proliferation of a variety of indexes, each covering a specific area. This means:-

1. Duplication in searching the same serials.
2. Some areas of botany not covered by a special index.
3. Far more expensive for libraries to purchase all these separate indexes.
4. For the user, far more time spent in scanning them.

An extremely wasteful and utterly uneconomic situation!

To ascertain more widely the support for a 'Botanical Record' a very small sample of such a service has been prepared. The method was the following:-

For 6 weeks, May-June 1971, the journals received in the British Museum (Natural History) were scanned for Algal literature and yielded some 240 references (Fossil literature was, for reasons of staff time, omitted). The whole sample indicated the range of literature and assisted us in compiling the subject headings that would appear to be needed for the Algal section of such a 'Botanical Record' a section which would contain a yearly total of some 3,000 references. There are three parts in each section of the Zoological Record. The sample attached to this letter contains a specimen page from each part of a section of a 1966 issue of the Zoological Record, Insecta; an equivalent sample page of Algal references and the proposed schedule of subject headings for an Algal section.

If there were 500 subscribers to such an Algal section, and some allowance made for the gradual expansion of the service the cost would be around £20. per annum for this section, with the proviso of no rampant inflation in the next year. If such an Algal section were produced by normal printing methods it would be issued quarterly. The services of the Commonwealth Agricultural Bureau however, are in the process of mechanization and the Zoological Society are currently discussing with CAB possible mechanization of the Zoological Record. It would thus seem highly advantageous to commence such a 'Botanical Record' in conjunction with these other biological services, thus providing a comprehensive service for pure and applied biology with the minimum of wastage of time and money. It is not possible, at this stage, to indicate how this would affect the estimated cost of such an Algal section.

My first objective is naturally to ascertain the measure of support for such an initial Algal section and for a complete 'Botanical Record' service. I would therefore be most grateful to receive your comments. An indication by name and address of other Botanists or Institutions who may not have seen this article would be appreciated, to ensure their receipt of future documents regarding the proposed service.

Phyllis I. Edwards.
Librarian
Botany Department,
British Museum (Natural History)

THE THIRTEENTH ANNUAL COURSE IN MARINE BOTANY.

30th March - 8th April 1973. Marine Science Laboratories, University College of North Wales, Menai Bridge, Anglesey.

The fee for the course will be £10. This will include laboratory fees, transport costs, etc. Persons wishing to enrol should write to:-

Dr. W. Eifion Jones
Marine Science Laboratories,
Menai Bridge, Anglesey.

not later than 1st February 1973. Accommodation can be arranged in Menai Bridge at reasonable charges; those who require accommodation should state this when enrolling for the course. Early application is advised.

INTERNATIONAL BOTANICAL CONGRESS (EDINBURGH) FUND.

Administered by the British National Committee for Biology. The first priority in the use of the fund will be the next International Botanical Congress at Leningrad in 1975. In 1973 the sum of £1,000 will be available for travel grants for young botanists to attend meetings. The closing date for the receipt of applications will be 31st March 1973. Application should be made on the relevant form available from:-

The Executive Secretary of the Royal Society,
6 Carlton House Terrace,
London. S.W.1.

JOINT MEETING WITH THE BRITISH LICHEN SOCIETY.

The Council of the British Lichen Society has suggested a possible joint meeting with the B.P.S. for late 1973 or sometime in 1974. The Council of the B.P.S. has decided that the views of members should be sought on this, and any member interested in such a meeting is asked to write to the Hon. Secretary.

BOTANICAL RESEARCH FUND.

The Botanical Research Fund is a small private Trust Fund founded in July 1913. Its purpose is to encourage research in Botany in all its branches and to assist research workers, more especially women and particularly those with some experience of research who, for some reason, may not be eligible for grants from public or university funds.

Short term grants of the order of £50. or £100. are given in aid of maintenance or research expenses. The grants may be renewed in special circumstances, but assistance over length periods is not contemplated.

Applications may be submitted at any time and special form is needed. Applications should normally be by graduates and may be of any nationality, but consideration will be given to applications from non-graduates provided they are supported by a graduate who is known personally to the applicant and is qualified to express an opinion about the status and value of the work to be undertaken.

Further details may be obtained from the : Hon. Secretary,

Dr. H.A.P. Badger,
6 Rosamond Court,
Burton Bradstock,
Bridport. Dorset.

GIAI IV

Under the auspices of UNESCO and WHO, the Fourth International Conference on Global Impacts of Applied Microbiology (GIAI IV) will be held in Sao Paulo, Brazil, from 23 to 28 July, 1973. Program will deal with impacts on agriculture, environment, food, industry, public health, veterinary and wood preservation. In the framework of GIAI IV, the Second Congress of World Federation of Culture Collections will take place in Rio de Janeiro, State of Guanabara, Brazil, from 15 to 20 July, 1973. Several inter-national training courses sponsored by UNESCO-UNIDO, UNESCO-WFCC, and PAHO will be offered.

Interested people may ask for further information from:

Dr. Joao S Furtado,
Caixa Postal 4005,
01000 - Sao Paulo,
SP, Brazil.

ALGAE IN STREAMS AND RIVERS.

Week in Durham, 4 - 11 July, 1973.

AIM.

The aim of this week is to bring together people with knowledge or interest in the taxonomy and general biology of stream and river algae. It is intended that the time will be considerably more organized than a typical field week, but less formal than a course.

ACCOMMODATION.

Accommodation has been booked in Van Mildert College, Durham, at a charge of £2.75 per day for board, breakfast and dinner. If any very hard up research student should wish to attend, it will probably be possible to fix some cheaper, but much rougher accommodation. It will also be necessary to make some charge (not more than 75p per day) to cover costs of transport, packed lunch and laboratory drinks.

INFORMATION & BOOKING.

Please write to:

Dr. B. A. Whitton,
Department of Botany,
University of Durham,
South Road,
Durham. England.

CONSERVATION COMMITTEE.

The society now has a committee willing to assist with any conservation problem wholly or partly relating to algae, freshwater or marine. Cases now being dealt with by members demonstrate that classic sites are endangered. Please inform us of any conservation problem before it is too late in order that the best use may be made of the considerable reservoir of professional expertise on which a society such as ours can call.

In particular, moves are at present being made from various directions towards the preparation of a Marine Code of Conduct - do seaweeds get a look in?

Contact: Dr. D.J. Hibberd Culture Centre of Algae and Protozoa
36, Storey's Way, Cambridge. CB3 0DT (0223) 61378.

D. HIBBERD.

FIELD STUDIES COUNCIL

FIELD COURSES (1973) OF INTEREST TO PHYCLOGISTS.

Details of courses may be obtained from the Warden of the Centre concerned to whom application should be made for a place on a course.

DALE FORT CENTRE, Faverfordwest, Pembrokeshire.

16 - 23 May Basic introduction to Sublittoral Marine Ecology for B.S.A.C. Divers and Diver Scientists.

5 - 12 Sept. Introduction to Sublittoral Marine Ecology for B.S.A.C. Divers and Diver Scientists.

12 - 19 Sept. Advanced Sublittoral Marine Ecology Course for B.S.A.C. Divers and Diver Scientists.

FLATFORD MILL FIELD CENTRE, East Bergholt, Near Colchester, Essex CO7 6UL

25 - July - 1 Aug. Fresh Water Biology.

THE LEONARD WILLS FIELD CENTRE, Nettlecome Court Williton, Taunton, Somerset.

15 - 22 Aug. Exploring Ponds and Streams.

29 Aug - 5 Sept. Exploring Rocky Shores.

ORIELTON FIELD CENTRE, Pembroke, Pembrokeshire.

25 July - 1 Aug. Exploring Rocky Shores.

SLAPTON LEY FIELD CENTRE, Slapton, Kingsbridge, Devon TQ7 2QP.

3 - 15 Aug. Rivers and Estuaries of South Devon.

ORKNEY FIELD TRIP.

Dates have been arranged for July 28 - August 4 1973.