

BRITISH

PHYSIOLOGICAL

SOCIETY

NEWSLETTER

NUMBER 13

JULY 1980

membership
list in this
issue

The closing date for the next Newsletter is 31st January 1981. Please send contributions to the editor:

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

The editor is very grateful to the 36 members who returned the questionnaire from the last Newsletter about the Newsletter's content. A summary of the replies is given on the next page.

Winter Meeting

The Secretary would like to receive member's views on the timing of the winter meeting.

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CONTENT OF NEWSLETTER

A questionnaire was included in the last Newsletter in an attempt to find out what material members wished to see in their Newsletter. As the questionnaires began to come back it was realised that its format invited people to simply put a tick in favour of most items. Perhaps this was not, on reflection, the best way of doing it. In any event a majority of the questionnaires returned was in favour in each item on the list of items provided for possible inclusion. The list was:

Trial Keys	Forthcoming meetings
Personal News of Members	Jobs Vacant
New Techniques	Jobs Wanted
Letters to the Editor	Reports of Meetings
Crosswords/Poetry etc	Reports of Research in Progress
Research Requests	Reports of Study Tours
Thesis titles of graduating students	Book Information
Membership List	Information on obscure reports

In only a few cases, e.g. Crosswords, was there any violent reaction against inclusion but this was counterbalanced by very enthusiastic approval from other members. Some members appeared to misunderstand some of the items as they said they should only be presented in Journals or at Meetings e.g. Research reports and Trial keys. The suggestion of research reports was not meant to be reports in the form of a scientific paper but general summaries of the activities of particular research groups. Similarly trial keys and new techniques were intended as a means of reaching a wider audience for development testing before proper scientific publication.

Some useful additional headings were suggested:

- Second-hand psychological books for sale.
- Notes on teaching of algae and "tips" for practical classes.
- Lists of speakers willing to give psychological talks at other institutions.
- Visitors from abroad on sabbatical.
- Availability and existence of new identification keys.

Accordingly you are earnestly requested to send to the editor any information whatever for inclusion in the Newsletter under the headings in the two foregoing lists as well as under the usual headings. To facilitate this a form is included with this issue for some of these headings. All you need do is fill in the relevant bit and send it to the editor.

In general there appeared to be satisfaction with the Newsletter and the editor wishes to thank the many people returning the questionnaire who also added kind comments.

SOCIETY ANNOUNCEMENTS

Constitution

A copy of the constitution of the British Phycological Society is available to any member who wishes one on application to the Secretary:

Dr Joanna M. Jones
Marine Biological Station
Port Erin, Isle of Man

Membership List.

A membership list is included at the end of this Newsletter. A full list will not be reissued for several years but changes to the present one will be notified in each Newsletter. Please notify any changes or mistakes to the Membership Secretary:-

Dr Chris Happey-Wood
School of Plant Biology
University College of North Wales
Bangor
Gwynedd LL57 2UW
Wales

Phytoplankton Discussion Group

It was agreed at the Annual General Meeting of the Society in January 1980 that an experimental meeting of an informal discussion group should be held one evening during the forthcoming (January 1981) winter meeting in Liverpool. The main interest of the group will be phytoplankton, and it is hoped that the divide between field and laboratory workers can be bridged. Proceedings will be kept very informal it is hoped that a profitable and enjoyable discussion will result. A suggested topic for the first meeting is 'Phytoplankton and Light', which gives plenty of scope. If you have a better idea, or wish to contribute, please contact Chris Gibson, FBIU, Greenmount, Muckamore, Co Antrim, BT41 4PX. It is intended that formal presentations will be avoided. A blackboard and chalk might, however, be available.

FORTHCOMING MEETINGS

Repeated below are details of the remaining field weekends to be run in Summer 1980 by the BFS under the coordination of Dr Brian Whitton. Please note that there are some revisions from the announcement in the last Newsletter. At the last AGM it was provisionally arranged that a field meeting of the more traditional week-long type would be held in Summer 1981 and would be run by Dr Trevor Norton on the Island of Arran in the Firth of Clyde, West Coast of Scotland. Details were not to hand as this Newsletter was prepared. Also under the auspices of the Events Coordinator, Brian Whitton, a course on macromolecular separation techniques has been organised at Leeds University. Details of this course are also given below.

Field Weekend	<u>Rivers and reservoirs of South Wales</u>
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	15-16
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 Buckingham (not Reading as previously announced)

Organiser Professor A.J. Brook, Dept of Life Science, The University College at Buckingham, Buckingham, MK18 1EG. Tel: Buckingham (028 02) 4161

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

Accommodation Can be arranged at the university college if suitable warning is given; c. £10 per night for bed, breakfast and evening meal.

Travel Persons arriving by train can be uplifted by arrangement with Prof. Brook at Bletchley station which has regular services from Euston and Birmingham.

Aims To make brief field visits 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.

Field Visit Algae in Polluted Estuaries

Location Edinburgh

Organiser Dr M. Wilkinson, Dept of Brewing and Biological Sciences, Heriot-Watt University, Chambers Street, Edinburgh EH1 1HX.

There has been virtually no response to this proposed meeting which it had been hoped to hold about the time of the mailing of this Newsletter. However a number of persons attending the International Phycological Society Meeting in Glasgow from 19-22 August have asked the organiser of this field meeting to arrange trips to estuarine collecting sites. Accordingly it is now suggested that anyone interested in joining in such collecting work during or immediately before or after the IPS meeting should contact Dr Wilkinson as soon as possible.

Introductory Course on Macromolecular Separation Techniques with particular reference to their use with Algae.

Assuming there is sufficient interest, it is proposed to hold a course as above at the Department of Plant Sciences, Leeds University from 14.00 Monday 6th July - 12.00 Friday 10th July 1981. A course fee of approximately £35 would have to be levied to cover the cost of materials. Accommodation can be arranged in a hall of residence. No previous experience with the techniques is required. Wherever possible, participants would be able to gain practical experience with the techniques, although in certain cases, techniques would have to be demonstrated.

Techniques to be discussed include:

DENSITY GRADIENT CENTRIFUGATION (making, running, fractionating and recording U.V. absorbance of gradients).

MOLECULAR SIEVING e.g. Sephadex gel filtration (for preparation of purified enzyme preparations or preparation of specialized compounds e.g. labelled lectins)

ELECTROPHORESIS (polyacrylamide disc and slab gels)

FLAT-BED ISOELECTROFOCUSING

ION-EXCHANGE CHROMATOGRAPHY

USE OF IMMUNOLOGY IN ALGAL RESEARCH (organised by Dr G. Codd, University of Dundee).

If you are interested in attending this course please write to Dr Maureen Callow, Department of Plant Sciences, Leeds University, Leeds LS2 9JT no later than October 1st 1980. This does not commit you in any way, but we need to know whether there is sufficient interest. The course would be limited to about 30 participants.

Maureen Callow, Nigel Kerby, Len Evans and Geoff Codd

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.

Details from:

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

Brackish-Water Algal Discussion Group

It is proposed to hold an informal gathering during the IPS meeting, 19-22 August 1980, in Glasgow to discuss the formation of a brackish-water algal discussion group. Persons interested in this idea who have not already been circulated or who will not be attending the IPS meeting are invited to write to:

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

Advanced Study Institute in the Physiological Ecology of Phytoplankton
An Advanced Study Institute on the Physiological Ecology of Phytoplankton, sponsored by the NATO Marine Sciences Panel, will be held October 14-26, 1980 on the Island of Lipari in the Aeolian Archipelago off the coast of Sicily. Among the subjects covered will be the light reactions of photosynthesis; the dark reactions of photosynthesis; respiration including photorespiration; biochemistry and physiology of nitrogen metabolism; nutrient uptake kinetics; relationship between assimilation and growth; adaptation to temperature, nutrients and light history; and competition. The meeting is intended to be tutorial or didactic in scope, with the main aims of giving phytoplankton ecologists a better understanding of the biochemical and physiological processes important in primary production, and of improving the exchange of insights between field and laboratory workers in this subject area. The bulk of the lectures will be given by a small number of invited specialists. However, a limited amount of time will be available for contributed papers from participants: these contributions will be selected according to the criterion that they present results illustrative of points covered in the lectures given by the main speakers. The total number of participants will be limited to 70. Interested research workers should contact the organiser.

Dr Trevor Platt
Marine Ecology Laboratory
Bedford Institute of Oceanography
P O Box 1006
Dartmouth - Nova Scotia
Canada B2Y 4A2

RECENT PUBLICATIONS OF INTEREST TO PHYCOLOGISTS

Actas del Primer Symposium Sobre Algas Marinas Chilenas.

Edited by B. Santelices, 1979.

Subsecretaria de Pesca, Ministerio de Economica,
Fomento y Reconstruccion, Santiago, Chile.

Paperback 312 pp., price not known.

("Contributions in English and Spanish, including several general reviews of topics related to commercial use and cultivation of seaweeds; of interest in areas other than Chile" - G. Lobban).

Flora and Vegetation of the Wadden Sea. Final Report of the Section
Marine Botany of the Wadden Sea Working Group.

Edited by W.J. Wolff, 1979.

A.A. Balkema, P.O. Box 1675, Rotterdam, The Netherlands.

ISBN 90 6191 053 6 Hfl 17.50 £4.20

206pp. Paperback.

(Also available as a clothbound edition with ten other reports on the Wadden Sea under the title "Ecology of the Wadden Sea - Basic Data for the management of Europe's largest marine wetland" at Hfl 95, £22.50, \$48.50).

CHINESE PHYCOLOGICAL SOCIETY

The Chinese Phycological Society was established in October 1979, with the inaugural meeting being held at Wuhan, Hupeh Province. The Society has more than 200 members, and more than 70 attended the first meeting where 63 papers were presented. The Society intends to publish a phycological journal. The executive consists of: C.C. Jac, Honorary President; C.K. Tseng, President; H.Z. Chu, T.C. Fang, and S.N. Li, Vice-Presidents; G.Y. Wu, Secretary, X.G. Fei and M.C. Yu, Vice-Secretaries.

PROGRESS OF THE SEAWEED DISTRIBUTION MAPPING SCHEME

Since its inception in 1971, the scheme has progressed steadily. There are now 263 registered recorders and at least 30 of these submit records regularly. There are also networks of both specialist and regional referees set up to help the collectors.

I have received several hundred completed cards and have records for almost 40% of all the 10km squares likely to contain seaweeds (see map), and preliminary maps illustrating the distribution of selected species are in press.

However, only about half of the squares mapped could be considered well-recorded. Collectors are undoubtedly inhibited by the appalling dearth of keys and good descriptions suitable for the identification of seaweeds. It is hoped therefore that the following list of books and articles will prove useful. They contain keys and/or descriptions which supersede the accounts in Newton (1931).

Keys to the genera of almost all the British seaweeds - Jones (1962).

CHLOROPHYTA

Most tubular and membranous greens - algae - Bliding (1963 & 1968)

<u>Acrochaete</u>	- South (1968)	<u>Kornmannia</u>	- Bliding (1968)
<u>Blidingia</u>	- Bliding (1963)	<u>Monostroma</u>	- Bliding (1968)
<u>Bolbocoleon</u>	- South (1968 & 1969)	<u>Percoursaria</u>	- Bliding (1963)
<u>Capsosiphon</u>	- Bliding (1963)	<u>Prasiola</u>	- Edwards (1975)
<u>Cladophora</u>	- Hoek (1963), Soderstrom (1963)	<u>Phaeophila</u>	- Wilkinson (1975)
<u>Codium</u>	- Silva (1955)	<u>Rosenvingiella</u>	- Edwards (1975)
<u>Enteromorpha</u>	- Bliding (1963)	<u>Ulva</u>	- Bliding (1968)

PHAEOPHYTA

Most brown seaweeds	- Hamel (1931-1939)	<u>Fucus distichus</u>	- Powel (1957)
Most brown filaments	- Cardinal (1964)	<u>Giffordia</u>	- Cardinal (1964), Kuckuck (1961)
<u>Cystoseira</u>	- Roberts (1967)	<u>Herponema</u>	- Cardinal (1964)
<u>Desmarestia dresnayi</u>	- Drew & Robertson (1974)	<u>Kuckukia</u>	- Cardinal (1964)
<u>Ectocarpus</u>	- Russell (1966)	<u>Sphacelaria</u>	- Haas-Niekirk (1965), Irvine (1956)
<u>Feldmannia</u>	- Cardinal (1964)		

RHODOPHYTA

All calcareous crusts-	Adey & Adey (1973)	<u>Helminthora</u>	-Dixon & Irvine (1977)
All non-calcareous crusts-	Denizot (1968)	<u>Jania</u>	-Hamel & Lemoine (1953)
<u>Acrochaetium</u>	- Dixon & Irvine (1977)	<u>Lithothamnion</u>	-Adey & Adey (1973)
<u>Ahnfeltia</u>	- Dixon & Irvine (1977)	<u>Lithophyllum</u>	-Adey & Adey (1973)
<u>Antithamnion</u>	- Hardy-Halos (1968)	<u>Melobesia</u>	-Denizot (1968)
<u>Asparagopsis</u>	- Dixon & Irvine (1977)	<u>Mesophyllum</u>	-Adey & Adey (1973)
<u>Atractophora</u>	- Dixon & Irvine (1977)	<u>Naccaria</u>	-Dixon & Irvine (1977)
<u>Audouinella</u>	- Dixon & Irvine (1977)	<u>Nemalion</u>	-Dixon & Irvine (1977)
<u>Bonnemaisonia</u>	- Dixon & Irvine (1977)	<u>Petrocelis</u>	-Dixon & Irvine (1977)
<u>Calliblepharis</u>	- Dixon & Irvine (1977)	<u>Petroglossum</u>	-Guiry & Hollenberg (1975)
<u>Calosiphonia</u>	- Dixon & Irvine (1977)	<u>Phyllophora</u>	-Dixon & Irvine (1977)
<u>Catenella</u>	- Dixon & Irvine (1977)	<u>Platoma</u>	-Dixon & Irvine (1977)
<u>Ceramium</u> (spiny spp. only)	- Dixon (1960)	<u>Plocamium</u>	-Dixon & Irvine (1977)

(continued on next page)

<u>Ceratocolax</u>	- Dixon & Irvine (1977)	<u>Polyides</u>	-Dixon & Irvine (1977)
<u>Chondrus</u>	- Dixon & Irvine (1977)	<u>Porphyra</u>	-Conway (1964)
<u>Corallina</u>	- Hamel & Lemoine (1953)	<u>Porphyrodiscus</u>	-Dixon & Irvine (1977)
<u>Cruoria</u>	- Dixon & Irvine (1977)	<u>Pterocladia</u>	-Dixon & Irvine (1977)
<u>Cystoclonium</u>	- Dixon & Irvine (1977)	<u>Rhodochorton</u>	-Dixon & Irvine (1977)
<u>Epilithon</u>	- Denizot (1968)	(as <u>Audouinella</u>)	-Dixon & Irvine (1977)
<u>Erythrodermis</u>	- Dixon & Irvine (1977)	<u>Rhodophyllis</u>	-Dixon & Irvine (1977)
<u>Fosliella farinosa</u>	- Chamberlain (1977)	<u>Rhodymenia</u>	-Guiry (1977)
<u>Furcellaria</u>	- Dixon & Irvine (1977)	<u>Schizymenia</u>	-Dixon & Irvine (1977)
<u>Gelidium</u>	- Dixon & Irvine (1977)	<u>Scinaia</u>	-Dixon & Irvine (1977)
<u>Gigartina</u>	- Dixon & Irvine (1977)	<u>Schottera</u>	-Dixon & Irvine (1977)
<u>Gracilaria</u>	- Dixon & Irvine (1977)	<u>Soliera</u>	-Dixon & Irvine (1977)
<u>Gymnogongrus</u>	- Dixon & Irvine (1977)	<u>Sphaerococcus</u>	-Dixon & Irvine (1977)
<u>Halarachnion</u>	- Dixon & Irvine (1977)	<u>Stenogramme</u>	-Dixon & Irvine (1977)
<u>Helminthocladia</u>	- Dixon & Irvine (1977)		

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Trevor A. Norton
 Department of Botany
 University of Glasgow
 Glasgow G12 8QQ

UNDERGRADUATE PRACTICAL MANUAL FOR PHYCOLOGY

Dr Rehda Al-Hasan is seeking and inviting whoever is interested to co-operate and help in preparing a standard practical manual for undergraduate courses in phycology. In order to make this task easier and faster the help could be offered as follows:

- (1) Contribution towards any practical procedures used in undergraduate courses in phycology (algal physiology, applied phycology, ecology of algae, etc...)
- (2) Contribution towards the organisation of and editing of the manual.

The funds and other requirements for preparation and completion of the manual are available.

For further information please write to: Dr R. Al-Hasan,
 Department of Botany & Microbiology
 University of Kuwait - Kuwait

INFORMATION WANTED

Observations of Redcoloured Species of Oscillatoria

This is a request for help to collect information on occurrence and distribution of redcoloured species of Oscillatoria. We are thankful for any items of knowledge and suggestions which might promote our research purpose.

Phenomenon

Phytoplankton investigations carried out extensively during the last twenty years in various regions of southern Norway have revealed some species of Oscillatoria with ecological properties making them successful invaders of lakes.

The formation of water blooms by these species of Oscillatoria is associated with lake progression from oligotrophic to eutrophic conditions. While about 15 species of Oscillatoria up to now have been observed in lake plankton in southern Norway, a few of them only can be said to be of common occurrence or are developing algal blooms:

<u>Oscillatoria</u> <u>agardhii</u> Gom.	-	greencoloured
<u>Oscillatoria</u> <u>agardhii</u> var. <u>isothrix</u> Skuja	-	greencoloured
<u>Oscillatoria</u> <u>agardhii</u> Gom. var.	-	redcoloured
<u>Oscillatoria</u> <u>bornetii</u> f. <u>tenuis</u> Skuja	-	redcoloured
<u>Oscillatoria</u> <u>rubescens</u> DC. var.	-	redcoloured

Oscillatoria rubescens DC. is among the species which long have acquired attention in connection with the evolution of lakes from oligotrophic to eutrophic conditions. The experience from biological investigations in Scandinavia point out that two other redcoloured species - Oscillatoria agardhii Gom. var. and Oscillatoria bornetii f. tenuis Skuja - possess similar possibilities of developing dense populations in water layers near the thermocline in stratified lakes.

The redcoloured Oscillatoria spp., although different from each other, all seem to be particularly efficient invaders of the lakes. In contrast to the more common greencoloured oscillatorians, the redcoloured forms are capable of maintaining high populations throughout the year.

The redcoloured species of Oscillatoria can occur under quite different conditions. Still they seem to have some properties in common which make them successful invaders of the lakes in which they occur. A contributory cause to this is probably their capability to maintain relatively high populations through the winter.

When only redcoloured species of Oscillatoria behave like this, there are reasons to believe that the pigmentation is important. The red colour stems from the presence of C-phycoerythrin which has an absorption peak around 545nm, the same wavelength which usually penetrates deepest into the water. Thus the pigmentation of these algae provides them with a more efficient light utilization. The combination of a low maintenance energy and efficient light utilization probably makes it possible for the redcoloured Oscillatoria to prolong their growing season in the autumn.

Wanted

We are interested in obtained information on observations of redcoloured species of Oscillatoria and of similar events here described, and to know about recent research on Oscillatoria. Please inform us about localities where populations of redcoloured oscillatorians are developing. We are

thankful for references to publications and investigations related to this topic.

Thank you--Olav M. Skulberg

Address: Norwegian Institute for Water Research
Blindern - Oslo 3
Norway

Brackish and Marine Algae subject to low pH and Metal Enrichment

A project is underway at Heriot-Watt University, with funding from the Natural Environment Research Council, to investigate the intertidal algal ecology of the Garnock Estuary on the West Coast of Scotland. This estuary is notable for the substantial volume of industrial effluents it receives resulting in remarkably low pH (down occasionally as low as 2.0!) combined with high dissolved levels of certain metals. While there has recently been much work on combined low pH and metal enrichment in fresh-water such situations in marine and brackish habitats are poorly known. We would be delighted to hear of any situations, in Britain or elsewhere, where natural or man-made causes bring about a pH reduction and/or metal enrichment in estuaries or other brackish-waters or on the open sea coast. Any information, with or without algal data, would be gratefully received. Please write to:

Dr M. Wilkinson

Department of Brewing and Biological Sciences
Heriot-Watt University, Chambers Street
Edinburgh EH1 1HX, Scotland.

PHYCOLOGICAL CROSSWORD

Kindly provided by Professor George Lawson who has promised five pounds to the first correct answer out of the hat. These should be sent to the editor and the closing date is 1st November 1981. The answers will be in the next Newsletter.

Clues across

1. I'm a real sec decanted producing superior reds (10)
6. See 14
9. We must put a check on these if we want to be systematic (5)
10. A stroke by the French turned air brown (1, 8)
12. and 1. (down) First in rising sap I calculated a small cavity making primary growing point (7, 6, 4)
14. and 6. Riotously won a great goal - with point lost - that's culture! (2, 4, 2, 4)
15. In an old warship it was hardly safe to be armoured with....(2,4) and 7. (down)protective plates - 0' a relic battered! (7)
17. A snap ending in the North gives algae a little bit of energy (6)
19. Algal extract produced a late gin cocktail (8)
21. Useful for phycologists in the main (1, 8, 4)
24. A posh land messed up where we drop unwanted or troublesome seaweeds perhaps! (3, 3, 3)
25. Nine poorer perhaps but none more mature (2, 3, 5)
27. Within this enterprise a partial solution for phycologists is to open forcibly (5, 5)

Clues down

1. See 12 (across)
2. A quiet time for actors off stage and for algae in it! (7)
3. A blue-green alga provides pig-food and I go with cabbage to America (1)
4. English Electric rail deposits Brown family to mix up with Automobile Association (8)
5. According to the U.S. Constitution all men are supposed to be but certainly in some divisions whips are not! (5)
7. See 15 (across)
8. A difficult proposition - like the Laminariales perhaps? (1, 4, 5)
11. Creeping Rhodomelaceous alga gives an oil - Phospho-1 after treatment (13)
13. An old colonial type takes a step to the Hospital first at midday (10)
16. Every Hospital and some initially required on 21 in an emergency (3, 5)
18. See 23
20. In the morning hop out before the artist - a yellow little type! (7)
22. See 25
23. and 18. Systematic Red revue not giving rise to cut our outstanding fee (4, 7)

ALGAE MARINAE HIBERNICAE - A NEW EXSICCATA OF IRISH MARINE ALGAE

Sets, comprising 20-25 specimens each, of this new exsiccata will be issued annually from the Department of Botany, University College, Galway, Republic of Ireland (GALW). Material will be collected principally in the Galway region both intertidally and subtidally. Fifty sets of 20 specimens will be available in 1980 as exchange material to interested institutions and private individuals.

It is hoped, through such exchange, to build up a working reference collection. Currently about 3,000 specimens of benthic marine algae (Rhodophyta, Phaeophyta and Chlorophyta) are housed in the phycological herbarium in GALW and these are available on loan to recognised institutions.

Those interested should contact:

Mr M.D. Guiry
Department of Botany
University College
Galway
Republic of Ireland

1		2		3		4		5		6	7	8
	9				10				11			
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Membership at 1 April 1980

HONORARY MEMBERS

Dr M C H Blackler
Dept of Botany
University of St Andrews
Fife
Scotland

Professor T Braarud
Institut for Marin Biologi
Avd B
Blindern
Oslo 3
Norway

Dr E M Burrows
Box Cottage
4 Main Street
Broadmayne
Nr Dorchester
Dorset DT2 8EB

Dr E Conway
1 Rothesay Road
Curzon Park
Chester CH4 8AJ

Professor G E Fogg
Dept of Marine Biology
Marine Science Laboratories
Menai Bridge
Anglesey

Mr N I Hendey
12 Penwinnick Parc
St Agnes
Cornwall

Dr J G W Lund
Ferry House
Far Sawrey
Ambleside
Cumbria

Professor I Manton
15 Harrowby Crescent
West Park
Leeds

Dr M T Martin
1 Maes yr Hafod
Menai Bridge
Gwynedd

Professor L Newton
Maes-y-Wern
20 Upper Heathfield Road
Pontardawa
Swansea SR84 4LE

Dr Mary Parke
The Laboratory
Citadel Hill
Plymouth
Devon

Professor W R Taylor
Dept of Botany
University of Michigan
Ann Arbor
Michigan
U S A

Professor M de Valera
Dept of Botany
University College of Galway
C Galway
Ireland

ORDINARY MEMBERS

Dr I Abbott
Hopkins Marine Station
Pacific Grove
California 93950
U S A

Professor Cesar Acleto
Departamento de Botánica
Museo de Historia Natural
Univ Nacional Mayor de San Marcos
Av Arenales 1256
Apartado 1109
Lima
Peru

Professor Juan P Acosta
Museo de Historia Natural
"Javier Prado"
Univ Nacional Mayer de San Marcos
Av Arenales 1256
Apartado 1109
Lima
Peru

Mrs M Adams
17 Hazelmere
Spennymoor
Co Durham DL16 6UL

Mr John G Aghajanian
Dept of Pathology
Central Electron Microscopy Lab
P C E B - 228 H
Univ of North Carolina
Chapel Hill
N C 27514
U S A

Mr I Akatsuka
119 Sakae-machi
-2 Tsu-shi
Mie-ken
Japan

Dr R B Al-Hasan
Botany Department
Kuwait University
Kuwait

Fourzia Al-Houty
Dept of Botany
University College
Singleton Park
Swansea

Dr Kamal A Al-Kaisi
Botany Department
Kuwait University
Kuwait

Dr M Ann Allen
Royal Masonic School for Girls
Ricknamsworth Park
Herts

Dr T Allen
Dept of Botany
University of Wisconsin
Madison
Wisc 53706
U S A

B M Allender
Botany Department
Monash University
Clayton
Victoria 3168
Australia

Dr A Almestrand
Nyckelkroken 22
S-222 47 Lund
Sweden

Dr L R Almodovar
P O Box 286
San German
Puerto Rico 00753

Miss Monica Amhad
Collingwood College
Durham University
South Road
Durham DH1 5LT

Mr Michael C Amspoker
Dept of Botany
Oregon State University
Corvallis
Oregon 97331
U S A

Mrs Gillian J H Anderson
Dept of Biochemistry
Royal Holloway College
Egham Hill
Egham
Surrey

Robert A Anderson
Dept of Botany and Biochemistry
University of Arkansas
401 Science Engineering Building
Fayetteville
Arkansas 72701
U S A

Norman A Andresen
5742 Princeton Place
Ypsilanti
Michigan 48197
U S A

Dr H T Andrews
Dept of Biology
Tennessee Technological University
Cookeville
Tenn 38501
U S A

Dr Patricia Archibald
Box 11
Spiceland
Indiana 47385
U S A

Mme F Ardre
Laboratoire de Cryptogamie 68
12 Rue de Buffon
Paris 5E
France

Miss F Carol Agregood
158 Glenside Drive
Jackson
Mississippi 39211
U S A

Brian J Armitage
TVA - Biothermal Res Lab
Box 2000
Decatur
Alabama 35601
U S A

Mr Per Avid Åsen
Palladiumveien 11
N-4600 Kristiansand S
Norway

Miss K M Atkinson
Ferry House
Far Sawrey
Ambleside
Cumbria LA22 0LP

Dr A P Austin
Dept of Biology
University of Victoria
Victoria
British Columbia
Canada

Mrs J Aykulu
Ankara Üniversitesi
Fen Fakültesi
Botanik Kürsüsü
Ankara
Turkey

Dr Alan Bailey
Biology and Environmental Science
Queensland Inst of Technology
Box 2454 GPO
Brisbane 4001
Australia

Shri Prakash Bajpai
Dept of Marine Biology
U C N W
Menai Bridge
Anglesey

David L Ballantine
Dept of Marine Sciences
University of Puerto Rico
Mayaguez
Puerto Rico 0008

Steven Barlow
6216 Ravenna Avenue NE
Seattle
WA 98105
U S A

Maria A G Barrientos
Cuauhtemoc N 492 Sur
Monterrey
N Leon
Mexico

Robert Ian Baybutt
37 Ridge Road W
Rochester
NY 14615
U S A

Mr S M Baynes
Fisheries Laboratory
Pakefield Road
Lowestoft
Suffolk NR35 0RT

Dr I.A. Bekheet
Dept of Botany
Faculty of Science
University of Alexandria
Moharren Bey
Alexandria
Egypt

Dr Hilary Belcher
The Culture Centre of Algae & Protozoa
36 Storey's Way
Cambridge CB5 0DT

D J Beliveau
9119-79 Street
Edmonton
Alberta
Canada T6C 2R5

Mrs Rosemary Bellamy
Dept of Botany
Science Laboratories
South Road
Durham City

Mr E G Bellinger
5 The Hall Coppice
Egerton
Nr Bolton
Lancs

Mr V J Bellis
Dept of Biology
East Carolina College
Greenville
NC
U S A

Roland Bengtsson
Slottet S-34057 Torpsbruk
Sweden

Brian R. Benham
5 Fairy Street
Bury
Lancs

Dr K Benson-Evans
Botany Department
University College
Cathys Park
Cardiff
S Wales

C Bessey
Dept of Marine Biology
Port Erin
Isle of Man

Dr Carlos E M Bicudo
Instituto de Botanica
Caixa Postal 4005
01000 - SAN PAULO
SP
Brasil

Mrs Rosa M T Bicudo
Institute de Botanica
Caixa Postal 4005
01000 - SAN PAULO
SP
Brasil

Ms Ann M Biglieri
Dept of Botany
University of California
Davis CA 95616
U S A

Mohammad Bihzad
School of Plant Biology
U C N W
Bangor
Gwynedd LL57 2UW

Neil Billington
Dept of Animal and Plant Ecology
University of Technology
Loughborough
Leics

Dr R Bland
20 Oakwood Drive
London 61
Ontario N6K 2V4
Canada

Dean W Blinn
Dept of Biological Sciences
Northern Arizona Univ
Flagstaff
Arizona 86001
U S A

Professor J.L. Blum
Dept of Botany
Univ of Wisconsin-Milwaukee
Milwaukee
Wisconsin 53211
U S A

Dr Gerald Blunden
School of Pharmacy
Portsmouth Polytechnic
Park Buildings
King Henry I Street
Portsmouth PO1 2DZ Herts

Dr G T Boalch
The Laboratory
Citadel Hill
Plymouth
Devon

Dr Marcel Bodard
70 Rue de la Louviere
59000 Lille
France

Kordula Boehlke
North West Kent College of Technology
Miskin Road
Dartford
Kent DA1 2LU

Professor H C Bold
Dept of Botany
University of Texas
Austin 12
Texas
U S A

John J Bolton
Biologische Awstalt Helgoland
(Meeresstation)
2192 Helgoland
Federal Republic of Germany

Peter L Bonanomi
Dept of Natural Sciences
Castleton State College
Castleton
Vermont 05755
U S A

Dr A D Boney
Dept of Botany
The University
Glasgow W2

Dr Edmund R Bonneau
Biology Dept
University of Puerto Rico
Rio Piedras
Puerto Rico 00931

Mr E Booth
Selbourne Villa
Beech Grove
Ashton
Preston PR2 1DX

Dr Lesely Borowitska
Roch Research Inst of Marine
Pharmacology
P O Box 255
Dee Why N S W
Australia 2099

Dr M A Borowitzka
Roch Research Inst of Marine
Pharmacology
P O Box 255
Dee Why N S W
Australia 2099

John S Bowditch
95 Dunvegan Avenue
Elderslie
Renfrewshire PA5 9NJ

Yocie Yoneshigue Brada
Instituto de Pesquisas de Marinha
Estacao de Biologia Marinha
28.910 Arrairl do Cabo (RH)
Brasil

John F Brauner
Dept of Botany
Rutgers University
P O Box 1059
Piscataway
NJ 08854
U S A

Dr A M Breeman
Dept of Plant Systematics
State University Groningen
P O Box 14
9750 AA Haren
The Netherlands

Dr P A Broady
Dept of Botany
University of Melbourne
Parkville
Victoria 3052
Australia

Professor A J Brook
School of Life Sciences
Univ College at Buckingham
Buckingham MK18 1EG

Mr D J Brown
Dept of Biology
University of Winnipeg
Winnipeg
Manitoba R3B 2E9 - Canada

Dr R.M. Brown
Botany Department
University of North Carolina
Chapel Hill
NC 27514
U S A

Paul Bubrick
Dept of Botany
Tel-Aviv University
Ramat-Aviv
Tel-Aviv
Israel

Dr J S Buchanan
2 Kingsley House
Barnack
Nr Stamford
Lincs PE9 3ED

Kenneth Bullock
Dept of Biology
Box 1927
Univ of Alabama
Alabama 35486
U S A

Mr H M Burkill OBE
41 The Mount
Leatherhead
Surrey KT22 9EG

Dr G I Butler
Dept of Biology
University of Alabama
Box 1927
Alabama 35486
U S A

Mrs Y M Butler
4 Shelley Close
Itchen Abbas
Winchester
Hampshire

Kenneth S Button
Dublin Road Water Plant
Central Research Lab
940 Dublin Road
Columbus
Ohio 43215
U S A

Dr J S Buzer
Dept of Botany and Microbiology
Univ of Witwatersrand
I Jan Smuts Ave
Johannesburg 2001
R S A

Mr Caljon
Leerstoel voor Morfologie
Systematiek en Ecologie van
de Planten
Rijksumiversiteit K L
Ledeganckstraat 35
9000 Gent
Belgium

Dr Maureen E Callow
Dept of Plant Sciences
Univ of Leeds
Leeds LS2 9JT

Dr M Campion
Dept of Biology
The University
Keele
Staffs

Dr A Cardinal
Dept de Biologie
Universite Laval
Quebec 10
Canada

David M Carroll
10 Fernhill Avenue
Gohowen
Salop

Dr P J Casselton
Dept of Botany
Birkbeck College
Malet Street
London WC1

Dr Vivienne Cassie
Botany Division
D S I R
Private Bag
Mount Albert
Auckland
New Zealand

Dr W Castenholz
Dept of Biology
Univ of Oregon
Eugene
Oregon 97403
U S A

Dr T Cavalier-Smith
59 Alwyne Road
Wimbledon
London SW19 7AE

Mr A H L Chamberlain
Dept of Microbiology
Univ of Surrey
Guildford
Surrey GU2 4XH

Dr D J Chapman
Dept of Biological Sciences
Univ of California
Los Angeles
California 90024
U S A

Miss D V Chapman
Dept of Botany
Royal Holloway College
Huntersdale
Callow Hill
Virginia Water
Surrey GU25 4LN

Russell L Chapman
Louisiana State University
Baton Rouge
Louisiana 70803
U S A

Dr Donald P Cheney
Jackson Estuarine Lab
Univ of New Hampshire
Durham NH 03824
U S A

Dr Young-Meng Chiang
Inst of Oceanography
National Taiwan University
P O Box 25-15 Taipei
Taiwan
China

Professor Mitsuo Chihara
Inst of Biological Sciences
The Univ of Tsukuba
Sakura-mura
Ibaraki-Ken
500-51
Japan

Dr T Christensen
Institut for Sporeplanter
Øster Farimagsgade 2 D
DK - 1535 København K
Danmark

Miss Heather L M Christie
Dept of Plant Sciences
University of Leeds
Leeds LS2 9JT

Miss M I Claassen
Dept of General Botany
Univ of Pretoria
Pretoria 0002
Republic of South Africa

Dr Margaret N Clayton
Botany Dept - Monash Univ
Clayton - Victoria 3168
Australia

Julian Clokie
42 Marine Parade
Millport
Isle of Cumbræ
Buteshire - Scotland

Dr G A Codd
Dept of Biological Sciences
Univ of Dundee
Dundee DD1 4HN

Mr Alan Cohen
Dept of Botany
Washington University
St Louis
MO 63130
U S A

Dr Kathleen M Cole
Univ of British Columbia
3529-6270 University Bend
Vancouver
British Columbia
Canada V6T 2B1

Mr F Colijn
Laboratory of Plant Systematics
Biological Centre
Haren
The Netherlands

Dr L H Colinvaux
Dept of Zoology
Ohio State University
1735 Neil Avenue
Columbus
Ohio 43201
U S A

Miss Alison D Collie
103 Quees Drive
Walton
Liverpool 4

Gary B Collins
8109 Woodruff Road
Cincinnati
Ohio 45230
U S A

Pamela D Collins
Dept of Botany
Colorado State University
Fort Collins
CO 80523
U S A

Dr Paola Mariani Colombo
Istituto di Botanica e Fisiologia
Vegetale - Via Orto Botanico 15
35100 Padova
Italy

Pierre Compere
Chef de Traveau au Jardin Botanique
National de Belgique
Domaine De Bouchout
B-1860 Meise
Belgium

Ferdandex Consolacion
Dpto Zoologia y Ecologia
Facultad de Ciencias
Universidad de Oviedo
Oviedo
Spain

Helene Contant
Dept of Botany
Univ of British Columbia
Vancouver - BC
Canada V6T 1W5

Dr P W Cook
Dept of Botany
Univ of Vermont
Burlington - VT 05401
U S A

Mr Eric Coppejans
Leerstoel voor Morfologia
Systematic en Ekologie der Planten
(Lab Algologie)-Ledeganckstraat 35
3-9000 Ghent
Belgium

Sean Coughlan
Dept of Biochemistry
U C N W
Bangor
Gwynedd LL57 2UW

Miss P J Court
Dept of Plant Biology
Ridley Building
The University
Newcastle-upon-Tyne

A H Cowell
7 Holt Coppice
Aughton Green
Nr Ormskirk
Lancs

Dr E J Cox
Botany School
South Parks Road
Oxford OX1 3RA

Dr Elenor R Cox
Dept of Biology
Texas A & M University
College Station
Texas 77843
U S A

Dr Raymond P Cox
Biochemisk Institut
Odense University
Dk - 5250
Odense M
Denmark

Dr R M Crawford
Botany Department
The University
Bristol 8

Mr A B Cribb
Dept of Botany
Univ of Queensland
Brisbane - Queensland
Australia

Professor D J Crisp
Marine Science Labs
Menni Bridge
Anglesey
North Wales

Dr Hannah Croasdale
Dept of Biological Sciences
Dartmouth College
Hanover - New Hampshire - 05755
U S A

Gertrud Fil mag Cronberg
Trelleborgsv 32
S-250 42 Tygelsjo
Sweden

Mrs Cecilia B Crosby
Ferry House
Far Sawrey
Ambleside LA22 0LP
Cumbria

Dr J S P Cullinane
Dept of Botany
Univ College
Cork
Eire

Mrs M I M Cullum
Fisheries Laboratory
Burnham-on-Crouch
Essex

Elizabeth G Cutter
Dept of Cryptogamic Botany
The University
Manchester M15 9PL

Dr David B Czarnecki
Dept of Botany
Univ of Minnesota
220 Biological Sciences Centre
1445 Gunter Av - St Paul
Minn 55108 - U S A

Dr A L Dahl
South Pacific Commission
Post Box D5
Noumea Cedex
New Caledonia

Dr D H Dalby
Botany Department
Imperial College
Price Consort Road
London SW7

Mark Dale
Dept of Biology
Dalhousie Univ - Halifax
Nova Scotia
Canada B5H 4J1

G F Daniel
Dept of Biological Sciences
King Henry 1 Street
Portsmouth Polytechnic
Portsmouth

H M C Danielli
Dept of Plant Science
Univ College
P O Box 78
Cardiff CF1 1XL

Dr W Marshal Darley
Dept of Botany
Univ of Georgie
Athens
Georgia 30601
U S A

Dr W Davies
Biological Sciences
Purdue University
2101 Coliseum Boulevard East
Fort Wayne - Indiana 46805
U S A

Dr C J Dawes
Dept of Botany & Bacteriology
Univ of South Florida
Tampa - Florida 33620
U S A

Dr James Dawson
Dept of Biology
Pittsburg State University
Pittsburg - KS 66762
U S A

Dr Penelope A Dawson
16 St Paul's Square
Bromley
Kent BR2 0XH

Dr T R Deason
P O Box 1927
University
Alabama 35496
U S A

Thomas C Decew
Univ Herbarium
Dept of Botany
Univ of California
Berkeley
Cal 94720
U S A

M R Delepine
Lab de Biologie Veg Marinif
7 Quai Street
Bernard - Paris 5
France

Dr C Den Hartog
Dept of Aquatische Oecologie
Katholiek Universiteit
Nijmegen
The Netherlands

Dr T V Desikachary
Univ Botany Laboratory
Madras 5
India

Isabel C A Dias
Rua Jorge Rudge
44-1202-B Bila Isabel
Rio de Janeiro
Brasil

Dr M Diaz-Piferrer
Dept of Marine Science
R U M
Univ of Puerto Rico
Mayaguez
Puerto Rico 00708

Dr R C Dillon
Dept of Biology
Univ of South Dakota
Vermillion - South Dakota 57067
U S A

Mr M J Cretiennot-Dinet
Station Marine d'Endoume
Rue de la Batterie-des-Lions
13007 Marseille
France

Professor P S Dixon
Dept of Ecology & Evolutionary Biology
Univ of California
Irvine - CA 92717
U S A

Dr A H Dizerbo
3 Rue Ernest Renon
29160 Crozon
France

Dr J D Dodge
Dept of Botany
Royal Holloway College
Huntersdale
Callow Hill - Virginia Water
Surrey GU25 4LN

David S Domozych
Dept of Botany
Miami University
Oxford - Ohio 45056
U S A

Dr M Donze
Joubertweg 25
6861 DM Oosterbeek
The Netherlands

Professor Maxwell S Doty
Dept of Botany
Univ of Hawaii
Honolulu 96822
Hawaii
U S A

Angela Douglas
Dept of Microbiology
Marischal College
Aberdeen
Scotland AB9 1AS

Dr B Douglas
c/o Dept of Botany
The University
Leeds 2
Yorkshire

Dr Gerhard Drebes
Biologische Anstalt Helgoland
Litoralstation - 2282 LIST/SYLT
Hafenstrasse 3
Germany

Edward A Drew
Gatty Marine Laboratory
St Andrews
Fife

Dr M R Droop
S M B A
Dunstaffnage Laboratory
P O Box 3
Oban - Argyll
Scotland

Mrs C S Ducker
Dept of Botany
Univ of Melbourne
Parkville 3052
Victoria
Australia

Professor Jeffrey G Duckett
Dept of Plant Biology and
Microbiology
Queen Mary College
Mile End Road
London E14 NS

Robert Crispin Duerden
105 Briarwood
Brookside
Telford
Salop TF3 1TT

Dr M Durairatnam
Division of Oceanography & Limnology
Institute de Biologia Marinha
Praia de Mae Luiza SIN
Universidade Federal do Rio Grande
do Norte - Natal RN - 59000
Brasil

Dr H C Duthie
Dept of Biology
Univ of Waterloo
Waterloo - Ontario
Canada

G J Dwyer
41 Pye Corner
Gilston
Nr Harlow
Essex

Dr S A Earle
California Academy of Sciences
San Francisco
California 94118
U S A

Dr J W Eaton
Dept of Botany
University of Liverpool
P O Box 147
Liverpool L69 3BX

L A Edgar
Dept of Botany
The University
Bristol BS8 1UG

Dr P Edwards
Environmental Engineering Division
Asian Institute of Technology
P O Box 2754
Bankok - Thailand

R G J Edyvean
Dept of Plant Biology
Univ of Newcastle-upon-Tyne
Newcastle-upon-Tyne

Mr H H Eichelberger
Electron Microscopy Unit
Marischal College
Aberdeen AB9 1AS

Dr J K Elner
The Cory Cottage
45 Carlton Street
St Andrews
New Brunswick
Canada

Dr A Ergashev
Inst of Botany
Acad of Sciences of the UZB S S R
Tashkent
Uzbekistan
U S S R

Stephen C Esser
New Jersey Marine Sciences Consortium
Fort Hanwek
New Jersey 07732
U S A

Mrs J Etherington
17 Marlborough Road
London W5

Dr Elizabeth H Evans
School of Plant Biology
U C N W
Bangor - Gwynedd
North Wales

Dr G H Evans
22 Ryder Crescent
Aughton - Nr Ormskirk
Lancs

Dr J H Evans
Dept of Botany
Royal Holloway College
Huntersdale - Callow Hill
Virginia Water
Surrey GU25 4LN

Dr I V Evans
Dept of Plant Sciences
Baines Wing - The University
Leeds LS2 9JT

Dr W F Farnham
Dept of Biological Sciences
Portsmouth Polytechnic
King Henry I Street - Portsmouth
Hants PO1 2DY

Dr P Fay
Dept of Botany
Westfield College
Hamptsead - London NW5

Karoly L Felfoldy
The Marins Labs
University of Guam
P O Box EK
Agana - Guam 96910
U S A

Chris Filion-Mykelbust
Institutt for Marinbiologi og Limnologi
Avd Marin Botanikk
Postboks 1069 - Blindern
Oslo 5 - Norway

P C Finch
14 Church Close
Lancing
Sussex BN15 0EZ

Professor Hermann Fischer
Botanisches Institute der
Universitat
Mackenheimer Allee 170
D-5500 Bonn 1
Germany

Mr R L Fletcher
The Marine Laboratory
Portsmouth Polytechnic
Ferry Road
Hayling Island PO11 0DG

Gary L Floyd
Botany Department
Ohio State University
Columbus - Ohio 43210
U S A

J Roderick Forbes
Dept of Botany
The Univ of Alberta
Edmonton - Alberta
Canada

Malcolm A Forbes
Australian National Parks
Wildlife Service
P O Box 656
Canberra City - Act 2601
Australia

Nicola M Ford
Dept of Botany
Univ of Bristol
Woodland Road
Bristol NS8 1UG

Michael S Foster
Moss Landing Marine Labs
P O Box 223 - Moss Landing
C A 95059
U S A

Alex Fotheringham
29 Christchurch Road
Reading
Berkshire

Dr J B Frankton
Estates and Valuation Dept
Kent County Council
Springfield - Maidstone
Kent

Thomas Friedl
Gulbranssonstr 14
D-8000 Munchen 71
W Germany

Dr I Friedmann
Dept of Biological Science
Florida State University
Tallahassee - Florida 32306
U S A

Dr Lisbeth Fries
Uppsala Univ Inst for Fysiologisk
Botanik - Uppsala
Sweden

A R Frohlich
7 Hamilton Road
Thornton Heath
Surrey CR4 8NN

Dr R O Fournier
Institute of Oceanography
Dalhousie Univ
Halifax - Nova Scotia
Canada

Greta A Fryxell
Dept of Oceanography
Texas A & M Univ
College Station
Texas 77845
U S A

George E Furet
Dept of Botany
University College
Cardiff
Wales

Paul W Gabrielson
Dept of Botany
Coker Hall
Univ of North Carolina
Chapel Hill N C 27514
U S A

Dr E K Ganesan
Dept de Biologia Marina
Instituto Oceanografico
Universidad de Oriente
Cumana
Venezuela

David Garbary
Dept of Botany
Univ of British Columbia
Vancouver - B C V6T 1W5
Canada

William E Gardiner
Biology Department
Univ of South Florida
Tampa - FL 33620
U S A

Prof Mme P Gayral
Institut de Botanique
Universite de Caen
39 Rue Desnoueux
Caen - France

Mr E A George
The Culture Centre of Algae
& Protozoa
36 Storeys Way
Cambridge

Dr J F Garrath
Dept of Botany
Univ of Guelph
Guelph
Ontario
Canada

Mr C E Gibson
Freshwater Biological Investigation
Unit - Greenmount College
Greenmount Road
Muckamore - Antrim
N Ireland BT41 4PX

Miss C J Gilchrist
Dept of Plant Biology
Ridley Building
The University
Newcastle-upon-Tyne

Professor C R Goldman
Division of Environmental Sciences
University of California
Davis 95616 - U S A

Dr Stjepko Golubic
Dept of Biology
Boston University
2 Cummington Street
Boston - Mass 02215
U S A

Dr H J Gons
Limnologisch Instituut
Ryksstraatweg 6
Nieuwersluis
The Netherlands

Elizabeth Gordon-Mills
Dept of Botany
The University of Adelaide
Adelaide
South Australia 5001

Stephen B Gough
Environmental Science Division Bldg
2024 Oak Ridge Nat Lab
P O Box X - Oak Ridge - TN 37850
U S A

R Goulder
Dept of Plant Biology
The University
Hull

Dr K H Goulding
Dept of Biological Sciences
The Hatfield Polytechnic
Hatfield
Herts

Dr E Suzanne Graham
The University of Leeds
Wellcome Marine Laboratory
Robin Hood's Bay
Yorkshire YO22 4SL

Linda E Graham
Dept of Botany
Univ of Wisconsin - Madison
459 Birge Hall
450 Lincoln Drive
Madison - Wisconsin
U S A

Miss J M Graves
Dept of Botany
Univ of Cape Town
Rondebosch
Cape Province
South Africa

Dr J C Green
The Laboratory
Citadel Hill
Plymouth

Mr A D Greenwood
Dept of Botany
Imperial College of
Science & Technology
Prince Consort Road
London SW7

Mrs E Greig-Smith
"Ardmore"
Ty Mawr Lane
Llandegfan
Anglesey
Gwynedd - North Wales

Dr M D Guiry
Dept of Botany
University College
Galway
Ireland

Henry Norman Hammond
59 Outgang Road
Aspatria - Carlisle
Cumbria CA5 3HS

Kurt Handke
Schillerstr 22
5040 Solton
Federal Rep of Germany

Dr L A Hanic
Biology Department
Dalhousie University
Halifax - N S
Canada

Fiona Hannah
University Marine Biological Stn
Millport
Isle of Cumbria
Scotland KA28 0EG

Gayle I Hansen
Dept of Botany
2075 Westbrook Mall
University of British Columbia
Vancouver BC
Canada V6T 1W5

Mr J B Hansen
Univ Botaniske Museum
Gothersgade 150
Copenhagen K
Denmark

Dr CM Happey-Wood
School of Plant Biology
University College of North Wales
Bangor - Gwynedd
North Wales

Dr Yoshiaka Hara
Dept of Biological Sciences
Tsukuba Univ
Sakura-mura
Niihari-gun - Ibaragi
Japan

J P C Harding
Biology Laboratory
North West Water Authority
Rivers Division - Dawson House
Liverpool Road - Great Sankey
Warrington

Mrs Daphne Hardy
4 Birch Lee
Wallington - Beverley
Humberside

Frederick G Hardy
11 Windsor Avenue
South Gosforth
Newcastle-upon-Tyne NE3 1PS

Mmr M Th L' Hardy-Halos
Laboratoire de Biologie Marine
C N R S - Faculte des Sciences
Route de Laval - 72017 Le Mans
France

Miss M P Hare
Dept of Biology
The University
Bath
Somerset

Mr E Harkin
Marine Biological Station
Port Erin
Isle of Man

Mrs M M Harlin
Dept of Botany
Univ of Rhode Island
Kingston - RH 02881
U S A

Dr Graham P Harris
Dept of Biology
McMaster University
Hamilton - Ontario
Canada L8S 4K1

Leslie H Harris
Taxonomy Program
Southern California Coastal
Water Research Project
646 West Pacific Coast - Highway
Long Beach - California 90806
U S A

Ms Lizabeth C Hart
Dept of Biological Sciences
Univ of Southern California
Los Angeles
California 90007
U S A

Mrs Clare Harvey
Benhams
The Garrison
St Mary's
Isle of Scilly

Dr G R Hasle
Inst of Marine Biology
Univ of Oslo
P B 1096 - Blindern
Oslo 3
Norway

Miss E Haworth
Freshwater Biological Association
Far Sawrey
Ambleside
Westmorland

David Haycroft
School of Plant Biology
U C N W
Bangor
Gwynedd LL57 2UW

Paul Hayes
18 Greenfinch Close
Eastleigh
Hampshire SO5 3JN

Dr John Hayward
Botany Department
University College
Swansea
Glamorgan

Berit Riddervold Heimdal
Biological Station
Espesgrend - N-5065
Blomsterdalen
Norway

Mrs Dorothy Hepper
Groesffordd
Graiglywd Road
Penmaenmawr - Gwynedd
North Wales

Dr Hester Heuff
Forest and Wildlife Service
2 Sidmonton Place
Brey - Co Wicklow
Ireland

Peter Heywood
Division of Biological and Medical
Sciences
Brown University
Providence - Rhode Island 02912
U S A

Dr D J Hibberd
The Culture Centre of Algae & Protozoa
76 Storey's Way
Cambridge CB3 0DT

Dr M Hickman
Botany Department
University of Alberta
Edmonton 55057
U S A

Mrs S Hiscock
Oil Pollution Unit
Orierton Field Centre
Orierton
Pembroke
Pembis

Mr Y.B. Ho
Department of Botany
University of Hong Kong
Hong Kong

Kyle D Hoagland
Dept of Life Sciences
Oldfather Hall
University of Nebraska
Lincoln
Nebraska 65808
U S A

Lynn M Hodgson
Dept of Botany
Bartram Hall
University of Florida
Gainesville
Florida 32611
U S A

Dr C van den Hoek
Biological Centre
Dept of Systematic Botany
Kerkaan 30
Postbox 14
Haren (Gr)
Netherlands

Dr I R Hoffman
Dept of Botany
Univ of Illinois
Urbana - Illinois 61801
U S A

Mrs M A J Hogan-Guzkowska
School of Geography
Mansfield Road
Oxford OX1 3TB

Dr Richard D Holland
Biology Department
Livingston University
Livingston
Alabama 35470
U S A

P M Holligan
The Laboratory
Citadel Hill
Plymouth PL1 2PB

Dr R W Holmes
Marine Science Institute
Univ of California
Santa Barbara
California 05105
U S A

Raymond W Holton
Dept of Botany
University of Tennessee
Knoxville
TN 37916
U S A

Dr Max H Hommersand
Dept of Botany
University of North Carolina
Chapel Hill
NC 27514
U S A

Robert Hopper
Dept of Biology
Memorial University of Newfoundland
St John's
Newfoundland
Canada

Dr Terumitsu Hori
Dept of Biological Sciences
University of Tsukuba
Sakura - Mura Ibaraki - 500 -51
Japan

Dr A J Horne
Dept of Civil Engineering
College of Engineering
University of California
Berkeley - California 94720
U S A

Dr Rita A Horner
4211 NE 88th
Seattle
Washington 98115
U S A

Mr I S Hornsey
Porthaethwy
New Road
Mepal nr Ely
Cambridgeshire CB6 2AL

Dr R W Hoshaw
Dept of Biological Science I
Univ of Arizona
Tucson
Arizona 85721
U S A

Bryan Cleaver Hughes
Exposure Trials Station
Ferry Road
Eastney
Portsmouth

Jeffrey W Hunt
University of Hawaii
Department of Botany
Plant Science Building
Room 101
5190 Maile Way
Honolulu 96822
Hawaii

Dr S H Hunter
Haskins Labs at Pace College
41 Park Row
H Y - 10058
U S A

Mme Helene Huvé
Lab de Biologie Veg
Fac Des Sciences De Luminy
70 Route Leon-Lachamp
13 Marseille 9^e
France

Robert Huxley
25 The Cloisters
Tarleton
Preston
Lancs PR4 6UL

David M Huxtable
Botany Department
University College
Gower Street
London WC1E 6BT

Mr Liang Wei Hwang
75 Edgeworth Drive
Fallowfield
Manchester M14 6RS

Dr Jeremy S Hyams
Dept of Botany and Microbiology
University College London
Gower Street
London WC1E 6BT

Anthony E Irish
Freshwater Biological Association
The Ferry House
Far Sawrey
Nr Ambleside
Cumbria

Dr D E G Irvine
Dept of Food & Biological Sciences
Polytechnic of North London
Holloway Road
London N7 8DB

Mrs Linda M Irvine
79 Springfield Road
New Southgate
London N11

Mr Hiroshi Itono
Dept of Biology
Faculty of Science
Kagoshima University
Kagoshima 890
Japan

P W James
British Museum
Natural History
Cromwell Road
London SW7 5BP

Dr Shirley W Jeffrey
C S I R O
Div of Fisheries & Oceanography
P O Box 21
Cronulla
N S W 2250
Australia

C G Jenkerson
Botany Department
University of Alberta
Edmonton
Alberta
Canada

Mr I R Jenkinson
Dept of Oceanography
University College
Galway
Eire

Dr D H Jewson
Limnology Lab
New University of Ulster
Traad Point
Drummenagh
Magherafelt - Co Derry
Northern Ireland

Mrs W Jin
P O Box 204
La Jolla
California - 92037
U S A

Mr H W Johansen
Dept of Biology
Clark University
Worcester - Mass 01610
U S A

Jeff Johansen
Dept of Botany & Range Science
401 WIDB
Brigham Young University
Provo - Utah 84602
U S A

Dr D M John
Dept of Botany
University of Ghana
Legon
Accra
Ghana

Karl A Johnson
c/o Post Office
Leigh
New Zealand

Dr C S Johnston
Institute of Offshore Engineering
Heriot-Watt University
Riccarton
Currie EH14 4AS

Dr Ian M Johnstone
Biology Department
Box 4820
University PO NCD
Papua
New Guinea

Mr A K Jones
Botany Department
University College of Wales
Aberystwyth
Wales

Dr E B Gareth Jones
Dept of Biological Sciences
Portsmouth Polytechnic
Park Road
Portsmouth - Hants

Dr Joanna M Jones
Marine Biological Station
Port Erin
Isle of Man

Dr R I Jones
Animal and Plant Ecology
University of Technology
Loughborough
Leics LE11 3TU

Dr W E Jones
Marine Science Laboratories
Menai Bridge
Anglesey
Gwynedd
North Wales

Alan E Joyce
11 Ferry Road
Golspie
Sutherland
Scotland

Dr Robert G Kalinsky
Biology Department
Louisiana State University
Shreveport
LA 71115
U S A

Mr David Francis Kane
Shell Toxicology Lab (Tunstall)
Sittingbourne
Research Centre
Sittingbourne
Kent ME9 8AG

Professor Jae Won Kang
Institute of Marine Science
National Fisheries University of Busan
Haewundae
Busan
Korea

Dr Tom Kantz
Dept of Biological Sciences
California State College
Sacramento
6000 Jay Street
Sacramento
California 95819
U S A

Dr D F Kapraun
Dept of Biology
University of North Carolina
Wilmington
N Carolina - 28401
U S A

Miss Deneb Karentz
Dept of Botany
College of Arts and Sciences
University of Rhode Island
Kingston - RI 02881
U S A

Michael Karydis
Marine Biology Laboratories
U C N W
Menai Bridge
Gwynedd
N Wales

Chr Katsaros
University of Athens
Institute of General Botany
Panepistimiopolis
Athens - 621
Greece

Mrs M Kaul
1220 Eastridge Drive
Lincoln
Nebraska 68510
U S A

Miyaji Kazuyuki
Dept of Biology
Faculty of Science
Toho University
Miyama 2-2-1
Funabashi
Chiba 274
Japan

Frances G R Kennedy
4 Tithe Close
Hilton
Cambs

Dr F G Kennedy
525 Alpine Drive
Sumter
South Carolina - 29150
U S A

Dr N W Kerby
Dept of Plant Sciences
The University
Leeds LS2 9JT

A K Khfaji
Botany Department
Faculty of Science
University of Riyadh
Riyadh
Saudi Arabia

S P J Kightley
British Antarctic Survey
Madingley Road
Cambridge CB3 0ET

Professor Doug Ho Kim
122 Beal Street
Lunenburg
Mass 01462
U S A

Dr B T King
28 Carley Heights
South Perth
Western Australia 6151

W L Kirk
1201 Foster Street
College Station
Texas 77840
U S A

John R Kitchenside
Imperial College Field Station
Silwood Park
Sunninghill
Ascot
Berks

David M Klarer
Old Woman Creek National Estuarine
Sanctuary - Ohio Dept of Natural
Resources - Division of Natural
Areas & Preserves
2605 Cleveland Road
East Huron - Ohio 44859
U S A

Dr F W Knaggs
Department of Botany
The University
Nittingham

Mr S J T Knight
Scottish Marine Biological
Association - Dunstaffnage
Marine Research Laboratory
P O Box 3
Oban
Argyll PA34 4AD
Scotland

Professor E W Knight-Jones
Dept of Zoology
University College of Swansea
Singleton Park
Swansea
Glam

Dr K M Knutson
Dept of Biology
St Cloud State University
St Cloud
Minnesota 56301
U S A

Mr K L Koetzner
95 South Bay Drive
Babylon
New York 11702
U S A

Dr P Kornmann
Biologische Anstalt
Heligoland
Germany

Mark Krejci
Marine Biomedical Institute
200 University Blvd
Galveston
Texas 77550
U S A

Dr Bruno P Kremer
Andreasstrasse 51
D-5700 Bonn 2
FRG

Mrs Aase Kristiansen
Institut for Sporeplanter
Øster Farimagsgade 2D
1555 Copenhagen
Denmark

Mr J Kristiansen
Inst for Plant Anat & Cytology
Solvgade 85
1507 Copenhagen K
Denmark

Professor Palle Krogh
Dept of Veterinary Microbiology
Pathology & Public Health
Veterinary Pathology Building
Purdue University - West Lafayette
Indiana 47907
U S A

Jonathan M Krupp
Department of Botany
University of California
David - C A 95616
U S A

Dr Munenao Kurogi
Dept of Botany
Faculty of Science
Hokkaido University
N 10 - W 8 - Sapporo 060
Japan

John W La Claire II
Dept of Botany
University of Texas
Austin - Texas 78712
U S A

J K Shri Ladha
Botany Department
Benaras Hindu University
Varanasi-5
India

David J Lampard
Biology Department
Todd Centre
University of Strathclyde
Taylor Street
GLASGOW G4 0NR

Dr N J Lang
Dept of Botany
University of California
David - California 95616
U S A

Dr B S C Leadbeater
Dept of Botany
The University
Edgebaston
Birmingham

Mr P A Lebednik
Tera Corp
P O Box 400
Avila Beach
California 93424
U S A

Dr In Kyu Lee
Department of Botany
Seoul National University
Seoul
Korea

Dr J J Lee
Dept of Botany
The City College of N Y
Convent Avenue at 158 Street
New York
NY 10051
U S A

Kwok W Lee
Division of Natural & Health Sciences
George Williams College
555 Thirty-First Street
Downers Grove
Illinois 60515
U S A

Dr G F Leedale
Dept of Plant Sciences
Baines Wing
The University
Leeds LS2 9JT

Mr Geoffrey L Leister
Dept of Biology
California State University
Long Beach - CA 90840
U S A

Raissa Fonseca de sa Leitao
Av Nascimento de Castro
1520 - Dix-Sept - Rosado
59.000 - Natal/RN
Brasil

Dr Carole A Lembi-Ross
Dept of Botany & Plant Pathology
Purdue University
W Lafayette
Indiana 47907
U S A

Dr Angela Lennox
Box 182
215 Herrick Road
Newton Centre
Mass 02159
U S A

Howard Leving
Botany Department
Univ of Massachusetts
Amherst - Mass 01003
U S A

Professor T Levring
Carl Skottsbergs Gata 22
413 19 Goteborg
Sweden

Ms Susan Ann Lewey
(Mrs S A Taphouse)
Science Department
New England College
Arundel
Sissex BN18 0PA

Dr Joyce C Lewin
P O Box 185
Friday Harbour
Washington 98250
U S A

Dr R A Lewin
Scripps Inst of Oceanography
Univ of California
La Jolla
California 92038
U S A

John A Lewis
Materials Research Laboratory
P O Box 50
Ascot Vale - Victoria 3132
Australia

Dr S M Lewis
Personnel Records
The British Council
10 Spring Gardens
London SW1A 2BN

Dr L B Liddle
Southampton College
Southampton
New York 11968
U S A

Sandra C Lindstrom
Division of Biological Sciences
University of Michigan
Ann Arbor
Michigan 48109
U S A

Mr B E Lippert
Dept of Biology
Portland State College
Portland 1
Oregon 97207
U S A

Louis L Lipsey
Dept of Botany
Southern Illinois University
Carbondale
Illinois 62901
U S A

D Livingstone
Dept of Botany
Science Laboratories
University of Durham
South Road
Durham DH1 3LE

Dr M M Littler
Dept of Ecology & Evolutionary Biology
University of California
Irvine - California 92717
U S A

Dr C S Lobban
Div of Sciences
University of New Brunswick
St John - E2L 4L5
New Brunswick
Canada

Joan R Lockhart
Dept of Botany
Morrill Science Centre
University of Massachusetts
Amherst
Mass - 01002
U S A

Professor Helen N Loeblich
Dept of Geology
University of California
Los Angeles
California - 90024
U S A

Dr A R Loeblich
University of Houston
Marine Science Program
Building 305
4700 Avenue U
Galveston
Texas 77551
U S A

Colleen A Lohr
Dept of Biology
University of South Carolina
Coastal Carolina Regional Campus
Conway - South Carolina 29526
U S A

Dr Rex L Lowe
Dept of Biology
Bowling Green State University
Bowling Green
Ohio 43403
U S A

Dr I A N Lucas
Marine Science Labs
Menai Bridge
Anglesey
Gwynedd
North Wales

Dr Hilda M Lund
Ellerbeck
Allerigg Road
Ambleside
Cumbria

Klaus Luning
Biologische Anstalt Helgoland
2192 Helgoland
West Germany

Professor Hans Luther
Djurgardsvillan 8
00530 Helsingfors
Finland

David M Luxton
Davis Gelative (N Z) Ltd
Connal Street
Christchurch
New Zealand

Dr Hazel Mackenzie
37 Green Road
Hall Green
Birmingham B28 8DA

Mrs L C Macleod
Dept of Brewing & Biological Sciences
Heriot-Watt University
Edinburgh EH1 1HX

Graeme N Macrauld
Botany Department
University of Canterbury
Christchurch 1
New Zealand

Dr M F Magne
Laboratoire de Cryptogamie
Universite de Paris
7 quai Saint-Bernard
75 Paris (5^e)
France

Miss Christine A Maggs
Department of Botany
University College
Galway
Ireland

Mr A A Mahdi
Dept of Botany
University of Liverpool
P O Box 147
Liverpool L67 5BX

Stefan C Majer
Dept of Botany
Westfield College
Kedderpore Avenue
London NW5 7ST

Abdulla Mandura
Botany Department
University of Glasgow
Glasgow G12 8QQ

David G Mann
Dept of Botany
The Kings Building
Mayfield Road
Edinburgh EG9 5JH

Dr A F H Marker
Freshwater Biological Association
The River Laboratory
East Syoke
Wareham BH20 6BB
Dorset

Dr J W Markham
Biologische Anstalt Helgoland
2192 Helgoland
West Germany

Melvin M Markowitz
Dept of Botany
University of Illinois at
Urbana-Champaign
297 Morrill Hall
Urbana - Illinois 61801
U S A

Mr W Marsden
24 Burchett Grove
Leeds 6

Lisbeth Mathiesen
Botanical Institute
University of Aarhus
68 Nordlandsvej
DK - 8240 Risskov
Denmark

Bahram K Maulood
Biology Department
College of Sciences
Sulaimaniyah University
Sulaimaniyah
Iraq

Annette McCann
Regina Water Institute
University of Regina
College Building
College Avenue
Regina
Canada S4S 0A2

Bernard McConnell
c/o Craig Mair
Marine Science Labs
Menai Bridge
Anglesey
Gwynedd - N Wales

Dr Michael D McCracken
Department of Biology
Texas Christian Univ
Fort Worth
Texas 76192
U S A

Mr R H McDowell
20 Oak Tree Close
Virginia Water
Surrey

Ailsie McEnteggart
Department of Biological Sciences
Chico State College
Chico
California 95926
U S A

Dr C I Macfarlane
1101 Wellington Street
Halifax
Nova Scotia
Canada

Hazel Mackenzie
Botany Department
Liverpool University
P O Box 147
Liverpool L69 3BX

Dr J McLachlan
National Research Council
Atlantic Regional Lab
Oxford Street
Halifax
Nova Scotia
Canada

Dr R O McLean
Paisley College of Technology
High Street
Paisley
Renfrewshire
Scotland PA1 2BE

Linda Medlin
Texas A & M University
Moody College of Marine Sciences
and Maritime Resources
Mitchell Campus
Pelican Island
P O Box 1675
Galveston
Texas 77550
U S A

Dr John C Meeks
Dept of Bacteriology
University of California
Davis
California 95616
U S A

Dr M E Meffert
Max-Planck-Institut für Limnologie
Abteilung Allgemeine Limnologie
252 Plon (Holstein)
Postfach 165
Germany

Dr Michael Melkonian
Botanisches Institut
Westfälische Wilhelms Universität
Schlossgarten 5
D-4400 Münster
Germany

Dr Pamela J Merrick
31 Donnington Road
Woodingdean
Brighton BN2 6WH

Dr A M Metwalli
Kuwait University
Faculty of Science
Botany Department
State of Kuwait

Dr R L Meyer
Dept of Botany & Bacteriology
Univ of Arkansas
Fayetteville
Arkansas 72701
U S A

Goran Michanek
c/o The Resident Representative
of UNDP
P O Box 558
Tripoli - Libya

J W Millbank
Botany Department
Imperial College
London SW7 2AZ

William I Miller
Department of Biological Science
Room 306
Conradi - Florida State University
Tallahassee - Florida 32306
U S A

D F Millie
Dept of Botany and Plant Pathology
Bessey Hall
Iowa State University
Ames
Iowa 50011
U S A

Jimmy T Mills
Asst Prof Biology
St Edward's Univ
Austin - Texas 78704
U S A

U Min-Thein
Dept of Marine Biol
Moulmein College
Moulmein
Burma

Miss Mary J Mitchell
Ponjantuel
Mawgan - Helston
Cornwall

Richard L Moe
University Herbarium
Dept of Botany
University of California
Berkeley - Cal 94720
U S A

Mr O Moestrup
Institut for Sporeplanter
Farimagsgade 2D
1355 Copenhagen
Denmark

Fatemeh Moghadan
Faculty of Science
Tehran University
Tehran
Iran

Dr D Mollenhauer
Forschungs Institute Sonchenberg
Ausstelle Lochmuehle
D-6465 Bieber/Spessart
Germany

Dr N Montford
80 The Mount
Guildford
Surrey

Dr S Moorjani
25 Ebrington Road
Kenton
Harrow
Midx HA3 0LS

Lenita Morrill
University of Houston
Marine Science Program
4700 Ave U - Building 305
Galveston
Texas 77550
U S A

Dr G.J. Morris
The Culture Centre of Algae and
Protozoa
36 Storey's Way
Cambridge CB3 0DT

Rev J H Morris
176 Sandgate Road
Kolkestone
Kent CT20 22Q

Osborne Morton
115 Malone Road
Belfast BT9 6SP
N Ireland

Dr Betty Moss
Dept of Botany
The University
Newcastle-upon-Tyne 1

Dr Brian Moss
School of Environmental Sciences
University of East Anglia
Norwich NOR 88C

Professor E T Moul
42 F R Lillie Road
Woodshole
Mass 02543
U S A

Dr Keto E Mshigeni
Dept of Botany
University of Dar es Salaam
P O Box 35060
Dar es Salaam - Tanzania
East Africa

John A J Mullett
12A Silverdale Road
Oxton
Birkenhead - Merseyside

Mr T F Mumford
4004 Cooper Pt Road N W
Olympia - WA 98502
U S A

Dr I M Munda
Biological Institute
Slovene Academy of Science
Novi trg 5
Ljubljana
Yugoslavia

Matt Murphy
Sherkin Island Field Study Centre
Sherkin Island
Co Cork
Ireland

Dr S N Murray
Dept of Biological Sciences
California State College
Fullerton
California 93651
U S A

Mrs Patricia Mynott
25 Mount Park Road
London W5

Dr C Nalewajko
Scarborough College
University of Toronto
1265 Military Trail
West Hill
Ontario
Canada

Dr M Neushul
Dept of Biological Sciences
University of California
Santa Barbara
California 93106
U S A

P R Newroth
Water Investigations Branch
Ministry of the Environment
Parliament Buildings
Victoria BC
Canada

Dr F Xavier Niell
Instituto de Investijaciones
Pesgueras - Muelle de Bolzas
Avda - Orillamar - 47 (Berbes) Vigo
Spain

Helle Nielsen
Inst of Sporeplanter
Farimagsgade 2D
DK-1353 København K
Denmark

Ruth Nielsen
Thorsvej 6
9870 Sindal
Denmark

Dr P H Nienhuis
Krommeemeet 1102
Goes
The Netherlands

Dr R E Norris
Friday Harbour Laboratories
Friday Harbour
Washington 98250
U S A

Dr T A Norton
Dept of Botany
The University
Glasgow
G12 8QQ

Harry V Nyberg
Dept of Botany
University of Helsinki
Unioninkatu 44
SF-00170 Helsinki 17
Finland

K Okabe
8-30-28 Seijo
Setagayaku
Tokyo
Japan

Dr E C de Oliveira
Instituto de Biociencias
Dept of Botanica
Universidade de Sao Paulo
C Postal 11461
Sao Paulo
Brazil

Kirsten Olrik
11 Agern Alle
DK-2970 Horsholm
Denmark

Dr Mair Hopson Ong
10 Gables Lea
Sutton Bonington
Loughborough
Leicestershire

Dr F I Opute
Department of Biological Sciences
Univ of Benin
Benin City
Nigeria

Dr Deborah L Orwig
Physics-Astronomy Dept
University of Wisconsin
Oshkosh - Wisconsin 54901
U S A

Cynthia Ostroff
459 N Madison Road
Guildford - Conn 06437
U S A

Dr D W Ott
Dept of Biology
University of Akron
Akron - Ohio 44325
U S A

Franklyn D Ott
Biology Department
Memphis State University
Memphis
Tennessee 38152
U S A

N J P Owens
Institute for Marine Environmental
Research
Prospect Place
The Hoe
Plymouth

Mr T B B Paddock
Dept of Botany
British Museum Nat Hist
Cromwell Road
London SW7

Professor G F Papenfuss
Dept of Botany
University of California
Berkeley 4
California 94720
U S A

Miss H M Parkes
52 Eglinton Road
Dublin 4
Ireland

Dr B C Parker
Dept of Biology
Virginia Polytechnic Institute
Blacksburg - Va 24061
U S A

Mr M J Parsons
Botany Division
DSIR
Private Bag
Christchurch
New Zealand

G Patterson
Dept of Botany
Science Labs
South Road
Durham City SH1 5LE

Mr A J Peabody
Home Office
Central Research Establishment
Aldermaston
Nr Reading
Bucks RG7 4PN

Nina Pearlmutter
Dept of Botany & Plant Pathology
Lilly Hall - Purdue University
W La Fayette - Indiana 47907
U S A

Howard W Pearson
Botany Department
The University
Liverpool 5

Professor R A Pecora
Dept of Biology
Univ of South Western Louisiana
Lafayette - Louisiana 70501
U S A

Mr M Q Peel
Dept of Biology
Queen Elizabeth College
Campden Hill Road
London W8 7AH

Malcolm Potts
Dept of Biological Science
Florida State University
Tallahassee - Florida 32306
U S A

Poul Møller Pedersen
Institut for Sporeplankter
Ø Farimagsgade 2D
DK 1555 København
Denmark

Mme Liliane Pellegrini
Laboratoire de Biologie
Végétale - Centre Universitaire
de Luminy - 70 Route Leon Lachamp
13 Marseille (9^e)
France

John W Penny
Dept of Chemistry and Biology
Bell College of Technology
Almada Street
Hamilton - Strathclyde Region
Scotland

Dr Allan Pentecost
Dept of Applied Biology
Chelsea College
Hortensia Road
London SW10

Dr Elizabeth Percival
Dept of Chemistry
Royal Holloway College
Egham Hill
Egham
Surrey TW20 0EX

Dr J L Perez-Cirera
Departamento de Botanica
Facultad de Farmacia
Universidad Complutense
Madrid (5)
Spain

Hans G Peterson
Dept of Biological Sciences
The University
Dundee DD1 4HN

Professor R N Pienaar
Dept of Botany
University of Natal
P O Box 575
Pietemarihtsh 5200
Natal
South Africa

Dr Peter Pitkin
School of Botany
Trinity College
Dublin 2
Eire

Jürgen Plötz
4506 Hagen a T W
Wilopstr - 21
Fed Rep of Germany

Mr A Polanshek
Dept of Biological Sciences
School of Science
San Jose State University
San Jose - CA 95192
U S A

Mrs Utsa Pollinger
Israel Oceanographic & Limnological
Research Ltd - Haifa Labs
P O Box 1793
Haifa
Israel

Michael T Postek
Dept of Botany
Louisiana State University
Baton Rouge
Louisiana 70803
U S A

Mr H T Powell
Dunstaffnage Research Lab
P O Box 3
Oban
Argyll
Scotland

Dr B N Prasad
Dept of Botany
Lucknow University
Lucknow
India

Dr Hans R Preisig
Culture Centre for Algae & Protozoa
36 Storey's Way
Cambridge CB3 0DT

Dr G W Prescott
Univ Montana Biological Studies
Bigfork
Montana 59911
U S A

Mr I R Price
Dept of Botany
James Cook University
Townsville
Queensland 4811
Australia

Mr J H Price
Dept of Botany
British Museum (Nat Hist)
Cromwell Road
London SW7

Reif L Price III
Institute of Cell Analysis
National Children's Cardiac Hospital
147 NW 12th Avenue
Miami - Florida 33101
U S A

Dr Julian Fiddle
School of Plant Biology
U C N W - Bangor
Gwynedd LL57 2UW

Jeffrey S Prince
Dept of Biology
P O Box 9118
Univ of Miami
Coral Gables - Florida 33124
U S A

Dr V W Proctor
Dept of Biology
Texas Technological College
Lubbock - Texas 79409
U S A

Miss Carmen Pujals
Museo Argetino de Ciencias Natur
Casilla de Correo 10
Surcursal 5
Buenos Aires
Argentina

Dr C Pybus
Dept of Oceanography
University College
Galway
Ireland

Miss Susan P Radford
13 Elizabeth Street
Toowong
Queensland 4066
Australia

Richard Raeburn
Dept of Biology
Paisley College of Technology
Paisley
Renfrewshire
Scotland

M Anisur Rahman
Chemistry Department
Royal Holloway College
Egham Hill
Egham
Surrey TW20 0EX

Sue Ramm
Botany School
University of Melbourne
Parville - Victoria 3052
Australia

Dr R A Rasmussen
Department of Biological Sciences
Humboldt State University
Arcata - CA 95521
U S A

David Rathke
Centre for Lake Erie Research
Ohio State University - 1735 Neil Av
Columbus - Ohio 43210
U S A

Mr M Ratnasabapathy
University of Malaya
Kuala Lumpur
Malaysia

Miss Orvokki Ravanko
Dept of Botany
University of Turku
20500 Turku 50
Finland

Dr J A Raven
Dept of Biological Sciences
The University
Dundee DD1 4HN

William R Rayburn
Dept of Botany
Washington State University
Pullman
Washington 99163
U S A

Robert H Reed
Dept of Botany
The University
Liverpool L69 3BX

Alwyn Rees
Dept of Botany and Microbiology
University College
Singleton Park
Swansea SA2 8PP

Dr P C Reid
Institute for Marine Environmental
Research - Prospect Place
The Hoe
Plymouth PL1 3DH

Dr S W F Prudhomme van Reine
Rijksherbarium Schelpenhade 6
P O Box 9514
2300 Ra Leiden
The Netherlands

Dan Reinke
State Biological Survey
Avenue A
West Campus - Lawrence
Kansas 66044
U S A

David Andrew Rendall
Dept of Brewing & Biological Sciences
Heriot-Watt University
Edinburgh EH1 1HX

Bertil Rex
Marinbotaniska Institutionen
Carl Skottsbergs Gata 22
S-413 19 Gothenberg
Sweden

Dr C S Reynolds
Freshwater Biological Association
The Ferry House - Far Sawrey
Ambleside - Cumbria - LA22 0LF

Dr N B Reynolds
Dept of Biological Sciences
State Univ of New York
College at Cortland
Cortland - New York 13045
U S A

Dr R Rhodes
S M S U - Life Sciences Dept
Springfield - Ohio 65802
U S A

Ramona Gail Rice
University of Arkansas
Department of Botany
Fayetteville
Arkansas 72701
U S A

Martin C Richards
1 Tan-y-Bryn Terrace
Llunpobty
Bangor
Gwynedd
N Wales

Katherine Richardson
Marine Science Laboratories
U C N W Menai Bridge
Anglesey
Gwynedd
N Wales

Mr W D Richardson
Biology Department
Goldsmiths' College
New Cross
London SW14

Dr H Rietema
Biologisch Centrum
Afd Plan den Systematik
Universitat v Groningen
Postbus 14 - Haren
Netherlands

Salvador Heredia Riguel
c/o Carrera Juan Ramon
4A - 2A Madrid 25
Spain

Dr M Roberts
Nether Glen
Chapel-le-Dale
via Carnforth
Lancs LA6 3AR

Peter K. Robinson
Dept of Biological Sciences
Univ of Aston
Gosta Green
Birmingham B4 7ET

Dr Cilian Roden
Zoology Department
Shellfish Research Laboratory
Carna
Co Galloway
Ireland

Donald R Roeder
Dept of Botany and Plant Pathology
Iowa State University
Bessey Hall
Ames
Iowa 50011
U S A

Mr R Ross
Dept of Botany
British Museum
Cromwell Road
London SW7

Joshua A Rother
Imperial College of Science
and Technology
Applied Geochemistry Research Group
Dept of Geology
Royal School of Mines
Prince Consort Road
London SW7 2BP

Dr F E Round
Dept of Botany
The University
Bristol 8

Dr R M M Royackers
Zwanenveld 52-67
Nymegen
The Netherlands

Nigel R Rudd
15 Panmure Place
Toll Cross
Edinburgh
Scotland

Jan Rueness
Department of Marine Biology
and Limnology
P O Box 1069
Blindern
Oslo 3
Norway

Dr G. Russell
Botany Department
The University
Liverpool 3

Dr Yuzuro Saito
Faculty of Fisheries
Lab of Marine Botany
Hokkaido University
Hakodate
Hokkaido 040
Japan

Egil Sakshaug
Førsteamanuensis cand. real
University of Oslo
Institute of Marine Biochemistry
N 7054 Trondheim-Nth
Norway

Juan M Salinas
Laboratorio Oceanografico
Apartado 240
Santander
Spain

Dr Craig Sandgren
Dept of Biology
Hobory & Wm Smith Colleges
Geneva - NY 14456
U S A

Bernabe Santelices
Laboratorio de Zoologia
Universidad Catolica de Chile
Casilla 114-D
Santiago
Chile

Uwe J Santore
Botanisches Institut der
Universität Dusseldorf
Fes 26 - 15 - Universitäts strasse 1
4 Dusseldorf
W Germany

Pranjit Sarma
D-1 University Teacher's Quarters
Tarabag - Burdwan 713104
West Bengal
India

Professor Y S R K Sarma
Head Dept of Botany
Banaras Hindu University
Varanasi - 221005
India

Dr P D V Savage
18 Pear Tree Road
Dibden Purlieu
Southampton

P J Say
Dept of Botany
Science Labs
University of Durham
South Road
Durham
DH1 3LE

Professor R F Scagel
Dept of Biology and Botany
University of British Columbia
Vancouver 8
British Columbia V6T 1C2
Canada

Dr J A Schiff
Brandeis University
Dept of Biology
Waltham
Massachusetts - 02154
U S A

Dr Uwe G Schlosser
Sammlung von Algenkulturen
Pflanzenphysiologisches Institut der
Universität - Nikolausberger Weg 18
D-3400 Gottingen
Germany

Dr Ruth E Schmitter
49 Garfield Street
7 Cambridge
Massachusetts 02138
U S A

Professor Dr Reinhard Schnetter
Botanisches Institute der Universität
Senckenbergstr 17-21
D-6500 Giessen
West Germany

Dr Craig W Schneider
Department of Biology
Trinity College
Hartford
Ct 06106
U S A

Dr R B Searles
Botany Department
Duke University
Durham
N Carolina - 27706
U S A

Ulrich Seeliger
Base Oceanographica Atlantiae
Fundacao Universidade do Rio Grande
Calixa Postal 474
96200 - Rio Grande
Brazil

Bulent Sen
Department of Botany
The University
Bristol BS8 1UG

Robert B Setzer
University of South California
Allan Hancock Foundation
University Park
Los Angeles
California 90007
U S A

Robert Sneath
Department of Botany
University of Rhode Island
Kingston
R I 02881
U S A

F Shehata
42 Kepier Court
Durham

Dennis B S Shevlin
Department of Botany
University of California
Berkeley
California 94720
U S A

L Elliot Shubert
Department of Biology
University of North Dakota
Grand Forks
North Dakota 58201
U S A

Dr P C Silva
1516 Westview Drive
S49-1561
Berkeley
California 94705
U S A

Mary Silver
Marine Sciences
University of California
Santa Cruz
California 95060
U S A

Dr Reimer Simonsen
Institut für Meeresforschung
D-285 Bremerhaven
Am Handelshafen 12
Fed Rep Germany

Phillip D Simpson
3905 Allendale Court
Monkton
Maryland 21111
U S A

Miss Patricia A Sims
Botany Department
British Museum (Nat Hist)
Cromwell Road
London SW7

Robert H Sims
P O Box 10476
Santa Ana
California 92711
U S A

Faisal A Sinada
Dept of Biological Sciences
Univ of Dundee
Dundee DD1 4HN

Olav M Skulberg
Norwegian Inst for Water Research
Boks 260
Blindern - Oslo 3
Norway

G R W Sloan
Dept of Biological Sciences
Univ of Dundee
Dundee DD1 4HN

Dr T J Smayda
Graduate School of Oceanography
Narragansett Bay Campus
University of Rhode Island
Kingston - RI 02881
U S A

Lynda P Smith
Botany Department
University of Bristol
Woodland Road
Bristol BS8 1UG

Dr R V Smith
Freshwater Biological Investigation
Unit - Greenmount College
Greenmount Road
Muckamore - Antrim
N Ireland BT41 4PX

Mrs Jennifer A Skinner
54 Dudley Drive
Glasgow G12 9SA

Dr A Sladeckova
Dept of Water Technology
Trojanova 15
Prague 2
Czechoslovakia

Mr Daniel Somers
Leestoel voor Morfologie
Systematic en Ekologie der Planten
(Lab Algologie) - Ledeganckstraat 35
3-9000 Ghent
Belgium

Dr M R Sommerfeld
Botany Department
Arizona State University
Tempe
Arizona 85281
U S A

Mrs E de Farnot Sosa
c/o Prof N R Butler
Dept of Child Health
Royal Hospital for Sick Children
St Michael's Hill
Bristol 2

Dr Alain Sournia
Laboratoire des peches outre-mer
Museum nat d'histoire naturelle
57 rue Cuvier
75 - Paris (5)
France

Dr Estela Sousa Silva
Lab Microbiologia Experimental
Instituto Nacional de Saude
Av Padre Cruz
1699 Lisbon
Portugal

Dr G R South
Dept of Biology
Memorial University of Newfoundland
St Johns
Newfoundland
Canada A1B 5X9

Dr W T Stam
Dept of Systematic Botany
Biological Centre
P O Box 14
Haren
Netherlands

Larry H Stanker
Dept of Botany
University of Illinois
at Urbana-Champaign
297 Morrill Hall
Urbana - Illinois 61801
U S A

Thomas L Starks
Department of Biology
University of North Dakota
Grand Forks
ND 58202
U S A

Dr R C Starr
Department of Botany
University of Texas
Austin
Texas 78712
U S A

Dr C L N Steenberg
Limnological Institute
Ryksstraatweg 6
Nieuwersluis
The Netherlands

Herre Stegenga
Sammar 13
Wyckel (Fr)
Holland

Karen A Steidinger
FDNR Marine Research Lab
100 8th Avenue
Se - St Petersburg
Florida 33701
U S A

Dr Janet R Stein
Dept of Biology and Botany
University of British Columbia
Vancouver 8
British Columbia
Canada

Dr V J H de J de Sternberg
Director CIA
Algimar - Rue Benjamin Batista 27
Riao de Janeiro - GB
Brasil

Professor W D P Stewart
Dept Biological Sciences
Univ of Dundee
Dundee DD1 4HN

Dean Stockwell
Graduate School of Oceanography
University of Rhode Island
Narragansett Bay Campus
Kingston - Rhode Island 02881
U S A

Professor H A von Stosch
Botanisches Institut
Pilgrimstein 4
Marburg/Lahn 16
West Germany

Wilmer C Stowe
The Pennsylvania State University
The Berks Campus
R D 5 - Tulpehocken Road
Reading - Penn 19608
U S A

Dr K Subbaramaiah
CSMCRI Marine Algal Research Station
P O Mandapam
Dist Rammad - Tamil Nadu
India

Dr Michael J Sullivan
Dept of Biology
P O Drawer GY
Mississippi State University
Mississippi State - MS 39762
U S A

Dr E Swift
Graduate School of Oceanography
University of Rhode Island
Kingston - RI 02881
U S A

Dr J B Sykes
Dept of Education
Manchester Polytechnic
Chester Street
Manchester M1 5GD

Professor P J Syrett
Department of Botany
University College of Swansea
Singleton Park
Swansea
Wales

Philip Sze
Dept of Biology
George Town University
Washington - DC 20057
U S A

Miss Y C Tai
Fisheries Research Station
Shek Pari Wan Road
Aberdeen
Hong Kong

Mr Eiji Takahashi
Dept of Biology
Faculty of Science
Kobe University
Nada - Kobe 657
Japan

Dr J F Talling
Ferry House
Far Sawrey
Ambleside
Cumbria

Professor A R A Taylor
Dept of Biology
University of New Brunswick
Fredericton
New Brunswick
Canada

Mrs C J Taylor
19 Devonshire Gardens
Chiswick - London W4

Dr D Taylor
Inst of Marine Sciences
10 Rickenbacker Causeway
Miami - Florida 33149
U S A

Dennis L Taylor
University of Maryland/CEES
Box 775 - Cambridge
Maryland 21613
U S A

Dr F J Taylor
Marine Research Laboratory
University of Auckland
R D - Leigh
New Zealand

Miss Lynee A Terry
Dept of Plant Biology
Ridley Building
University
Newcastle-upon-Tyne NE1 7RU

David Perry Thomas
Dept of Botany
Univ of Tasmania
GPO Box 252C
Hobart - Tasmania 7001
Australia

Kuno Thomasson
Vaxtbiologiska Institutionem
Box 559 - S - 751 22 Uppsala
Sweden

Helge Abildhauge Thomsen
Københavns Universitet
Institut for Sporeplanter
Ø Farimagsgade 2D
DK-1353
København K
Denmark

Mrs M N E Tiffany
84 Old High Street
Headington
Oxford
U K

Mr Roger Tippet
Dept of Zoology
The University
Glasgow W2

Mr I Tittley
Botany Department
British Museum (Nat Hist)
Cromwell Road
London SW7

Dr G L Tiwari
Dept of Botany
University of Allahabad
Allahabad 211002
India

Dr Hiroshi Tokuda
Dept of Fisheries
Faculty of Agriculture
University of Tokyo
Bunkyo-ku
Tokyo
Japan

Dr Livia Tonolli
Inst Italiano di Idrobiologia
28048 Verbania Pallanza
Novara
Italy

Roberta Townsend
Dept of Botany
Univ of Sydney
Sydney 2006
Australia

Dr Bilgin Tözün
Posta Kutusu 15
Tophane
Istanbul
Turkey

Dr F R Trainor
Dept of Botany
Univ of Connecticut
Storrs - Connecticut - 06268
U S A

Mrs Caroline B Tropper
68 Audubon Avenue
North Providence
Rhode Island 02908
U S A

Earnest W Truby
Biology Department
University of South Florida
Tampa - Florida 33620
U S A

Dr R T Tsuda
Div of Biosciences and Marine Studies
University of Guam
P O Ek
Anana
Guam 96910
U S A

Dianna Tupa
831-B Meadows Drive
Austin - Texas 78758
U S A

Mr L P Turnbull
Registrar's Office
Bedford College
Regents Park
London NW1

Mr M F Turner
Scottish Marine Biological Association
Dunstaffnage Marine Research Lab
P O Box 3
Oban - Argyll
Scotland

Dr P A Tyler
Dept of Botany
Univ of Tasmania
Tasmania
Australia

Dr F Umezaki
Dept of Fisheries
Faculty of Agriculture
Kyoto University
Kyoto 606
Japan

Kathryn Vanden Bosch
Botany Department
Univ of Massachusetts
Amherst - Mass 01003
U S A

Mr D F Vab Dyke
4901 Colonial Avenue
Norfolk
Virginia - 23508
U S A

Dr S L Vanlandingham
3741 Woodson Drive
Cincinnati
Ohio - 45239
U S A

Shirley Van Valkenburg
University of Maryland
Div of Agricultural and Life Sciences
College Park 20742
Maryland
U S A

Dr J Van der Veer
Biological Centre
Dept of Systematic Botany
Kerklaan 30
Postbox 14 - Haren
Netherlands

C D Van Vlyman
Dlaption Ley Field Centre
Slapton - Kingsbridge
Devon TQ7 2QP

Matilde Velasco
Universidad de Guayaquil
Facultad de Ciencias Naturales
Escuela de Biología
P O Box 471
Guayaquil
Ecuador

Dr V Venkateswarlu
Dept of Botany
Osmania University
Hyderabad - 7 AP
India

Dr K Vickerman
Protozoology Unit
Dept of Zoology
The University
Glasgow W2

Dr M Villalard-Bohnsack
Dept of Biology
Roger Williams College
Bristol - RI 02809
U S A

J Robert Waaland
Dept of Botany
Univ of Washington
Seattle
Washington 98105
U S A

Dr Rosemary Walker
Dept of Plant Biology
Ridley Building
The University
Newcastle upon Tyne
NE1 7RU

Patricia L Walne
Dept of Botany
Univ of Tennessee
Knoxville - Tennessee 37916
U S A

John G M Walsh
51 Eglinton Road
Ardrossan
Ayrshire
Scotland

Mr Kentaro Watanabe
National Institute of Polar Research
9-10 Kaga 1-Chome
Itabashi - Ku
Tokyo
Japan

Masayuki Watanabe
Dept of Botany
National Science Museum
Sakura-mura
Tbaraki 305
Japan

R A Watson
12 Cedar Road
Norwich

Dr C I Weber
6985 Moorfield Drive
Cincinnati
Ohio 45250
U S A

Dr E E Webber
Dept of Biology
Kenka College
Kenka Park
N Y 14478
U S A

Mrs Joan R Webster
17 Lady Lane
Paisley
Renfrewshire

James L Wee
Dept of Botany & Plant Pathology
Bessey Hall
Iowa State University
Ames - Iowa 50011
U S A

Dellef Wessel
Pflanzenphysiologisches Inst
Abtl Cytologie
Untere Karspule 2
34 Göttingen
W Germany

Dr J A West
Dept of Botany
Univ of California
Berkeley
California 94720
U S A

Larry K West
Dept of Botany
Univ of Tennessee
Knoxville
Tennessee 37916
U S A

Richard Wetherbee
University of Melbourne
Parkville - Victoria 3052
Australia

J H Wheeler
1680 University Drive 10
Charleston
Illinois 61920
U S A

Mark Whiting
Dept of Botany & Plant Pathology
Oregon State University
Corvallis - Oregon 97331
U S A

Dr A Whittick
Dept of Biology
Memorial University of Newfoundland
St John's - Newfoundland
Canada A1B 2X9

S J Whittle
38 Langham Road
Tottenham
London N15 3RA

Dr B A Whitton
Dept of Botany
Univ of Durham
South Road
Durham City

Dr T B Widdowson
4655 West Saanich Road
Victoria BC
Canada V8Z 3G7

Dr R T Wilce
Dept of Botany
Univ of Massachusetts
Amherst
Massachusetts
U S A

Dr M Wilkinson
Dept of Brewing & Biological Sciences
Heriot-Watt University
Chambers Street
Edinburgh EH1 1HX

Mr P E Williams
31 Exmouth Court
Lynnmouth Crescent
Rumney
Cardiff

Mr D R Wiseman
Dept of Biology
College of Charleston
S Carolina 29401
U S A

W J Woelkerling
Dept of Botany
La Trobe Univ - Bundoora
Victoria
Australia 3085

Dr B J B Wood
Dept of Indust Microbiology
Strathclyde University
Glasgow Cl

Gavin Wood
50 Barwell Avenue
Marleston
South Australia 5033
Australia

Professor R B Wood
School of Biology
The New University
Coleraine
Ireland

Dr D E Wujek
Dept of Biology
Central Michigan University
Mount Pleasant
Michigan 48858
U S A

Dr J T Wyatt
Aquatic Ecologist
Water Quality Engineering Division
U S Army Environmental Hygeine Agency
Aberdeen Proving Ground
MD 21010
U S A

Dr M J Wynne
Division of Biological Sciences
The Univ of Michigan
Ann Arbor
Michigan 48109
U S A

Hiroshi Yabu
Faculty of Fisheries - Hakodate
Hokkaido
Japan

Professor T Yamagishi
Biological Laboratories
College of Agriculture and
Veterinary Medicine
Nihon University
Shimouma
Setagaya-Ku
Yokyo
Japan

Charles Yarish
Dept of Biology
Univ of Connecticut
Scofieldtown Road
Stamford
Conn 06905
U S A

David N Young
Dept of Biological Sciences
Univ of Southern California
University Park
Los Angeles
California 90007
U S A

Dr V N de Yonge
Blauforlaet 22
9284XH Augustinusga
The Netherlands

Dr Tadao Yoshida
Dept of Botany
Faculty of Science
Hokkaido University
Sapporo
Japan

Makoto Yoshizaki
Dept of Biology
Toho University
542 Miyama
Funabashi
Chiba Pref 274
Japan

Mrs Joyce Young
36 Birch Street
Greenfield
Massachusetts 01301
U S A

Mr R E Youngman
The Water Research Association
Ferry Lane
Medmenham
Marlow
Bucks

Dr R Zingmark
Dept of Biology
Univ of South Carolina
Columbia
SC 29208
U S A

Dr George A Zoto
10 Widgeon Lane
W Barnstable
Mass 02668
U S A

ASSOCIATE MEMBERS

G H H Ainsworth
University College
P O Box 78
Cardiff

Mrs S E Arregger-Perini
92 Edward Road Southborough
Tunbridge Wells
Kent

Mohammad Ashraf
Queen Mary Student's House
7 Stainsby Road
London E14

Miss Christine Butterwick
26 Havelock Road
Windemere
Cumbria

N. Montford
60 The Mount
Guildford
Surrey

Miss K M Chalklin
35 Grove Road
Sandown
Isle of Wight

Dr M J Dring
Dept of Botany
Queens University
Belfast 7
N Ireland

Dr S M Eden
80 Temple Road
Cowley
Oxford OX4 2E2

Mr B P Eyden
Experimental Protozoology Unit
Zoology Department
Glasgow University
Glasgow G12 8QQ

Mr R A J Foyle
29 New Road
The Causeway
Staines
Surrey

Mr M K Garrett
Agricultural and Food Chemistry Dept
The Queen's University of Belfast
Newforge Lane
Belfast BT9 5PX
N Ireland

Dr Margaret Anne Haroer
169 Pembroke Road
Northland
Wellington 5
New Zealand

Mr S I Heaney
Freshwater Biological Association
Windermere Lab
The Ferry House
Ambleside
Cumbria LL22 6LP

Professor W E Isaac
20 Spray Point Road
Blairgowrie
Victoria 3942
Australia

Mr G H M Jaworski
Freshwater Biological Association
Ferry House
Far Sawrey
Ambleside
Cumbria

Professor G W Lawson
Dept of Biological Sciences
University of Lagos
Lagos
Nigeria

Dr Elizabeth Mackey
Dept of Botany
The University
Bristol BS8 1UG

Dr Mary McHarg
112 Eellows Road
London NW3

Mrs Catherine Mitchell
Holly Bank
Mill Lane
Hemingford Grey
Huntingdon
Cambridgeshire PE18 9DQ

Mrs J A Moore
Dept of Botany
British Museum (Nat Hist)
Cromwell Road
London SW7 5BD

Mr G H Morgan
1 Somerfield Close
Maidstone
Kent

Helen Morison
Freshwater Biological Association
Ferry House
Far Sawrey
Ambleside
Cumbria

Dr J A Mowat
Department of Agriculture and
Fisheries
Marine Laboratory
P O Box 101
Victoria Road
Torry
Aberdeen AB9 8DB

Dr R Ocampo-Freidmann
Department of Biological Science
Florida State University
Tallahassee 32306
U S A

Mr Michael J Picken
Dunstaffnage Marine Research
Laboratory - P O Box 3
Oban
Argyll
Scotland

Dr P J J Polderman
Polarisstraat 12
3235 TH Rockanje
The Netherlands

Mrs M J Pybus
Dept of Oceanography
University College
Galway
Ireland

Mrs S M Reid
Dept of Agriculture and Fisheries
Marine Laboratory
P O Box 101
Victoria Road
Aberdeen AB9 8DB

Terence Roy Ricketts
Cell Biology Unit
Department of Botany
School of Biological Sciences
The University
Nottingham NG7 2RD

H J D Salmon
32 Logan Road
Bristol BS7 8DT

R H Simons
Dept of Botany
Univ of Cape Town
Rondebosch 7700
Cape Town
South Africa

Dr Y Steinitz
Dept of Plant Pathology and Microbiology
The Hebrew University
P O Box 12
Rehovot
Israel

Barbara Surek
Institut für Allgemeine Botanik
Junginstrasse 6
2000 Hamburg 36
Germany

Mrs Ann J Taylor
28 Linksway
Gatley
Cheadle
Cheshire

Mrs A Wallace
28 South Park Road
Hamilton ML5 6PJ
Lanarkshire
Scotland

Dr A E Walsby
Marine Science Laboratories
Menai Bridge
Anglesey
Gwynedd
North Wales

John Wehr
Dept of Botany
Science Laboratories
South Road
Durham University
Durham DH1 3LE

Shiela W Wisemand
St Anthony's House
Heversham
Cumbria LA7 7EA

