

Phycological

Newsletter 8:2

Phycological Society of America

May 1972

Editor: J. Ramus, Department of Biology, Yale University,
New Haven, Connecticut 06520



ANNUAL MEETING NEWS

The most recent, and almost final, news about the 1972 Annual Meeting at the University of Minnesota is summarized in the subsequent sections by the Program Chairman, Robert W. Hoshaw, Department of Biological Sciences, University of Arizona, Tucson, Arizona 85721 (Phone: (602)884-2364 or (602)326-0239). Additional information about the Annual Meeting was mailed to all members of PSA in the ANNUAL MEETING NEWS dated January 18, 1972.

Two-Day Field Trip

The preliminary reservations were sufficient to continue planning for the field trip at Lake Itasca, on August 25-27, 1972. The field trip will be based on the University of Minnesota's Forestry and Field Biology Station on Lake Itasca in Itasca State Park. Dr. Alan J. Brook will lead the foray along with several other phycologists who are familiar with the area. The alga flora of the area which is especially rich in chlorophytes, chrysophytes and xanthophytes is fairly well-known. A first session on the biology, climatology and geology of the area will be given on Friday evening, August 25 in the Forest Inn near the Field Station.

For those persons not driving their own cars, transportation will be provided by several vehicles belonging to the University of Minnesota which will depart at intervals from the rear door of the Botany Building from 1:00-3:00 P.M. on Friday, August 25. The trip to the Forestry and Field Biology Station at Lake Itasca, travel during the collecting trip and return to the University of Minnesota early in the afternoon on Sunday, August 27 (approx. 750 miles) will cost \$10.00 per person. Lodging near the Field Station for 2 nights will be approximately \$5.00 per night for a cabin and \$10.00 per night per single room at Douglas Lodge. Meals will be available at Douglas Lodge.

Advance reservations are necessary. All participants including those who returned the preliminary reservation form should complete and return the new reservation form at the back of the Newsletter, so Dr. Alan Brook can make final housing and transportation arrangements. Even those participants who drive directly to Lake Itasca in their own automobiles or who camp in the area should also return the reservation form. Dr. Brook's phone numbers are: Office - (612)373-5177; Home - (612)473-3432.

Contributed Paper Sessions

A total of 95 contributed papers were received. This generous response has necessitated concurrent sessions which will result in some conflicts not only with our own sessions but also with those of other societies. All indications are for a BIG meeting with many contributed papers and many symposia. The contributed papers have been organized into 4 categories which appear appropriate, but in most cases sequencing of papers was done from titles without the aid of abstracts. The contributed paper sessions are:

- 28 August (Monday) 8:30-12:00 -- Physiology and Biochemistry
- 28 August (Monday) 1:30- 5:00 --- Cytology and Ultrastructure
- 28 August (Monday) 1:30- 5:00 --- Taxonomy and Morphology
- 29 August (Tuesday) 1:30-5:00 --- Ecology
- 29 August (Tuesday) 1:30-5:00 --- Taxonomy and Morphology
- 30 August (Wednesday) 8:30-12:00 --- Cytology and Ultrastructure
- 30 August (Wednesday) 8:30-12:00 --- Physiology and Biochemistry
- 30 August (Wednesday) 1:30- 5:00 --- Ecology

In case you must cancel your paper, please notify the Program Chairman, Robert W. Hoshaw. Each contributor will be notified of the date and time for the presentation of his or her paper.

Symposium (Forum)

A 10-speaker forum has been organized for the last day of our meeting, Thursday, August 31. So plan to stay to the end! Certain of our speakers could not arrive at Minneapolis prior to this date because of a geological meeting in Canada. The forum has been arranged jointly with the Microbiological Section of the Botanical Society of America and is co-sponsored by the Phycological Section of the Botanical Society of America and the Mycological Society of America. Origin of Protistan Cells is the title of the forum which is organized in two sessions with Ralph A. Lewin presiding. There will be time for discussion (controversy, debate, etc.) between speakers. All forum speakers have exchanged brief abstracts to reduce duplication of effort. In addition, they have provided the forum organizers with key references which will be compiled and distributed to those attending the forum sessions. The titles and speakers are:

- I. 8:30 -- Introductory Remarks. Ralph A. Lewin, Scripps Institution of Oceanography, LaJolla, California
- 8:45 -- Endosymbiont Hypothesis. Lynn Margulis, Boston University, Boston, Massachusetts
- 9:10 -- Discussion
- 9:20 -- Nucleic Acids. Arnold Bendich, University of Washington, Seattle, Washington
- 9:45 -- Discussion
- 9:55 -- Nuclear and Cytokinetic Apparatus. Jeremy Pickett-Heaps, University of Colorado, Boulder, Colorado

- 10:20 -- Discussion
 10:30 -- Recess
 10:45 -- Organellar RNA's. William Barnett, Oak Ridge National Laboratory Oak Ridge, Tennessee
 11:10 -- Discussion
 11:20 -- Chloroplasts and Mitochondria. Sarah Gibbs, McGill University, Montreal, Quebec
 11:45 -- Discussion
- II. 1:30 -- Membrane Systems. James Morré and Charles Bracker, Purdue University, Lafayette, Indiana
 1:55 -- Discussion
 2:05 -- Algal Cell Walls. Bruce Parker, Virginia Polytechnic Institute, Blacksburg, Virginia
 2:30 -- Discussion
 2:40 -- Fungal Cell Walls. Salomon Bartnicki-Garcia, University of California, Riverside, California
 3:05 -- Discussion
 3:15 -- Recess
 3:30 -- Fossil Evidence. J. William Schopf, University of California, Los Angeles, California
 3:55 -- Discussion
 4:05 -- Ecological Aspects. Thomas Brock, University of Wisconsin, Madison, Wisconsin
 4:30 -- Discussion

Our society has been asked to co-sponsor 3 additional symposia. We agreed to do this even though certain obvious conflicts of timing occur. Other sponsors of these symposia are: American Society of Limnology and Oceanography, Ecological Society of America, and American Microscopical Society. The symposia are:

- 28 August (Monday) 9:00-12:00 and 2:00-5:00 -- Nuisance Algae and Bloom Phenomena
 29 August (Tuesday) 9:00-12:00 -- Cultivation of Planktonic Organisms: Their Use in Bioassay and Pollution Research
 29 August (Tuesday) 2:00-5:00 -- Paleolimnology of Forest Lakes

Distinguished Lecture in Phycology

The 1972 lecture will be given by Dr. Francis R. Trainor, University of Connecticut on Tuesday, August 29 at 9:00 a.m. Morphogenesis in Some Microalgae will be the title of his lecture.

Business Meeting

This meeting will follow the Distinguished Lecture on Tuesday, August 29 at 10:15 a.m. PSA President Philip Cook invites a full attendance of the membership at this meeting.

Social Hour and Dinner

This Social Hour and Dinner is scheduled for Tuesday evening, August 29 in the Campus Club, Student Union Building. The Social Hour will begin at 6:00 p.m. with dinner served at 6:45 p.m. A feature of the occasion will be the past president's address: Reds in Gondwanaland by Richard E. Norris, University of Washington, Seattle.

The program described in the preceding sections is tentative since AIBS will finalize our program with those of the other societies. The final and official program will be published and distributed by AIBS later in the summer prior to the Annual Meeting.

OPPORTUNITIES AVAILABLE

Graduate research assistantships are available in the area of phytoplankton ecology in waters off the eastern coast of the United States. \$3,000 to \$4,000 annual stipends. Apply to Dr. Harold G. Marshall, Department of Biology, Old Dominion University, Norfolk, Va. 23508.

NEWS OF COLLEAGUES

Dr. Harold G. Bold was presented the Outstanding Teaching Award of the Standard Oil (Indiana) Foundation, Inc., the only member of the University of Texas to be so honored. The award, which carries a \$1,000 honorarium, is designed to "recognize and provide incentive for teaching undergraduates at tax-assisted colleges and universities."

Dr. Richard C. Starr will be on sabbatical leave for 12 months beginning in September, and will spend the time at the Max-Planck-Institut in Köln working on the purification and characterization of the inducer produced by the male strain in Volvox carteri. He also hopes to get work done on a monograph of Volvox, including all aspects of its biology. While at the Institut, he will be working under the auspices of a senior fellowship from the Alexander von Humboldt-Stiftung; the fellowship is part of their "USA-Sonderprogramm zur Förderung der fach-erogenen Zusammenarbeit zwischen deutschen und amerikanischen Forschungsinstituten." At the Max-Planck-Institut (Abteilung Straub) is Dr. Dieter Müller, who with his collaborators recently published on the characterization of the chemical substance secreted by female gametes of Ectocarpus as a male attractant.

SUMMER COURSES

Dr. James Rosowski of the University of Nebraska, Lincoln, will give a course on freshwater algae on the Orono Campus of the University of Maine. The course will run from 10 July to 18 August. Information can be obtained from the Department of Botany, University of Maine, Orono 04473.

Dr. G. W. Prescott will be teaching a one-week course on the algae of the Sandhills of Nebraska, through the Department of Botany, University of Nebraska. The course is for 2 units and will be held from May 22-29, 1972.

PANEL DISCUSSION OF CHONDRUS

A day-long panel discussion on C. crispus, sponsored jointly by the Canadian Botanical Association and the Canadian Society of Plant Physiologists, will be held Tuesday, 20 June 1972 at Dalhousie University, Halifax, Nova Scotia.

Discussion Leaders

I. Introduction. R. G. S. Bidwell, Queen's University; II. Biology. A. R. A. Taylor, University of New Brunswick, and L. C-M. Chen, Atlantic Regional Laboratory, National Research Council; III. Cytology & Genetics. L. A. Hanic, University of Prince Edward Island, and Elizabeth Gordon, McMaster University; IV. Ecology. A. C. Mathieson, University of New Hampshire, and J. R. Prince, Woods Hole Oceanographic Institution; V. Physiology. R. C. Buggeln, Memorial University, and J. S. Craigie, Atlantic Regional Laboratory; VI. Chemistry of Carrageenins. W. Yaphe, McGill University.

During the session, Miss C. I. MacFarlane and Dr. E. G. Young will be recognized for their contributions to phycology, and they will serve as honorary co-chairmen of the panel.

Publication

Review articles covering the designated areas will be published as a special supplement to Vol. 27 of the Proceedings of the Nova Scotian Institute of Science. A comprehensive bibliography of Chondrus, prepared by Miss Evelyn Campbell, will also be included. This volume should be available for distribution before the end of the year, and further information may be obtained from the Editor, Nova Scotian Institute of Science, 1411 Oxford Street, Halifax, N. S.

General Information

The panel discussion will form part of the program of the annual meeting of the Canadian Botanical Association and the Canadian Society of Plant Physiologists. The meeting is scheduled for 19-22 June, 1972, and will include several symposia in addition to contributed scientific papers. Pre-registration may be made at a reduced fee up to 15 April; it will however be possible to register upon arrival. Further information regarding registration, general program, housing, transportation, etc. may be obtained from: Dr. W. C. Kimmins, Biology Department, Dalhousie University, Halifax, N. S.

BOOK REVIEWS

A Textbook on Algae by H. D. Kumar and H. N. Singh (1971) vii + 200 pp. Affiliated East-West Press Private, Ltd., Publishers, US \$5.00. (Available from the publishers, 9 Nizamuddin East, New Delhi 13, India.)

This volume, designed as a textbook for undergraduate students, presents a brief but balanced account of the algae. The authors are to be complimented for their inclusion of recent contributions, particularly in regard to the Cyanophyta, with updated topics such as nutrition, nitrogen fixation, cyanophages, and comparisons with the red algae. On the other hand, the systematics of Fritsch (1945) are followed, with no mention of the works of Drouet and Dailey.

The shortcomings of the book, imposed by the limited size, lie in the cursory treatment of the algae themselves. For example, the Xanthophyta are covered with a discussion restricted to Vaucheria and Botrydium; the Rhodophyta are limited to Batrachospermum and Polysiphonia; the Phaeophyta are essentially restricted to the Ectocarpales and Fucales. Such a narrow perspective is unfortunate. The desirability of presenting the hypothetical origin of sex in the algae (namely, from the fusion of small, "weaker" zoospores) might be questioned, especially when the data are admittedly unverified. There is a useful section on field and

laboratory techniques dealing with techniques such as collection methods, preparing permanent slides, chromatography of pigments, and culture procedures (isolation and media). A glossary is also included. --M. J. Wynne, Department of Botany, University of Texas at Austin.

Lhodoský, O. (Ed.), *Algological studies* 2/3, 4, *Arch. Hydrobiol. Suppl.* 39 (1/2, 3):1-243. Available from E. Schweizerbart'sche Verlagsbuchhandlung, D-7000 Stuttgart-1, Johannesstrasse 34. 2/3 - DM 70, 4 - DM 46.

The series includes 12 studies performed on several mass-cultured algae (predominantly chlorophytes), catalogues of two major algal culture collections of the Czechoslovak Academy of Sciences in Trebon and Prague, and two anniversary articles dedicated to Prof. Dr. Bohuslav Fott and Dr. Jiří Ružička. 9 articles are in English and 7 in German language.

Seven papers dealing with the genus *Scenedesmus* include the following studies: membrane ultrastructure of 3 species and its significance in the systematics of the genus; maintenance of synchronous cultures; mutual ionic influences of K^+ , SO_4^{2-} and PO_4^{3-} during nutrient uptake; effect of humus substances (fulvo-acids, humatomelan-acids and humic acids) on algal growth and protein production.

The application of mutagens to both *Scenedesmus* and *Chlorella* is discussed in two papers: algal response to dosage variation; stimulatory and inhibitory effects; and mutagenesis vs. physiological damage.

Two papers deal with nutritional studies on *Chlorella*: protein content and internal N-distribution under conditions of N-starvation; and autotrophy vs. heterotrophy under low temperature conditions.

One article describes light utilization by different algal populations in situ and in vitro. It includes a comparison of photosynthesis to light-intensity ratios (P/LI) between natural populations of different habitats, seasons and taxonomic groups, and between natural and cultured populations.

Two articles deal with morphometric variability as a result of different growth conditions and of inherent cell division patterns. One treats the variability of representatives of following genera: *Scenedesmus*, *Chlorella*, *Crucigenia*, *Cosmarium*, *Closterium*, *Micrasterias*, and *Pinnularia* under various culturing conditions. Ecological and taxonomical implications are discussed. The other article refers to the polarization of dividing cells and the resulting inequities in cell size distribution, generation time, and division rhythms along a portion of an *Ulothrix* filament.

The articles are well organized and edited. Each is accompanied by an introduction and discussion which orient the reader in the area of related research. The series represents, therefore, a cohesive collection of readings which can also be recommended for graduate teaching in the field. --S. Golubic, Department of Biology, Boston University.

PHYCOLOGY GROUP - OHIO STATE UNIVERSITY

The senior member of the group is Dr. C. E. Taft, whose speciality is freshwater algal taxonomy. His recent research efforts have been on the algal flora of Lake Erie and the control of algae in water supply reservoirs. Dr. Gary B. Collins is a specialist in freshwater diatom systematics and ecology whose recent work has dealt with riverine diatom communities in Ohio and floristic studies of some unique habitats. Dr. H. P. Hostetter is our experimental phycologist whose recent work has been on the dynamics of size reduction in clonal diatom cultures.

Courses offered include: Freshwater Algae -- Taft; Plankton -- Taft; Experi-

mental Phycology -- Hostetter; Diatom Ecology and Systematics -- Collins; Cryptogamic Botany Seminar -- in which topics vary but an introduction to marine algae is regularly offered by adjunct professor Dr. L. H. Colinvaux.

Cognate courses offered in the Botany Department are: Aquatic fungi -- Dr. Roland Seymour; Aquatic Vascular Plants -- Dr. Ronald Stuckey.

The algal herbarium includes the collections of Transeau and Taft and the recently acquired Edward and Fletcher Hodge M.D. Collection of diatoms. The Hodge Collection includes exsiccata of Van Heurck, Wm. Smith, H. L. Smith, Moller, Cleve and Moller, Bailey, and an incomplete Rabenhorst as well as many slides of other diatomists of the 19th century. It is probably the largest diatom exsiccata collection in any U.S. academic institution, totaling over 10,000 slides.

BOOKS AVAILABLE

Selected Papers in Phycology, Edited by James R. Rosowski and Bruce C. Parker.

Intended as a supplementary text for courses dealing with algae, Selected Papers in Phycology can serve as a single condensed, inexpensive, and convenient source of readings for students in phycology. The contents have been organized and written by specialists in each of the major areas of phycology, and together the six sections of the book provide a synthesis and general overview of phycology with an emphasis on current trends. For seminar courses, the original introductions, bibliographies, and commentaries provide a basis for discussion of current work in each field and for the generation of ideas for individual research.

Available from: The University Bookstore, The University of Nebraska, 14th and R Street, Lincoln, Nebraska 68508. Price: \$9.95.

Selected Bibliography on Algae, No. 12, published by the Nova Socia Research Foundation. Price: \$15.00.

TREASURER BEARS DOWN ON DELINQUENT MEMBERS

Over 10% of the individual members of the Society (127, actual number) were eliminated from the active mailing list due to non-payment of 1972 membership dues. These individuals will not receive the March issue (Vol. 8, No. 1) of the Journal of Phycology. The Treasurer regrets the necessity for this action but the continued financial health of the Society demanded it be taken. If you do not receive the March issue, you should check your records to determine if you are among the dues delinquents. Payment of dues owed will result in immediate re-instatement of membership. --N. J. Lang.

FINAL RESERVATION FOR PHYCOLOGY FIELD TRIP

Forestry and Biology Station, University of Minnesota
August 25-27, 1972

Print or Type

Name _____

Mailing Address _____

(City)

(State)

(Zip)

Total No. of persons in your party _____ No. participants for field trip _____

Names of persons who will accompany you _____

Estimated time of arrival in Mpls. _____

Transportation (Check one):

_____ Will drive own car

_____ Could transport _____ persons from
Minneapolis to Field Station

_____ Will need transportation for _____
persons.

Please circle the time which would be
most convenient for you to leave Mpls.
for Itasca in University transport:

12:00 noon 1:00 2:00 3:00 p.m.

Housing (Check one):

_____ Single room _____ Double room

_____ Family cabin for _____ persons

_____ Share cabin with 3 or 4
other persons.

_____ Will camp in Itasca State
Park

Return this form to: Dr. Alan J. Breck, Department of Ecology and Behavioral
Biology, University of Minnesota, 349 Museum of Natural
History, Minneapolis, Minnesota 55455, USA, by July 10, 1972.

BALLOT FOR 1972 PHYCOLOGICAL SOCIETY OF AMERICA

Please vote for President, Vice-President, Secretary, and three Editorial Board Members. Each candidate has agreed to serve if elected. Ballots must be received no later than August 1, 1972. Please return your ballot NOW. Either return the ballot in an envelope or fold over and affix stamp.

RETURN TO: E. Gantt
Radiation Biology Laboratory
12441 Parklawn Drive
Rockville, Md. 20852

PRESIDENT: (vote for one)

- Robert W. Hoshaw
- H. Wayne Nichols
- _____

VICE-PRESIDENT: (vote for one)

- Harold J. Humm
- Patricia L. Walne
- _____

SECRETARY: (vote for one)

- Larry R. Hoffman
- Michael J. Wynne
- _____

EDITORIAL BOARD: (Vote for three)

- Peter S. Dixon
- Elisabeth Gantt
- Robert R. L. Guillard
- Johan A. Hellebust
- Francis R. Trainor
- John A. West
- _____
- _____

Phycological Newsletter
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