



Phycological Newsletter

A PUBLICATION OF THE PHYCOLOGICAL SOCIETY OF AMERICA

*Editor: Grant Mitman
Associate Professor*

*Department of Biological Sciences
Montana Tech of The University of Montana
1300 West Park Street
Butte, Montana 59701*

E-mail: gmitman@mtech.edu

Work: 406-496-4617, 406-496-4184

Home: 406-494-4235, FAX 406-496-4650

December 1998

Volume 34

Number 1

INSIDE THIS ISSUE:

PHYCOLOGICAL TRAILBLAZER NO. 12:

Niels Foged 1

BOOK REVIEWS

Seaweeds of the South African

West Coast 5

Marine Botany, 2d edition 6

Seaweeds at the Smithsonian—

From the Trash to the Web 8

Now Available—NEAS publ 8

Spirulina platensis (Arthrospira)

Physiology, Cell-biology and

Biotechnology 9

HAPPENINGS

36th Northeast Algal Symposium 10

Second Asian Pacific

Phycological Forum 10

19th Southeastern Phycological

Colloquy 11

Advanced Biology Training

Course in Antarctica 11

MISCELLANEOUS

I Had a Dream 12

Notes from your Editor 12

Address change information 12

NEWS OF COLLEAGUES

In Memoriam—Chin-Chih Jao 13

Dedication to Richard Starr 13

Comments about Richard Starr 14

Vandermeulen accepts position 15

Officers & Executive Committee 16

Submissions 16

Subscriptions 16

Phycological Trailblazer No. 12: Niels Foged

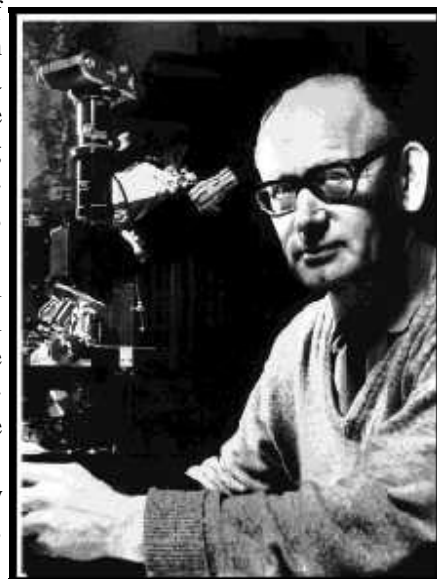
by M.J. Wynne

University of Michigan, Ann Arbor

Niels Foged became an internationally recognized authority of diatoms, but he took up the study of diatoms under unusual circumstances, namely, when he was imprisoned during World War II. It was at this time that he was forced to live under an assumed name under threat of execution. He had been a courageously active participant in the resistance movement in Denmark, and his activities resulted in his almost being killed in his own home. But before we get to the dramatic movement in his life, let us start at the beginning.

Niels Foged was born on the 5th of February, 1906, the eldest son on a farm in Jutland in northern Denmark. As a student at the Gymnasium in Randers, he took a wide range of courses, including natural history, chemistry, and geography. He completed these studies in 1928 by passing the cand. mag. examination. In 1930, he started lecturing in general biology at the old Cathedral School (Katedralgymnasium) in Odense, where he would remain until 1971 when he retired but remained active publishing the results of his studies on diatoms.

What led to his taking up the study of diatoms? Well, when Denmark was overrun and occupied by Germany in the Second World War, Foged was active in the resistance movement, becoming a regional leader. He had always held strong interests in social issues, and he



Niels Foged at age 60.

PSYCHOLOGICAL TRAILBLAZER NO. 12: NIELS FOGED

took action to oppose the Nazi regime by means of the written word and well-thought-out arguments—never by weapons.

An interest in science was also latent. For a period of one year, he rode his bicycle every month to visit sites where the six Funen watercourses intersected the roads. He took regular water samples to determine the water chemistry. Max Møller, a pharmacist and an active diatom researcher, was responsible for turning Foged's attention to diatoms. Møller encouraged Foged to bring back water samples so that he might check on what types of diatoms were present. This interaction between these two friends later influenced Foged to look at diatoms himself.

It was on these bicycle tours that Foged used the opportunity of being out in the countryside to distribute anti-Nazi leaflets to people he knew. Foged's former pupils and colleagues were familiar with his strongly critical attitude toward the German occupation. But disaster struck following the killing of a Nazi collaborator in Odense. This episode occurred on March 3, 1944. The infuriated Nazis sought retaliation by looking to kill a well-known anti-Nazi.

Two days following the collaborator's death, four persons forced their way into the home of Foged and his wife Lotte. The house maid had unwittingly opened the door, and the four intruders entered the room where Foged was sitting with his 11-year-old daughter, together looking at a book featuring exotic animals. Mrs. Foged was also in the room. One of the four intruders was a fellow Dane who asked Foged to follow the group outside. But Foged answered that he saw no reason for doing so, that he had no secrets from his wife and that whatever they wanted to tell him could be said there in the room.

Impatiently, one of the others pulled Foged's daughter aside and at the same time used a revolver to shoot Niels Foged twice in the chest. One of the bullets passed through a lung and ended up in the chair where he had been sitting. The other bullet lodged beneath the skin of his back. Two additional bullets were fired, both entering books on the shelves behind him because Foged succeeded in fending off the gun. A struggle ensued, Foged holding the intruder with the gun in the doorway as a shelter from the others. But at last the assailant managed to fire off another bullet. This one entered Foged's left temple, but fortunately at an angle, such that the bullet glanced off and ended in the floor. As abruptly as the intruders had appeared, they as quickly fled. Mrs. Foged was frozen with shock at the suddenness of what had just transpired, but a loud cry from her husband brought her back to reality. She raced to the phone to call both the police and the fam-

ily physician. An ambulance arrived to take the badly wounded Foged to the hospital, accompanied by his wife and daughter. They had departed before the physician, a good family friend, arrived on the scene. He found the other Foged daughter, who was only a year-and-a-half, at home with the maid. He drove the very distraught maid back to her parents, and he took the baby to his own home to be taken care of.

Even though the doctors succeeded in saving Foged's life in the hospital, he was still very much in jeopardy. It turned out that there was an order from the forces of occupation that Foged should be executed. Some loyal police stayed outside his hospital room 24 hours a day, but as soon as Foged could muster the strength, he was spirited out of the hospital by the Danish police, who transferred him, under a false name, into the relative safety of the infirmary of the large prison in Nyborg. Only the chief warden and a single nurse knew of his true identity. Niels managed to print more leaflets in the prison cellar. There was a tunnel connecting it with the cellar of a nearby bank, from which others of the resistance could fetch these leaflets for distribution.

During this time, the Germans were misled into thinking that Niels Foged had escaped into Sweden across the Öresund by publishing this false fact in illegal newspapers. Mrs. Foged was able to visit him in the prison for 1 to 2 hours at intervals of 4 to 6 weeks. She brought to him some of his treasured books from home—among these was a Hustedt treatise on diatoms. So set the stage for Foged's remarkable psychological career, in prison and under a pseudonym for safety's sake. He set about to translate the Hustedt book into Danish at the same time copying all of the figures.

The prisoners were looked after by a tuberculosis specialist, Dr. Helms, who had been the chief of a large sanatorium on the south coast of Funen. He and his wife, also a physician, invited Foged to stay in their home if he had to leave the prison. In September when the Nazis took over command of the Danish prisons and imprisoned all the Danish police, this possibility became a necessity. Before leaving the prison, the police provided Foged with a false identity card. During the occupation, every citizen had to carry such an identity card with him. Mrs. Foged was also provided with her own false identity card by a person in the resistance movement. In prison, the superintendent of the police made the suggestion that Foged should allow his beard to grow. He was still recognizable to people who knew him, but the beard was meant to be a silent warning for others not to use his name. If he encountered, say, a former pupil, Foged would immediately

PHYCOLOGICAL TRAILBLAZER NO. 12: NIELS FOGED

shake hands with him, saying, "Hello, my name is Jørgen Larsen."

During Foged's first two weeks in the home of the Helms, he quickly devoured all the books in their library. He also was aware that the Helms had a microscope in their laboratory that was used to study the saliva of tuberculosis patients. But the microscope was used for only a few hours each day. So Foged was permitted to use it for the rest of the day to study diatoms. His pharmacist friend back in Odense prepared slides of diatoms for Foged, and Mrs. Foged carried the slides to the Nakkebølle Sanatorium. So it was at this time and in a rather inauspicious way that the career of this world renown diatomist began.

Foged's first publications appeared after the War and reported on the diatoms from the Funen water courses. His interest and knowledge of diatoms continued to mature, and he gradually expanded his investigations to diatom floristics across Europe and from around the world. The War years had transformed him from a high school lecturer into scientist with an international reputation. His having been shot in the head, though, had greatly reduced his hearing, and lecturing for more than two or three hours gave him severe headaches. He was allowed to have a reduced lecturing schedule, but he was still given his full salary.

Over the period from 1946 to 1987, more than 80 papers by Foged appeared. Despite his phycological interests being narrowed to diatoms, his focus on diatoms was extremely broad, ranging from fossil diatoms to extant species with wide distributions. He published on diatoms in human tissues and diatoms associated with death by drowning. His interests included airborne diatoms and diatoms in historic ship wrecks and from archeological sites. His studies showed a very wide geographical scope as well, not just Scandinavia. He traveled widely, making collections and publishing on diatoms from Spitsbergen, Greenland, Thailand, Lake Baikal in Siberia, Gambia, Senegal, Cuba, Alaska, Iceland, Viti Levu in the Fiji Islands, Sri Lanka, Australia, and New Zealand. Often these trips were made on "package tours," and he expressed his frustration when not enough time was allotted for his collecting. He also worked up collections from Norway, Ireland, Italy, Spain, Greece, Iceland, Ghana, Afghanistan, Egypt, Turkey, Jan Mayen Island in the Arctic Sea, and Renell Island in the Solomon Islands.

Lotte Foged was very much a part of Niels' scientific work. She did a great deal of translation, particularly early in his career, typed all his manuscripts, and kept his collections in order. She was the one who could efficiently

locate a desired collection from the stack of boxes in the basement of their home. According to Gene Stoermer, who visited the Fogeds, Lotte Foged was also a most gracious hostess, who set an overflowing table in the grand Danish tradition. Niels' hearing deficit rendered him somewhat difficult to communicate with, but Lotte was always there to smooth the way.

Niels Foged's scientific contributions were recognized by the University of Odense in 1976 when they awarded him a doctor honoris causa as did the University of Uppsala in 1980. His name is also commemorated by the diatom genus *Fogedia* (Witkowski, et al., 1997).

The following list is a selection of Foged's publications. A more complete list can be found in Håkansson (1988).

- Foged, N. 1947a. Diatoms in water-courses in Funen. I. Stavisk Å (The Stavisk Brook). *Dansk Bot. Arkiv* 12(5): 1-40.
- _____. 1947b. Diatoms in water-courses in Funen. II. Lindved Å (The Lindved Brook). *Dansk Bot. Arkiv* 12(6): 1-31.
- _____. 1947c. Diatoms in water-courses in Funen. III. Odense Å (The Odense Brook). *Dansk Bot. Arkiv* 12(6): 33-71.
- _____. 1948a. Diatoms in water-courses in Funen. IV. Vindinge Å (The Vindinge Brook). *Dansk Bot. Arkiv* 12(9): 1-30.
- _____. 1948b. Diatoms in water-courses in Funen. V. Braende Å (The Braende Brook). *Dansk Bot. Arkiv* 12(9): 31-55.
- _____. 1948c. Diatoms in water-courses in Funen. VI. Conclusions and general remarks. *Dansk Bot. Arkiv* 12(12): 1-110.
- _____. 1949. Diatoms in the salt bog of Langemose in East Funen. *Dansk Bot. Arkiv* 13(6): 1-31.
- _____. 1952a. Diatoms in trumpet-formed catching-nets of *Neureclipsis bimaculata* L. in Sweden. *Botaniska Notiser* 1952: 1577-184.
- _____. 1952b. The distribution of freshwater diatoms in Norway. A preliminary report. *Nytt Mag. f. Bot.* 1: 107-123.
- _____. 1953a. Diatoms from West Greenland. *Meddelelser om Grönl.* 147(10): 1-86.
- _____. 1953b. Diatoms transported by the southern cormorant, *Phalacrocorax carbo-sinensis*. *Bot. Tidsskr.* 50:63-74. [In Danish, with English summary.]
- _____. 1954a. En interglacial diatoméjordaflejring i Øst-Fyn. [An interglacial deposit of freshwater diatom earth in the eastern Funen.]. *Meddelelser Dansk*

PHYCOLOGICAL TRAILBLAZER NO. 12: NIELS FOGED

- Geologisk Forening 12: 541-547. [English summary.]
- _____. 1954b. Diatoms in one trumpet-formed catching net of a Trichoptera larva. *Flora og Fauna* 60. [In Danish, with an English summary.]
- _____. 1954c. On the diatom flora of some Funen lakes. *Folia Limnologica Scandinavica* No. 6. 75 pp., pls. I-III.
- _____. 1955. Diatoms from Peary Land, North Greenland collected by Kjeld Holmen. *Meddelelser om Grønland* 128(7): 1-90, pls. I-XIV.
- _____. 1957. The diatom flora of some Danish springs. Part I. Strandkaer, the Mols-Laboratory. *Nat. Jutland* 6/7: 1-84.
- _____. 1958. The diatoms in the basalt area and adjoining areas of archean rock in West Greenland. *Meddelelser om Grønland* 156(4): 1-146.
- _____. 1959. Diatoms in Afghanistan. *V.S. Biol. Skrifter* 11: 1-95, 13 pls.
- _____. 1960a. Notes on diatoms I. *Gomphocymbella ancylis* recent in Denmark and Eire. *Botanisk Tidsskrift* 55: 282-288.
- _____. 1960b. Notes on diatoms II. *Cymbellonitzschia diluviana* in Denmark, Northern Ireland, and Iceland. *Botanisk Tidsskrift* 55: 289-295.
- _____. 1962a. Notes on diatoms III. *Asterionella ralfsii*. *Botaniska Tidsskrift* 58: 68-71.
- _____. 1962b. On the diatom flora in interglacial Kieselguhr at Hollerup in East Jutland. *Geological Survey of Denmark, II. Series, No. 84*: 1-51.
- _____. 1964. Freshwater diatoms from Spitzbergen. *Tromsø Museum Skrifter* 11: 1-159, 22pls.
- _____. 1966. Freshwater diatoms from Ghana. *Biol. Medd. Biol. Skr.* 15: 1-169, 25 pls.
- _____. 1968a. The freshwater diatom flora of the Varanger Peninsula, North Norway. *Acta Borealia A. Scientia* 25: 1-64.
- _____. 1968b. Some new diatoms from Alaska. *Nova Hedwigia* 16: 1-20, 3 pls.
- _____. 1969. Diatoms in a postglacial core from the bottom of Lake Grane Langsø, Denmark. *Meddelelser fra Dansk Geologiske Forening* 19: 237-256.
- _____. 1971a. Freshwater diatoms in Thailand. *Nova Hedwigia* 22: 267-270, 13 pls.
- _____. 1971b. Diatoms found in a bottom sediment sample from a small deep lake on the Northern Slope Alaska. *Nova Hedwigia* 21: 923-1035, 23 pls.
- _____. 1972. The diatoms in four postglacial deposits in Greenland. *Meddelelser om Grønland* 194: 1-66, 16 pls.
- _____. 1973. Diatoms from Southwest Greenland. *Meddelelser om Grønland* 194: 11-184, 29 pls.
- _____. 1974. Freshwater diatoms in Iceland. *Bibliotheca Phycologica* 15: 1-118 pp., 36 pls.
- _____. 1975. Some littoral diatoms from the coast of Tanzania. *Bibliotheca Phycologica* 16: 1-127.
- _____. 1978. Diatoms in Eastern Australia. *Bibliotheca Phycologica* 41: 1-146, 48 pls.
- _____. 1980. Diatoms in Öland, Sweden. *Bibliotheca Phycologica* 49: 1-98, 48 pls.
- _____. 1981. Diatoms in Alaska. *Bibliotheca Phycologica* 53: 1-317, 1 map, 64 pls.
- _____. 1982a. Diatoms in human tissues. Greenland ab. 1460 A.D.-Funen 1981-82 A.D. *Nova Hedw.* 36: 345-379.
- _____. 1982b. Diatoms in Asklepion, Pergamon, Turkey. *Nova Hedw.* 36: 587-620.
- _____. 1984. Freshwater and littoral diatoms from Cuba. *Bibliotheca Diatomologica* 5: 1-242, 1 map, 60 pls.
- _____. 1985. Diatoms in Kos and Kalymnos, two Greek islands in the Aegean. *Bibliotheca Diatomologica* 10b: 1-105.
- _____. 1986a. Diatoms in Gambia. *Bibliotheca Diatomologica* 12a: 1-153, including 25 pls.
- _____. 1986b. Diatoms in the Volo Bay, Greece. *Bibliotheca Diatomologica* 12b: 1-67, including 13 pls.
- _____. 1987. Diatoms from Viti Levu, Fiji Islands. *Bibliotheca Diatomologica* 14: 1-195.
- _____. 1993. Some diatoms from Siberia especially from Lake Baikal. *Diatom Research* 8: 231-279.
- Håkansson, H. 1988. Obituary. Niels Aage Johannes Foged 1906-1988. *Diatom Research* 3: 169-174.
- Witkowski, A., D. Metzeltin, H. Lange-Bertalot, & G. Bafana. 1997 *Fogedia* gen. nov. (Bacillariophyceae) a new naviculoid genus from the marine littoral. *Nova Hedwigia* 65: 79-98.

This essay would not have been possible without the generous sharing of information by Foged's widow, Mrs. Anna Charlotte Foged of Odense. I am indebted to her for her willingness to write down her personal account of the events related in this account. I am also grateful to Hannelore Håkansson of the University of Lund, a long-time friend of the Fogeds, for her contributions to this article. ■

Next Issue: Phycological Trailblazer No. 13: M.A. Howe.

BOOK REVIEWS

Seaweeds of the South African West Coast

by Stegenga, Bolton, and Anderson

Reviewed by David Garbary
Friday Harbor Laboratories

Given the number of important books and monographs in recent years, we seem to be in a golden age for systematic phycology. Among publications of special note are the floras of the British Isles and southern Australia that are well on their way to completion and the distribution of the exiccata from Japan by Enomoto, Yoshida, Masuda and Kawai (1996, *The Marine Benthic Algae of the Seto Inland Sea, Japan*, Volumes 1-6. Kobe University).

Now we have this single volume flora by Stegenga, Bolton and Anderson for the west coast of South Africa. As an achievement, it ranks with that of Abbott and Hollenberg's (1976) *Marine Algae of California*. The primary objective of this work was to provide an overall account of the flora that would allow for ready identification of the species. In addition, it provides a fascinating window on an important algal flora with many taxonomically interesting and beautiful marine algae. This book will set the scene for seaweed systematics in southern Africa, and it represents a major milestone for African and Southern Hemisphere phycology.

The book begins with an overall introduction (45 pp.) that gives the systematic, biogeographic and ecological background for the region. This discussion includes extensive reference to 16 color plates (62 photographs). Unfortunately, the text here refers to plate numbers which are not given with the photographs (they are simply numbered), and it requires considerable page flipping to find the appropriate photograph. This is followed by the systematic section where the Chlorophyta (22 genera and 58 species), Phaeophyta (41 genera and 52 species) and Rhodophyta (133 genera and 276 species) are covered. Because Yvonne Chamberlain and Derek Keats are currently dealing with nongeniculate Corallinales, they were omitted from this book.

At the beginning of each division, there is a key to genera and families and is followed by additional keys within genera or families as required. The

keys are meant to be used and should be straightforward even for the novice. A glossary as well as an index to taxonomic names are included.

With its approximately 400 species, this is a medium-sized flora in terms of species richness. For Northern Hemisphere phycologists, this work is a treat because many of the taxa at generic level and a huge number at specific level (over 50 percent) are Southern Hemisphere, if not South African, endemics. There are 15 new species including members of the genera *Bryopsis*, *Porhyra*, *Gelidium*, *Rhodoglossum*, *Botryocladia*, *Lomentaria*, *Myriogramme*, *Laurencia*, *Polysiphonia* and a new genus of Ceramiaceae, *Seagrieffia*.

In addition, there exist at least three new combinations in *Colaconema* and *Ahnfeltiopsis*. The new species of *Membranella*, *M. africana*, which results in this bangiophyte genus being a disjunct between South Africa and western North America, is of considerable taxonomic and biogeographic interest. The taxon *Bangiophyceae* indet." provides a new complex of morphological and chloroplast variation within bangiophytes. It is unfortunate that the authors did not feel they could characterize this entity sufficiently by gracing it with a name.

The illustrations are the high point of this flora. There is an initial section with 62 color photographs and then 252 half- to full-page plates of line drawings. The latter show habits, anatomical details, and even development and chloroplast morphology. Almost all taxa are illustrated. The drawings have been beautifully executed by Herr Stegenga, and these make the plants come alive. Unfortunately, the printing of some plates is not dark enough, and this distracts from the image quality.

The authors have given us an excellent contribution with regard to both floristic treatment and taxonomy of many individual groups of algae. This work will be an important resource for any subsequent floristic or biogeographic study in the southern hemisphere (especially accounts of *acrochaetiaceae* with 23 species and *Ceramiaceae* with 64 species). The brevity of descriptions makes it less useful for serious systematic comparisons. This problem is particularly acute in the accounts of the new taxa. These are presented with very little discussion as to the rationale for de-

BOOK REVIEWS

scribing the new species or comparisons with taxa that are possibly related.

There are many unsolved problems here, and at least 30 taxa (about 8 percent of the total flora) have been included with differing amounts of uncertainty ranging from "cf." (e.g., *Rhodophysema cf. feldmannii*) to "sp." or "sp. indet.," (e.g., *Acrochaete* sp. or *Antithamnion* sp. indet), to entities which could not be assigned to genus (e.g., *Rhodymeniaceae* gen. indet.), or even to order (e.g., *Bangiophyceae* indet.). Although the authors might be criticized for leaving some of these issues unresolved, I concur with their decision to publish now.

There are a few frustrations with the species accounts. The authors do not explicitly tell us the origin of the type material for nonendemic taxa. Generic descriptions are only present where multiple infrageneric taxa are characterized in the flora. Some aspects of the classification are dated, e.g. only one class of green algae is recognized whereas a number of current red algal orders are not, e.g. *Acrochaetales*, *Gelidiales*, *Bonnemaisoniales*, *Plocamiales*.

The book contains some factual errors: Sexual reproduction is known in *Blidingia*. *Bangiophytes*, in addition to conchocelis stages of *Bangiaceae*, have pit connections. *Corallinales* does have more than one family. However, these are minor slips in an otherwise authoritative contribution.

Overall, the production qualities of this volume are fine. The information is well laid out, and there are a few typographical errors. I would like to have seen a stiffer cover, and people using it at the lab bench will regret the absence of a more water-repellent cover. This book is well worth the \$55 cover price. Buy it if you are at all interested in this kind of material.

The Seaweeds of the South African West Coast, by H. Stegenga, J.J. Bolton, R.J. Anderson. 1997. Contribution from the Bolus Herbarium (Cape Town, South Africa). Number 18, 655 pp.

Order from Bolus Herbarium, University of Cape Town, South Africa. U.S. \$55., including postage—make checks payable to University of Cape Town.) ■

Marine Botany, 2d edition

reviewed by David J. Garbary
St. Francis Xavier University

The publication of any new algal textbook should be of major interest to phycologists, and this book by Dawes is no exception. The basic approach in this thoroughly revised edition is very different from the classically oriented texts of Lee, Bold and Wynne, van den Hoek *et al.* with their fundamentally taxonomic organization. Here we have a text that deals with the ecology, physiology, systematics and natural history of all marine plants. The inclusion of marine flowering plants and the discussion of the primary marine plant community types is also a major departure from the standard algal text. The approach can be captured by listing the chapter titles: Marine plants and their habitats, Abiotic factors, Biotic factors, Physiological ecology, Human affairs and marine plants, Macroalgae, Microalgae and their communities, Macroalgal communities, Salt marshes, Mangals, Seagrass communities, Marine plants of coral reefs. In addition, there are two appendices dealing with a) Selected methods for study of marine plants, and b) Uses of algae.

This volume represents a major overhaul of the first edition of this text published in 1981. The most obvious change in this edition has been a reduction of what was the weakest part of the previous edition (i.e., the taxonomic sections) into two chapters: one each for micro- and macroalgae. In the table of contents, however, the microalgal chapter (Chapter 7), unfortunately uses "macroalgae." To show the extent to which classical phycology has been simplified, there is only a single life history diagram for red algae (for *Eucheuma*) in the macroalgae section (although the life history of *Porphyra* is given in Appendix B).

It is difficult to evaluate all parts of this text in terms of accuracy and consistency of material. I will concentrate on the discussion of the red algae (pp. 144-167) as an exemplar of the quality of information content in the book. Here I found numerous oversimplifications, errors, inconsistencies and carryovers from dated sources that undermine the usefulness of this book. On p. 144, there are 20 genera of freshwater red algae, whereas on p. 150, there are only six. The text mentions an early fossil record for calcified red algal forms from the Cambrian, but completely omits the Proterozoic record of a *Bangia*-like fossil that is twice as old (Butterfield *et al.*

BOOK REVIEWS

1990. *Science* 250:104-107). In the discussion of the red algal life history, there is the unfortunate implication that the male and female gametophytes are isomorphic or heteromorphic when it is the gametophytic and tetrasporophytic generations that are being discussed. The suggestion that red algae have plasmodesmata (p. 147) is a major departure from current interpretations.]

Two interesting typographical errors here (p. 149) include “carpogonium” and “gonimonoblast.” Dawes restricts sexual reproduction in bangiophyte genera to three taxa (*Bangia*, *Porphyra* and *Rhodochaete*) and is unaware of sex in at least three other marine genera: *Erythrotrichia*, *Porphyrostromium* and *Smithora*. Several older or inappropriate generic names are used: *Gonio-trichum* instead of *Stylonema* and *Iridaea* instead of *Mazzaella*. Individually, these are relatively minor slips; however, collectively they set a pattern for the text.

Some other major oversimplifications or omissions include: a) the statement that all Laminariales are oogamous (see Motomura and Sakai 1988. *J. Phycol.* 24: 282-285 on flagellated eggs in *Laminaria*), b) the implication that pyrenoids are amylase-containing protein bodies when their primary protein is RuBisCO, and c) the use of the Division Phaeophyta without mention of the obvious phylogenetic relationships with other chlorophyll *c*-containing algae (i.e., Chromista).

Although this book was not designed as a reference book for algal taxonomy, it is important that reasonable classifications be used. The classification of green algae (p. 121) with the three classes Prasinophyceae, Chlorophyceae and Charophyceae (the latter referring only to Charales) is extremely dated, and the dismissal of Syringodermatales and Ascoseirales as “questionable” seems incongruous with the acceptance of Ralfsiales and Scytosiphonales. In the red algae, there is an almost arbitrary recognition of orders, and on p. 152, the author states, “The classification used in this text does not recognize five other orders (Achrochaetiales [sic], Batachospermales [sic], Hildenbrandiales, Gracilariales, Ahnfeltiales). . .” I can understand the author not wanting to discuss all of these groups, but the wording implies that there are taxonomic reasons for this.

The strength of this book lies in the description of the major marine plant communities. This is the only algal textbook I know with useful descriptions of salt marshes, mangroves, seagrass communities and coral reefs, in addition to the standard accounts of rocky intertidal, intertidal and subtidal communities and phytoplankton communities.

It is useful to have the algae put into a context of the ‘nonalgae’ in these habitats. There are ca. 1000 references. Most of these are quite modern, with almost 50 percent published since 1986 and over 7 percent published since 1996.

Appendix B, “Uses of Algae” is a useful addition. However, it comes across as an afterthought that should have been expanded and included as a regular chapter. The ecological perspective of this text is refreshing, and students will appreciate the discussions of marine habitats and the biology of their constituent species. There is considerable descriptive information here that will be of general use to teachers (including some useful figures of habitats and organisms). Experimental ecologists will find this book frustrating for its lack of more mechanistic and evolutionary approaches to ecological issues. Indeed, for virtually all topics, the presentation reads like a listing of facts and definitions rather than a peeling away of layers of material as one grapples for deeper explanations.

Professor Dawes has been badly let down by his publisher. Typographical, spelling or grammatical errors are pervasive with almost one per page. Many of the spelling errors are of taxonomic names (e.g., *Amphoria*, *Gelidella*, *Agardiella*, *Cystoseria*, Bangiophycidae, Prophyridiales, Pyrmnesiales, *Scripus*, *Ecotocarpus*), of important terminology (e.g., concepticals, phageotrophic, amphisima, cartenoids, unicellar, coccolithophorid, photoheterotrophy) and names of biologists being cited (e.g., Angnostidis, Hummand, Whetland). Many of these spellings seem likely enough and will go unnoticed by undergraduates. Based on this alone, I do not recommend that this book be used in teaching undergraduates. We have enough problems with student literacy without using a text where this is so compromised.

Although I like the cover and the layout, which makes this easy to read, the overall production qualities of the volume are sloppy and lack attention to detail. For example, over 20 of the photomicrographs lack scale bars or reference to size in spite of the fact that many of them have scale bars cited in the figure legends. On one page of the references where I checked nine citations against originals, there were errors in four. This is apart from the unusual abbreviation “Monograf.” for ‘Monographis’ (used throughout as well as “Oceanograf” for ‘Oceanography’) and the tendency to omit diacritical marks (e.g., Warming, Komárek, Børge-sen, Curaçao).

BOOK REVIEWS

Seaweeds at the Smithsonian— From the Trash to the Web

by Gene Rosenberg

The early years of the Smithsonian Institution witnessed sharp debates about how best to fulfill the terms of James Smithson's bequest "to found at Washington . . . an establishment for the increase and diffusion of knowledge among men." Joseph Henry, a pioneer of American physics and the Smithsonian's first Secretary, was called upon to defend basic research at the Smithsonian, including research on marine algae. This curious story was recounted in a recent article by Marc Rothenberg, Editor of the *Joseph Henry Papers*.

In 1853, five years before his celebrated series of debates with Abraham Lincoln, Illinois Senator Stephen A. Douglas took the Smithsonian to task for its preoccupation with research "of no practical bear," such as studies of "sea weeds and such trash." In response, Henry wrote: "It is in the study of objects considered trivial and unworthy of notice by the casual observer that genius finds the most important and interesting phenomena." I am certain that the members of the Phycological Society of America would heartily agree with the sentiment behind Henry's rejoinder!

In 1998, the Smithsonian's Department of Botany premiered a new World Wide Web site devoted to the Algae. URL:

The Smithsonian Department of Botany home page is []. The new Web site represents a significant advance in the Department's efforts to make information from the Smithsonian's plant collections and databases available to users around the world.

The Smithsonian holds one of the largest collections of algae in the world, including over 183,000 pressed specimens, and 61,600 specimens on microscope slides, in boxes, or preserved in liquid. The collection includes algae from marine, estuarine, freshwater, terrestrial (including caves), and airborne habitats, with principal holdings of green, brown, and red marine macroalgae, diatoms, and cyanobacteria. The collection has strong geographic representation from the Gulf of California, Pacific Mexico, southern and cen-

tral California and the Channel Islands, the Galapagos Islands, Aldabra Atoll, and the Caribbean (especially Florida, Belize, the Bahamas, and Panama).

The algae Web site presently allows searches and data retrieval for brown algae (Phacophyta) in the Type Collection. Efforts are under way to expand direct access to all of the algal type holdings. Data for the main collection (including the complete Type Database) can be obtained from in-house staff. Profiles of research interests and regularly updated lists of publications (including the texts of many abstracts) by the curators are included.

Basic information is also provided on the different algal groups, their economics uses, collecting and preserving algae, reference information for published marine floras, and hypertext links to other algae sites on the World Wide Web. The new Web site was developed by Robert Sims, assisted by other botany staff. The site is continually being improved. Comments and suggestions are welcome and may be sent to Sims [] or to James Norris []. Senator Douglas would not have been amused. ■

Now Available: 1st Publication of the Northeast Algal Society (NEAS)

NEAS Keys to the Benthic Marine Algae of the Northeastern Coast of North America from Long Island Sound to the Strait of Belle Isle. For more information on ordering and the Table of content can be found at .

■

NEW BOOK

Spirulina platensis (Arthrospira): Physiology, Cell-biology and Biotechnology

Description by Avigad Vonshak, Editor

This important title contains detailed descriptions of both the biology and the biotechnological uses of *Spirulina platensis*.

Spirulina platensis, a blue-green microalga (cyanobacteria), has been recognized and used worldwide as a traditional source of protein in the food industry. Recently, the uses and mass cultivation of this valuable alga have risen substantially due to an increased understanding of its biological systems.

Part one of this comprehensive book focuses on the physiology, morphology, photosynthesis and genetics of laboratory cultures. Part two discusses the practical uses in biotechnology industries, such as cultivation in closed photobioreactors; mass cultures in open ponds outdoors; uses in wastewater treatment and use of biomass, offering critiques of the problems encountered and discussions of the future commercial prospects for large scale production.

Written by leading experts in the field, it will be an invaluable reference for researchers and industrialists working with this microalga.

Contents

- ◆ Morphology, Ultrastructure and Taxonomy of *Arthrospira (Spirulina) maxima* and *Arthrospira (Spirulina) platensis* - Luisa Tomaselli
- ◆ The Photosynthetic Apparatus of *Spirulina*: Electron Transport and Energy Transfer - Prasanna Mohanty, Madhulika Srivastava and Kolli Bala Krishna
- ◆ *Spirulina*: Growth, Physiology and Biochemistry - Avigad Vonshak
- ◆ Genetics of *Spirulina* - Ajay K Vachani and Avigad Vonshak
- ◆ Outdoor Mass Production of *Spirulina*: The Basic Concept - Avigad Vonshak

- ◆ Tubular Bioreactors - Giuseppe Torzillo
- ◆ Cultivation of *Spirulina (Arthrospira) platensis* in Flat Plate Reactors - Mario R. Tedici and Graziella Chini Zittelli
- ◆ Mass Culture of *Spirulina* Outdoors - The Earthrise Farms Experience - Amha Belay
- ◆ Mass Cultivation and Wastewater Treatment Using *Spirulina* - Gilles Laliberte, Eugenia J Olguin and Joel el la Noue
- ◆ The Chemicals of *Spirulina* - Zvi Cohen
- ◆ Use of *Spirulina* Biomass - Avigad Vonshak

Spirulina Platensis (Arthrospira) was published May 1997

ISBN 0 7484 0674 3 Hbk

234 pp £49.95

To order ***Spirulina platensis (Arthrospira): Physiology, Cell-biology and Biotechnology***, call or write:

Taylor & Francis

Rankine Road

Basingstoke, Hampshire RG24 8PR

Tel: +44 (0) 1256 81300

Fax: +44 (0) 1256 479438

e-mail:

For more information about the book, to contact the editor/contributors, or to receive a catalogue of titles call Huw Neill at:

huw.neill@tandf.co.uk ■

HAPPENINGS

36th Northeast Algal Symposium

The 36th Northeast Algal Symposium (NEAS) was held on April 26-27, 1997, at the Marine Biological in Woods Hole, Maryland. Of the 144 participants, 51 were students.

The Executive Committee of PSA not only attended the Symposium but also held their planning meeting.

The NEAS scientific program included 23 contributed oral presentations and 26 posters. Twenty-seven students completed for the Robert T. Wilce awards given annually for the best student presentations. The following awards were made:

Oral category—

James Harper, Author
Mr. Gary W. Saunders, Co-author
The University of New Brunswick

Phylogenetic relationships of representative Acrochaetaceae (Achrochaetiales, Rhodophyta) inferred from nuclear small-subunit ribosomal RNA sequence data.

Poster category—

Ms. Rui Li, Author
Ms. Susan H. Brawley, Co-author
Mr. Timothy J. Close, Co-author
University of Maine

Dehydrin-like proteins in furoid algae.

The **Frank Shipley Collins Award** for meritorious service to NEAS and to phycology was presented to Barry Colt, University of Massachusetts, Dartmouth.

The varied and interesting scientific sessions on Saturday were followed by the Distinguished Lecture given by Robert Sheath of The University of Guelph. His talk, entitled, "Freshwater red algae: from the molecule to the globe," was well received. The annual banquet and award presentations followed Sheath's presentation.

Sunday's program featured a minisymposium presented by Barbara MacGregor and Lynda Goff, entitled "Why should we care about molecular biology?" Aimlee Laderman organized the symposium, "Cedar Wetlands and Woodlands Walk."

Brian Duval and Eduardo Morales took awards in the algal photograph competition.

Other participants included commercial exhibi-

tors featuring books, laboratory teaching supplies, microscopes, image analysis systems, and industrial and food applications of algae.

Thank you to everyone who helped to make the 36th Symposium such a great success. Co-conveners for the 1998 meeting were John Wehr (Biological Field Station, Fordham University) and Glen Thursby (US EPA, Narragansett, Rhode Island).

Tracy Villareal (University of Massachusetts Environmental Science Program) and Joby Chesnick (Lafayette College) will co-convene the 1999 meeting in Plymouth, Mass. during the weekend of April 4-5, 1999.

Contact the Membership Director Bill Johansen, (508) 793-7190 or about joining NEAS and about next year's meeting. ■



Second Asian Pacific Phycological Forum

June 22-25, 1999

The Chinese University of Hong Kong
Shatin, N.T. Hong Kong SAR, China

The Second Asian Pacific Phycological Forum will be held at The Chinese University of Hong Kong, from June 22 to 25, 1999 under the sponsorship of the Biology Department of the Chinese University of Hong Kong, and the Asian Pacific Phycological Association. The theme of the Forum will be Asia-Pacific Phycology in the 21st Century, Prospects and Challenges.

Asia-Pacific region produces and consumes the largest amount of algae and algal products in the world. It is also the region experiencing the fastest economic growth today. Traditionally, interests on phycological research in the Asia-Pacific region have mainly been on the potential of algae as a resource. While these interests have continued to expand and more uses or potential uses of algae as food, medicine, and sources of bioactive compounds have been developed or discovered, the use of algae as a tool in biotechnology, as well as in experimental biology to explore and understand biological phenomena has also been recognized. The ecology of algae and their role in the environment is also the focus of much attention.

HAPPENINGS

(Second Forum—cont'd)

This Forum will bring together phycologists from the Asia-Pacific region as well as from other parts of the world who have keen interests in the development of all aspects of phycology in this region. This Forum hopes to discuss challenges to be faced by phycologists in the coming years and to help chart the direction of phycological research in the coming century. Young scientists and students are especially encouraged to participate in this Forum for they, learning and gaining from the wisdom and experiences of past and present phycologists, shall be the hope of the future.

To receive more information about the Second Asian Pacific Phycological Forum:

Dr. Put O. Ang, Jr., Dept. of Biology
The Chinese University of Hong Kong
Shatin, NT, Hong Kong
Fax nos. 852-2603-5646; 2603-5745
Email: put-ang@cuhk.edu.hk ■



19th Southeastern Phycological Colloquy

Submitted by Sandra Davis

The 19th Southeastern Phycological Colloquy was held Oct. 24-26, 1997, at the Lions club Convention Center in Cedar Key, Florida, under the auspices of the University of Florida.

The 36 participants included 19 professionals and 17 students, representing states from Virginia to Louisiana and countries ranging from Russia to Columbia and Mexico.

The program included 8 posters and 14 oral presentations dealing with algae in the sea, estuaries, rivers, forest, and industry. A collecting trip to the University of Florida's Marine Laboratory on Seahorse Key closed the meetings. Conveners were Sandra Davis and Joseph S. Davis, both of the University of Florida.

The 20th southeastern Phycological Colloquy will be hosted by Dennis Hanisak of Harbor Branch Oceanographic Institute. ■



Advanced Biology Training Course in Antarctica January 1999

"Integrative Biology and Adaptation of Antarctic Marine Organisms" is a National Science Foundation-sponsored course and will be held in Antarctica at the United States' McMurdo Station for one month, Starting January 1999. Course emphasis will be on integrative biology with laboratory-based projects focused on adaptations in an extreme polar environment.

Modern laboratory facilities for experimental work, sophisticated operational support for field collection, and course location make this course unique. A diverse faculty will offer up to 24 students the opportunity to work on a wide range of Antarctic organisms (bacteria, algae, invertebrates, and fish) as well as different levels of analysis (molecular biology to organismal physiological ecology).

Teaching modules in specific areas will be coordinated by:

- Dr. Lynda Goff, University of California, Santa Cruz
- Dr. Deneb Karentz, University of San Francisco
- Dr. Donal Manahan, University of So. California
- Dr. Robert Maxson, University of So. California
- Dr. George Somero, Stanford University
- Dr. Gretchen Hofmann, University of New Mexico

Specific themes will include:

Biodiversity and molecular phylogeny
Energy metabolism
Macromolecular synthesis
Membrane physiology
Temperature adaptation
UV-photobiology

McMurdo Biology Course
Antarctic Support Associates
61 Inverness Drive East, Suite 300
Englewood CO 80112, USA
Tel: 303-790-8606
Fax: 303-790-9103
<http://www.asa.org> ■

MISCELLANEOUS

I Had a Dream

submitted by Ralph A. Lewin

I had a dream.

I was in a wood of metaphyletic trees,
some of them rooted,
other uprooted.

Their branches showed sister groups,
brother groups, in-groups and out-groups,
based on sequences of nucleo-tides,
ebb-tides and tsunamis
(data from *C. communis*, *M. elegans*, *D. vulgaris*,
S. pendula, *T. erecta*, *L. ciliata*,
G. elegans, ONZ.205837-cat.3g, *P. vulgaris*,
E. inversa, *Fiat lux* and *Pax vobiscum**).

In the green glades were green clades,
including Angiophycophyta,
Pteridophycophyta and Bryophycophyta
(all originating from the green Phycophycophyta).

There were Eustigmatophytes, Aneustigmatophytes, and
Myopothytes; Thanatophytes, Coprophytes, Kleptophytes,
Retrophytes and Prizephytes
(including the Necrozoo and Necrophilia).

There were also the Callophyta and the Ugliophyta
(including *Eucharista* and *Pleutista*).

This dream made me feel like both a
classicist and a molecular biologist.
(Actually, I'm neither, but who could tell?)

*Kugelschreiber, K. (1998). *Abst. int. Biol.* 3, 81-453.
Chevalier-Schmitz, F.X (1991). *Passim*, 151-155.
Paterfilius, F-2. (1707). *Papal Annunc.* (Rome). *Expurg.*
Inedit. CXLXIII. ■

Note from the Newsletter Editor

Where's my newsletter!?

If you have been wondering where your hard copy newsletter is after filling out your obnoxious pink card, it is finally here. Most of the summer was spent creating a database from these cards in conjunction with requests made directly to Allen Press (they sent me photocopies of all 1,200 subscription forms). So, in my copious free time, I, with the help of various departmental secretaries and graduate students (mostly Sarah Dakel) attempted to decipher your wonderfully clear handwriting.

All cynicism temporarily aside (whoops!), we have had over 550 requests for the newsletter, about equally divided between USA and international mailings. Also, we have decided to change the mailings to Fall (sorry I'm late!) And mid winter (Jan-Feb). If you would like to continue to receive this newsletter-do nothing! You will continue to get it. If you would like to get the hard copy newsletter, please mail me a postcard with your name and complete address printed in your best handwriting (or better yet, typed) or check the little box on your PSA Journal subscription form. If you would rather read all your newsletters on the web-contact me and I will remove your name from the hard copy list.

Now that that is all sorted out the Newsletter should be reaching you in a more timely fashion, and I look forward to your input.

Thanks to all those who helped, with special thanks to Christina Foley—Geophysical Engineering Dept., Montana Tech—for her help with desktop publishing and editing.

—Grant G. Mitman
Phycological Newsletter Editor

P.S. I am buying all four of my graduate students copies of the Journal for Christmas/Chanukah/ Holiday presents....just a suggestion. Support your society and get young phycologists interested. http://condor.depaul.edu/~rmccourt/PSA/PSA_home.html

Join the PSA list! Send a message to with the message subscribe PSA firstname lastname. ■



IF YOUR ADDRESS HAS CHANGED

Any address changes and applications for membership should be filed with the Phycological Society of America, Membership Office, P.O. Box 1897, Lawrence, KS 55044-8897. Phone: 913-843-1235 fax: 913-843-1274

NEWS OF COLLEAGUES

In Memoriam—Chin-Chih Jao

By Christina Foley

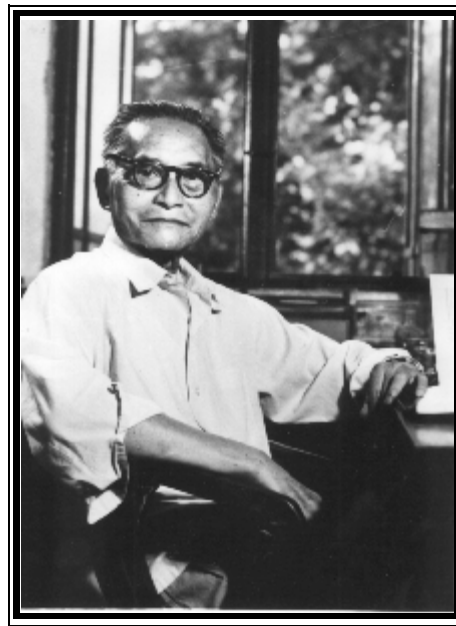
Chin-Chih Jao—1900-1998. China's respectable Professor Chin-Chih Jao passed away on the morning of March 28, 1998, in a Wuhan hospital. Jao, who was featured in the June 1998 Phycological Newsletter, celebrated his 98th birthday February 23 with family and friends and was delighted to share the Phycological article.

Jao, who spent his life studying both fresh- and saltwater algae, epitomized the all-round 20th Century phycologist. His studies ranged from the rice fields of Szechwan Province of southwestern China to Ann Arbor, Michigan, to Cape Cod, and back to China.

This most revered phycologist and artist is acknowledged for his many publications and is credited for pioneering China's phycology. He supervised the work and publications on all known planktonic algae occurring in China's inland waters in the 1950s and 1960s. His publications span the time between 1934 through 1981.

Jao worked in the Institute of Botany, Academia Sinica, in Shanghai until the liberation of China in 1949 and then transferred to the Institute of Hydrobiology in Wuchang as a "research fellow of the first rank" where he retained affiliation until the time of his death.

Thanks to Lirong Song who notified us of Professor Jao's passing. "Both he and his family felt de-



On his 80th birthday (1980).

lighted to see your [Phycological Newsletter] article," wrote Dr. Song. "We should also take this opportunity to express our thanks for your excellent introduction to our respectable Professor Jao. May the wishes of [Jao] flourish forever." ■



Dedication to Richard Starr—1924-1998

by R. Malcolm Brown, Jr.

(copied with permission from the May/June 1998 issue of Alcalde)

I've known Richard Starr nearly forty years. In 1959, Dr. Harold Bold told me that I would meet him when I traveled to Woods Hole to enroll in the Marine Biology Course. I was lucky. As an undergraduate student, Dr. Bold asked, "Malcolm, would you like to go to Woods Hole this summer?" I responded, "What's Woods Hole?" My early naiveté was soon overcome by simple awe! That summer was a glorious period, with field trips

to Sandwich Beach, evenings at the Captain Cook (playing the old piano, naturally!), and intense study in a small, square, dilapidated building. It was what was inside that building which made the difference! It is hard to imagine the wonderment and inspiration of a young undergraduate student having a unique opportunity to meet "giants in the field of phycology" such as Richard Starr as well as Ralph Lewin who was a visiting scholar that summer. These people made ALGAE COME ALIVE! We WORKED---Played---and we loved it! William Randolph Taylor, Walter Herndon, and John Kingsbury

NEWS OF COLLEAGUES

also taught this course. Bob Goldstein, Ben Bouck, and Larry Hoffman were the instructors that year. What a year! It made an indelible impression on me and was the turning point in my life's decision to major in Botany.

My second memorable meeting with Richard was when he attended my doctoral final oral exam in 1964. Only five years earlier, I could never have imagined that I would have been able to complete a doctorate! Certainly, Richard and I and some forty other students owe our debt of gratitude to Harold C. Bold. For this I came across Richard's path again in the 1960's when I visited Indiana University for a job interview. Little did I know that I would someday see Richard on my home turf where I had studied as an undergraduate and graduate student and had taught as an assistant professor. In 1982, when I rejoined the UT Botany Department, Richard kindly let me borrow space which he controlled. Richard helped me choose cabinets, paint colors, and materi-

als to make my temporary lab home a pleasant place to live. That was the beginning of a long friendship. Over the years, I could always depend on any algal culture for my classes.

I remember many a day which Richard would feed the squirrels outside of the Biological Laboratories and also feed and care for the fish in the pond. He really loved animals. He had a French poodle.

Richard cared about our Botany staff. One member commented to me that he would invited all of the staff to dinner at least once each year. We all know about Richard's contributions to the *Phycological World*, but hopefully the little vignette and the music I have composed will convey that here was a man of high moral character and great dedication to his field and the people who worked with him. Richard, you will be sorely missed! Bon Voyage. ■

Comments [about Richard Starr] by Harold C. Bold , June 15, 1977

(kindly supplied by Dr. Bruce C. Parker of the Phycological Archives)

I first knew Richard C. Starr in 1948 when he transferred from George Peabody College in Nashville, Tennessee, to the Graduate Program of the Department of Biology at Vanderbilt University. He was then a slender, blond, crew-cut young man. Our relationship began as that of Major Professor and graduate student, but was quickly modified as, in my opinion, all such relationships should be, to one based strongly on friendship and mutual respect. I am happy to report that this has continued for almost 30 years, and I do not anticipate that it will change.

It was about that time (1948) that the late Gilbert Morgan Smith advised several phycologists, me included, to start to work to try to prove or disprove some of Moewus' work, and he urged me to start isolating *Chlamydomonas* from soil, because Moewus' cultures were not available. As I made such isolations of *Chlamydomonas*, I could not refrain from picking up and preserving in culture colonies of other unicellular green algae, and at that time



Richard Starr—(permission to copy from the May/June 1998 issue of *Alcalde*)—1924-1998.

NEWS OF COLLEAGUES

I, myself, made some cursory efforts to identify them. I soon realized that this was fraught with insurmountable difficulties, because the descriptions of the organisms in the literature were based exclusively on collections from the field, and I began to realize, even then, that the only sound basis for the taxonomy of most microalgae must depend upon organisms in unialgal or axenic culture. Providentially, at that time, when Richard Starr consulted me about a research project in the algae, I said: "For a starter, why don't you try to identify these (approximately 150) isolates of green algae from soil." He set to work at once and persevered: A weaker spirit would have been discouraged very quickly, but Richard Starr persevered.

At that time, I was quite inexperienced, and I sought through correspondence advisory assistance from Professors Pringsheim and Fritsch, both of whom were then still at the Botany School at Cambridge University England, as a result of World War II. At the same time, Richard was so fortunate as to have been awarded one of the early Fulbright Fellowships, and so he was able to spend a year at Cambridge University and have first-hand direction from these two eminent phycologists. All this resulted in his first major scientific contribution, the 1955 paper entitled "A Comparative Study of Chlorococcum Meneghini and other Spherical Zoospore-producing Genera of the Chlorococcales", which in my opinion, is a classic in the field. The taxonomic criteria he used to differentiate unicellular organisms, have proved reliable until the present.

One of the greatest joys and satisfaction for a Major or Supervising Professor is to have students who continue in research, especially when they deviate from their Professor's field. In this connection, Richard Starr has been preeminent. Although his basic work on soil algae will endure, he has also made incisive and significant contributions in two other fields, namely, the sexual reproduction and genetics of desmids, as controlled by laboratory techniques, and in elucidating the biology of the colonial Volvocales, especially Volvox, and the system of sexual

inducers in the latter. Undoubtedly, the fourth major and altruistic contribution of Richard Starr has been his vision in establishing in 1953 the great Culture Collection of Algae at Indiana University, recently transferred to The University of Texas at Austin, which has so greatly stimulated phycological research and teaching in this country and abroad.

Richard is deservedly well known in Biology, in general, and in Phycology, both nationally and internationally, and the recognition of his stature came relatively early by his election to Membership in the National Academy of Sciences in 1976. As I review his career, in which it has been my privilege to participate in a small way, I am reminded of the statement of the famous statesman and pianist, Paderewski, who said, "There are no great teachers, only great students." ■



Herb Vandermeulen accepts position

Herb Vandermeulen is now the National Coordinator of Contaminants Science for the Canadian Department of Fisheries and Oceans. He will be involved with the evaluation and funding of departmental research projects on harmful substances, introduced species and habitat issues in aquatic environments. The new address is:

Department of Fisheries and Oceans
Environmental Science ranch
200 Kent Street, 12th Floor
Ottawa, Ontario
Canada K1A 0E6
(613) 990-0311 ■



OFFICERS AND EXECUTIVE COMMITTEE

PRESIDENT:

Rick McCourt
MCCOURT@say.acnatsci.org
Richard McCourt
Associate Curator of Botany
Academy of Natural Sciences
1900 Benjamin Franklin Parkway
Philadelphia, PA 19118
Fax: 215-299-1028
Phone: 215-299-1157

PAST-PRESIDENT:

Lynda J. Goff
goff@biology.ucsc.edu
University of California
Santa Cruz, CA 95064
Fax: 408-459-4882
Phone: 408-459-2832 (lab/office)

VP/PRESIDENT-ELECT:

Paul Kugrens
pkugrens@lamar.colostate.edu
Department of Biology
Colorado State University
Fort Collins CO USA 80523
Fax Number : 970-491-0649
Office Phone: 970-491-7551

SECRETARY:

Jane C. Gallagher
jgcc@cunyvm.cuny.edu
Biology Department
CUNY 138th St. at Convent Ave.
New York NY USA 10031
Fax Number : 212-650-8585
Office Phone: 212-650-8507

TREASURER:

Kyle Hoagland
Dept. of Forestry, Fish & Wildlife
University of Nebraska
101 Plant Industry
Lincoln, NE 68583-0814
Office Phone: 402-472-8182
Fax: 402 472 2964

PROGRAM DIRECTOR:

David F. Millie
USDA-ARS
South Reg. Res. Center
P.O. Box 19687
New Orleans, LA 70179
Office Phone: 504-286-4457
Fax: 504-286-4419

MEMBERSHIP DIRECTOR:

Thierry B.R. Chopin
tchopin@unbsj.ca
Univ. of New Brunswick
Centre for Coastal Studies & Aquaculture
Dept. of Biology-PO Box 5050
Saint John NB CANADA E2L 4L5
Fax Number : 506-648-5650
Office Phone: 506-648-5507

CHAIR/BOARD OF TRUSTEES:

M. Dennis Hanisak
hanisak@hboi.edu
Harbor Branch Oceanographic Inst.
5600 U.S. 1 North
Fort Pierce FL USA 34946
Fax Number : 561-468-0757
Office Phone: 561-465-2400

FUND MANAGER,**SOCIETY MANAGER:**

J.R. Waaland
jrww@u.washington.edu
Dept. of Botany
Box 355325
Univ. of Washington
Seattle WA USA 98195-5325
Fax Number : 206-685-1728
Office Phone: 206-543-7098

EDITOR, JOURNAL OF PHYCOLOGY:

Susan H. Brawley
Brawley@maine.maine.edu
Dept of Plant Biology & Pathology
5722 Deering Hall
University of Maine
Orono ME USA 04469-5722
Fax Number : 207-581-2969
Office Phone: 207-581-2973

EDITOR, PHYCOLOGICAL NEWSLETTER:

Grant G. Mitman
gmitman@mtech.edu
Montana Tech
1300 W. Park St.
Butte MT USA 59701
Fax Number : 406-496-4650
Office Phone: 406-496-4617

ASSISTANT NEWSLETTER EDITOR

Christina Foley
cfoley@mtech.edu
MSTC Graduate student, MT Tech
Fax Number: 406-496-4704

Submissions to the *Phycological Newsletter*

Contributors are welcome to submit phycological news items, announcements of books, courses, awards, articles, and other items for publication. The easiest form of submission is via email with a *.txt attachment (subject: PSA NEWSLETTER), or on diskette (**no MAC disks**), also as *.txt documents. All submissions are more than welcome. Send submissions to the *Newsletter* Editor. I will acknowledge receipt of submissions by phone, fax or email.

Newsletter subscriptions

Members of the Phycological Society of America receive the Newsletter as one of the benefits of membership. To join PSA, contact the Phycological Society of America, Membership Office, P.O. Box 1897, Lawrence, KS, 66044-8897. Phone: 913-843-1235, Fax: 913-843-1274.

In addition to the newsletter, members also receive the *Journal of Phycology*. Student memberships are discounted in price, and student members are eligible for various fellowships and travel awards for attending the Annual Meeting and Summer field courses.