



PHYSIOLOGICAL NEWSLETTER

A PUBLICATION OF THE PSYCHOLOGICAL SOCIETY OF AMERICA

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December 1997

Volume 34

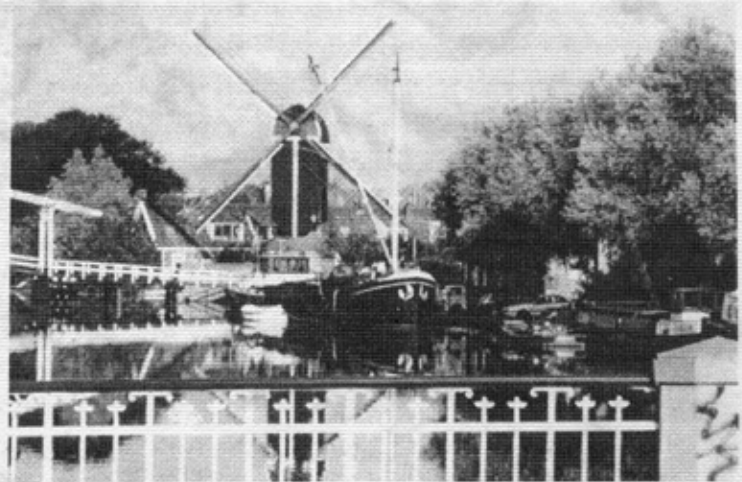
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The Annual Meeting of the Psychological Society of America, Leiden, the Netherlands, 10 - 16 August, 1997:

The PSA Program Director's Views with Passages Taken from Lynda Goff's Message.



A canal in Leiden near Leiden University

The 1997 Psychological Society of America meeting was held in Leiden, The Netherlands, in conjunction with the 6th International Psychological Congress. PSA was well represented with nearly 200 PSA registrants out of more than 700 Congress registrants. There were 86 registrants from North America, and it was one of the highest turnouts of PSA



members in the last several years, with the exception of the 50th Anniversary meeting held in Santa Cruz last year. In addition, the Annual PSA Business meeting was attended by more persons than any previous business meetings held in the last decade or longer. I am either too young or too old to remember anything prior to those ten years.

The weather during the week of the Congress was hot and humid and the locals kept telling us that this was unusual for The Netherlands. Being of Latvian origin, the weather was unbearable for me. Lodging was scattered throughout Leiden in various hotels, as well as dormitories. Not only did the extremely hot weather surprise us but we also were surprised to find out that the Congress rates for accommodations were considerably higher than those made by individuals in the same hotels.

During the 6th International Congress, nearly 500 papers, posters and symposium contributions were presented. The abstracts for the Congress were received and organized by the PSA Program Director and published as a supplement to *Phycologia*. The Congress program was organized by Drs. Willem Prud'homme van Reine and Chris Van den Hoek, and they are to be commended for their hard work and organizational skills. Each day began with a keynote speaker followed by symposia in the areas of Cells and Molecules, Algal Evolution, Algae and Human Affairs, and Toxic Algae and Algal Toxins. Afternoon sessions consisted of contributed papers related to the general symposium topics and dealt with a wide range of topics such as Taxonomy & Biodiversity, Ecophysiology, Life History Strategies, Algae as Monitors, Global Change, Evolution & Phylogeny, Nuisance Algae and Transgenesis in Algae. In addition, a multitude of posters were displayed throughout the duration of the Congress. Posters were presented in 3 formal poster sessions held in the late afternoons on Monday, Tuesday and Thursday.

The opening ceremonies were conducted in Pieterskirk on Sunday evening, followed by a social consisting of beer, wine (a special seaweed wine was available) and snacks. This was a wonderful time to meet colleagues from other countries in a relaxed setting. Drinking wine and beer in a church is always uninhibiting. During the opening ceremonies, the PSA President Lynda Goff, on behalf of the PSA, dedicated its participation in this International Congress to the memory of Professor George F. Papenfuss. It was Professor Papenfuss who, with many other

members of the world's Phycological Community, had the vision to see the need for the internationalization of phycology through world congresses. It was Professor Papenfuss who worked so diligently to make the 1st International Congress, held in St. Johns Newfoundland in 1982, a reality. It was his idea that the various nation-based societies of the world would come together under the fellowship of these international congresses, once every few years. Unfortunately, he did not live to witness his dream come to fruition. Although PSA had met in conjunction with these Congresses in Newfoundland and at Duke University, this was the first time in the 51 year history of PSA that it met somewhere other than North American soil. Hopefully, the leadership shown by PSA in meeting officially with the International Congress will encourage other Societies to consider holding their annual meetings in conjunction with international Congresses in the years to come. Now is the time to begin planning, since the next International Phycological Congress will be held in Thessaloniki, Greece in the year 2001. (Most of the paragraph is excerpted from Lynda Goff's PSA List Message)

All PSA activities were conducted on Tuesday. The Bold Award competition was held Tuesday afternoon and was again chaired by Mark Buchheim. As usual the presentations and scientific content were exemplary. Presenters and the title of their presentations are as follows: Robb Van Putte - A mechanism of toxicity by volatile aromatic hydrocarbons is disruption of cytoplasmic membrane lipids; Ok-Kyong, Chah - Life history, karyology and sex determination mechanism of *Aglaothamnion oosumiense* (Ceramiales, Rhodophyta); Rafael Riosmena-Rodriguez - A taxonomic reassessment of rhodolith-forming species of *Lithophyllum* in the Gulf of California, Mexico; Troy Mutchler - Analysis of epiphytic diatom community development on *Zostera marina* using *in situ* manipulation; Jon Ashen - Species-specific bacterial gall formation in the red algal genus *Prionitis* (Halymeniaceae): phylogeny reflects ecological separation; Jeff Hughey - A systematic study on selected species of *Mazzaella* (Gigartinales, Rhodophyceae) from Pacific North America; and Brandon Wustman - Modeling extracellular adhesives of *Achnanthes longipes* and *Cymbella cistula* (Bacillariophyceae). Brandon Wustman's presentation

was judged to be the best in this year's competition. Congratulations to Brandon and his advisor, Michael Gretz! The annual PSA business meeting was held Tuesday evening at 6 PM in the choir room in Pieterskirk. The high attendance at this meeting no doubt was due to the agenda items and not the free drinks. Two major decisions were made that will affect the membership. First, the membership voted to suspend the hard-copy newsletter after the September issue and will try, for a one-year experimental time, to develop and utilize the PSA Website as our major vehicle of communication. We envision that this will begin on 1 January 1998 and will provide members with a monthly updated "news" section and links to research and educational sites on the world-wide web. Many of us are very excited about the potential that this new technology will provide for us to publish color photographs, video clips that may be useful in teaching, more short-subject type articles such as those wonderful historical articles of Mike Wynne, and the potential for truly rapid communication of news among colleagues. However, we also realize that not all our members have access to the web, or the inclination to use this regularly. Thus, as an interim solution, we will provide the opportunity for members to obtain a "down-loaded" copy of the news and special articles section 2-3 times a year. (Except for the first two sentences, the rest is an excerpt from Lynda Goff's Message)

Secondly, the Executive Committee approved increasing the library subscribers fees from \$290 to \$325 effective in 1998. There will be no individual membership dues increase this year. The increase in library fees will go to cover the partial costs (Allen Press will absorb the majority of costs) of having the Journal of Phycology put electronically "on-line". All members and library subscribers will continue to receive a hard-copy version of the Journal, and in addition, each member will receive (at no costs to the member) a password which will enable you to read the Journal from your computer. Allen Press has indicated that eventually there will be sophisticated search engines and links within articles for cross-referencing. For most of our domestic members, this change is probably not too important since many of us are not used to or fond of reading Journals on our computer screens. But for our international members who often do not receive their Journals for a month or more after the domestic members do, they will be able to see articles immediately upon publication. (Excerpt from Lynda Goff's Message)



Bold Award participants. From left front row- Ok-Kyong Chah, Jeff Hughey, Mark Buchheim (Chair). Back row- Brandon Wustman, Robb van Putte, Jon Ashen, Rafael Riosmena-Rodriguez. Not Pictured Troy Mutchler.

After "stimulating" reports from chairs of standing committees and officers, the election results for the recent PSA elections were announced. The new editorial board members are Rick Wetherbee, Paul Hargraves, Patricia Wheeler and John La Claire. Kyle Hoagland was elected Treasurer, Dave Millie was elected Program Director and Paul Kugrens was elected Vice-President/President Elect. Based on approved changes in bylaws, all newly elected officers will assume office on January 1, 1998. All bylaw changes were approved and are in effect, and the Society is indebted to Janet Stein-Taylor for all her hard work in updating our bylaws. In addition, Michelle Wood, the Chairperson of the Elections Committee and all her committee members are to be thanked for their hard work in assembling this complicated ballot.

The PSA social followed the lively and relatively short business meeting (1 ½ hrs). The evening reception was open to all IPC participants, and beer and wine flowed freely (literally) and a variety of fine tasting, high fat content sausage snacks were served. Thus PSA did its part in elevating the cholesterol levels of IPC participants. The reception lasted well into the night and the drinks flowed continuously, although the glasses could have been larger or contained more beer. Nevertheless, the participants ran out before the drinks. This tremendously successful social provided a

wonderful opportunity for delegates to share more science and a great deal of friendship. Pieterskirk reverberated with the many sounds of phycologists.

Field trips to various locales dominated Wednesday's activities. The theme of these trips included water of some type, such as lakes, canals, water treatment facilities, estuaries, rivers and pools. Some of the trips, however, were misleading, such as the Amsterdam tour where most of the time was spent at a water treatment facility where five hours of lectures had been scheduled. Since spouses had accompanied some of the participants, expecting a guided tour of the city, plans had to be altered by some to accommodate a tour of the city, to see the famous landmarks, and to make spouses happy. As the saying goes, no one is happy unless the spouse is happy.

The IPC banquet was held Thursday evening. Participants were bused to an unannounced location, herded into a semifloating replica of a ship near Harlem and then supplied with a plethora of drinks, superb food and lively music provided by a Latin American style band. The venue was modeled after the interior of a cruise ship ballroom, but it was not on water, hence the term semifloating. Funny money was issued to each participant so that they could indulge in a bit of fun gambling. Prizes were awarded at the end of the evening depending on winning numbers or whatever. A grand time was had by all! We returned to our hotels after 2 AM to rest for the final day's activities.

Friday was the last day of the Congress, but I was not present during the last day of the Congress and am unable to report any scandals that may have arisen. I left at 6 AM and flew to Latvia to find my roots and relatives.

In summary, the 51st Annual Meeting of the Phycological Society of America was a success. We had wonderful participation by the PSA and the quality of the science presented was superb. In the future, the PSA should consider meeting in conjunction with other International Congresses as it affords our foreign members (who are nearly as numerous as our domestic) a convenient opportunity to meet with our Society, and it demonstrates to the phycological world that the Phycological Society of America is not only a very viable and dynamic domestic society, but it is also a leader in fostering the internationalization of our science. (Lynda Goff)

This is the last summary of a PSA meeting that I will contribute for the PSA as its Program Director. Dave Millie is the incoming Program Director and we have been in direct

planning next year's meeting in Flagstaff, Arizona. The meeting will be held from August 2 - 7, 1998, not as the J. Phycol. indicated earlier, and will be held in conjunction with the International Society for Evolutionary Protistology (ISEP) and The Society of Protozoologists (SOP). ISEP is expected to meet on August 1 & 2, followed by meetings of PSA and SOP. Our local organizer is Larry Fritz (E-mail: lawrence.fritz@nau.edu), and any questions about local arrangements should be directed to him. We look forward to seeing all of you in Flagstaff. Have a wonderful year between now and next year's meeting.

As noted in the appropriate paragraphs, this report includes portions of text written by Lynda Goff in a message sent to PSA List members. I was unable to improve upon her expressed thoughts so I decided to include them as a portion of my report, with appropriate credits.

Paul Kugrens, PSA Program Director

MINUTES

NOTE: Minutes of the 1996 General Business Meeting of the Phycological Society of America in Santa Cruz, California Can be obtained from Jane C. Gallagher:
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Biology Department
CUNY 138th St. at Convent Ave
New York NY USA 10031
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Northeast Algal Symposia

NEAS 1997

The 36th Northeast Algal Symposium was held on April 26-27, 1997 at the Marine Biological Laboratory in Woods Hole, MA. One hundred and forty-four participants, fifty-one of whom were students, attended the meeting. We also had in attendance the Executive Committee of PSA who were involved with a planning meeting at the same time. The NEAS scientific program included 23 contributed oral presentations and 26 posters. Twenty-seven students competed for the Robert T. Wilce awards given annually for the best student presentations. In the oral category, James Harper of The University of New Brunswick received the award for his talk entitled "Phylogenetic relationships of representative Acrochaetiaceae (Achrochaetiales, Rhodophyta) inferred from nuclear small-subunit ribosomal RNA sequence data" with co-author Gary W. Saunders. In the poster category, the award went to Rui Li of the University of Maine for her presentation entitled "Dehydrin-like proteins in furoid algae" co-authored with Susan H. Brawley and Timothy J. Close.

Saturday's interesting and varied scientific sessions were followed by the Distinguished Lecture by Robert Sheath of The University of Guelph who gave an informative talk on "Freshwater red algae: From the molecule to the globe". This was followed by the annual banquet and presentation of student awards. In addition, the Frank Shipley Collins award for meritorious service to NEAS and to Phycology was presented to Barry Colt of the University of Massachusetts, Dartmouth.

Sunday's program included a minisymposium on "Why should we care about molecular biology?" with papers presented by Barbara MacGregor and Lynda Goff. Other events at the symposium included the "Cedar Wetlands and Woodlands Walk" organized by Aimlee Laderman, and also the algal photograph competition, in which the winners were Brian Duval and Eduardo Morales. The symposium was enriched by the presence of the commercial exhibitors featuring books, laboratory teaching supplies, microscopes and image analysis systems, and the industrial and food applications of algae.

Thanks are due to everyone who helped to make the 36th Symposium such a great success. Co-conveners for the

1997 meeting were John Wehr (Biological Field Station, Fordham University) and Glen Thursby (US EPA, Narragansett, RI). Co-conveners for the next meeting to be held in Woods Hole on the weekend of April 25-26, 1998 are Tracy Villareal (University of Massachusetts Environmental Science Program) and Joby Chesnick (Lafayette College). Those interested in joining NEAS are urged to contact the Membership Director Bill Johansen at (508) 793-7190 or hjohansen@vax.clarku.edu

The 35th Northeast Algal Symposium was held on April 27-28, 1996 at the Marine Biological Laboratory in Woods Hole, MA. One hundred and fifty-nine participants, sixty-eight of whom were students, attended the meeting. The scientific program included sixteen contributed oral presentations and twenty-eight posters. Twenty-four students competed for the Robert T. Wilce awards given annually for the best student presentations. In the oral category, Keith Josef of Syracuse University received the award for his talk entitled "Measurement of Signal Transduction in *Chlamydomonas reinhardtii*" by K. Josef, J. Saranak & K. Foster. In the poster category, the award went to Susan Bubuka of Binghamton University for her presentation entitled "Cytoskeleton of the Red Alga *Antithamnion kylinii*: a Freeze-substitution Ultrastructural Study" by S.J. Babuka & C.M. Pueschel.

Saturday's scientific sessions were concluded with the Distinguished Lecture by Robert Andersen of Bigelow Laboratory on "Algal Biodiversity and its Significance". This inspiring address illustrated how the algae, with their polyphyletic origins and consequent great diversity, have immense ecological importance and economic potential. The theme of algal diversity was aptly reflected in the conference motif, an phylogenetic tree of the algae designed by Carolyn Bird. This was based on SSU rDNA sequences, drawn in the 19th century style of Haeckel, and showed other eukaryotic lineages properly truncated to subsidiary positions!

Sunday's program focused on Applied Phycology and began with a mini symposium of three invited papers delivered by Robert Nuzzi, Greg Tracey and Tracy Villareal on brown tides (i.e. blooms of *Aureococcus anophagefferens*) which had recently recurred in New England. This was followed by a discussion session entitled "The Value of

Phycological Research for Industry and Government" in which a panel of representatives from industries and government agencies concerned with the economic aspects of algae, presented the main issues, problems and goals of their fields. The topics that were covered and the representatives present were (i) "Seaweed Aquaculture" Steve Crawford, Coastal Plantations International, (ii) "Microalgal Feeds in Aquaculture" Chris Heinig, MER Assessment Corp., (iii) "Value-added Algal Products" Paul Behrens, Martek Biosciences Corp., (iv) "Harmful Algal Blooms" Robert Nuzzi, Suffolk County Dept. of Health Service and (v) "Implications of Coastal and Freshwater Pollution" Michael Connor, Massachusetts Bay Water Authority. Andrew Bertocci, Algae Tech Seaweed Solutions, rounded out the panel presentation with a consideration of communication methods. More in-depth discussion of the topics was pursued in a round-table format over lunch. The summary reports of these discussions will be collated by the Society for circulation to be used as guidelines to applied research in phycology.

Other events at the symposium included the first photograph competition, in which the winners in the micrograph category were: Brian Wysor (First), Southampton college "*Asterionella*"; Paul Cancellieri (Second) Southampton College "*Callithamnion*"; and in the macrograph category: Ester Serrao (First) University of Maine "*Saccorhiza Forest*"; and Li Rui (Second) University of Maine "*Fucoid Recruitment*". A very special award was the first Frank Shipley Collins award for meritorious service to the Society and to Phycology, given very appropriately to Ed Boger. The symposium was enriched by the presence of eight commercial exhibitors featuring books, laboratory teaching supplies, microscopes and image analysis systems, and the industrial and food applications of algae. And, few will forget the kelp and dulce canapes at the pre-banquet social, supplied with great flair by Carl Karush of Maine Sea Vegetables!

Co-conveners for the 1996 meeting were Carolyn Bird (National Research Council, Canada) and Greg Boyer (SUNY at Syracuse). Co-conveners for the next meeting to be held in Woods Hole on the weekend of April 26-27, 1997 are John Wehr (Biological Field Station, Fordham University) and Glen Thursby (US EPA, Narragansett RI). Those interested in joining NEAS are urged to contact the Membership Director Bill Johansen at (508) 793-7190 or hjohansen@vax.clarku.edu

Thomas Charles DeCew 1946--1997

Tom DeCew died on August 12, of cirrhosis. Tom was born July 16, 1946 in Evanston, Illinois. He grew up in Bakersfield, California and eventually attended Bakersfield College, Humboldt State University, and the University of California at Berkeley. He received a doctorate in Botany from the latter institution in 1983. Tom became interested in the biogeography of northeastern Pacific marine algae at Humboldt State University under the influence of Robert Rasmussen and Edward De Martini and began a comprehensive compilation of phenological data about marine algae. At the University of California, mentored by John West and Paul Silva, he studied red algae with heteromorphic life histories, drawing on his invaluable phenological data sheets, and using innovative culture techniques. He published papers on species in the genera *Farlowia*, *Gloiosiphonia*, *Gymnogongrus*, *Haematocelis*, *Hildenbrandia*, *Opuntia*, *Rhodophyseta*, and *Schizymenia*. With Paul Silva, he established the new genus *Ahnfeltiopsis*. The data sheets became the nucleus of a book on West Coast marine algae, which he constantly updated and improved. He loved to teach, and his infectious interest in algae made him effective in the lecture room and unparalleled in the laboratory and field.

Upon receiving his PhD, Tom, along with other recent graduates in Phycology, found that the opportunities of employment in the field were slim. He had a talent for design and woodworking and an interest in the Arts and Crafts Movement, and developed this into a business renovating architecturally significant houses in the San Francisco Bay Area, and constructing beautifully detailed fences, gates, and decks.

Tom was an enthusiast. In addition to interests in algae and architecture he was an athlete, devoting himself first to middle-distance running, then to the marathon, then to the triathlon. When arthritic hip joints curtailed his running, he shifted to cycling and rode great distances daily. He restored and maintained an XK-140 Jaguar, and this brought him into contact with numerous sports car aficionados. In all his enthusiasms, Tom strove for perfection. His accomplishments are held in respect by a diverse range of people who will think of him often and miss him greatly.

Chin-Chih Jao epitomizes the all-round phycologist, whose very long and productive career in phycology truly spans the 20th Century. His broad interests in the algae ranged from marine to fresh-water. He covered a lot of mileage over the decades both in China and in North America in quest of algae, and he discovered and described many interesting algal species. In North America, he managed to spend time working at two phycological meccas, Woods Hole on the east coast and Friday Harbor on the west coast, as well as being a graduate student in the middle of the country, in Michigan. Born in 1900, Jao remains a vital presence in China, a revered figure in a land where longevity,



C.-C. Jao as a student in Ann Arbor

symbolized by the peach, is especially treasured. For a seven-year period (from 1928 up through early 1934) prior to his traveling to America to embark on his graduate studies, Jao carried out extensive field work in Szechwan [= Sichuan] Province of southwestern China. This province was then made up of numerous rice farms, and Jao found himself in an ideal situation to carry out collecting of freshwater algae. In fact, he made nearly 2,000 collections in the various seasons. His doctoral research, working under the guidance of Prof. W. R. Taylor at the University of Michigan in Ann Arbor, involved working up his many collections of Zygnemataceae (Jao, 1935a). He carried out most of his collecting during winter and early spring from rice farms and water-storage pools after the rice harvest and before the fields had been plowed. He found that this period was most favorable for algal growth because after plowing as well as during the luxuriant growth of rice in the summer months, the algae, in particular filamentous green algae, were in poor condition for study. Frost is exceedingly rare in

this region; occasionally a very thin layer of ice would appear during the night in winter. Winters were characterized by infrequent sunshine and by banks of mist hanging over the land and preventing surface evaporation. These conditions resulted in very damp soil and much standing water, in other words, very favorable conditions for algal growth. More than half of the species of Zygnemataceae he described (Jao, 1935a, 1936d) were regarded as new: *Zygnema*, 11 species, including four new; *Zygonium*, one new species; *Zygnemopsis*, one new species; *Mougeotia*, 10 species, including four new; *Spirogyra*, 51 species, including 31 new; *Sirogonium*, one species with one new variety.

Jao spent the summers of 1934 and 1935 at the Marine Biological

Laboratory on Cape Cod, carrying out much collecting with Hannah Croasdale. In reading over his papers (Jao, 1934a, 1935b, 1936a, b) and being somewhat familiar with the geography of the Cape, I can see that Jao and Croasdale covered a lot of territory, by land and by sea: Nobska Point in Woods Hole, Cuttyhunk, Grassy, and Pine Islands, Sheep Pen Harbor on Nonamesset Island in the Elizabeth Island chain, across Vineyard Sound to North Point and Gay Head out on Martha's Vineyard, and across Buzzards Bay to Black Rock near New Bedford. Freshwater habitats were also being sampled during these excursions as well as many other places on the Cape such as Harper, Wall, Salt, and Iron ponds. Thanks to such concentrated collecting, Jao reported on seven new taxa of Zygnemataceae from Woods Hole and environs (Jao, 1935b), including *Spirogyra taylorii* from Whitman Road, where the Taylors' cottage was located, and a total of 47 taxa (species and vars.) of *Oedogonium*, including *Oe. croasdaleae* (Jao, 1934a) to honor his fellow-collector.

From August to Dec., 1935, Jao had the opportunity of working at Friday Harbor Laboratories (of the Univ. of Washington, Seattle) on San Juan Island. He spent a four-month period of intensive field work there, obtaining samples from as many different localities and habitats as possible: San Juan, Brown, Turn, McConnell, Canoe, Bell, and Shaw Islands. He discovered some new species of marine red, brown, and green algae and made some new records for the Washington coast (Jao, 1937a). He brought his samples back to China to complete the work of identification. He had largely completed the task of making identifications some months after the Japanese invasion into North China in July, 1937. But owing to the difficulties (impossibility) of printing during war time, he was not able to publish on this work until 1948 (Jao, 1948a).

Over the years and in spite of the difficult and turbulent times of war Jao managed to turn out a steady flow of papers on algae. This often involved arduous collecting trips. In the period 1936-1941 he made collections from various localities of China, which contributed to a paper (1941b) on freshwater red algae. Even though he modestly used "a preliminary account" in the title, Jao made observations on eight genera, listing 21 species and three varieties. Eleven of these species (in *Audouinella*, *Batrachospermum*, *Lemanea*, *Sirodotia*, and *Compsopogon*) and two varieties were described as new. The Chialing River, where his new var. *angusta* of *Caloglossa leprieurii* occurred, had flooded, filling up a rocky cave. Jao used the water-filled cave as a natural culture chamber to follow the form of this alga

for almost 11 months.

He and his family moved from Shanghai to Wuchang in 1954. Their home was situated on the shore of Lake Tunghu, very close to the Institute, and he was pleased to be living in such a beautiful place. He and his wife had four children. Their only son became an instructor at the Wuhan Industrial College. The eldest and youngest daughters became high school teachers, while the middle daughter became a doctor and instructor at the Bethune Medical University.

While as a student in the U. S., Jao's artistic talents had been put to good use by Randolph Taylor in putting together the first edition of his algal flora of the northeast coast of North America. Taylor (1937) acknowledged that Jao executed most of the drawings used in this book, and Jao received "second billing" as the artist on the book's title page. After Taylor sent a copy of his 1957 revised flora, Jao wrote an appreciative letter back to Taylor the same year, saying that the book was the first item that he had received sent directly from the U.S. to China since 1950. He was indeed delighted. Jao went on to explain that he had worked in the Institute of Botany, Academia Sinica, in Shanghai until the liberation of China in 1949. Since then he was transferred to the Institute of Hydrobiology, still affiliated with the Academic Sinica, in Wuchang, as a "research fellow of the 1st rank." This meant that he had about 30 workers in his laboratory along with several guest investigators from various universities. The theme of their research was not merely systematics of freshwater algae but also had a strongly applied aspect. They were interested in expanding fish farming in the shallow lakes in China and making rational use of natural food by the fish (Wu & Jao, 1958). Fish farming flourished after the People's Republic

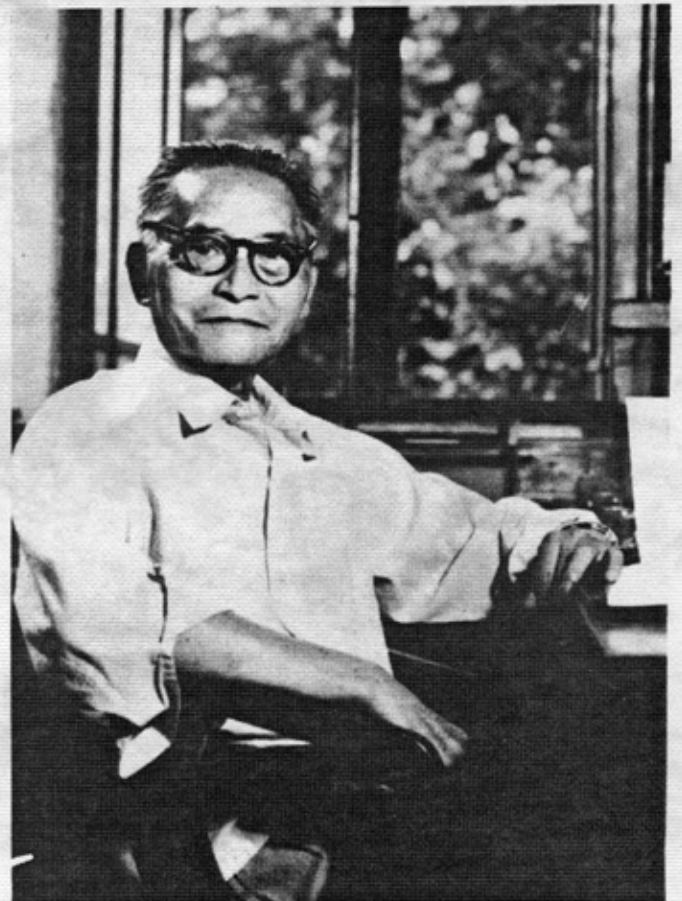
of China was established. It was in this period that he collaborated with others in producing books both on methodology for studying lakes (Jao et al., 1956) and on freshwater fish farming (Li et al., 1961). Jao felt that it was an opportune time for the development of phycology in China. He spent much of his time supervising workers on the various algal groups they were studying, and a series of articles was published treating all of the known planktonic algae occurring in the inland waters of China. In 1956 he traveled to Helsinki to attend the 8th International Limnological Congress, where he met R. C. Starr and got caught up on news of colleagues in the U. S.

In retrospect, Jao's primary specialization was on the green algal orders Oedogoniales and Zygnematales (1988). Yet over the years he showed a broad interest in various groups of algae, including *Vaucheria* (1936c), Cyanobacteria (1939b, 1944b, 1948a), Chlorophyceae (1941a, 1942, 1947a, b, c), freshwater brown algae (1941b, 1943), freshwater red algae (1941c), diatoms (1964), charophytes (Jao & Lee, 1974), and chloromonads (1978). Jao was the author of several new genera, e.g., *Leptosiropsis* (1940), *Oncosaccus* (1947a), *Westellopsis* (1959a) [non *Westelliopsis* Janet, 1941], *Sphaerodictyon* (1978), *Echinocoleum* (Jao & Lee, 1947), and *Dicloster* (Jao, Wei, & Hu, 1976). His publications also concerned river algal assemblages (1944a) and limnological surveys (Jao, 1962).

One of the most impressive of Jao's publications was his monograph of the Oedogoniales of China (1979). This work, written in Chinese, was reviewed by Taylor (1981), who admitted that it may appear

"rash" for him to report on a book most of which he could not read. But he was able to grasp the general scope of the book, to read the Latin descriptions of the many new taxa, and to appreciate again Jao's truly beautiful illustrations. This book included 346 taxa in *Oedogonium* and 55 in *Bulbochaete*, of which 122 (eighty at the species level) were described as new.

In terms of eponymy, *Jaoa* was used by K. C. Fan (1964) to replace Jao's (1941d) *Coelodiscus*, which was a later homonym. Skvortzov (1961) described *Jaoniella planktonica* of the Isochrysidales. Now at the age of 97 years, Jao lives in contented retirement in Wuhan, Hubei Province. He remains associated with the Institute of Hydrobiology of the Chinese Academy of Sciences.



On his 80th birthday (1980).

- Jao, C.-C. 1934a. *Oedogonium* in the vicinity of Woods Hole, Massachusetts. *Rhodora* 36: 197-214, pls. 286-288.
- _____. 1934b. New *Oedogonia* collected in China. *Papers Michigan Acad. Sci., Arts & Lett.* 19: 83-92, pls. V-VII.
- _____. 1935a. Studies on the freshwater algae of China. I. Zygnemataceae from Szechwan. *Sinensia* 6: 551-645.
- _____. 1935b. New Zygnemataceae from Woods Hole. *Trans. Microsc. Soc.* 54: 1-7.
- _____. 1935c. New *Oedogonia* collected in China. II. *Papers Michigan Acad. Sci., Arts & Lett.* 20: 57-63, pls. X & XI.
- _____. 1936a. New Rhodophyceae from Woods Hole. *Bull. Torrey Bot. Club* 63: 237-257, pls. 10-13.
- _____. 1936b. Notes on *Oedogonium* and *Bulbochaete* in the vicinity of Woods Hole, Massachusetts. *Rhodora* 38: 67-73, pl. 407.
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- M. J. Wynne
University of Michigan, Ann Arbor
- Next issue: Phycological Trail-Blazer No. 12. Niels Foged

MEETINGS

North West Algal Symposium to be held on Whidbey Island, Washington May 29-May 30 1998.

The 12th North West Algal Symposium will be held May 29-31, 1998 in a joint meeting with 21st annual Pacific Estuarine Research Society at the Casey Conference Center, Coupeville, Whidbey Island, WA. The waterfront Camp Casey facility is located 90 minutes from Seattle at the entrance to Puget Sound on 200 acres of old Fort Casey, established in the 1890's. Economical accommodations and meals are available on-site to maximize interaction among participants and encourage student involvement. The joint meeting will begin on Friday evening May 29 (after a 1.7 ft tide in the afternoon; great seaweeds on site) and will continue through Sunday noon. Plan now to attend. The NWAS/PERS meeting co-organizers are: Douglas Bulthuis, Padilla Bay National Estuarine Research Reserve; Suzanne Strom, Shannon Point Marine Center; and Gisèle Muller-Parker, Shannon Point Marine Center and Dept. of Biology, Western Washington University.

For further information about the 12th NWAS, contact Gisèle Muller-Parker (email: gisele@cc.wwu.edu, phone: 360-293-2188).

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. 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.
Department 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

CHEMISTRY AND ECOLOGY OF HIGHLY ACIDIC ENVIRONMENTS

This workshop is being held at University of Durham, England, from **16-19 August 1998**.

Anyone interested in this subject and who would like to participate, please contact Brian Whitton (email b.a.whitton@durham.ac.uk; Department of Biological Sciences, University of Durham, Durham DH1 3LE).

Co-organizers are Dr Patrizia Albertano (Dipartimento di Biologia, Università degli Studi di Roma "Tor Vergata", Italy) and Dr Ken'ichi Satake (National Institute for Environmental Studies, Tsukuba, Japan).

The aim is to bring together researchers from various disciplines concerned with chemistry, microorganisms and general ecology of highly acidic environments. Aspects to be covered include mine drainages, thermal and non-thermal natural springs and fumaroles and the more severe effects of acidic atmospheric deposition on waters and terrestrial surfaces - basic science and practical problems of control.

Algae are usually the most conspicuous organisms in such environments!

Brian Whitton

New PSA Website

Early in 1998 PSA will have a new expanded website. The website will be updated regularly and will, we hope, be a site that PSA members consult frequently for news, teaching materials, job advertisements, research reports, and as a gateway to internet resources dealing with algae. The website will be managed by Morgan Vis-Chaisson. The server for the website was being connected at the time of this Newsletter publication, however members will be notified as soon as the website address is assigned. Also, the old website address, shown below, will have a direct link to the new site. Members are encouraged to contact Morgan with suggestions on what to include on the website or what will make the website of greatest use to members. Grant Mitman will remain as Newsletter Editor and he will forward edited submissions to the webmaster.

Old Web site address:

http://condor.depaul.edu/~rmccourt/PSA/PSA_home.html

Rick McCourt

AWARD NOMINATION

1998 Darbaker Prize in Phycology

The Botanical Society of America is accepting nominations for the Darbaker Prize in Phycology. This award is presented for meritorious work in the study of microscopical algae. The Darbaker Award Committee will base its judgement primarily on papers published by the nominee during the last two full calendar years (1996-97). The award is limited to residents of North America and only papers published in the English language will be considered. A monetary prize is presented to the recipient at the BSA society banquet during the annual meeting.

Nominations for the 1998 award should include all reprints of the nominee's work that are to be considered for the 1996-97 period and a statement of the nominee's merits addressed to the committee. The materials must be received no later than April 1, 1998. Please send nomination materials to: Gary L. Floyd, Chair, Darbaker Committee, 936 Kendale Road South, Columbus, Ohio 43220; email - floyd.1@osu.edu

AWARDS

The Gilbert Smith Morgan Medal

The award is being presented to **Isabella A. Abbott**, the G. P. Wilder Professor of Botany at the University of Hawaii at Manoa. The bronze medal and \$15,000 prize, given every three years, rewards excellence in published research on marine or freshwater algae. Abbott was selected for "her comprehensive investigations of the biogeography and systematics of marine algae in the eastern and central Pacific with emphasis on Rhodophyta, the red algae"....The 76-year-old researcher says that "I consider it irresponsible to have the luxury of studying something I love to do if I don't publish..."....This appears in the article entitled, "National Academy of Sciences' Awards". *The Scientist* (April 28, 1997).

PRESCOTT AWARD

The winners were: "*Algae, an Introduction to Phycology*", by **Chris van den Hoek, David G. Mann and Hans Martin Jahns** and, "*Freshwater Algae, Their Microscopic World Explored*", by **Hilda Canter-Lund and John W.G. Lund**.

The committee selecting the winners consisted of Kyle Hoagland, Raymond J. Lewis, Conrad E. Wickstrom and Richard Searles.

EMPLOYMENT

Memorial University of Newfoundland Director Ocean Sciences Centre Faculty of Science

Memorial University invites applications and nominations for the position of Director, Ocean Sciences Centre (OSC), Faculty of Science. The Director will hold a tenured faculty position at the OSC. The appointment, which will be effective September 1, 1998 or the earliest date thereafter, is initially for a term of three years and is renewable.

The OSC is a research and graduate teaching unit, with a wide range of programmes addressing questions relevant to the cold ocean environment. These include aquaculture; physiology, biochemistry and behavioural studies of marine organisms; and biological and chemical oceanography. The OSC attracts significant levels of external funding from government and from the private sector. The OSC is situated 10km north of the university's main campus in St. John's, and provides excellent facilities for laboratory and field studies. Further information can be obtained at <http://www.mun.ca/osc/>

Applicants should have administrative abilities, and be established scientists with a commitment to research and graduate training. The successful candidate will be expected to maintain an active research programme. An application, including a resume and the names of at least three referees should be submitted by February 27, 1998 to:

Dr. Alan Whittick
Chair OSC Search Committee
c/o Office of the Dean of Science
Memorial University of Newfoundland
St. John's, Newfoundland Canada A1B 3X7
alanw@morgan.ucs.mun.ca

All applications will be treated in confidence. In accordance with Canadian immigration requirements, first preference will be given to Canadian citizens and permanent residents. Memorial University is committed to the principles of employment equity and welcomes applications from all qualified candidates.

PHYCOLOGY CLASSES

Class VIII--Seaweeds

Dates: March 27--29, 1998

Instructors: Paul Silva, Dick Moe, Max Chacana

Location: Bodega Marine Laboratory, Sonoma Co., California

Victorian ladies and gentlemen were inspired by seaweeds, seeing in them the exquisite handiwork of the Creator. The Jepson Herbarium weekend workshop will offer an opportunity for the layman to learn the names and special features of their "ocean flowers". The professional biologist will learn how these relatively simple photosynthetic organisms solve life's problems in a unique and highly restricted habitat and how they interrelate with neighboring animals. History buffs will find much of interest since the development of our knowledge of California seaweeds will be traced as a fascinating part of the history of exploration of our state. Field trips Saturday and Sunday morning will provide fresh material for examination during each day. The text will be "Marine Algae of California" (Abbott & Hollenberg, 1976, Stanford University Press). Instruction will be given in the preparation of herbarium specimens.

For more information:

<http://ucjeps.herb.berkeley.edu>

phone: (510) 643-7008

e-mail: karen@ucjeps.herb.berkeley.edu

Algal Virus Workshop Bergen, Norway

June 15 - 18
1998

Department of Microbiology
University of Bergen
Jahnebakken 5
N-5020 Bergen
Norway

Algal Virus Workshop

The first international workshop on algal viruses will be organized by the Department of Microbiology, University of Bergen, Norway, from Monday 15 June to Thursday 18 June 1998.

During the last few years it has become evident that viruses infecting algae may play a significant ecological role in many aquatic ecosystems both with respect to host population dynamics and with respect to carbon and nutrient flow. Research on algal viruses is, however, carried out in only a few laboratories world wide. The scientists who share a common interest in this field of research have diverse backgrounds and their motivations for working with algal viruses differ. We belong to different scientific communities and some are focused on the virology, others on the phycology, the physiology, the molecular biology or the ecology. The idea behind this workshop is to establish a forum where we can meet and pursue the study of algal viruses.

The purpose of this workshop is

- to present and discuss the most recent results in the field.
- to exchange ideas and discuss approaches, methods and problems of common interest.
- to be conducive to personal contact and future collaboration between scientists and research groups.
- to promote this field of research and be a point of reference for scientists who want to initiate new activities or become updated.

Preliminary Schedule

The workshop (Monday morning (15.6) - Thursday noon (18.6)) will be organized with morning and afternoon sessions and include keynotes, contributed talks and posters. The social program includes a get-together on Sunday evening (14.6) and a banquet on Tuesday evening (16.6).

Invited Keynote speakers include

- D.G. Müller, Germany
- J.L. van Etten, USA
- C. Suttle, Canada
- K. Nagasaki, Japan
- W. Wilson, England
- R. H. Meints, USA
- G. Bratbak, Norway

Invitation

Oral and poster presentations addressing any question concerning algal host-virus systems, their physiology, molecular biology and ecology, methods and models are invited.

Oral contributions will be 20 min (incl. time for questions and discussion).

Posters should be no more than 80 x 80 cm.

Deadline for registration, abstracts and accommodation: April 18. 1998

Scientific Committee:

- Prof. G. Bratbak, Norway
- Prof. N. Mann, UK
- Prof. C. Suttle, Canada
- Prof. Y. Ishida, Japan

Local organizing committee:

- M. Heldal T. Castberg
 - Ø. Enger G. Bratbak
 - S. Norland T.F.Thingstad
- Department of Microbiology
University of Bergen
Jahnebakken 5

N-5020 Bergen Norway

Phone: +47 55 58 26 58 / 62

Fax: +47 55 58 96 71

E-mail: Gunnar.Bratbak@im.uib.no

WWW: <http://imp.imp.uib.no/virus/index.htm>

Registration & accommodation:

The registration fee will be approx. NOK 2300 (320USD). The fee includes book of abstracts, coffee, lunch, welcome reception and banquet.

Accommodation costs will be approx.

NOK 400 - 900 per night

If you are considering attending the workshop and want to receive the 2nd circular with registration forms and the call for abstracts, please send us the information requested below by E-mail, fax or snail-mail (please use block letters).

Name.....
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Address.....
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E-mail.....

Attendance only.....

Poster.....

Oral

Preliminary title:.....
.....
.....

US NORI FARMING: AN EMERGING INDUSTRY

Ira A. Levine

Coastal Plantations International, Inc. PO Box 209, 1219
Maine Street, Poland, ME 04274 USA

The red alga *Porphyra* (nori) is utilized by humans as a food source throughout the world. In 1995, approximately 12 billion sheets (approximately 36,000 dry metric tons) of *Porphyra* were produced. The consumption of nori, long prized by the Japanese, Chinese, Koreans and other people of Asia and the western Pacific as a complement to rice, sushi, soups and salads. Additionally, nori is a staple in macrobiotic diets, is a source of taurine which controls blood cholesterol levels and a valuable source of phycoerythrin, a red pigment used in the medical diagnostic industry. *Porphyra* is a valuable health food source as it contains high levels of protein (25-50%), vitamins (greater percentage of Vitamin C than in oranges), trace minerals, and dietary fiber. The consumption of nori in the United States was wholly dependent upon importation from Japan, Korea and China prior to Coastal Plantations International entering the market.

Commercial Cultivation of the red alga *Porphyra yezoensis* (nori) was initiated in Cobscook and South Bays, Maine in 1991 by Coastal Plantations International, Inc. (CPI). CPI's attempt to cultivate nori in the country's northeastern coastal waters follows Washington State's efforts of the 1980's. The transfer and modification of Japanese, Korean, Chinese and Washington State's nori cultivation and processing technologies to Maine has resulted in the world's first internationally certified, organically cultivated and processed nori in addition to the establishment of a nori:finfish integrated polyculture system.

While visiting our Maine facilities, a Japanese nori industrialist commented "CPI and its management have exhibited *frontier spirit* for what it has accomplished in North America". He further stated he had no reservations concerning the prediction of our future success, because CPI possesses the "knowledge and passion" for nori cultivation, research and marketing.

The knowledge and passion are shared by CPI's founders. Ira A. Levine, Ph.D., President of CPI has over 21 years of phycological experience. Dr. Levine's first marine agronomic efforts included *Gracilaria* farming in Hawaii and assisting Max Doty's *Eucheuma* farming efforts in Asia. Steve Crawford, M.S., CPI farm General Manager has over 25 years of finfish experience from India to Maine, including ownership of Oklahoma's largest catfish farming operation. Observations of pure strands of local nori on Cobscook Bay, salmon cage mooring lines provided Steve with the initial inspiration for Maine nori cultivation.

The development of a United States based marine agronomy and integrated polyculture industry, is complete. The farm has reached a maximum of 1000 saku with two nets/saku/season. Production values have been inconsistent, ranging from 0 to 8000 sheets per net equivalents. The farm and processing units have developed the experience to produce and market a crop of organically produced nori sheets distributed to health food stores, direct mail order, and as a source of fluorescent labelers marketed directly to biomedical concerns.

CPI operates a cultivation and processing facility in Eastport, Maine, maintains three aquaculture lease sites in Cobscook and South Bay, Maine totaling 128 acres, while the corporate offices and laboratory are located in Poland, Maine. Additionally, the company has established satellite research efforts in Massachusetts, North Carolina, Florida, California, and Michigan. CPI is planning to build and operate a new corporate facility (approximately 15,000 square feet) to be completed by second quarter of 1998, which will replace the present corporate office, laboratory and wet labs and significantly consolidate the company's satellite facilities. Additionally, CPI intends to lease a total of 30,000 square feet involving two facilities beginning in years 1999 and 2001. The first facility, approximately 10-15,000 square feet will be a production, extraction, formulation, packaging and storage facility. The second facility is envisioned as a new processing plant located onshore of our second farming center of operations anticipated for the waters of Long Island Sound.

Coastal Plantations International, Inc.

- Convened International Seminar "Potential *Porphyra* (Nori) Cultivation and Processing Industry in Maine"
- Awarded Maine Aquaculture Innovation Center, National Coastal Research Institute, National Marine Fishery Service, and National Sea Grant College Program Research Grants totally 1.5 million dollars.
- Purchased and assembled nori processing plant and cultivation system
- Successfully seeded and cultivated *Porphyra yezoensis* (Japanese cultivar)
- Produced market quality nori sheets under the **Maine Nori Company** logo
- Successfully established direct sales of organic nori sheets
- Awarded permits, licenses and approvals from; local (Eastport), state (DEP and DMR), federal (Army Corps of Engineers, US Coast Guard, and EPA), Canadian (Federal Dep. Fisheries and Oceans, Provincial Departments of Fisheries and Aquaculture and the Environment) and global (UN's International Conference for Exploration of the Sea (ICES))
- Established Japanese nori farmer exchange program
- Sponsored Marine Agronomy Fellowship Program
- Developed bulk nori sales to biomedical industry
- Awarded organic certification from the OCIA International, Inc.
- Domesticated local wild nori & Genetically improved several strains of nori
- Initiated salmon:nori integrated polyculture

The **Maine Nori Company** division represents the Company's effort to produce and market organic nori and develop new products and marketing strategies for nori in North America and beyond. **PhycoGen**, a state-of-the-art biotechnology research and product development division with a goal to produce new industrial products and drugs through the development of transgenics, natural product discovery, site directed mutagenesis, phycoremediation, and genetic transformations via protoplast fusions. The following applications are representative selections of pending and future aquatic biotechnology projects: Natural Sunscreen, Nori Pigments, Phycoremediation,

Pharmaceuticals and Edible Vaccines Transgenically Produced By Nori, and Sugar Substitute. The company has assembled a world class scientific team whose experience include state-of-the-art transgenic technologies, nori physiology, protoplast fusion, algal ecology and reproduction, biochemistry and natural products chemistry. The combination of scientific expertise and applied seaweed industrial experience represents a merger of two normally segregated entities, providing PhycoGen with a unique opportunity to lead the industry into the next century.

BOOK REVIEW

Catalogue of the Benthic Marine Algae of the Indian Ocean. Paul C. Silva, Philip W. Basson, Richard L. Moe. 1996. University of California Publications in Botany 79: xiv + 1-1259.

(order from: University of California Press, California-Princeton Fulfillment Services, 1445 Lower Ferry Road, Ewing, New Jersey 08618; phone orders: 1-800-777-4726; \$130.00)

One is often disappointed or mildly pleased by a book, but less often is one truly impressed. This volume by Silva, Basson and Moe falls into the latter category. At over 1250 pages it is not only monographic, but also monumental in scope. That this volume came to be is a marvelous credit to the authors, publisher, funding agencies etc. that made it possible. That volumes like this can still be completed and published at the end of the 20th century provides a confirmation that classical systematics is central to understanding biodiversity of the world ecosystem. It is not surprising that this work has taken 20 years to come to fruition.

This book is neither a flora nor a checklist. The closest analogues are DeToni's *Sylloge Algarum* (1889-24), minus the descriptions and with a particular geographic scope, or Scagel et al.'s *A Synopsis of the Benthic Marine Algae of British Columbia, Southeast Alaska, Washington and Oregon* (1989), with a more inclusive geographic scale, and with numerous nomenclatural changes and taxonomic discussions. The

book deals with the suite of organisms that marine, benthic phycologists have traditionally dealt with from systematic, floristic and ecological perspectives. This includes cyanobacteria (67 genera and 287 species or infrageneric taxa), Chlorophyta (77 genera with 585 species or infraspecific taxa); Rhodophyta (390 genera and 1810 species or infraspecific taxa), Xanthophyceae (11 species in *Vaucheria*) and Phaeophyceae (96 genera with 595 species or infraspecific taxa). Thus in one place one has authoritative, annotated bibliography to at least a fifth of described genera and species of marine green, red and brown algae. The volume includes over 90 new names at specific and infraspecific ranks and the validation of *Betaphycus* Doty. Literature has been meticulously cited, and there are over 4000 references. Thus, those of us who only occasionally dip into 'obscure' literature can find complete titles of journals or complete pagination for monographs that will make preparing our own bibliographies considerably simpler.

Even though this book deals only with benthic algae that occur in the Indian Ocean, it will be an invaluable reference work for benthic, marine algal systematists working on any algal group anywhere in the world. Some of the distributions seem a bit odd (e.g., *Porphyra purpurea*, *Ahnfeltia plicata* and *Palmaria palmata*), although the authors are not responsible for the taxonomic decisions upon which such distributions are based. Every algal systematist will have at least some quibbles with the taxonomic decisions that were made. My personal one is that the authors make a point of accepting Feldmann's (1962) generic concepts for the Acrochaetiales, but then do not apply them throughout.

Blue-green algal taxonomy has been in a state of chaos since Drouet began to publish his monographs, and microbiologists have claimed these organisms. I am pleased that Silva et al. have included cyanobacteria in their treatment, and that they have used the Anagnostidis and Komrek systematic arrangement (e.g., 1985. *Archiv für Hydrobiol. Suppl.* 71: 291-302). It may be a long time before we really understand what a cyanobacterial species really is; however, the morphological/phenetic approach taken here will at least allow us to put names on phenotypes, rather than lumping variation into categories that we know have little meaning (i.e., the Drouet system). For adherents of the Drouet system, there is a table that reconciles the two classifications.

This book should be in every university library or institutions where systematic phycology is active. It will

be an invaluable reference for anyone working on macroalgal floristics and taxonomy. It is commonplace to complain about the cost of new books. At \$130, Silva et al. may be a lot of money; however, put in the context of what one can pay for books these days, and the fact that it will be a heavily used reference work for decades, the price is a bargain for the 6 cm of shelf space it will occupy.

David Garbary
St. Francis Xavier University

Note from the Newsletter Editor

The next Phycological Newsletter will soon have its own website. Dr. Morgan Vis-Chaisson of Ohio University has agreed to be our new webmaster. I will continue to edit submissions and pass them along to her for posting on the website. This will have the benefit that time sensitive news will reach our web-using subscribers in a more timely fashion. These changes are due to a vote (at the business meeting in Leiden) by the membership to suspend the hard-copy newsletter after the September issue and the PSA will try, a one-year experimental time, to develop and utilize the PSA website as our major vehicle of communication.

For those of you who prefer to continue to receive a hard copy of the newsletter (like I do), please send the enclosed bright pink card back to me and a hard version will be sent out May 1 and November 1 each year.

Look for information regarding the Phycological Newsletter web site at the old PSA web site sometime in January:

http://condor.depaul.edu/~rmccourt/PSA/PSA_home.html

Join the PSA list! Send a message to listproc@colostate.edu with the message subscribe PSA firstname lastname.

Grant G. Mitman
Phycological Newsletter Editor

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