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EDITOR: LARRY LIDDLE
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From The Editor's Desk

The plans for the First International Botanical Congress, a special report on the American phycologists' trip to the People's Republic of China and a pre-publication offer for Selected Papers in Phycology II are highlights of this issue of the newsletter. Hearty congratulations to Luigi Provasoli on the occasion of his receipt of the National Academy of Sciences 1982 Gilbert Morgan Smith Award! In a telephone conversation Dr. Provasoli expressed his modest gratitude and also informed me that he is back in the lab working fulltime after a brief curtailment of his activities. We are pleased to hear that, too.

美國海藻學家參觀中國

For ten United States phycologists, 1981 brought the opportunity to visit and learn from our phycological colleagues of the People's Republic of China and to travel through this most intriguing country along a 3000 kilometer transect that extended from the snows of the majestic Great Wall of Northern China to the coral reefs of the "Edge of Heaven" - the southern tip of Hainan Island. The occasion was a Joint U. S. - China Phycology Symposium, organized and sponsored by the Committee of Scholarly Communication with the People's Republic of China (CSCPRC) and the Chinese Academy of Science (CAS). This symposium,



Standing l to r: Canton Acad. Sciences Rep., Unident., Bus Driver, West, Loeblich, Beemer, Fenical, Mayor of Hainan, Starr, Unident., Translator, MacLaughlin, Tseng, Neushul, Doty. Seated l to r: Local Rep., Diver, Diver, Wu (Interpreter), Coff, Lee (Interpreter), Resort Official.

in addition to others sponsored by the CSCPRC and the CAS (e.g. Biological Nitrogen Fixation, Biological Control of Insects, Science Policy) is part of an ongoing program that began in 1975 to encourage scientific communication between the USA and PRC. The adventure began in Beijing where the delegation arrived on a cold and clear Chinese November night. We were met by the translators/guides who had been assigned to our group by the Chinese Foreign Ministry Office, to accompany us throughout our month's visit. After two days of organizational meetings, tea, visiting the People's Square (Tian'anmen Square), more tea, and visiting scientific institutes where we were served more tea, we departed Beijing (sans luggage) in a wonderful coal-burning steam-powered train and headed southeast toward the beautiful coastal city of Qingdao (Tsingtao), site of the Academia Sinica Institute of Oceanology, Shandong College, Yellow Sea Fisheries and Research Institute, Tsingtao Brewery and the appropriate site of the Joint U.S. -- China Phycology Symposium and the 1983 Seaweed Symposium. That first day in Qingdao (Sunday) was spent exploring this city of hills, harbors, white buildings with red tile roofs (with a distinctly Germanic architectural style) seeing the coastal scenic spots (including a very excellent city aquarium and museum) and visiting the Institute of Oceanology. That evening, we were treated by our Chinese hosts to a Chinese (Hong Kong) movie. The film, "Golden Eagle" was a hilarious, swash buckling movie that effectively combined everything that "worked" in the 1930-40 Hollywood movies of this type and a few things that didn't. It was pure entertainment and the fact that the dialog was Chinese did not make the plot any less understandable. It was lucky that the movie was so captivating, as it is likely that had we fallen asleep in this theater, we would have quickly frozen to death! The symposium began promptly the next morning (Monday) and throughout the following 5 days and evenings, we heard papers from the 10 American and 20+ Chinese delegates in the areas of (1) algal systematics, morphology and evolution (Alfred Loeblich, Michael Neushul, Tseng C. K., Chu Hao-Jan, Chou Chenying, Jin Dexiang, Cheng Beilin, Zhang Derui, and Zhu Wah-jia), (2) reproduction, life histories and genetics (Richard Starr, Fang Tsungei and John West), (3) Ecology, Interactions, Community Structure and Diseases (Ted Smayda, Wu C. A., Lynda Goff and Guo Yujie), (4) Physiology and Biochemistry (Annette Coleman, Mei Chenan, Lawrence Bogorad, Tang Peisung, Jiang Li-jin, Li Jingyan, Ji Minghou and Bai Kenzhi), and (5) Cultivation and Utilization (Max Doty, Bill Fenical, Tseng C. K., Li Shanghao, Zhang Zongshe and in addition papers were given by Jack McLachlan (Canada) and Arnie Jensen (Norway) who were in Qingdao as part of the organizing committee for the upcoming Seaweed Symposium. Several evening workshops were conducted in which delegates discussed current research methodology and instrumentation and, of course, a major share of scientific exchange occurred over cups of green tea, Tsingtao beer, Mai t'ai (55% alcohol by volume!) and the two memorable Chinese banquets that we shared. In addition to participating in the formal symposium, the American and Chinese delegates were treated to an afternoon "on the rocks" of Qingdao where we had the opportunity to see, photograph and collect many of the local marine algal species. Another

afternoon away from the formal symposium presentations took us off shore to see first hand the impressive marine farms of mussels (Mytilus edulis), scallops (Chalamys farreri) and the brown alga Laminaria japonica which is cultivated for its alginate. Several alginate factories (communes) operate in the Qingdao area. We had the rare opportunity to visit one of these; however, photographs within the plant were strictly prohibited. None of us could help but compare the depressing working environment of the alginate factory (something out of a Dickens' tale) with the industrial sophistication (and apparent high productivity) of the Qingdao (Tsingtao) Brewery. The quality of the final products (low grade alginate and world class beer) clearly reflected this difference! Qingdao is certainly a center for both applied and basic research on marine algae and we were impressed by the work of Professor Fang and associates (Shandong College) who are making significant contributions in the study of the genetics, physiology and diseases of Laminaria japonica. For those of us from California, it was particularly impressive to see Macrocyctis angustifolia (stock from Baja California) growing in culture rooms and seed beds at the Yellow Sea Fisheries Research Institute. It will be interesting to see if our Chinese colleagues will be successful in developing a temperature tolerant strain of this species that will survive the 20^o C plus summer temperatures of the Qingdao and Dalian coastal regions where concerted effort is being made to farm this important alginophyte. Leaving Qingdao, we returned by train to Beijing where we spent the following 3 days visiting the Department of Biology, Beijing University, Academia Sinica's Institute of Genetics and the Institute of Botany and the Chinese Academy of Medical Sciences Materia Medica Institute. This latter institute is active in pharmacological and clinical research on natural plant and animal products. The Institute houses a staggering collection of dried plants and animals which are used in these studies. One of the more interesting items in this collection was a bottle (ca. 10 kilograms) of dried Hepialus americanus (a caterpillar) with its fungal parasite Cordyceps sinensis; this fungus has been found to contain an alkaloid which is very effective in treating bronchitis. The research underway at The Institute of Botany (Beijing) was also quite impressive. This is one of the oldest institutes in China (1925) and although the buildings show the strain of time, the enthusiasm, energy and excitement of the scientists was genuine and contagious. Various projects are underway at this Institute including (1) studies of the evolutionary origins of higher plants (2) synecological studies of Chinese vegetation (particular interest in the northern grassland and forest communities and the subtropical vegetation of Guangdong and Guangxi provinces) (3) developmental studies (tissue culture) of higher plant growth, (4) somatic cell fusion attempts (one of the most interesting is an attempt to fuse the Crown Gall inducing bacterium Agrobacterium tumefaciens with the nitrogen fixing bacterium Azotobacter chroococcum; this has resulted in a bacterium that induces Crown Gall in Tomato and these tissues actively fix atmospheric nitrogen - see McGraw-Hill's Biotechnology Newswatch 2, #2 Jan. 18, 1982) and (5) the bioenergetics of solar energy conversion including

such topics as photosynthesis, plant metabolism and nitrogen fixation. Blue-green algae (*Anabaena azollae*) are being used in these latter studies to examine the enzymes involved in the process of photolysis, and thylakoid structure and function. In addition, studies are underway into the mechanisms by which red light stimulates sporocarp germination in the *Azolla-Anabaena* symbiosis as well as what factors control the synchronous growth of the symbionts and the simultaneous germination of the fern sporocarp and the alga's akinetes. The city of Wuhan located on the Yangtze River and surrounded by many beautiful lakes was our next stop on our sweep through China. Wuhan is not only the home of one of China's most important iron and steel works, it is also the home of the Academia Sinica's Institute of Hydrobiology. We were warmly welcomed by the scientists of this research center and spent 3 days sharing in science and friendship. This Institute (founded in 1950) was originally located in Shanghai and was involved in both freshwater and marine biological research. In 1954, the marine program departed to found the Institute of Oceanology in Qingdao and the Institute of Hydrobiology moved to Wuhan to concentrate on studies of the freshwater biology of this region and other freshwater systems in China. Currently the 400 employees (250 scientific and technical staff) are engaged in studies of (1) fish biology including genetic research, diseases of fish, ecology and taxonomy (the institute houses a 100,000 specimen collection of freshwater fish from China), (2) water pollution environmental toxicology and (3) freshwater phycology. The research that is underway in the several algal laboratories include taxonomic studies of the algal flora of China, physiological and ecological studies of oxygen sensitive *Anabaena* mutants and photosynthetic studies of the dinoflagellate *Gymnodinium* and life history studies of several cultured freshwater algae. During our visit to Wuhan we were shown the amazingly productive fish (carp) ponds of the area, the Experimental Fishery Station where research is underway on the freshwater dolphins (indigenous to the Yangtze River and its tributaries) and Wuhan University. Wuhan was followed by visits to the Institute of Plant Physiology and Cell Biology (Academia Sinica) in Shanghai from where we departed for the warmth of southern China. Upon arriving at the most beautiful city of Guangzhou (Canton), a city of flowers and revolutionary traditions (site of the National Institute of the Peasant Movement founded by Mao Tsetung and the Memorial Hall to Dr. Sun Yat-sen), we were finally able to shed our long underwear and several layers of woolen clothing. Visits here included a lovely morning at the South China Institute of Oceanology (Academia Sinica). This Oceanology Institute is the southern counterpart of that at Qingdao. However, whereas the Institute of Qingdao emphasizes basic and applied marine biological research, marine geophysical and chemical research is the focus of the South China Sea Institute which employs over 700 workers. One marine biological research laboratory is housed at this institute in which basic research is underway on the growth and ecology of *Gracilaria*, the systematics of the Nemalionales and phytoplankton taxonomy, and distribution. In addition, this institute administrates 3 experimental marine biological stations (one is situated east of

Guangzhou and is involved in phycological research, another is located south of Guangzhou and is involved in invertebrate research and the newest is at the southern tip (Yaxian) of Hainan Island). Hainan Island was our last science stop of this most amazing tour of China. We travelled the length of this ca. 250 kilometer tropical island in our Toyota bread-box-bus through rubber, coffee, tea, black pepper and cocoa plantations (communes) and ended up at Yaxian where not a minute was wasted in our dash for the beaches, warm water and coral reefs. The coral, fish and algal flora were spectacular! One of the most interesting stops on Hainan Island was at the Shalo Mariculture station. Here, *Gracilaria eucheumoides* and *Eucheuma gelatina* are harvested, dried and processed for carrageenan. The station which began operation in 1955 employs 145 workers and its production value is reported to exceed 1 million Yuan (ca. 1.6 Yuan/1 U.S. dollar) per year. The highest yield was 300 tons dry weight (in 1978) from a production area of ca. 3200 mu (207 hectares). The processed seaweed yields ca. 10-12 tons carrageenan (dry weight) per year and the profit for the government from this seaweed farm is 100-200,000 Yuan per year (ca. 20% profit). Interesting as was the science of China, even more so was the populace, particularly as we realized we could wander anywhere when we could snatch the time. Although the delegation generally attracted attention anywhere we travelled, the female delegates held the most interest for the Chinese. Crowds amassed around us whenever we stopped to buy peanuts, oranges or tonic (which was extremely difficult to find and some days, an absolute necessity!). All were very friendly, curious and polite, and often, the younger folk would try some English phrases, products of the nation-wide teaching of English which has now replaced Russian. Several surprises: TV has really come, at least to the major cities where a good proportion of the populace may have access to TV. Generally a single channel operates giving advanced trigonometry in the afternoon, placid reading of the news at dusk, and sports or even a foreign movie at night. The latter must be a major cultural revelation to the people, as western books and magazines are not generally available. For a country whose lengthy and sophisticated cultural heritage has been near worshipped in the west, the truly tasteless and ugly aspect of everyday and popular art and furnishings was a surprise. Likewise, was the uniform population of London plane trees bordering all main streets from Beijing to Shanghai, the product of some central committee's decision 20 years ago, while here we plant Chinese Ginko! Most impressive was the obvious good health of the people (though none are fat on the average diet of less than 2000 calories per day) and the rarity of small children compared to the numbers of people. Women cannot marry until 23 and men until 26, and the monthly bonus for one child is withdrawn after the birth of a second child. Having a third child seems to be beyond the imagination, except in the country-side where extra hands still bring in more money. Also overwhelming is the amount of housing that has been built or rebuilt, mostly small attached houses (in villages) or 8-10 story apartment buildings in the cities. These are all from preprepared concrete forms and hence all a drab

gray. Most of the North China we saw had this aspect, and everywhere (and all night) construction continued, trying to make up for the lost years of the cultural revolution. For most people, housing means a two room apartment, with a charcoal stove and cold running water. Warmth comes from padded clothing and large, lidded, boiling hot cups of tea (or sometimes just hot water). For us, it came from long winter underwear and woolens which we were rarely without during our weeks in Northern China. Everywhere we were treated royally. Hotels and guest houses were more than adequate and meals for foreigners (standard meals were always in a dining room separate from the Chinese) were almost compulsively high in protein dishes of various sorts. One red letter day on Hainan Island included boa constrictor (captured locally) soup for lunch, and dishes of crabs, turtle (fresh-water) soup, sea slugs and frogs' legs for the banquet dinner in addition to the usual chicken, duck, goose and pork. Rice and bread dumplings we could get, but sweet potatoes and peanuts were considered unsuitable food for our table. And things like that were not easy to change. Probably the single most interesting thing we saw was a tent show, including masked stiltwalkers, billy goat baiting, stave fighting and a magician of high finesse, all for the equivalent of 6 cents in the park along the Yangtze River in Wuhan. It was the Sunday show for the local folk, with 3 short rows of bleachers and standing room behind, walled off by sheets hung from trees. All the adults watched the whole show with fascination, but without any sign of response, no clapping, only an occasional involuntary intake of breath. However, here there were lots of children in the audience, and they had not yet finished learning the proper forms of behavior in public, so they at least giggled. As the wanderers hastened back through the park to meet obligations, we passed young people practicing soccer and a sea of old men playing Chinese chess. The park is both the meeting ground and the escape in a system where privacy, in the Western sense, hardly exists. Dormitory rooms normally house 8 students, so potential study nooks are searched for. Next year will see the graduation of the first undergraduate class in the past 15 years and the Chinese encountered on this trip recognize that they have a lot of catching up to do and are eager for outside contacts. What a privilege it was to visit, and yet how many light years away from "normal" life that month seemed to be. Chairman Mao has said, "To see China briefly is like picking flowers from a galloping horse". We started our bouquet on this brief tour through this marvelous country but look forward to adding to it throughout the future.

--Lynda Goff and Annette Coleman

1. Jog your students world-wide thinking! The Embassy of the People's Republic of China (2300 Connecticut Ave, N.W., Washington, D.C. 20008, attn: Mr. Wang Yan-sheng) has available a 20 minute film, free of charge about aquaculture in China and featuring Professor Tseng, Director of the Institute of Oceanology at Qing-dao. The film, "Happy Sea and Algae", is in Chinese, but that will present little problem to your class. The

following synopsis may help, though I may have a couple of sequences out of order: Open with waves on Qing-dao rocks, Tseng walking along beach. Dreamed since a child of cultivating the sea like the land. Intertidal views. Porphyra culture at the Institute. Flashback to early years of Tseng in Amoy in diving suit, etc. (1930's). Laminaria culture at Qing-dao, including liquid fertilizer applied by fire hose to the sea. Tseng family at home, checker game, Tseng loses to granddaughter and has to pay the forfeit - granddaughter wants a song (your students will crack up when they hear what song it is). Shift to tropics, Hainan Island or south, class of students collecting, eating on beach, Tseng working late in tent at night, various fruits of the sea in the tropics, final scenes of the sea as a farm. If you want to borrow this, just write the Embassy and say you would be delighted to pay the postage.

Annette Coleman

2. The George Frederik Papenfuss Memorial Fund has been established for the purpose of maintaining, developing, and facilitating the use of the psychological resources of the Herbarium of the University of California at Berkeley. Contributions should be made payable to the Papenfuss Memorial Fund, U.C. Berkeley, and sent to the Development Office 2440 Bancroft Way, Berkeley, CA 94720.

News THE GREAT BLUE-GREEN ALGAL HEIST

The owner and bookkeeper of a health food store in Fresno were arrested after police seized 830 cases of plankton dietary supplement reportedly stolen from a Santa Cruz firm. A Santa Cruz policeman investigating the theft of 1,000 cases of Spirulina read in an advertisement that the product was being sold at low cost by Suddenly Slim Health Products. He ordered a bottle and found that its lot number matched one of those stolen from Light Force Products of Santa Cruz, police said. Fresno police booked the owner of the health food store and the bookkeeper for investigation. Officers recovered about \$81,000 worth of the plankton product Tuesday. Plankton is microscopic animal and plant life found in water. --AP release.

News of Colleagues

PATRICIA A. WHEELER has accepted a position as Associate Professor in the School of Oceanography at Oregon State University, Corvallis, OR 97331.

ALAN W. WHITE has taken a one year professional development leave in Japan where he will study the effects of toxic dinoflagellates on marine fish larvae with Dr. Masateru Anraku of the Red Tide Research Division at the Nansei Regional Fisheries Research Laboratory in Ono-Cho, near Hiroshima.

DANIEL E. WUJEK will be on sabbatical leave during winter and early spring 1982 working in the laboratory of Clinton Dawes at the University of South Florida. There he will conduct both SEM and TEM on freshwater and marine phytoplankton.

JAMES T. HOLLIBAUGH's new address is Maclaren Plansearch Corp., 401 750 West Pender St., Vancouver, B.C. V6C 2T7.

NELSON LAWRY, University of Rochester, won first

prize in the Structural Category for his essay on the World's Most Boring Protein. The contest was sponsored by Bethesda Research Laboratories and judged by faculty members at Harvard University. The protein was (what else?) cyanophycin, alias multi-L-arginyl-poly(L-aspartic acid). Who sez science ain't fun!

GEORGE F. PAPPENFUSS, Professor Emeritus of Botany at UC-Berkeley, died on December 8, 1982 in his Berkeley home at the age of 78. Pappenfuss was known for his expertise on marine algae and was the current President of the International Phycological Society and of the First International Phycological Congress to be held in Newfoundland next year. He was born in Harrismith, South Africa and came to this country in the 1920s to study agriculture at North Carolina State College where he earned his bachelor's degree in 1929. He received a doctorate in marine algae at Johns Hopkins in 1933. Pappenfuss later did research in South Africa and Sweden. In 1940, to escape German occupation, he crossed Russia by train and made his way to Hawaii. He came to Berkeley in 1942 as a research botanist and joined the faculty in 1944. He retired with emeritus status in 1971. Pappenfuss was a Guggenheim Fellow in 1949 and a Milner Research Professor at Berkeley in 1960. He was a member of several professional societies. Survivors include his wife, Jean, and a son, Theodore J. Pappenfuss, both of Berkeley.

RUSS CHAPMAN, Louisiana State University, Associate Dean of Letters and Sciences, has won the AMOCO Foundation Inc. 1978 Outstanding Undergraduate Teaching Award and the LSU Alumni Foundation Distinguished Faculty Award for 1981.

RICHARD NORRIS can now be reached at Dept. of Botany, University of Natal, P.O. Box 375, Pietermaritzburg 3200, Natal, South Africa.

Recent Publications

1. The Biology of Seaweeds (Botanical Monograph 17) 1981; Ed. C. S. Lobban and M. J. Wynne; University of California Press, 2223 Fulton, Berkeley, CA 94720; 786 pp.; \$85-U.S. (Outside U.S. order from Blackwell Scientific Publications, £45.)
2. Marine Botany; Clinton J. Dawes; John Wiley Sons, Inc., Dept. 0320, P.O. Box 063, Somerset, NJ 08873; 632 pp.; \$45.00.
3. The Lake George Ecosystem; Charles W. Boylen, Ed.; Proceedings of the Lake George Research Symposium and Contributed Papers, Margaret H. Schadler, Chairwoman; The Lake George Association, Canada St., Lake George, NY.
4. Plants and the Daylight Spectrum; H. Smith, Ed; Academic Press, Inc., 24-28 Oval Road, London NW1 7DX, England.
5. Nori News .. The PNNGA (Pacific Northwest Nori Growers Association) Newsletter; Initiation Fee \$25.00; 1982 Annual Dues \$15.00; Bill Hanson, PNNGA Treasurer, P.O. Box 7192, Tacoma, WA 98407.

6. Phytoplankton: biomasse, production, numeration et culture; Ed. Guy Jacques; a workshop organized by Laboratoire Arago with the aid of CNRS (Setar) and UNESCO; 9 Oct.-4 Nov., 1978; Laboratoire Arago, University Pierre et Marie Curie, 66650 Banyuls-sur-Mer, France.
7. The Ecology of Algae; F. E. Round; Cambridge University Press, 32 E. 57th Street, New York New York 10022. U. S. \$130.00.

Summer Courses

1. B. E. Lippert, Portland State University, will teach a three week course emphasizing the identification and ecology of freshwater algae in the streams, lakes, ponds, snowfields, and hot springs of the high desert areas of southeastern Oregon. Studies of visible fungi and lichens will be included. Algae & Fungi FSBI 255, 455, 555; (4 sem. hr. cr.) Aug. 16 - Sept. 4. For additional information contact: B. E. Lippert, Department of Biology, Portland State University, Portland, OR 97207, or: Director, Malheur Field Station, Princeton, OR 97221.
2. Ronald W. Hoham will be teaching "Freshwater Phycology" at the University of Montana's Biological Station during Summer 1982. The session runs from 21 June through 14 August, and is worth 8 credits. The course will emphasize diversity in algal habitats and community structure. Field trips are planned for alpine areas in Glacier Park and the Mission Mountains in addition to examining streams, bogs, ponds, lakes, marshes, and swamps in the valleys surrounding the mountains in northwestern Montana. For further information write to: Jack Stanford, Director, University of Montana's Biological Station, East Shore, Bigfork, MT 59911.
3. R. T. Barber and J. Ramus, Duke University Marine Laboratory, will be teaching "Primary Productivity in the Seas" (BOT/ZOO 215L). This is a new course for advanced undergraduate, graduate, and postdoctoral students from 19 July - 20 August, 1982. The theme of the course is the biological flux of carbon in coastal and open seas by functional groups of primary producers, specifically cyanobacteria, phytoplankton, seaweeds, seagrasses, and marsh grasses. The laboratory will consist of the analysis of biological carbon flux in adjacent marshes, estuaries and coastal waters. Visiting lecturers will include Mary Jane Perry (U. of Washington), Hans Paerl (U. of North Carolina), and Evelyn Haines (U. of Georgia). For application and information, write or telephone: Admissions, Duke University Marine Laboratory, Beaufort, NC 28516. (919) 728-2111
4. Grethe Rytter Hasle and Jean Thronsen, University of Oslo, will teach a "Phytoplankton Course for Experienced Participants" from August 22 - September 10, 1983. Participants are requested to have a Ph.D., M.Sc., or B.Sc. degree or equivalent, and experience from phytoplankton work (species identification, cell enumeration by microscopy). The course will feature training in identification of

marine planktonic algae with emphasis on use of identification literature and light microscopy. The course will be held at the Biological Station, Drøbak, Oslofjord. Further information and an application form may be obtained until May 1, 1982 from: G. R. Hasle, Department of Marine Biology and Limnology, Section of Marine Botany, University of Oslo, P. O. Box 1069 Blindern, Oslo 3, Norway.

- 5 Field Phycology will be offered at the Shoals Marine Laboratory on Appledore Island in the Gulf of Maine from June 9-30. The course will emphasize the local marine flora, with an emphasis on field projects. Instructor: Philip Sze (Georgetown University). For information and applications, contact: Shoals Marine Laboratory, G14 Stimson Hall, Cornell University, Ithaca, N.Y. 14853. Total cost is \$835 (includes tuition, room, board). Financial aid is available.

Positions Available

ASSISTANT PROFESSOR -- PHYCOLOGIST OR BRYOLOGIST -- The Department of Botany, University of Iowa, announces a 9-month tenure track position at the Assistant Professor level to begin August, 1982. Preference will be given to candidates who have demonstrated research expertise in the area of either phycology or bryology. The successful candidate will be expected to teach an advanced course in his/her specialty and to participate in the undergraduate teaching program. The normal teaching load is one course per semester. Summer teaching appointments within the University are also possible. The University will support the research needs of this position; however, the candidate will be encouraged to seek additional external funding. Applications are requested from candidates trained in any aspect of phycology or bryology; resources are available to support research in evolutionary, ecological, ultrastructural, or biochemical approaches to these disciplines. The Department of Botany has ample office and laboratory space available for this position. Located within the Department are several growth chambers, an excellent TEM facility, and laboratories equipped for physiological and biochemical investigations. A complete SEM and freeze fracture facility is also available. The Department maintains a collection of living algae and bryophytes as well as an extensive bryophyte herbarium. The Botany Library is housed in the Departmental building. The University of Iowa and the Botany Department participate in the Organization for Tropical Studies and in a freshwater research facility at the Iowa Lakeside Laboratory. Interested candidates should send their curriculum vitae, graduate transcripts, a statement of research plans and accomplishments, and three letters of recommendation to: Dr. Robert W. Embree, The Department of Botany, University of Iowa, Iowa City, IA 52242. Screening of Applicants will begin on March 31, 1982.

- 2 RESEARCH ASSISTANTSHIP IN UNDERWATER PHOTOMORPHOGENESIS -- A Ph.D. or MS candidate is needed for research on the control of germination and differentiation in *Nitella*. Ideally the student will be interested in some aspect of photobiology and aquatic biology. Although most students in the department follow a core track in their training an individually designed program tailored to the student's interests may be desired. A stipend of \$5,000 is available for the calendar year. Certification or a willingness to train for SCUBA is desirable. The research is aimed at understanding the regulation of growth and development of *Nitella flexilis*, a species of charophyte that lives at great depth in clear lakes. A feature peculiar to its existence is the formation of sharply stratified boundaries. Both laboratory and field studies are underway to understand the control mechanism that results in such abrupt boundaries. The studies involve photomorphogenesis and the functioning of phytochrome and blue-absorbing receptors in the distinct photic environments of the sublittoral. The facilities for graduate training are excellent. Within the Department of Biological Sciences is the expertise of 35 faculty, well equipped laboratories and a number of centralized facilities such as environmental controlled units, stockroom of scientific supplies and professionally staffed shops for construction of facilities for plant tissue culture and plant molecular biology. Within a consortium of local universities is a cadre of plant scientists jointly committed to offering a maximum amount of service to the training of graduate students. Albany is central to a variety of lakes that contain native populations of the subject organism. The *Nitella* meadow in Lake George which extends the length of the lake, is the focus of an underwater laboratory. Lights and filters are in place to study directly the role of spectral quality on depth control of meadow boundaries. There is also a lakeside laboratory on Lake George that is staffed and equipped by Rensselaer Polytechnic Institute with whom a fine working arrangement exists. Address all inquiries to: Dr. Raymond G. Stross, Department of Biological Sciences, the University at Albany, Albany, NY 12222. Applications should go directly to the Graduate School with notice to the above person.

- 3 MARINE BOTANIST -- Harbor Branch Foundation is seeking applications for a permanent position in marine botany. Candidates should hold the Ph.D. degree with specific training in marine phycology and have postdoctoral experience in any related area, e.g. marine algal physiology, ecology, aquaculture. He/she will be expected to develop an innovative research program and cooperate with ongoing biological, chemical, physical and geological studies. Marine research is supported by Harbor Branch Foundation although outside funding efforts are encouraged. Salary and rank will be commensurate with experience. Send curriculum vitae, a statement of research interests and the names of three references by 15 April,

1982 to: R.A. Gibson, Search Committee, Harbor Branch Foundation, Inc., RR 1, Box 196, Ft. Pierce, FL 33450.

4. POSTDOCTORAL FELLOWSHIP -- ALGAL CYTOLOGY
Applicants should be experienced in light and electron microscopy and preferably also in EM cytochemistry on Rhodophyta or Phaeophyta. The fellowship initially pays \$15,000 per annum and may start any time after January, 1982. Interested candidates are invited to send a C. V. with names, addresses and telephone numbers of 3 references to: Dr. Kathleen Cole, Department of Botany, University of British Columbia, #3529-6270 University Blvd., Vancouver, B.C., Canada V6T 2B1.

Meetings and Symposia

1. MAY 1-2, 1982 -- 21st Northeast Algal Symposium, Marine Biological Laboratories, Woods Hole, MA. Abstracts and registration deadline is 22 March. Distinguished lecturer Johan Hellebust, Toronto University, will speak on "Osmoregulation and Salt Tolerance of Algae." A mini-symposium on "The Implications of Genetic Relationships from Algal Studies at the Micro and Macro Level" will include four speakers: 1) Annette Coleman, Brown University, "Diversity of Chloroplast DNA Types Among Algal Phyla"; 2) Gary Floyd and Charles O'Kelly, Ohio State University, "Phylogeny of the Ulvophyceae: an Ultrastructural Perspective and Update"; 3) Michael Neushul, University of California, Santa Barbara, "Evolutionary Implications of Kelp Hybridization"; 4) John van der Meer, National Research Council, Halifax, Nova Scotia, "Red Algal Reproductive Strategies with Special Reference to the Possible Evolution of *Palmaria palmata* and Related Forms." All phycophiles are welcome to the symposium. Further information may be obtained from Charles Yarish, Biology Department, University of Connecticut, Stamford (not Stanford), CT 06903; (203) 322-3466.
2. JUNE 7-9, 1982 -- The Fourteenth Miles International Symposium: "Cell Fusion" will be held at Johns Hopkins Medical Institutions, Baltimore, MD. The preliminary program includes sessions on: Haploid Cell Fusion (Fertilization), Bennett M. Shapiro (Seattle); Protoplast (Plant & Bacterial) Fusion, Edward C. Cocking (Nottingham); Hybridomas, J. Thomas August (Baltimore); Cell Fusion Other Than Hybridomas, Francis H. Ruddle (New Haven); Plant Cell Fusion, Eugene W. Nester (Seattle); Monoclonal Antibodies, to be selected. For further information contact: Edward G. Bassett, Symposium Coordinator, Miles Laboratories, Inc., P.O. Box 40, Elkhart, IN 46515, (219) 264-8460.
3. AUGUST 8-14, 1982 -- The Annual Meeting of the Phycological Society of America will be held with the First International Phycological Congress in St. John's, Newfoundland, Canada. The deadline for registration is 16 April and for abstracts 14 May, 1982. The actual program begins Monday, 9 August, with talks by

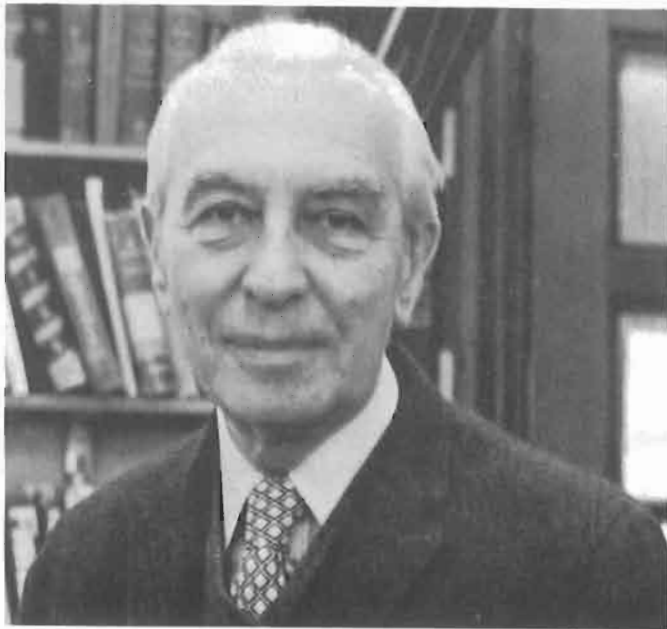
R. Wilce on "Problems in Arctic Phycology", Møestrup on Algal Phylogeny from the Ultrastructural Point of View, and K. Luning on Photoperiodism in Algae. Twelve symposia on a wide variety of topics will be presented on Tuesday, Thursday, and Friday the 13th. Contributed papers are scheduled for Monday, Tuesday, and Friday afternoons. Wednesday is set aside for excursions and local tours with no organized Congress sessions. The post-PSA banquet speaker will be Irene Manton. Further inquiries should be directed to: The Secretariat, Department of Biology, Memorial University of Newfoundland, St. John's, Newfoundland, A1B 3X9 Canada.

Group Travel to St. John's, Newfoundland:

- A. From the West Coast -- Contact Dave Montgomery, Department of Biological Sciences, Cal. Poly. State College, San Luis Obispo, CA 93407. (805) 546-2446.
- B. From the East Coast -- Contact Richard Searles, Department of Botany, Duke University, Durham, NC 22706. (919) 684-3375.
- C. From Britain -- Contact Joanna Jones, Department of Marine Biology, University of Liverpool, Port Erin, Isle of Man, U.K., Telephone: 83-20-27.
4. FEBRUARY 1-11, 1983 -- The Australian Society for Phycology and Aquatic Botany will hold its Annual General Meeting in Griffith, N.S.W. The conference will overlap and follow the Annual Congress of the Australian Society for Limnology. A joint session is being arranged. The fourth AGM is to be held in conjunction with the XV Pacific Science Congress in Dunedin, New Zealand. For further information contact: Roberta Townsend, School of Biological Sciences, The University of Sydney, NSW 2006, Australia.

Classifieds

1. DANNY C. REINKE, State Biological Survey of Kansas, 2045 Avenue A, Campus West, Lawrence, KS 66044, (913) 864-4493, would like to trade the following back journal issues for back issues of J. Phycol., Br. Phycol. J. or Phycologia:
- | | |
|------------------------|----------------|
| J. Phycol. | Amer. J. Bot. |
| Vol. 13 (1977) | Vol. 59 (1972) |
| 14 (1978) | 60 (1973) |
| 15 (1979) | 61 (1974) |
| J. Protozoology | 62 (1975) |
| Vol. 25 (1978) | 64 (1977) |
| Trans Amer Microso Soc | 65 (1978) |
| Vol. 96 (1977) | 66 (1979) |
| Vol. 97 (1978) | |
2. C. SHEILDS COWANS, 105 Tucker Hall, Div. of Biological Science, University of Missouri - Columbia, Columbia, MO 65201, (314) 882-4068, is interested in receiving cultures, or simply collections of *Dunaliella* - any species. He already has all the cultures from the Texas culture collection.



LUIGI PROVASOLI of Yale University has won the National Academy of Sciences 1982 Gilbert Morgan Smith Award. The committee reported that Provasoli was selected in recognition of his "work on the culture and nutrition of algae, and the influence of bacteria and organic substances on the morphology of larger algae." The award will be presented in a ceremony in Washington, D.C. on April 26, 1982. The G. M. Smith Award consists of a \$5,000 prize and a medal accompanied by an illuminated scroll commemorating the occasion.

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