



# PHYCOLOGICAL NEWSLETTER

A PUBLICATION OF THE PHYCOLOGICAL SOCIETY OF AMERICA

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**2009 Meeting of  
The Phycological Society of America  
Honolulu, Hawaii, USA  
18-22 July**

PSA ANNUAL MEETING – Plant Biology 2009

**A**loha! The 2009 Annual Meeting will be held in partnership with the American Society of Plant Biologists (ASPB) from July 18-22, 2009 at the Hawaii Convention Center, Honolulu, Hawaii, and is being hosted by Dr. Alison Sherwood (University of Hawaii). The meeting will kickoff on Saturday, 18 July with the Bold Award talks in the early afternoon and the opening mixer in the evening. The always popular PSA Auction and Mixer will be on Sunday evening. Poster Sessions are scheduled at several times during the meeting. The PSA banquet will be Tuesday evening at the Waikiki Aquarium (<http://www.waquarium.org/Default.asp>).

In addition to the standard PSA sessions, several symposia have been organized with both plenary and mini-symposium speakers. Topics and speakers include Algal Biotechnology: Past, Present and the Prognosis (David Chapman, Arthur Grossman and Don Cheney), Defining Algal Species in the 21st Century: Morphology vs. Genetics?

## WINTER SPRING 2009

Editor:

Juan Lopez-Bautista  
Department of Biological Sciences  
University of Alabama  
Tuscaloosa, AL 35487  
[jlopez@ua.edu](mailto:jlopez@ua.edu)

Co-Editor:

Dale Casamatta  
Department of Biology  
University of North Florida  
Jacksonville, FL 32224  
[dcasamat@unf.edu](mailto:dcasamat@unf.edu)

(Wayne Litaker, Robert Sheath and Dale Casamatta) and Coral Reef Ecology (Laurence McCook et al.). In addition there will be two joint PSA/ ASPB-sponsored symposia: Genomics Approaches for Systematics, Energy Metabolism and Acclimation in Algae (organizers -- Alison Sherwood and Sabeeha Merchant) and *Porphyra*: A Crop Of The Sea (co-sponsored with NSF and organized by Elisabeth Gantt).

Final abstract deadline is April 24 (<http://www.aspb.org/abstract>). Blocks of rooms have been reserved at the Hilton Hawaiian Village Beach Resort And Spa and the Double Tree Alana Hotel Waikiki (<http://www.aspb.org/meetings/pb-2009/housing.cfm>). Please note that discounted rates are available until June 1, 2009 or until the room blocks are exhausted, whichever is first.

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We are expecting 2000+ attendees at this meeting, so reserve your rooms early. There is also a roommate matching service; the form and contact info are on the housing webpage provided above.

With the economy of scale of a meeting of this size we are pleased to offer significantly reduced rates for students and postdocs. The early bird registration costs are offered until April 24, 2009 and are as follows: Member \$325; Nonmember \$495; Post-Doc \$245; Nonmember Post-Doc \$365; Graduate Student \$150; Nonmember Graduate Student \$245; Undergraduate Student \$ 50.

A wide variety of recreation and sightseeing activities are available for attendees. A complete listing can be found at: <http://www.activitysaleshawaii.com/aspb2009/>

*Mahalo!*

## COURSES

### MARINE ALGAE

Friday Harbor Laboratories, University of Washington

Dates: 14 June to 17 July 2009

Instructors:

Dr. Charles O'Kelly ([okelly@hawaii.edu](mailto:okelly@hawaii.edu))

Dr. Paul Gabrielson ([drseaweed@hotmail.com](mailto:drseaweed@hotmail.com))

Application deadline: 1 February 2009

The theme of the course is "principles, methods, and applications of marine algal biodiversity studies", in particular the macro- and microalgae of benthic environments. This is a hands-on field and laboratory intensive course. Students will learn classical and contemporary methods to characterize, identify and classify algae; the theories underlying

the methods; application of biodiversity information in research (e.g. benthic ecology, cellular evolution), regulatory (e.g. invasive species) and industrial (e.g. biofuels) settings. Students will gain practical experience in tools that are applicable worldwide, such as: specimen collection, preservation, and databasing; light and electron microscopy; DNA isolation and sequencing; computational approaches to phylogeny reconstruction. Field work will be extensive, as the diverse and species-rich aquatic habitats on and around San Juan Island are ideal for the examination of both macroalgal and microalgal diversity.

For more information about the course, visit: <http://depts.washington.edu/fhl/studentClasslist2009.html#SumA-4>

For information on the Friday Harbor Labs, including how to apply, housing, and financial aid packages, visit:

<http://depts.washington.edu/fhl/>



*Where and when?* Kindrogan Field Centre, Enochdhu, Blairgowrie, Perthshire, Scotland (near the tourist area of Pitlochry), Friday, 5 June – Friday, 12 June, 2009. This is the 14th year that the course has been offered.

*What is the course about?* The course takes full advantage of the excellent range of aquatic and terrestrial habitats in this beautiful area of Highland Perthshire to provide a sound introduction to the recognition, identification and ecology of freshwater algae. The course focuses on how to get to grips with identification, and the broader aspects of algal morphology, structure, reproduction, and classification (morphological and molecular).

*Who are the course tutors?* The course tutors are Dr Eileen Cox and Prof Elliot Shubert. Eileen and Elliot conduct research at The Natural History Museum, London, specializing in diatoms and green algae, respectively. We will be joined for part of the course, by two Guest Tutors. Dr Laurence Carvalho and Prof Geoff Codd.

*Who are the participants?* The course is open to individuals with different backgrounds ranging from beginners to those who would like to refresh their knowledge of particular groups of algae or experience collecting in a different region of the world.

*What is the full cost of the course?* The course costs £440 per person (approx 440€ or \$660), which includes accommodation, all meals and tuition.

*Is there support for students?* Yes, support for a student stipend is available from:

1. The British Phycological Society <<http://www.brphycsoc.org/funding.lasso>>

2. Graduate students who are members of the Phycological Society of America are eligible for financial support to attend a phycology course at a field station from the Hannah T. Croasdale Fellowship. <<http://www.psaalgae.org/ops/grants.shtm>><http://www.psaalgae.org/ops/grants.shtm>

3. The British Ecological Society (<http://www.britishecologicalsociety.org>) has Specialist Course Grants available for BES members (undergraduate and graduate) allocated on a first-come-first-served basis.

*How do you get to Kindrogan?* Edinburgh and Glasgow have international airports. The airports have a coach connection to the main railway station in the respective cities. The nearest mainline railway station is Pitlochry, which is on the London Kings Cross-Edinburgh-Inverness route.

*Where can I find more information?* For detailed information about the Kindrogan Field Centre:

<<http://www.field-studies-council.org/kindrogan>>

For course information, go to:

<<http://www.field-studies-council.org/professional/2009/courseinfo.aspx?id=246>>

For booking information, go to:

<<http://www.field-studies-council.org/professional/2009/bookinginformation.aspx>>

For a booking form, go to:

<[http://www.field-studies-council.org/documents/i\\_and\\_f/2008/bookingform.pdf](http://www.field-studies-council.org/documents/i_and_f/2008/bookingform.pdf)>

If you have any other queries, please contact:

Prof Elliot Shubert  
[e.shubert@nhm.ac.uk](mailto:e.shubert@nhm.ac.uk)

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## COURSES AT IOWA LAKESIDE LABORATORY

### FRESHWATER ALGAE

This is a full-immersion, field station course targeting undergraduates who have completed their core biology courses or graduate students desiring a foundation in phycology. An ecological perspective is used to explore the diversity of photosynthetic microbes forming the energy base of freshwater ecosystems. Field trips to the abundant lakes, fens, marshes, ponds, streams and wetlands near the lab provide easy access to fresh field samples for light microscopy. Identifications skills emphasize genera, phyla and life history stages. The course also includes environmental factors affecting algal growth, enrichment cultures, clonal isolation techniques, visits to soft-water habitats in Minnesota and a class project. Class size is limited to 10 students. May 18 - June 12, taught by Dr. Jim Wee.

### ECOLOGY AND SYSTEMATICS OF DIATOMS

This course is an intensive, field-oriented class appropriate for advanced undergraduate students, graduate students, and post graduate workers in ecology, geology, environmental sciences, and diatom taxonomy. We will immerse ourselves in the diverse aquatic habitats and fossil deposits of the Upper Midwest to observe freshwater diatoms. Students will learn techniques in diatom collection, preparation, and identification. Lectures will cover taxonomy, systematics and biogeography of most freshwater genera. Students will complete individual collections using modern database techniques. Students are encouraged to bring research materials. The use of diatoms in ecological and paleoecological research will be discussed. Class size is limited to 10 students. June 15 – July 10, taught by Dr. Sarah Spaulding.

### ANALYSIS OF ENVIRONMENTAL DATA

Practical classes will provide hands-on training in the use of statistical and graphical software including R, CANOCO, C2, and TWINSpan. The course will be directed towards advanced undergraduate, graduate and working professionals in ecology and paleoecology. Students are encouraged to bring their own data for application of techniques learned in class. Students will gain understanding of theory and application of statistical techniques useful for the analysis of ecological and paleoecological data. Topics will include data management, exploratory data analysis, regression analysis, direct and indirect ordination methods, classification techniques, transfer functions and the analysis of temporal data. Prereq: an undergraduate course in statistics, understanding of basic concepts such as correlation and regression, and familiarity with PC-based software for data analysis. Class size is limited to 15 students. July 13 - 24, taught by Dr. Stephen Juggins. See:

[www.staff.ncl.ac.uk/staff/stephen.juggins/teaching.htm](http://www.staff.ncl.ac.uk/staff/stephen.juggins/teaching.htm)

### MERIT SCHOLARSHIPS AND FELLOWSHIPS

Scholarships for study include the *C.W. Reimer Scholarship*, which will be awarded to a student in the Ecology and Systematics of Diatoms course based on scholastic merit. Application deadline is April 1 and students should apply through the Iowa Lakeside Lab website. The *J.C. Kingston Diatom Fellowship* will be made to one advanced student or researcher to serve as teaching assistant for the Ecology and Systematics of Diatoms course and to engage in a research project. The fellowship includes a stipend and room and board at Lakeside and is available to domestic and international students, at the graduate level or advanced undergraduate level. Submit a cover letter, CV, and a statement of teaching, research, and career interests by February 15 to Peter van der Linden ([peter-vanderlinden@uiowa.edu](mailto:peter-vanderlinden@uiowa.edu)). The *Hannah T. Croasdale Fellowship* is available to graduate students through the Phycological Society of America (deadline March 1), see:

[www.psaalgae.org/soc/croasdale.shtm](http://www.psaalgae.org/soc/croasdale.shtm)

### REGISTRATION AND CONTACTS:

<http://www.lakesidelab.org>

James L. Wee  
Sarah Spaulding  
Stephen Juggins

[wee@loyno.edu](mailto:wee@loyno.edu)

[sarah.spaulding@colorado.edu](mailto:sarah.spaulding@colorado.edu)

[Stephen.Juggins@ncl.ac.uk](mailto:Stephen.Juggins@ncl.ac.uk)



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**The Smithsonian Tropical Research Institute, Bocas Research Station**

**PAN-AMERICAN ADVANCED STUDIES INSTITUTE**

## **Advanced Tropical Field Phycology**

**Dates:** August 14-September 4, 2009

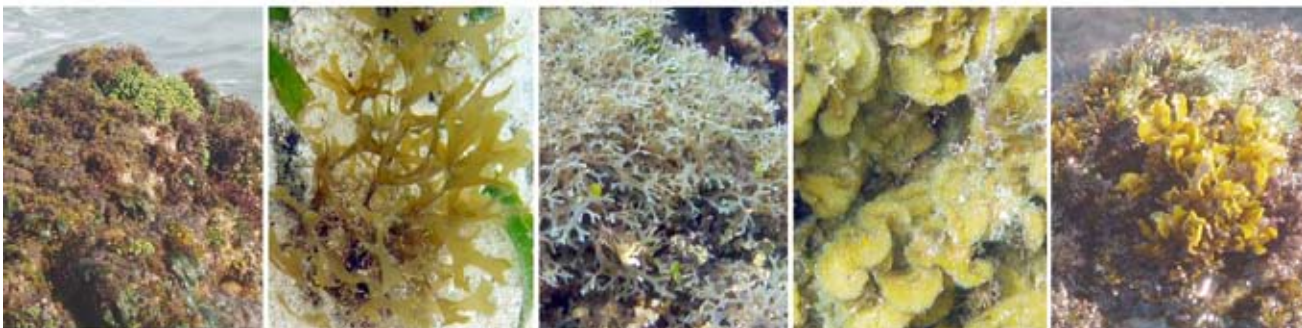
**Location:** Bocas Research Station, Bocas del Toro, Panama.

**Instructors:** Drs. Brian Wysor, Wilson Freshwater, and Suzanne Fredericq,

**Organizer:** Rachel Collin, STRI

**Participating Experts:** Drs. Renato Crespo Pereira, Rafael Riosmena-Rodriguez, Susana Enríquez Domínguez, Juan Lopez-Bautista, Guillermo Diaz-Pulido, Amy Driskell, and Steve Paton

**Application:** This is an NSF-funded, 3-week workshop for international graduate students, post-docs, and young investigators. The focus is on state-of-the-art methods and concepts for the study of macroalgae. Please e-mail your CV, 1 letter of recommendation, and a 1-2 page statement explaining your background and reasons for taking the course, to Rebecca Rissanen at [RissanenJ@si.edu](mailto:RissanenJ@si.edu) **before** February 15, 2008. For more information see <http://striweb.si.edu/taxonomy/>



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## MEETINGS

### Second NEAS Circular, 48th Symposium Amherst, Mass.



The 48th Annual Northeast Algal Symposium will convene April 17-19, 2009 in Amherst at the University of Massachusetts, USA. Co-convenors: Bob Wilce, Bill Johansen and Craig Schneider. The 2009 Northeast Algal Symposium will include a wide range of oral and poster presentations from the many disciplines of Phycology. As always, the NEAS Symposium will provide a relaxed and informal environment for students and professionals alike to meet colleagues, exchange ideas and make new friends. Awards will be presented for outstanding posters and oral presentations by undergraduate and graduate students. NEAS members take great pride in their commitment to students, and extend an especially warm welcome to everyone with algal interests.

Our plenary talk this year will be "Algae and Biofuels." We are excited to have Dr. Scott W. Gordon, CEO of Green Technologies, LLC., as our keynote speaker. We will also have special invited talks by our own Dr. Gary Saunders of the University of New Brunswick on the emerged relationship of molecular phylogenetics and morphological taxonomy, and

Dr. Michael Wynne of the University of Michigan on early seaweed explorations in the upper North Pacific and Bering Sea.

**Registration-Information:** We are fortunate to provide symposium participants a "one stop" venue in the University of Massachusetts Conference Center/Hotel and Parking facilities for all symposium activities. We have reserved 50+ rooms at the University hotel for the nights of April 17th and 18th. Rates will be \$114/night for a single or double occupancy. Twenty rooms at \$82/night have been reserved at our local Howard Johnson Motor Inn. Guests registering for a double occupancy room at the University Conference Center may request a cot for a third occupant for an additional \$10. Double rooms at the hotel complex shared by students will be partially subsidized by the Barry Colt Development Fund and will cost only \$50/room/night, but this is limited to the first 20 student rooms, so register early.

Symposium registration will be \$85 for students and retired members, and \$130 for professionals. The registration fee includes NEAS membership dues (\$20.00 for professionals, \$10.00 for students), the Friday evening reception, the Saturday banquet, Symposium breaks and lunches on Saturday and Sunday. The first 50 participants who register before the March 15 deadline will receive a free NEAS canvas meeting bag.

**Abstract submission:** Abstracts for posters and oral presentations will be due March 12, 2009. They should be typed in MS Word (Mac or PC), single-spaced, using 12 point Times or Times font, with 1" margins on top and sides and must be no longer than 325 words including the title, authors and affiliations. For multi-author talks, please underline the presenting author.

**Oral & Poster Presentations:** Oral presentations are scheduled for 12 minutes with 3 minutes of Q&A. Posters should be no larger than 36" high x 48" wide. NEAS will supply the poster mounts and pins to affix them.

**Undergraduate & Graduate Presentation Awards:** Undergraduate students can compete for the NEAS President's Award for the best oral presentation or poster, and graduate students for the Robert T. Wilce Awards for presentation and poster.

**Phyco-Speed Dating:** Do you have a pet project you would like to share with your colleagues? Want to present some-thing at NEAS that isn't a complete

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## III International Rhodolith Workshop Búzios, Brazil, 1 to 5 November 2009

**THE MEETING:** We announce the third international rhodolith workshop on all aspects of living and fossil rhodolith/maerl research. There will be two plenary lectures and contributed oral sessions each day. A visit to a rhodolith site in Búzios is planned during the meeting to a living bed or a fossil deposits. On the last day a multidisciplinary discussion will be held about exploitation and conservation issues of rhodolith beds. Optional field trips will be offered after the meeting to participants wishing to know more about the biology and geology of Brazilian rhodolith beds. Participants are encouraged to submit their contributions to be published by the Brazilian Journal of Oceanography [www.io.usp.br/publicacoes](http://www.io.usp.br/publicacoes)

**THE PLACE:** Búzios in is one of the most popular resort towns in Brazil. This place was inhabited by native populations and later on occupied by French pirates and then taken over by Portuguese. In the 1960s it was a small fishing village that caught the attention of artists and tourist from all over the world. Its charming architecture, diverse gastronomy, wide range of hotel accommodations and sophisticated commerce attract overseas ship cruises. Local population is around 25,000 inhabitants. Tropical climate forecast sunny days and an average temperature of 26°C. Búzios is a cape with more than 20 beaches and attractive islands, some of which are exposed to upwelling and surfing waves and others are sheltered and have warm waters. Geologically, Búzios is the Brazilian Himalaya due to its major importance for partially unraveling the final amalgamation events of SW Gondwana. Consequently, sites are protected as geological and cultural-

paper? Do you have an alga that you are having difficulty culturing, finding in the field, or identifying? Are you working on a project you would love to get some feedback on? How about a course/workshop/product you would like to promote? If any of these ideas strike your fancy, sign up for Phyco-Speed dating. Each "P-S date" is 5 minutes long maximum. The format will be a 2-3 min presentation as PowerPoint or not, using props or not, or whatever you choose, followed by 2 minutes of questions or comments/advice from the audience. For more information, please email Hilary at [hilary.mcmanus@uconn.edu](mailto:hilary.mcmanus@uconn.edu)

**Annual NEAS Auction:** We encourage you to bring along personal items to donate for the Society auctions (live and silent). These may include books, important reprints, and other items phycolgical, as well as other items of value that will help raise funds for the students in our Society. Please send a list of your items (and possible value for tax purposes) to celebrity auctioneer, Glen Thursby  
[Thursby.Glen@epa.gov](mailto:Thursby.Glen@epa.gov)

**Student Book Awards:** Graduate students and postdocs will be able to apply for competitive awards for a book pertinent to their program of phycolgical study. Details and necessary forms are posted on the NEAS website.

### Important Deadlines and Contacts

Abstracts: 12 March 2009 to [cschneid@trincoll.edu](mailto:cschneid@trincoll.edu)  
NEAS registration: 15 March 2009 to Bill Johansen, 4 Armington Lane, Holden, MA 01520  
Book award proposals: 1 April 2009 to [Thursby.Glen@epa.gov](mailto:Thursby.Glen@epa.gov)





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historical patrimony.

**ACCOMMODATIONS:** The meeting will be held at the Atlântico Búzios Convention & Resort located within city center - [www.atlanticobuzios.com.br](http://www.atlanticobuzios.com.br) Rooms to share with other attendees at special meeting pricing range from US\$190.00 to US\$240.00 (single/double), including a lunch meal. A wide range of hotel and hostel accommodations are available at [www.buziosonline.com.br](http://www.buziosonline.com.br) or [www.buziosturismo.com](http://www.buziosturismo.com)

**GETTING TO BUZIOS:** Búzios is easily reached within a 2-hour drive from Rio de Janeiro city by regular buses or faster by local flights. Daily shuttle service between Rio de Janeiro International Airport and the convention center can be arranged (US\$ 90.00).

**REGISTRATION AND FEES:** Full attendee (US\$ 250.00) and student (US\$ 110.00) registrations include admission to all scientific sessions, plenary lectures, caipirinha welcome reception, coffee breaks, closing dancing banquet, a copy of meeting abstracts and registration for one field trip.

## IMPORTANT DATES:

01 MAY 2009 – Registration fees at special rate. After deadline 10% fee is overcharged  
01 JUNE 2009 – Abstract submissions  
01 SEPTEMBER 2009 - Contribution paper submissions

**See you in Rio!**  
**Michael Foster**  
(Honorary president)

Marcia A.O. Figueiredo on behalf of the International Organizing Committee: Gilberto M. Amado, Rafael Riosmena Rodriguez, Diana L. Steller, Paulo A. Horta, Julio Aguirre and Juan Carlos Braga.

## NEWS FROM COLLEAGUES

### SEAWEED AND INTEGRATED MULTI-TROPHIC AQUACULTURE LABORATORY

Dear all,

I am pleased to direct you to our revised information on our website:

<http://www.unbsj.ca/sase/biology/chopinlab/>

Under "The Multi Facets of IMTA" and "IMTA in the News", you can read about:

- Our project receiving one of the 2008 NSERC Synergy Awards for Innovation
- You can also see that IMTA is featured at the "Ocean on the Edge" exhibit of the Aquarium of the Pacific, in Long Beach, California

In "IMTA & Regulations", you can see the progress we have made with revising Canadian regulations to enable IMTA to become a commercial reality.

In "IMTA & Gastronomy", we are tantalizing your taste buds with pictures of delicious dishes prepared by renowned chefs and featuring fresh IMTA products.

Happy reading and all the best to all,

*Thierry Chopin*  
*Vice-Consul Honoraire de France*  
*President of the Intl. Seaweed Association*  
[tchopin@unbsj.ca](mailto:tchopin@unbsj.ca)



In a study published in the 22 Jan 2009 issue of the journal *Current Biology*, lead authors Dr. Patrick Martone and Dr. Jose Estevez together with a team of international scientists detail their use of powerful chemical and histological techniques to identify and localize lignin within cell walls of a red alga that thrives along the wave-swept California coast.

Land plants evolved from aquatic green algae, and scientists have long believed that lignin evolved after plants took to land as a mechanical adaptation for stabilizing upright growth and transporting water from the root. Since red and green algae likely diverged more than a billion years ago, the discovery of lignin in red algae suggests that the basic machinery for producing lignin may have existed long before algae moved to land. This finding provides a new perspective on the early evolution of lignified support tissues (such as wood) on land, since the seaweed tissues that are mechanically stressed by waves crashing on shore appear to contain the most

lignin, possibly contributing to mechanical support. Lignin is also of interest to biofuel researchers since lignin binds cell walls and prevents the extraction of cellulose, a key component in biofuel production.

The research team has started looking for billion-year-old lignin genes that might be shared among land plants and red algae, and has started exploring whether lignin exists in other aquatic algae and what role it plays in the evolution and functions of aquatic plants.

You can find the full article at  
<http://www.cell.com/current-biology/home>

or email P. Martone at [pmartone@interchange.ubc.ca](mailto:pmartone@interchange.ubc.ca)  
or J. Estevez at [jestevez@fbmc.fcen.uba.ar](mailto:jestevez@fbmc.fcen.uba.ar)



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**Dr. Greta A. Fryxell honored**

*Photo by Bob Nagy*

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PSA member Dr. Greta A. Fryxell was honored by the publication of a Festschrift ("a volume of writings collected on honor of a scholar") recognizing her long record of scientific achievement in the fields of phycology and oceanography. Greta received the PSA Award of Excellence in Phycology in 1996. The current issue of the European scientific journal *Nova Hedwigia*, Beihefte (Beiheft 133, 2008) includes articles by colleagues and former students that are dedicated to her and which recognize her many achievements both in teaching and in research:

<http://www.schweizerbart.de/pubs/series/nova-hedwigia-beihefte-051.html>

Dr. Fryxell is Professor Emerita of Oceanography at Texas A&M University and also an Adjunct Professor in the School of Biological Sciences, the University of Texas at Austin. She now lives in Claremont, California, where she resides with her husband, Dr. Paul A. Fryxell.

A formal presentation of the Festschrift was made at a dinner held in her honor in Claremont on February 14, 2008 when many of her former students, who received M.S. or Ph.D. degrees under her direction, were present, several coming from overseas. A unique feature of this Festschrift is that it will include invited papers from each of her three



children, Dr. Karl J. Fryxell (George Mason University), Dr. Joan E. Fryxell (California State University, San Bernardino), and Dr. Glen E. Fryxell (Pacific Northwest National Laboratory) in their fields of biology, geology, and chemistry, respectively.

*Paul A. Fryxell Ph.D.*

Note added by the Editor: You can read a review of the special issue dedicated to Dr. G. A. Fryxell "Phyto-

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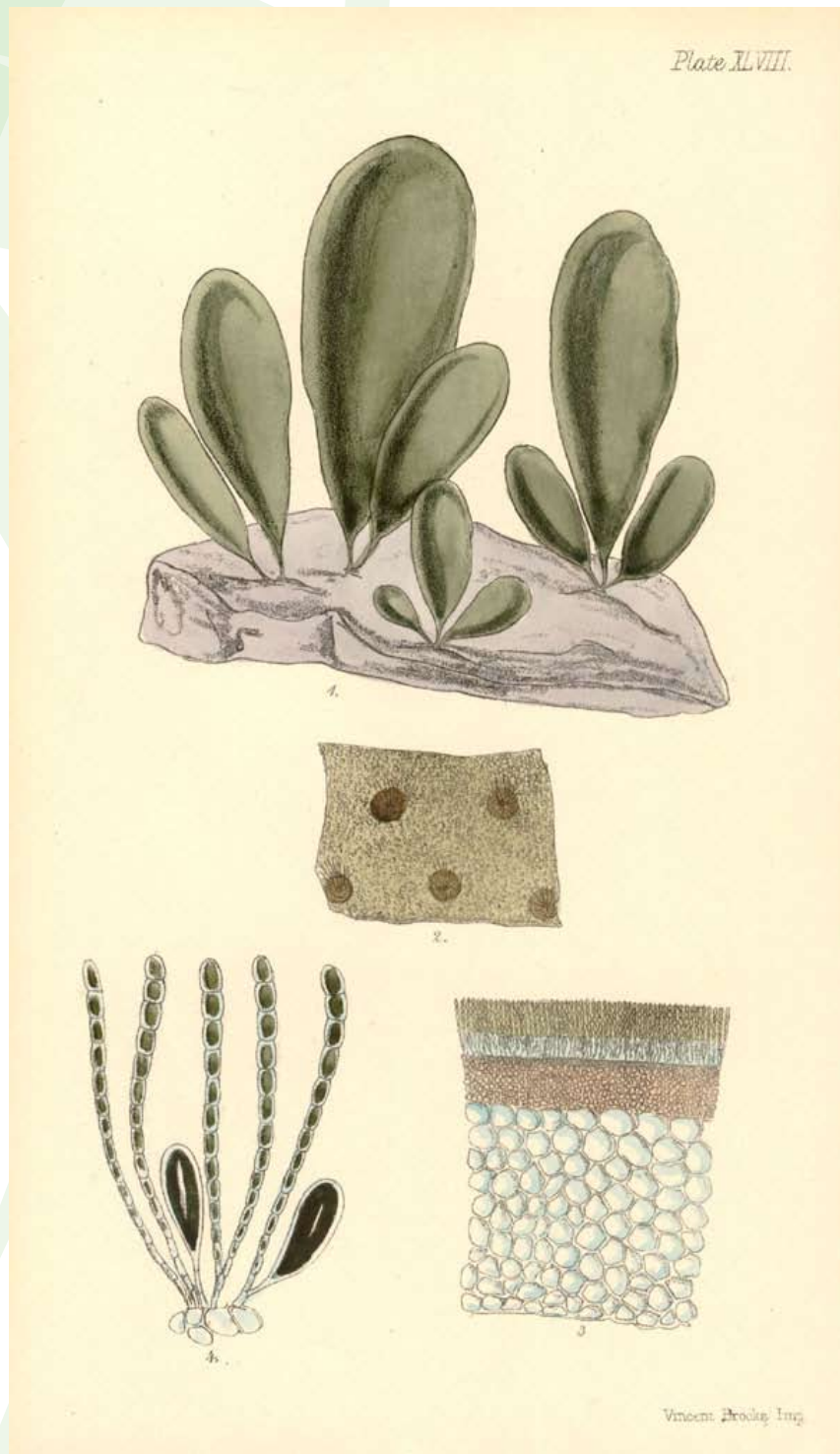
plankton Evolution, Taxonomy and Ecology" by A. Zingone in the Journal of Plankton Research 2009 31(1):119-120 or visit the website at:

<http://plankt.oxfordjournals.org/cgi/content/full/fbn106>

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## PHYCOLOGICAL TRAILBLAZER No. 30: A. B. Joly

It is fitting that Aylthon Brandão Joly (1924-1975) be included in this series of "Phycological Trailblazers" because during an exemplary if abbreviated professional career he singlehandedly spearheaded a strong phycological tradition in Brazil and South America. His efforts and contributions are worth recounting. Joly grew up in the coastal city of Santos in the state of São Paulo and early on was drawn to natural history. He earned his undergraduate degree (in 1945) as well as his PhD (in 1950) from the University of São Paulo. His PhD research was on systematics of flowering plants, in fact, on the vascular flora of the new campus of University of São Paulo, then located on the outskirts of the city. The botanist Felix K. Rawitscher had escaped war-torn Germany and was hired to establish a program in botany at the new university (Oliveira, 1996). Rawitscher was responsible for turning out the next generation of Brazilian botanists. He realized that no one in Brazil was working on the algae, and so he persuaded the young Joly to abandon (at least for awhile) his research on angiosperms and turn his attention to marine algae. So starting in 1950, Joly began collecting and studying seaweeds in southeastern Brazil, and a steady flow of publications commenced.

Fortunately, a fellowship from the Rockefeller Foundation allowed Joly to travel to the USA and spend the period 1951-1952 working with Dr. Wm. Randolph Taylor at the University of Michigan in Ann Arbor to receive training on the finer points of



Fig. 1. A. B. Joly at the MBL, Woods Hole, August, 1952 (photo taken by W. R. Taylor.)

marine algae. He also spent the summer of 1952 at the Marine Biological Laboratory in Woods Hole, Mass., where he immersed himself in the seaweed flora of New England (Fig. 1). While in the U.S., Joly made great use of the libraries of the University of Michigan, the New York Botanical Garden, and the Marine Biological Laboratory to compile the literature dealing with the algal flora of Brazil and thus well prepared himself to embark in this new direction for his research (Joly, 1952).

Over the ensuing years, Joly kept Taylor informed about his research, such as his progress in working on the marine algal flora of the northern part of the state of São Paulo, admitting that progress was slow at times. But he was excited when he discovered "a couple of new things to describe". Joly had a knack for detecting algae that represented new records for Brazil or in some cases entirely undescribed species or genera. He usually involved his many doctoral students as co-authors in his papers. New genera included *Diplothamnion* and *Heterodasya* and the parasites *Dawsoniocolax* and *Centrocerocolax*. New species included *Periphykon delesserioides*, *Jania prolifera*, *Cryptonemia delicatula*, *Tylotus* [later to *Gracilaria*] *cearensis*, *Champia minuscula*, *Leptofauchea brasiliensis*, *Lomentaria rawitscheri*, *Pseudogloioophloea* [later to *Scinaia*] *brasiliensis*, *Aristothamnion* [later to *Callithamnion*] *callithamnioides*, *Ceramiella* [later

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to *Corallophila*] *atlantica*, *Mesothamnion* [later to *Pleonosporium*] *boergesenii*, *Spermothamnion nonato* (Fig. 2), *Chondria platyramea*, *Caulerpa kempfii*, *Rhipilia fungiformis*, and *Acetabularia myriospora*.

Joly added two new species to some genera in Brazil. For *Anadyomene*, *A. saldanhae* and *A. rhizoidifera* were described; for *Acrochaetium*, *A. epispiculum* and *A. agardhiellae*, for *Ceramium*, *C. brasiliensis* and *C. dawsonii*, and for *Laminaria*, *L. abyssalis* and *L. brasiliensis*. The *Laminaria* species were found from significant depths (70 m) off Brazil (Joly & Oliveira, 1967). Joly and his students recorded for the Brazilian flora algal species previously known from the Pacific Ocean, such as *Rhipilia orientalis* (Joly & Sazima, 1971) and *Microdictyon vanbosseae* (Joly & Yoneshigue Braga, 1974).

There were numerous publications reporting species for Brazil for the first time, often expanding the distributions in a southerly direction. These papers by Joly and his co-authors demonstrated that many species that had formerly been thought to be restricted to the Caribbean had ranges extending to various states of the Brazilian coastline (Joly, 1964, 1965).

In late 1961- early 1962, Joly spent a successful two and a half months giving a summer course in Argentina, dividing the time between the marine station at Puerto Deseado (Lat. 48° S.) "not very far from the Strait of Magellan" with its very rich marine flora, and the rest of the time at Mar del Plata. For that course he had students from Argentina, Uruguay, Chile, and Brazil. He was enthusiastic about the pressed and wet-preserved collections that he was able to make in Argentina.

Joly and his family spent the summer of 1971 at Friday Harbor Laboratories on San Juan Island, Washington, where he co-taught the algae course with Dr. Richard Norris. Joly wrote to Taylor how he and his family had a wonderful vacation on their way to Friday Harbor. They flew from South America to Los Angeles, where they rented a car and drove over to check out Sequoia National Park. Next they drove from Los Angeles on Highway 1 along the coast, to visit Hopkins Marine Station on the Monterey Peninsula. From San Francisco they were able to check out Muir Woods in Marin County, then inland to Yosemite National Park, and then UC Berkeley, where they visited Drs. George Papenfuss and Paul Silva. Joly had earlier met Silva at Woods Hole in 1952. Joly related how the flight from SFO to Seattle was "superb" and how they observed the snow-covered mountains such as Mount Shasta and others. After teaching the algae course that summer, Joly had a circuitous route homeward making stops in Ann Arbor, Washington DC, Miami, and Caracas, Venezuela.

Joly's major publications on algae were publications on genera of freshwater algal genera of São Paulo (Joly, 1963), his marine flora of the littoral of the northern part of the state of São Paulo (Joly,

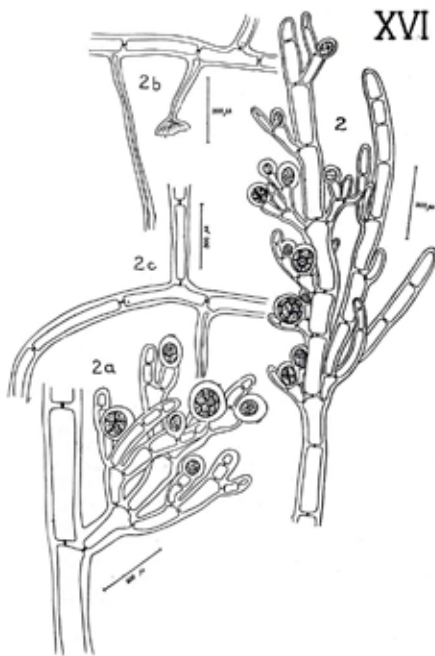


Fig. 2. *Spermothamnion nonato* A.B. Joly (from Joly, 1957, pl. XVI, fig 2).

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1965a), and his treatment of the genera of marine algae for the Atlantic coast of Latin America (Joly, 1967). Joly's research interest was certainly not limited to the algae. Late in his career his research returned to the flowering plants, and he directed his attention to the rupicolous flora of the mountains in the state of Minas Gerais, central Brazil. He also took leave from the University of São Paulo to become Chair of the Dept. of Botany at a new university in the city of Campinas (Oliveira, 1996). General books on botany and a popular textbook on botany were published (Joly, 1970, 1975) as well as a posthumous book on economic botany (Joly & Leitão, 1979).

At the time of his untimely death from cancer (at only 50 years of age) he was Full Professor as well as serving as Chairman of the Department of Botany at the University of São Paulo. His legacy was not only his own numerous publications but that he trained the next generation of students, a cadre of students that were in Brazil, Chile, Argentina, and Mexico. He was responsible for training a whole new generation of phycologists, including Eurico Oliveira, Marilza Cordeiro-Marino, Yumiko Ugadim, Noemy Yamaguishi-Tomita, Krisler Alveal, Sonia M. P. Pereira, Maria Laura Mendoza, Isabel Kreibohm de Pateroster, and Elza Lacoste Díaz. He also trained Yocie Yoneshigue-Valentin, Carlos Bicudo, Silvia de B. Guimarães, and M. M. Ferreira in their studies. Joly has been remembered in tributes by Bicudo (1976) and Oliveira (1975, 1996). The names of some algae also pay him tribute: the brown algal genus *Jolyna* by Guimarães (Guimarães et al., 1986), *Ceramiella joly* by Diaz-Piferrer (1969) [later to *Ceramium*], *Calliblepharis jolyi* by Oliveria (1969) [later to *Craspedocarpus*], *Arthrodesmus joly-*

*anus* by C. Bicudo & Azevedo (1977), *Diplothamion jolyi* by van den Hoek (1978), and *Dictyopteris jolyana* by Oliveira & Furtado (1978).

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**Michael J. Wynne**

University of Michigan, Ann Arbor



## OBITUARIES

### RALPH A. LEWIN

Ralph Arnold Lewin, a highly distinguished scientist, author and professor emeritus who spent nearly 48 years at Scripps Institution of Oceanography at UC San Diego, died peacefully in his sleep on Nov. 30 in La Jolla, Calif., after battling esophageal cancer for a year. He was 87. Lewin was a leading authority in multiple areas of marine biology and became known as "the father of green algae genetics."

"Dr. Lewin had a remarkable wit and enjoyed instructing us all on the peculiarities of English. He was also original as an observer of natural phenomena such as oil droplets in algal cells. He was one of the most well-traveled, scholarly people I have known," said Scripps Marine Biology Professor Victor D. Vacquier, a longtime colleague of Lewin's.

Lewin and his wife, Scripps biologist Lanna Cheng, were familiar fixtures around the Scripps campus and La Jolla community for decades. Born in London, England, on April 30, 1921, Lewin was educated at Cambridge University, receiving a B.A. degree in botany in 1942 and M.A. in botany in 1946. He came to the United States to continue graduate studies at Yale University and was awarded a Ph.D., also in botany, in 1950. He also was awarded a doctor of science degree from Cambridge University in 1972.

As a young expert in marine seaweeds (algae), he was enlisted during World War II to survey the entire coastline of Great Britain to estimate the quantity of algae present for potential fermentation in the production of fuels and organic liquids needed for the war effort. After obtaining his doctoral degree, he spent the next five years working in Nova Scotia as an algal biologist for the National Research Council of Canada. From 1956 to 1959 he was a research algologist at the Marine Biological Laboratory in Woods Hole, Mass.

Lewin joined Scripps Institution of Oceanography as associate professor of marine biology in 1960 and

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Ralph Lewin and Lanna in September 2001

*Photo by Russ Chapman*

retired from that position as full professor in 1991. Although retired, he remained extremely active in laboratory and field research and lectured nationally and internationally. His early research concerned the genetics of single-cell green algae, specifically their mechanism of sexual reproduction. He developed simple methods to select for mutant cells, thus making possible genetic studies and giving him the title of “the father of green algae genetics.”

His first investigations at Scripps were on marine microbes, known as flexibacteria that glide over surfaces. A genus of flexibacteria, *Lewinella*, was named in his honor. He later became interested in the electron microscopic anatomy of algal flagella, the long, thin beating structures used by algal cells to swim.

In the 1980s he was the first person to understand and publicize the evolutionary significance of a primitive group of marine algae known as the “prochlorophytes” or more simply “Prochloron,” a likely ancestor of green plant chloroplasts. Lewin was considered to be the world expert on these unique marine organisms.

He was one of the first scientists to be involved in using algal cells to condition agricultural soils to hold more water. He also was one of the first to show that some single-cell algae can produce important oils, today a subject of great importance in the search for alternative sources of energy.

In the 1980s the San Diego Zoo called Dr. Lewin to

ask why their polar bears were turning green. Microscopic examination by Lewin showed that the hollow hairs of the fur were harboring a single-cell blue-green alga that was dividing in this protected environment. A bath with a low concentration of bleach turned the green bears white again.

Lewin and Cheng, a Scripps marine entomologist, were well-known visitors of marine research laboratories throughout the world. Lewin enjoyed an international reputation as an engaging, humorous lecturer in the United States, Canada, Europe, South America, Asia and China. He helped organize and teach courses on marine microbiology and algae for UNESCO in Finland, Singapore and China.

In 1967 Lewin was awarded the Darbaker Prize by the Botanical Society of America. In 1970 he was president of the Phycological Society of America (PSA). In 1982 he was National Lecturer of the PSA.

Lewin published more than 250 scientific papers, edited “Physiology and Biochemistry of Algae,” “The Genetics of Algae,” “Origins of Plastids” and, with Cheng, “Prochloron: a Microbial Enigma,” and was author of “Merde, Excursions in Scientific, Cultural and Socio-Historical Coprology.”

He also was known for his poetry, including such works as “Poems about Animals and Plants” and “The Biology of Algae and Diverse Other Verses.” He was an expert in Esperanto translating “Winnie the Pooh” into that language.

Lewin was a member of the following scientific societies: Society of General Microbiology, British Phycological Society, Phycological Society of America, Sigma Xi, Society for Experimental Biology, International Phycologi-



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cal Society, International Society of Applied Phycology, Marine Biological Association of the United Kingdom, Zoological Society of San Diego, the Western Society of Naturalists and a Wilkins Fellow of Downing College.

In addition to Cheng, Lewin's survivors include his brother Basil Lewin of England and many nieces, nephews, grand nieces and grand nephews.

Per Lewin's wishes, a memorial service was not held. In lieu of flowers, gifts in his honor will be directed to support Scripps graduate student fellowships. For information contact Edwina Riblet, Scripps Development, at 858-534-7793 or eriblet@ucsd.edu.

## *The Book*

*We come from halls of Academe  
And, on an inspiration.  
Alone, or in a learned team.  
Embark on publication.  
We seek to teach, or disabuse.  
Where controversy rages.  
And press our honest facts, or views,  
On academic pages.  
Then, if our theories endure,  
Maintained by erudition,  
Our luck and virtue should assure  
A third or fourth edition.  
For ultimately all should know  
The fruits of our endeavour.  
Though scholars come and scholars go.  
Our books go on for ever.*

- By Ralph Lewin, 1986

Source: article posted by Scripps Institution of Oceanography on Thursday December 4, 2008.

## KEITH ROBERTS



Keith R. Roberts, PhD., 55, passed away peacefully on Thursday, December 25, 2008 at Our Lady of Lourdes Regional Medical Center. Survivors include his beloved wife of 9.5 years, Amy Bunnell of Kansas City, Missouri; his newlywed daughter, Kathryn Denise Roberts-Gaubert, and her husband, Brandon, of Lafayette; one son, Daniel Christian Roberts, a high school senior in Westford, Massachusetts; one sister, Caroline Marbry, and her husband, Jim, of Alamo, CA.; one brother, Brick Marshall, and his wife, Lisa, of Malone, NY; and his beloved canine companions, Pepper and Pogo. He was preceded in death by his parents, Roger W. Roberts and Margaret Schellenger Roberts; his maternal and paternal grandparents; and an infant brother, Kevin Brian Roberts. Keith was a loving husband, father, brother and friend to all who knew him.

He was a 1971 graduate of West Covina High School in West Covina, California, and went on to attend Eastern Oregon State College in La Grande, Oregon, where he received a B.A. Degree in 1976. He attended S.W. Missouri State University where he earned a M.S. in Biology in 1978, and also attended Miami University in Oxford, Ohio, where he earned his Ph.D. in Botany in 1982. Keith was a professor of Biology from 1982 to 1999 at the University of Louisiana at Lafayette. He left ULL to become a research administrator in the Kansas City area.

Keith loved gardening, SCUBA diving, cooking, entertaining and spending time with family and friends. He will be dearly missed by all who knew and loved him.

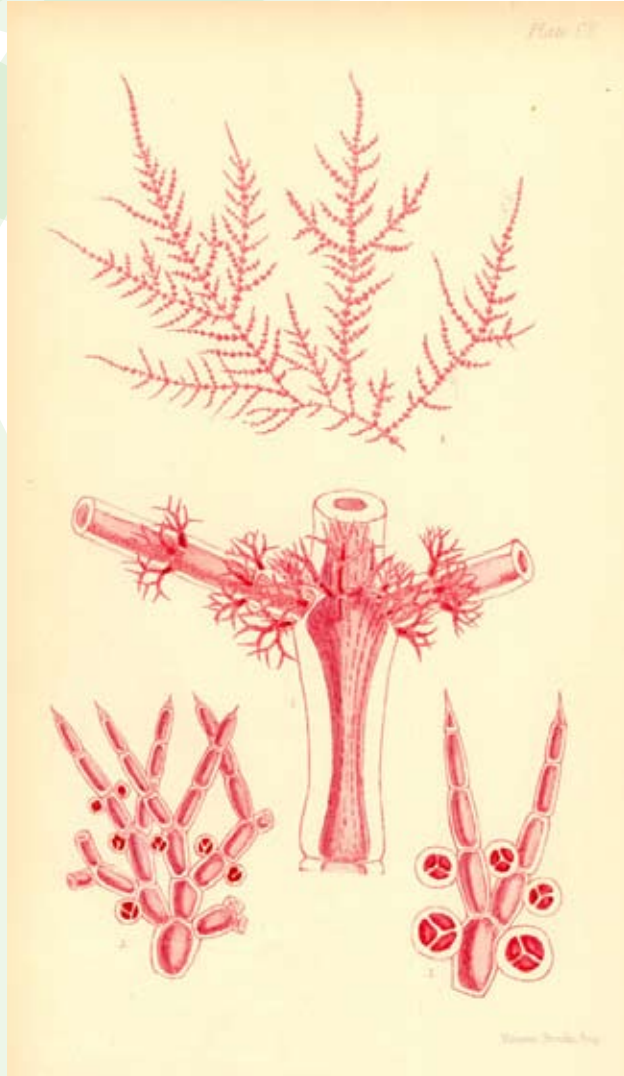
The family requests that donations be made in Dr. Keith Roberts' name to: Missouri Western State

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University Foundation, 4525 Downs Drive, Spratt Hall  
Rm 111, St. Joseph, MO 64507.

## Source:

[http://www.asimas.com/ASIMAS/martin/obituaryDescription.jsp?domain\\_id=157&deceased\\_id=181828](http://www.asimas.com/ASIMAS/martin/obituaryDescription.jsp?domain_id=157&deceased_id=181828)



Algal illustrations from Harvey's *Phycologia Australica* from the PSA  
website: <http://users.ugent.be/phycology/harvey/>

Deadline for contributions for the next  
PSA Newsletter:

**September 15th, 2009**

Please contact Juan Lopez-Bautista