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The ***Phycological Society of America*** (PSA) was founded in 1946 to promote research and teaching in all fields of Phycology. The society publishes the ***Journal of Phycology*** and the ***Phycological Newsletter.*** Annual meetings are held, often jointly with other national or international societies of mutual member interest. *Phycological Society of America* awards include the **Bold Award** for best student paper at the annual meeting, the new **Student Poster Award** for the best student poster at the annual meeting, the **Provasoli Award** for outstanding papers published in the *Journal of Phycology*, and the **Prescott Award** for the best Phycology book published within the previous two years. The society provides financial aid to graduate student members through **Croasdale Fellowships** for enrollment in phycology courses at biological stations, **Hoshaw Travel** Awards for travel to the annual society meeting, and **Grants-In-Aid** for supporting research. To join the *Phycological Society of America*, contact the membership director. Society Webpage: http://www.psaalgae.org/

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LOYOLA UNIVERSITY NEW ORLEANS

OFFICE OF THE PRESIDENT

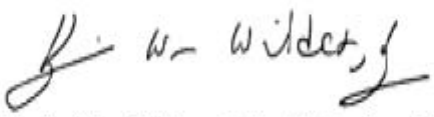
Dear Members of the Phycological Society of America,

I am sorry I am not able to join you at your 2008 annual meeting but wanted to send a warm welcome to all PSA members. I hope you will enjoy your visit to New Orleans and more particularly to our Loyola University campus. My thanks to Professor Jim Wee for bringing you to our campus.

It looks like your 2008 PSA Annual Meeting will be filled with information, activities and a taste of Louisiana. I note also that you have planned some volunteer activities in the New Orleans area for which I offer my thanks on behalf of the citizens of New Orleans.

Again, my thanks to all of you for your work, and I hope you enjoy our campus and the metropolitan New Orleans area.

Sincerely,



Kevin Wm. Wildes, S.J., Ph.D., President

11:20 **Physiology As A Reflection Of Habitat For Western South African *Porphyra* Species**
Michael S. Stekoll[1], John J. Bolton[2] and Robert J. Anderson[3,2]
1. Department of Natural Sciences, University of Alaska Southeast, Juneau, AK, USA; 2. Department of Botany, University of Cape Town, Cape Town, South Africa; 3. Seaweed Unit, Marine and Coastal Management, Cape Town, South Africa

11:40 **A Quantitative Method for Measurement of Neutral Lipids in Chlorophycean Microalgae**
Wei Chen[1,2], Chengwu Zhang[1], Lirong Song[2], Milton Sommerfeld[1] and Qiang Hu[1]
1. Department of Applied Biological Sciences, Arizona State University, Mesa, AZ, USA; 2. State Key Laboratory of Freshwater Ecology and Biotechnology, Institute of Hydrobiology, The Chinese Academy of Sciences, Wuhan, China

12:00 **Photosynthetic response of the toxic raphidophyte *Heterosigma akashiwo* during the imposition of, and recovery from, light- and nutrient stress**
Hugh MacIntyre[1,2], Marcel Babin[1], Amélie Gelay[1], Emily Goldman[2], Yannick Huot[1], Antoine Sciandra[1] and Tim Sherman[3]
1. Laboratoire d'Oceanographie de Villefranche, Villefranche-sur-mer, France; 2. Dauphin Island Sea Lab, Dauphin Island, AL, USA; 3. University of South Alabama, Mobile, AL, USA

12:20 **LUNCH BREAK -- St. Charles Room, Danna Center**

Miller 114; Miller Hall, Tuesday Afternoon:

Phylogenetics & Taxonomy - II

Moderator: Juan Lopez-Bautista, University of Alabama

13:40 **The correct identity of the species going under the name *Schizymenia dubyi* (Schizymeniaceae, Rhodophyta) in the Azores, based on molecular and morphological evidence**
Daniela Gabriel[1,2], Tom Schils[3], Ana I. Neto[1] and Suzanne Fredericq[2]
1. Department of Biology, University of the Azores, Ponta Delgada, Portugal; 2. Department of Biology, University of Louisiana at Lafayette, Lafayette, LA, USA; 3. Marine Laboratory, University of Guam, Mangilao, GU, USA

14:00 **Molecular systematics of *Thorea* (Rhodophyta, thoreales) in Brazil**
Orlando Necchi[1], Patricia Salles[1] and Mariana C. Oliveira[2]
1. Zoology and Botany, São Paulo State University, S. Jose Rio Preto, Brazil; 2. Botany, São Paulo University, São Paulo, Brazil

14:20 **Phylogeography of *Ishige* with recognization of *I. foliacea* (Ishigeales, Phaeophyceae)**
Kyung Min Lee[1], Ga Hun Boo[1], Jong Arm Shin[3], Rafael Riosmena-Rodriguez[2] and Sung Min Boo[1]
1. Biology, Chungnam National University, Daejeon, South Korea; 2. Marine Biology, UABCS, Las Paz B.C.B., Mexico; 3. Fishery, Cheonnam National University, Yeosu, South Korea

14:40 **Subaerial microchlorophytes from West Central Africa: morphological convergence in tropical rain forests**
Haj A. Allali and Juan M. Lopez-Bautista
Biological Sciences, University of Alabama, Tuscaloosa, AL, USA

assessment of intracellular neutral lipids in representative green microalgae and appears to be a useful high throughput technique for quick screening of a broader spectrum of algae for neutral lipids.

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Photosynthetic response of the toxic raphidophyte *Heterosigma akashiwo* during the imposition of, and recovery from, light- and nutrient stress

MacIntyre, Hugh[1,2], Babin, Marcel[1], Gelay, Amélie[1], Goldman, Emily[2], Huot, Yannick[1], Sciandra, Antoine[1] & Sherman, Tim[3]
[1]Laboratoire d'Oceanographie de Villefranche, Villefranche-sur-mer, France; [2]Dauphin Island Sea Lab, Dauphin Island, AL, USA; [3]University of South Alabama, Mobile, AL, USA

The toxic raphidophyte *Heterosigma akashiwo* was subjected to simultaneous nutrient- and light stress by cutting off the nitrate supply to continuous cultures that were acclimated to growth-saturating irradiance. Cell division ceased on exhaustion of available nitrate and cell volume increased by 60% over 3 days. There was a 2.5x increase in the cellular carbon quota, primarily due to a 6x increase in carbohydrate content. There were no significant changes in cellular nitrogen or chlorophyll quotas. Both the light-limited and light-saturated rates of photosynthesis declined during N-starvation. The reduction in the light-saturated rate was greater than the loss in the light-limited rate (60% vs 30%). This degradation in photosynthetic performance was correlated with losses of ATPase, the PSII reaction center protein D1 and the carboxylating enzyme Rubisco. There was a rise in the de-epoxidation state of the xanthophylls in both saturating light and darkness, in parallel with a loss of D1 relative to Rubisco. This is consistent with the reduced photosynthetic competence arising partially from slippage in the coupling between electron transport and the Calvin Cycle. The cells returned to the acclimated, nutrient-replete state within 36 hours of nitrate being re-supplied. These data suggest that this clone of *H. akashiwo* has a remarkable resistance to and very rapid recovery from photoinhibition arising from light stress during nutrient starvation. This may play a role in its ability to bloom in surface waters with intermittent nutrient supply.

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The correct identity of the species going under the name *Schizymenia dubyi* (Schizymeniaceae, Rhodophyta) in the Azores, based on molecular and morphological evidence

Gabriel, Daniela[1,2], Schils, Tom[3], Neto, Ana I.[1] & Fredericq, Suzanne[2]
[1]Department of Biology, University of the Azores, Ponta Delgada, Portugal; [2]Department of Biology, University of Louisiana at Lafayette, Lafayette, LA, USA; [3]Marine Laboratory, University of Guam, Mangilao, GU, USA

Within the Nemastomatales, the genus *Schizymenia* (Schizymeniaceae) has the broadest geographical distribution, with other genera in the order (e.g., *Platoma*, *Predaea*, and *Titanophora*) mainly found in the (sub)tropics. The genus that currently comprises ten species was established by J. Agardh in 1851, with type *Schizymenia dubyi* (Chauvin ex Duby) J. Agardh described from Atlantic France. Seven species names have been recognized as synonyms of *Schizymenia dubyi*, namely *Haematophloea crouaniorum*; *Haematocelis epiphytica*; *Haematocelis rubens*; *Schizymenia minor*; *Schizymenia obovata*; *Schizymenia undulate*; and *Turnerella atlantica*. Comparative *rbc*L sequence analysis indicates that *S. dubyi* specimens from the Azores should be referred to as *S. apoda*, a species described from the Cape Province in South Africa and also known from China and Namibia. *Schizymenia rbc*L sequences from Japan comprise two species; *S. dubyi* and a species here provisionally identified as *S. novae-zelandiae*. *S. pacifica* from Washington, Pacific USA, is the fourth distinct *Shizymenia* species. Morphological observations on *S. apoda* from the Azores are provided,

and the presence of secondary pit connections is newly reported in gametophytes within the Nemastomatales.

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Molecular systematics of *Thorea* (Rhodophyta, thoreales) in Brazil

Necchi, Orlando[1], Salles, Patricia[1] & Oliveira, Mariana C.[2]
[1]Zoology and Botany, São Paulo State University, S. Jose Rio Preto, Brazil; [2]Botany, São Paulo University, São Paulo, Brazil

This study aimed at evaluate species level taxonomy and phylogenetic relationship among *Thorea* species in Brazil and other regions of the world using two molecular markers - RUBISCO large subunit plastid gene (rbcL) and nuclear small-subunit ribosomal DNA (SSU rDNA). Three samples of *Thorea* from Brazil were sequenced, one from São Paulo and two from Mato Grosso do Sul states; a sample from Dominican Republic (DR) was also sequenced for comparison. Tree based on partial rbcL sequences (1,282 bp) revealed two major clades, representing genera: *Thorea* and *Nemalionopsis*. *Thorea* clade had two main branches with high bootstrap support (≥ 90%), representing species: *T. violacea* (including *T. gaudichaudii* from Asia and *T. riekei* from U.S.A.) and *T. hispida* (including *T. okadae* from Japan). Sequences of *T. gaudichaudii* formed a distinct clade (100% support) and with a high variation (110-196 bp, 8.6-15.3%) in comparison to the other samples of T. violacea (3-151 bp, 0.2-11.6%); they might represent a distinct specific or infra-specific taxon. Tree based on complete SSU rDNA sequences (1,753 bp) was essentially similar to rbcL tree with two major clades with high support (≥ 95%), representing the genera *T. hispida* and *Nemalionopsis*. Two clades with high bootstrap support (≥ 95%) were recognized within *Thorea* clade, representing species: *T. violacea* and *T. hispida*. Brazilian specimens were recognized as *T. hispida* on the basis of both SSU and rbcL sequences, as well as morphological comparison. However, a relatively high variation in comparison to other samples of this species was observed (112-212 bp = 8,7-16,5% x 1-82 pb = 0,1-6,4% for rbcL; 91-158 bp = 4,5-9,5% x 14-68 pb = 0,8-3,9% for SSU). Thus, they might represent a distinct species or a infra-specific taxon of *T. hispida*, but they are provisionally kept as *T. hispida*, since there is no clear basis for distinction. DR sample grouped, as expected, with other North American populations of *T. violacea*. A worldwide revision of *Thorea* is recommended based on molecular and morphological data. Thoreales consistently appeared as monophyletic with high support (≥ 95%) in trees based on both molecular markers.

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Phylogeography of *Ishige* with recognization of *I. foliacea* (Ishigeales, Phaeophyceae)

Lee, Kyung Min[1], Boo, Ga Hun[1], Shin, Jong Arm[3], Riosmena-Rodriguez, Rafael[2] & Boo, Sung Min[1]
[1]Biology, Chungnam National University, Daejeon, South Korea; [2]Marine Biology, UABCS, Las Paz B.C.B., Mexico; [3]Fishery, Cheonnam National University, Yeosu, South Korea

Common species occurring between geographically isolated regions are an interesting issue for taxonomy and biogeography. *Ishige Yendo*, previously included two species, inhabits the warm waters of the northwest and the northeast regions of Pacific Ocean. We determined the sequences of mitochondrial *cox*3 and plastid *rbc*L from 127 samples of the genus collected over its distribution range. Analyses of the *cox*3 and *rbc*L sequences resulted in similar trees that *Ishige* well resolved, but *I. sinicola* (Setchell and Gardner) Chihara consisted of two distinct clades: one for samples from Korea and Japan and the other from Mexico. Based on this result, we reinstated *I. foliacea* Okamura for samples from the northwest Pacific, which was previously synonymized with *I. sinicola* from Mexico. *Ishige foliacea* is circumscribed by large and wide thalli (up to 15 cm), and an epitype for the species is