

PHYCOLOGICAL NEWSLETTER

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PSA 2006

The 2006 annual meeting of the Phycological Society of America will be held July 7-12 in Juneau, Alaska. The meeting is being hosted by Dr. Michael Stekoll (University of Alaska Southeast and University of Alaska Fairbanks, School of Fisheries and Ocean Sciences). The Northwest Algal Society will meet in conjunction with PSA. The University of Alaska Southeast is a meeting sponsor and is hosting the opening mixer. See the meeting home page on the PSA web site (www.psaalgae.org) for registration information. Deadlines for abstract submission and early registration will be in May.

PLENARY - MINI-SYMPOSIUM SESSIONS

In a new meeting format, PSA will sponsor four sessions with Plenary talks and associated mini-symposia with two or three participants identified by the Plenary speakers. Contributed papers related to the mini-symposia topics will be solicited and scheduled in "featured contributed talk" sessions immediately following each mini-symposium. The sessions and invited speakers for 2006 are:

The experimental ecology - macroalgae connection <u>Plenary</u>: **Robert T. Paine**: "Reflections of a phycological zoologist: Macroalgae as powerful, experimental probes of how natural communities are organized"

Mini-symposium speakers:

Michael H. Graham: "Algal diversity manipulations: How do seaweeds structure rocky shores?"

Anne K. Salomon: "Synergistic serial depletion of nearshore benthic invertebrates leads to a decline of a keystone grazer and the alteration of a coastal ecosystem"

Karina J. Nielsen: "Macroalgae reveal the underappreciated role of resources in structuring benthic marine communities"

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The evolution of modern marine eukaryotic phytoplankton

<u>Plenary</u>: **Paul G. Falkowski:** "How, when, and why secondary red symbiotic algae rose to ecological prominence on the contemporary ocean"

Mini-symposium speakers:

Dion G. Durnford: "Origin and diversification of light harvesting complexes during plastid evolution"

E. Virginia Armbrust: "Whole genome analyses of diatoms: insights into ecology and evolution"

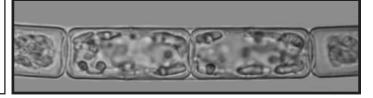
The scale of taxonomic, biogeographic, and paleontologic resolution and how it affects our understanding of diatom ecology and evolution

<u>Plenary</u>: **Edward C. Theriot**: "Scale of observation: limits on observations of rates of evolution in microfossils, particularly diatoms"

Mini-symposium speakers:

J. Patrick Kociolek: "What have we learned from fossil freshwater diatoms in terms of systematics, evolution, and ecology?"

Sarah A. Spaulding: "The intersection of history and environment in diatom biogeography"



Molecular, biochemical, and genomics approaches for phytoplankton research

<u>Plenary</u>: **Mark M. Hildebrand**: "Application of molecular and genomics tools to diatoms"

Mini-symposium speakers:

Nicole Poulsen: "Molecular genetic approaches to studying silica biomineralization in diatoms"

Betsy A. Read: "Molecular approaches to understanding biomineralization in marine coccolithophorids"

NEW STUDENT POSTER AWARD

This meeting will be the first for the new student poster award competition. All student members of PSA are eligible for this award. Additional information is available on the meeting web pages at www.psaalgae.org.

EDUCATIONAL OUTREACH WORKSHOP

The PSA Education Committee is pleased to present a workshop organized by Richard Triemer and Gisèle Muller-Parker on Algae and the Broader Impacts of Science.

Every high school and college student, teacher and professor, administrator and legislator, should know what algae are and why they are economically important to society. We as phycologists have not promoted our science as well as we should, but now we have an opportunity, and a requirement, to do so.

Many Federal programs that support basic scientific research now require scientists to propose to engage in education and public outreach activities and other "Broader Impacts" activities related to the research. Experience at the National Science Fondation shows that many proposers have difficulty understanding how to frame the broader impacts of the activities they propose to undertake. This workshop will provide a forum for phycologists to discuss effective practices and to develop strategies for effective ways to develop "Broader Impacts" activities. The goal of the workshop is to provide phycologists access to information and resources (people and organizations), and to promote discussions about the types of activities that meet the requirement for "Broader Impacts" of our science.

SOCIAL PROGRAM

The opening mixer is being sponsored by the University of Alaska Southeast and will be held on Friday evening, 7 July, at the University's Auke Lake campus (transportation from the hotels will be provided). Saturday night will feature the always popular PSA Auction and Mixer at Centennial Hall Convention Center (site of the scientific program). On Monday night (following the day of field trips) there will be a Poster Session and Mixer, also at Centennial Hall. The meeting will feature a somewhat informal, but very "Alaskan," banquet at the Gold Creek Salmon Bake on Tuesday evening. The Salmon Bake is in a beautiful spot alongside a stream with a small waterfall that is likely to have salmon running.

FIELD TRIPS

<u>Pre-meeting trips</u>: Because airline schedules will mean that many participants will want to come in on the evening of 6 July, we will have field trips during the day of 7 July (ending well before the opening mixer). These will probably include a full day cruise to the Tracy Arm Fjord Glacier and a half day city tour.

Mid-meeting trips: There will be a choice of full day or half day trips for all participants on Monday, 10 July. Scientific trips will include both intertidal and fresh water collecting. Recreational tours will include the Tracy Arm Fjord Glacier cruise, helicopter flights to the Juneau Ice Field, whale watching cruises, charter fishing, ocean kayaking, river rafting, and/or a trail hike

There will also be accompanying people trips on other days (Saturday, Sunday, and Tuesday). These will be 1/2 day morning excursions that will visit historic and contemporary points of interests in and around Juneau, including the old gold mines, museums, the DIPAC salmon hatchery and aquarium, the popular Alaskan Beer brewery, the university, the Mendenhall Glacier, and the beautiful Glacier Gardens. Each day will offer a different excursion.

Post-meeting trips: The tides in southeast Alaska are excellent during the meeting week and Dr. Sandra Lindstrom will lead a 3-day field trip to Sitka which will allow participants to sample a variety of marine habitats on the open Pacific coast and experience Alaskan cultural history in the former capital of Russian America. Juneau is a major recreational and vacation destination, and commercial tour options available include Glacier Bay, Skagway Railroad, flyin fishing, and an Inside Passage Sternwheeler cruise.

New Issue on Diatom Nanotechnology!

Gordon, R., F.A.S. Sterrenburg & K. Sandhage. 2005. A Special Issue on Diatom Nanotechnology. Journal of Nanoscience and Nanotechnology 5: 1-4. http://aspbs.com/jnn/

Attention PSA students!

Check the PSA website for information and deadlines for 2006 grants and fellowships (www.psaalgae.org). Questions? The Chair of the Grants and Fellowships Committee is Robert Waaland (jrw@u.washington.edu).

Deadline for contributions for the next PSA Newsletter: September 15th, 2006

Please contact Alison Sherwood (asherwoo@hawaii.edu)

2006 PSA AWARD OF EXCELLENCE - A CALL FOR NOMINATIONS

The PSA Award of Excellence honors scientists for a record of sustained scholarly activity, including teaching and service, who have had a major impact on the field of phycology. The Award is a career achievement award for a living phycologist. Nomination packages should include a nominating letter from a PSA member highlighting the reasons for the nomination, a complete CV for the candidate (including information relating to teaching and service), any supporting documents and two additional letters recommendation. Nominations will be welcomed for all fields of research/ teaching on algae and also should highlight the candidate's service to PSA and/or other phycological societies. Materials should be emailed to Professor Øjvind Moestrup (moestrup@bi.ku.dk), Chair, PSA Award of Excellence Committee, Department of Phycology, Biological Institute, University of Copenhagen, Øster Farimagsgade 2D, DK-1353 Copenhagen K, Denmark (Tel. no. (45) 3532 2290; FAX: (45) 3532 2321). In order to receive full consideration for the Award (s) that will be made at the 2006 annual meeting of the PSA, the complete nomination package must be received by March 1, 2006.

Why we need your e-mail address!

As we move further into the electronic age, the cheapest, fastest, least-obtrusive and most tree-conserving means of contacting our members is via e-mail. Soon, it will be necessary to provide an e-mail address when joining or renewing membership to the PSA. Before long, nominating and balloting will take place electronically; one e-mail address will be required to log in and nominate/vote at Blackwell's forthcoming PSA members website. As has been our policy in the past, I will do my best to see that the number of bulk e-mail messages to PSA members from us will be kept to an absolute minimum. We are here to serve members, not annoy them. These emails may include invitations to nominate or vote for candidates for PSA offices and Bylaws changes, reminders to renew membership and acknowledgements for those who do join/renew, as well as useful information about upcoming PSA meetings or special offers to PSA members. It is possible today for anyone to create an e-mail account through Hotmail, Yahoo, etc. for free, so this should not place any undue financial burden on anyone. If a member does not want PSA e-mail sent to a business or home e-mail address, he/she could create a new one solely for this purpose.

Currently, nearly 15% of PSA members do not have an e-mail address on file with our business partner, Blackwell. We would like to be able to contact all our members via e-mail, and as noted, soon e-mail addresses will be required information. If you fall into this 15%, we would be grateful if you would go to Blackwell's change-of-address web page (http:/

/www.blackwellpublishing.com/cservices/address.asp?site=1) and provide an email address for their database.

Blackwell is updating the PSA membership website, and soon it will include a searchable directory available to members only. Members will also be able to administer their own entries. Thus it will potentially be up-to-date, and it would not be possible for someone to copy or use it for an unauthorized bulk mailing.

As always, if you have any suggestions about this or any other aspect of your PSA membership, please do not hesitate to contact me.

With best wishes,

John (LaClaire), Membership Director (2005-2007)

Prescott Award Winner Announced

The book "Marine Green and Brown Algae of the Hawaiian Islands" by Isabella Abbott and John Huisman was selected by the Prescott Award Committee to receive the 2005 Prescott Prize. The book was selected by the Committee because of its quality and the fact that it will be of considerable value to a wide range of users. This book, together with Dr. Abbott's 1999 book "Marine Red Algae of the Hawaiian Islands" provide a thorough and modern treatment of the seaweed flora of the Hawaiian Islands. Together these works represent a 10-year effort to advance and update the knowledge of this marine flora.

The Prescott Award is named after Gerald W. Prescott, former President of the Phycological Society of America. The Award recognizes outstanding monographs devoted to the study of the algae and is supported through the PSA Endowment. The selection committee for the 2005 Award was formed by Drs. Susan Brawley, Curt Pueschel, Karen Steindiger, James Wee and Bernabe Santelices (Committee Chair).

OBITUARIES

Professor T.V. Desikachary

We regret to announce the passing of Professor T.V. Desikachary, a distinguished phycologist from India, early on Saturday, November 5, 2005 in Melbourne, Australia. He was recovering from a hip surgery after a fall. He was 86. Professor Desikachary was one of the recipients of the Phycological Society of America Award of Excellence. He was unable to travel to Durban, South Africa for the award ceremony for health reasons but was very happy to receive the award in absentia and appreciated it very much. Fortunately, because of the award he received from PSA, others may one day come to appreciate the tremendous depth of his knowledge and his many contributions to the field of phycology. His death marks the end of an era in Indian Phycology.

PHYCOLOGICAL TRAILBLAZER

No. 24: Giovanni Zanardini

Giovanni Antonio Zanardini (1804-1878) was born in Padua, Italy. Although he was plagued with ill health during much of his childhood, he showed a keen interest in learning, along with an early fascination with plants, especially flowers. As an adult he would continue to show this interest in his cultivation of many varieties of *Camellia*. Receiving the classical education of the period, he was regarded as an exceptional student through the primary and secondary levels of school. He was admitted to the University of Padua, where he studied law for two years. But his performance was mediocre, and he realized that his true interest was in botany. So he applied for admission to the Faculty of Medicine at the same University, where he would also be able to study the natural sciences.

He obtained his medical degree from the University of Padua in November of 1831. The title of his dissertation for this degree was "The benefits of the use of botany to modern medicine" (Meneghini, 1881). So his inclination toward botany was still evident. Drawn to its stellar reputation in anatomy, surgery, and general medicine, Zanardini next enrolled at the University of Pavia, in southwestern Lombardy, where he completed their advanced program in surgery and obstetrics by April of 1834. During this period he also came under the sway of Giuseppe Moretti (1782-1853), professor of botany and the director of the botanical garden of the University of Pavia.

Soon after completing his advanced education in surgery, Zanardini was offered the position of physician for the 'Casa di Forza' in Padua. His career in Padua included serving on a commission with the responsibility of maintaining standards of public sanitation. This task involved a role in fighting the cholera epidemic of 1836. Although a physician and surgeon by profession, botany and phycology in particular remained as his passionate avocations. During these years in Padua he began publishing the results of his studies, coming out of his strong interest in the algae.

He was especially intrigued by the processes of reproduction in plants and the development of embryos. At this early time the distinction between reproductive and vegetative organs was still not fully understood. He also took advantage of the contemporary improvements in light microscopy to further his interests in histology. In 1839 he published a work with numerous illustrations of reproductive organs, in which he discussed their form and function. He described development of new colonies from reproductive cells in *Hydrodictyon*. Also, in 1839, he published the descriptions of 18 new species occurring in

the Adriatic Sea (Zanardini, 1939). A treatment of the marine algae of the Adriatic Sea appeared in 1840.

In a monumental paper in 1842 he produced a discourse on his studies on the biology and morphology of algae, a treatment of the organization of a number of genera of siphonous green algae, including Halimeda, Dasycladus, Anadyomene, and Udotea, and a compilation of the species of marine algae recognized up to then as occurring in the Adriatic Sea. In his 'Saggio' (1843). presented to the Venetian Institute, Zanardini presented his innovative ideas on the "natural classification" of the algae, one scheme based on the morphological distinction between vegetative and reproductive organs and a second scheme based on what he regarded to be the functional aspects of vegetative and reproductive organs. It was an early attempt to arrange all known algal genera according to their natural relationships and thus was a significant departure from the proposals of C. Agardh, Decaisne, and Harvey (Meneghini, 1881). In a critical review of the reproductive structures of coralline algae, which were still being confused with corals, Zanardini's (1844) findings supported the contention made earlier by Philippi that non-geniculate corallines were algae (plants) rather than coral polyps (animals) (Woelkerling & Lamy, 1998).

After practicing medicine in Padua from 1834 to 1847, he requested and was granted a transfer as Chief Medical Officer to the Penal House of Correction in Venice. He began that assignment in April 1847 and served until his retirement in 1869. Zanardini did not restrict his attention to the algae of the Adriatic Sea. He published two important works on the marine algae of the Red Sea on the basis of collections made by Portier and Antonio Figari. In the first work (1851) he described 22 new algal species and the new red algal genus *Portieria*. The 1858 work was the most comprehensive account on Red Sea algae up to that time (Papenfuss, 1968). It included several new genera (*Sarconema*, *Chloroplegma*, and *Dichothrix*) and some new species of green, brown, and red algae (Fig. 2).

Zanardini's botanical interests were broad. He developed a rich collection of phanerogamic plants that were donated to the Institute of Venice. He produced a catalogue of the cultivated plants of the Venezia Province with the goal of encouraging exchange with the U.S. In 1851 he also made contributions to understanding the mode of infection of the powdery mildew (Uncinula necator, or Erysiphe necator), the fungus that was then destroying the grapes vines of Europe. In the areas of the small brown spots on the undersides of the leaf he observed that the fungus produced small root-like structures that penetrated the leaf cells. He called these structures "fulcra", but the preferred term "haustoria" was later used (Large, 2003). He made histological observations of the epidermis of desert plants and made experiments on their release of carbonic acid, presenting some novel ideas of the physiology of the xeric plants (Zanardini, 1859-1860).



Fig. 1. Giovanni Zanardini. (pl. xvii, from Minio, 1938).

In Venice, over a 17-year period, he published a series of fascicles with colored plates of the marine algae of the Adriatic and the Mediterranean seas (Zanardini, 1860-1876). This series included the description of some new taxa, such as the brown algal genus *Choristocarpus* and the red algal genus *Contarinia*. In 1872, he published on the collections made by the botanical explorer and palm specialist Odoardo Beccari from Borneo (Indonesia), Singapore, and Sri Lanka. *Ceratodictyon*, a red alga that was an unusual symbiotic combination of an alga and a sponge, was a new genus based upon a Beccari collection from the Moluccas in eastern Indonesia (Zanardini, 1878). He also worked up collections made in Australia (from Tasmania, Port Phillip in Victoria, and Lord Howe Island) (Zanardini, 1874).

Zanardini was awarded the first prize at the International Marine Exposition held in Naples in 1871. He was declared an Officer of the Royal Italian Crown by the King in 1874. Meneghini (1888) characterized Zanardini's medical practice as solid, constant, and meritorious. Meneghini also provided a litany of praises to characterize Zanardini the person, that he was generous with his time, often serving as an officer in various scientific societies and as an impartial examiner on academic committees. Zanardini was also said to have a down-toearth manner and an easy smile. A complete list of his publications was provided by Meneghini (1879), De Toni & Levi (1888), and De Toni (1921). His extensive herbarium and library were bequeathed to the city of Venice and now reside in the 'Museo Civico di Storia naturale di Venezia' (De Toni & Levi, 1888).

De Toni, G. B. 1921. Giovanni Zanardini. In: A. Mieli, *Gli Scienziati italiani dall' inizio del medico evo ai nostri giorn...* Vol. 1(1): 115-118. A. Nardecchia, Rome.

and D. Levi. 1888. L'algarium Zanardini. Civico
Museo e Raccolta Correr in Venezia. Collezioni di Storia Naturale. I. Collezioni Botaniche.
Venezia. 144 pp., frontispiece.
Large, E. C. 2003. The advance of the fungi. (New
introduction by KB. Schothof, P. D. Peterson, &
C. S. Griffith.) Amer. Phytopathological Soc., St.
Paul, MN. xi + 488 pp.
Meneghini, G. 1879. Commemorazione del Dott. Giovanni
Zanardini. Atti del Reale Istituto Veneto Scienze,
Lettere ed Arti, ser. 5, 5(10): 923-943.
1888, Biografia. In: L'algarium Zanardini (G. B.
De Toni & D. Levi). Pp. 9-21. Civico Museo e
Raccolta Correr in Venezia. Collezioni di Storia
Naturale. I. Collezioni Botaniche. Venezia.
Minio, M. 1938. I naturalisti che studiarono la Laguna.
In: La Laguna di Venezia, Monografia 3 (part 5,
tome 9, fasc. 1): 1-76, pls. i - xxii. C. Ferrari, Venice.
Papenfuss, G. F. 1968. A history, catalogue, and
bibliography of Red Sea benthic algae. Israel
Journal of Botany 17: 1-118, 1 fold-out map.
Reprinted as Bulletin No. 50. Contributions to the
Knowledge of the Red Sea, No. 42, Haifa, Israel.
Woelkerling, W. J. and D. Lamy. 1998. Non-geniculate
coralline red algae and the Paris Muséum:
systematics and scientific theory. Publications
Scientifique du Muséum, A.D.A.C., Paris. viii +
767 pp.
Zanardini, G. 1839. Sulle alghe. Lettera alla Direzione
della Biblioteca Italiana. Biblioteca Italiana
[Milano] 96: 131-137.
. 1840. Sopra le alghe del Mare Adriatico. Lettera
secondaalla Direzione della Bibliotea Italiana.
Biblioteca Italiana [Milano] 99: 195-229.
1842. Synopsis algarum in mari Adriatico
hucusque cognitarum cui accedunt
monographia Siphonearum nec non generales
de algarum vita et structura disquisitiones
Memorie Reale Accademie Scienze de Torino,
ser. 2, 4: 105-255, 8 pls.
. 1843. Saggio di classificazione naturale delle Ficee,
con nuovi studi sopra l'androsace degli antichi. 64
pp., [2] pls. Venezia. [Reprinted in summary
form, in German, in Botanische Zeitung 2: 404-
408, 1844.]
. 1844. Rivista critica delle Corallinee, o Pilipai
calciferi di Lamouroux. Atti delle Adunanze
dell'I. R. Istituto Veneto 3: 186-188.
. 1847. Notizie intorne alle cellulari marine delle
lagune e de'litorali di Venezia. Atti Reale Istituto
Veneto Scienze, Lettere ed Arti 6: 185-262, 1 fold-
out plate.
. 1851. Algae novae vel minus cognitae in mari
rubro a Portiero collectae. Flora, Regensburg 34:33-38.
. 1858. Plantarum in Mari Rubro hucusque
collectarum enumeratio (juvante A. Figari).

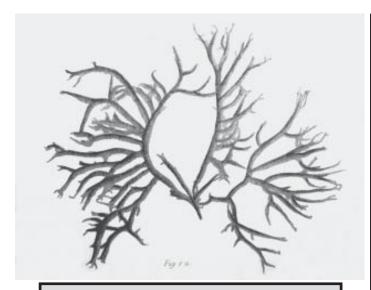


Fig. 2. Gracilaria arcuata Zanard. (1858, pl. V, fig. 2).

Memoire del Reale Istituto Veneto del Scienze, Lettere ed Arti 7: 209-309, pls. 3-14.

. 1859-1860. Intorno ai nuovi principii di fisiologia vegetale applicati all'agricoltura. Atti suddetti, ser. 3, vol. 5 and 6.

. 1860-1876. Scelta di Ficee nuove o piu rare del Mare Adriatico. Memorie del Reale Istituto Veneto del Scienze, Lettere ed Arti 9: 41-78, pls 1-8 (1860); 10: 93-124, pls 9-16; 449-484, pls 26-33 (1861); 11: 271-306, pls 11-18 (1862); 12: 9-43, pls 1-8; 377-410, pls 14-21 (1864); 13: 143-176, pls 2-9; 403-434, pls 10-17 (1866); 14: 181-216, pls 4-11 (1869); 14: 437-472, pls 26-33 (1870); 15: 425-460, pls 10-17 (1871); 17: 429-460, pls 14-21 (1873); 18: 255-286, pls 2-9 (1874); 19: 513-544, pls 23-30 (1876). [Reprinted as 'Iconographia Phycologica Adriatica', vols 1-3, Venice.]

. 1872. Phycearum indicarum pugillus a cl. Ed. Beccari ad Borneum, Singapore et Ceylanum annis 1865-67 collectarum... Memorie del Reale Istituto Veneto Scienze, Lettere ed Arti 17: 129-170, 12 pls. 1874. Phyceae Australicae novae vel minus cognitae. Flora, Regensburg, 57: 486-490, 497-505. 1878. Phyceae Papuanae novae vel minus cognitae a cl. O. Beccari in itinere ad Novam Guineam annis 1872-1875 collectae. Nuovo Giornale Bot. Ital. 10: 35-40.

I am grateful to Dr. Carmelo Tomas of the University of North Carolina in Wilmington for his generous help in translating the Meneghini (1888).

Michael J. Wynne

University of Michigan, Ann Arbor

News of Colleagues

Russell Chapman named new Executive Director for Scripps Marine Biodiversity and Conservation Center

Dr. Russell Chapman, founding dean of the School of the Coast and Environment at Louisiana State University (LSU), has been named the new executive director of the Center for Marine Biodiversity and Conservation (CMBC) at Scripps Institution of Oceanography, University of California, San Diego. In his new role, Chapman coordinates research and education efforts within CMBC, and in collaboration with other UCSD programs. He plays a key role in scientific and institutional policy and fund-raising, and guides CMBC in planning and development. His focus also involves establishing new, innovative and interdisciplinary biodiversity and conservation programs at Scripps.

Scripps Center for Marine Biodiversity and Conservation on the Web: cmbc.ucsd.edu

Rick McCourt starts new position at National Science Foundation

Congratulations to Dr. Rick McCourt, who is now working in his new position as Program Director for the Division of Biological Infrastructure at the National Science Foundation. Rick's new address is below:

Program Director
Division of Biological Infrastructure
National Science Foundation
4201 Wilson Blvd.
Arlington, VA 2220

Don Charles named first Ruth Patrick Chair in Environmental Science at the Academy of Natural Sciences

Dr. Donald F. Charles was recently named the first Ruth Patrick Chair in Environmental Science in recognition of his internationally acclaimed research involving diatoms. The Chair is a 5-year appointment designed to support individuals actively engaged in a particular endeavor that exemplifies the many contributions Dr. Patrick has made in determining ecosystem health and providing practical recommendations for sustaining ecosystems.

Where your money goes at PSA meetings

When I shared the budget for our 2006 PSA Annual Meeting in Juneau with the rest of the PSA Executive Committee last fall, one of the other members commented that it would be really great if the membership had a better understanding of where their registration money goes. This column is an attempt to do that.

The budget for every PSA meeting is different, but all share the goal of trying to break even financially. The meetings are intended as a forum for the exchange of ideas and to promote phycological scholarship and they are not intended to make a profit for the Society. I often tell people that registration fees are based on "real money" in that they go to pay real costs that are incurred at the meeting. If a meeting breaks even, that means that the members who attended paid no more than was necessary. But if it loses money, that means that the Treasury for the entire Society must be tapped to make up the deficit. Unfortunately, there are a number of uncertainties in estimating what a meeting will cost. Although our goal is to break even, we are a little conservative in making estimates so that if we are off, we err in having a small surplus rather than running a deficit.

The biggest uncertainty is the number of members who will attend a particular meeting. In making a budget, there are costs that will scale directly with the number of registrants, for example, the cost of food at a reception. But there are many other costs that do not, for example the cost of renting the meeting venue. Once these are contracted they are fixed and must be spread among those attending no matter how many or few members that ends up being. In some years, we get the meeting rooms for "free" by contracting far ahead of time for a certain number of hotel rooms or for the total dollars to be spent on catering. But the contracts have to be signed a year or, usually, well over a year before the meeting. Consequently, estimates of the number of attendees are critical in fixing a budget because if the minimums are not met, the Society still must pay for the rooms or food.

Another consideration in the budgets is that we want to encourage the participation of students and retired members by subsidizing their registration fees. Recently, their registrations have been approximately \$100 less than for regular members. So in making a budget, we have to estimate the proportion of such registrants.

Let's use the Juneau meeting as an example. In Juneau we are renting the meeting venue, Centennial Hall, and that is a major fixed cost. Other fixed costs are for insurance (which is required by the venue and a good idea for the Society regardless), buses for the opening mixer (which can make multiple trips if necessary), projectionist costs, and a small budget for unexpected or miscellaneous expenses. Since most people will register on-line using a credit card, with this and everything else

we have to incorporate the credit card charges. As it so happened this year, when we added all that up and divided by the estimated number of regular member attendees, it came out to \$101 per person. That made dividing up costs between regular and student/retired members easy. The regular members are going to pay for the fixed costs of putting on the meeting plus their own "per person costs" while the students and retired members will only be asked to pay for their per person costs.

The per person costs are just that, things that are charged per person based on the number of attendees who register by the deadlines. Most of this indeed the greatest total cost for the meeting overall is for food and beverages at the banquet, mixers, and breaks. Because we are renting the Juneau venue separately, we were able to competitively bid for all of that and so got very good prices. Also, the University of Alaska Southeast is sponsoring the opening mixer and paying for all of the food at it (this is saving the registrants about \$20 per person). The rest of the per person costs are for the on-line registration (which is billed per person although we are committed to a minimum), printing the program books, and the associated credit card charges on all this. That added up to about \$195 per person.

As I said, every year is different. As it was in 2004, in 2007 there will be no cost for the meeting rooms which are at a hotel. But we are committed to having the hotel do the catering (with a significant minimum contracted for in order to get the meeting rooms for "free") so we cannot competitively bid that (again, our biggest cost overall) as we did in Juneau. Not surprisingly, it appears to me that the total cost of food plus venue ends up pretty close to the same either way.

There are two very important meeting costs that are not included in the 2006 meeting budget I outlined. The biggest is for modest honoraria for the invited speakers. For 2006 this is plenary speakers associated mini-symposium speakers. Most of these funds are coming from the Endowment's Lecture Fund. The second cost is for the on-line abstract submission system. Because the abstracts are published on-line as part of the *Journal of Phycology*, the cost of abstract collection, sorting, and publishing is shared equally between PSA and our business partner, Blackwell. So the Society is only paying for half the total cost of this service and that comes out of our profit share from the *Journal*.

This column is probably too long but even as is, I have had to abbreviate a lot of the detail. I hope that if I have managed to keep your attention this far you understand a bit more about where your money goes. It all really is "real money!"

Chuck Amsler PSA Program Director

UPCOMING ALGAE COURSES

MARINE ALGAE COURSE AT FRIDAY HARBOR LABORATORIES - July 17-August 19, 2006

This course explores marine algae with emphasis on their role in marine ecosystems. The course will have four key components. Deadline for applications is March 1, 2006. See http://depts.washington.edu/fhl/ and http://depts.washington.edu/fhl/stu_index.html or contact the instructors for further information: Bob Waaland: jrw@u.washington.edu; Tom Mumford: tom.mumford@wadnr.gov

SUMMER FIELD COURSE IN FRESHWATER ALGAE-May 21-June 16, 2006

Students will learn methods for the collection, preparation and taxonomic identification of freshwater algae from field samples and develop skills in microscopy, aquatic field ecology and culturing. Course description information concerning Iowa Lakeside Laboratory, and registration can be found at www.lakesidelab.org, or by contacting the instructor: Kalina M. Manoylov, Michigan State University, Department of Zoology, 203 Natural Sciences Bldg., East Lansing, MI 48824, Cell: 517-974-4755, manoylov@msu.edu

ECOLOGY AND SYSTEMATICS OF DIATOMS – June 18-July 14, 2006. Taught by Mark Edlund and Sarah Spaulding, at the Iowa Lakeside Laboratory. Lectures will cover taxonomy, systematics and biogeography of most

of freshwater genera. Students will complete individual voucher collections using modern database techniques. Students are encouraged to bring research materials and prepared to discuss approaches using diatoms in ecological and paleoecological research. See http://www.lakesidelab.org for more information, or contact Sarah Spaulding (sarah.spaulding@colorado.edu) or Mark Edlund (mbedlund@smm.org).

FRESHWATER ALGAE COURSE IN SCOTLAND - 24 - 31 July, 2006, Kindrogan Field Centre, Enochdhu, Blairgowrie, Perthshire, Scotland (near the tourist area of Pitlochry), taught by Dr Eileen Cox and Prof Elliot Shubert. Course objectives are to provide a sound introduction to the recognition, identification and ecology of freshwater algae. Emphasis will be placed on the use of the microscope and taxonomic keys (print and electronic) for the identification to generic and species level and the ecological importance of algae. For more information:: http://www.field-studies-council.org/professional/2006/courseinfo.aspx?id=521

PHYTOPLANKTON CULTURING TECHNIQUES COURSE - 5-11 May, 2006. Taught by Dr. Robert A. Andersen and Dr. Michael Sieracki. The Provasoli-Guillard National Center for Culture of Marine Phytoplankton will offer an intensive seven-day course covering basic and advanced techniques for isolating, growing and cryopreserving marine phytoplankton. For more information e-mail: RAndersen@Bigelow.org or see the CCMP website: http://ccmp.bigelow.org/.



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