SOCIETY NEWS

TYGE CHRISTENSEN PRIZE 2004

The Tyge Christensen Prize, announced in 1997 (Phycologia 36: 1), is awarded annually for the best paper published in Phycologia in the preceding two years, alternating between papers on microalgae and macroalgae. The Prize consists of a single cash award of US$5000, and commemorative certificates and plaques for each author.

The International Phycological Society (IPS) is pleased to announce that the Tyge Christensen Prize for 2004 has been awarded to Sigrid Berger, Ulrike Fettweiss, Stefan Gleissberg, Larry B. Liddle, Ursula Richter, Heiko Sawitzky, and Giuseppe (Joe) Zuccarello for their paper ‘18S rDNA phylogeny and evolution of cap development in Polyphysaceae (formerly Acetabulariaceae; Dasycladales, Chlorophyta)’ (Phycologia 42: 506–561). This award is for the best macroalgal paper published in Phycologia during 2002–2003.

Judging of the awards is based on scientific significance, originality in subject matter or techniques, comprehensiveness, and clarity of presentation. One of the judges, Charley O’Kelly, commented: ‘High marks for significance and comprehensiveness, this culminating study is likely to stand for a while as the reference standard for the taxonomy of the Acetabularia group of Dasycladales – and this benchmark will matter to lots more folk than just the taxonomists, given the history and likely resurgence of Acetabularia as a model system. It’s an unfair advantage because of the subject matter, but the images are beautiful!’ Other judges praised the comprehensiveness of this paper, and its lovely illustrations.

The Polyphysaceae (formerly Acetabulariaceae) is one of two extant families of the Dasycladales, a group of ancient marine green algae. These peculiar plants are remarkable because they undergo complex morphological differentiation without cell partitioning and with one single nucleus. They perform complex morphogenesis at the tips of their polar plant bodies that is reminiscent of shoot apex development in higher plants. The body plan of the Polyphysaceae is polar and comprises a basal rhizoid, a stalk with whorls of branched hairs, and a subterminal umbrella-shaped structure. There is considerable morphological variation of the reproductive caps among the 19 extant species, which has been used to distinguish the five genera currently recognized.

This publication arose out of collaboration between several research groups interested in the evolution of the Polyphysaceae. The senior author, Sigrid Berger, explained that the study was undertaken because the Dasycladales play a significant role in palaeontological research and are a model group in cell biology. It is therefore important to understand the relationships of their members, but the position of the family Polyphysaceae was formerly rather poorly known. The various authors of the paper, who are all specialists in the Dasycladales or experts in aspects of morphological or phylogenetic analysis, joined forces to address this question. Evolutionary alterations and morphogenetic innovations were tracked by mapping developmental features on a molecular phylogeny derived from 18S rDNA sequences.

The Gleissberg group in Mainz analysed cap morphogenesis by sectioning and light microscopy in order to answer the following questions: Do the patterns of morphogenesis support the current system of the family? What kind of onto- genetic alterations underlie the diversity of cap morphology? The phylogenetic research was described by Joe Zuccarello as an enjoyable collaboration. ‘From the point of view of phylogenetic analysis, the long-branch attraction problem was nice to resolve. The evolutionary loss of a character that was thought to define a genus (corona inferior) and the gain of an “important” character of a genus embedded within Acetabularia (Aciculalaria) was exciting. Also the phylogeny indicated that the group with a ray development that involved a change in the growth zone of the ray (Acetabularia acetabulum) was quite distinct. The nomenclature was fixed up, both with careful description of development in culture and, hopefully, law-abiding name changes.’

Sigrid Berger obtained her degree in Biology from the University of Cologne, and her PhD from the Max-Planck-Institute for Marine Biology, Wilhelmshaven. For most of her career, Dr Berger was Curator of the Dasycladales collection, Max-Planck-Institute for Cell Biology, Ladenburg, where she was also Head of the electron microscope group. In 2004 she was appointed to a Professorship at Ruprecht-Karls-University, Heidelberg, where her current research activities are in intracellular transport. She is well known for her impressive monograph Dasycladales, which was coauthored by Matthias Kaever (Thieme Publishing Group, 1992).

Ulrike Fettweiss studied Biology at the Friedrich-Wilhelms-University in Bonn and her PhD (awarded 2004) was with Sigrid Berger at the University of Heidelberg. Her molecular biology work for this publication was carried out at the Max-Planck-Institute for Cell Biology in Ladenburg near Heidelberg.

Stefan Gleissberg was educated at the Universities of Frei-
burg and Heidelberg, and is now Assistant Professor in the Institute of Systematic Botany at the University of Mainz. His main research interest, apart from morphological evolution in the Polyphysaceae, is the development of leaves, particularly the origin and developmental potentialities of the leaf margin. He believes that the leaf margin is a crucial developmental-morphological element accounting for much of the diversity generated during evolution. The goal of his group is to understand the molecular control and evolution of processes underlying leaf bifaciality and leaf dissection.

Larry Liddle, who did his PhD in Marine Botany at the University of California, Santa Barbara, is Professor of Biology and Marine Science at Southampton College. He has had a long collaboration with several of the coauthors of this paper, asking very basic questions about cell structure and function, development, and molecular taxonomy using the most sophisticated techniques with algae as the research subjects.

Ursula Richter is in the Institut für Allgemeine Botanik und Pflanzenphysiologie at Justus-Liebig-Universität Giessen, where she and Heiko Sawitzky carried out some of the electron microscopy used in this publication. Her interests are in ultrastructure of plant tissues.

Heiko Sawitzky was formerly at the Max-Planck-Institute for Cell Biology, Ladenburg, where he worked on the dasyclads, but is now in Hungen, where his research interests include plant and algal physiology.

Giuseppe (Joe) Zuccarello was educated at the University of California, Santa Cruz, where his PhD was directed by Lynda Goff. Following postdoctoral research in Australia and the Netherlands, he has now been appointed Senior Lecturer at Victoria University of Wellington in New Zealand. His research interests are in the evolution of marine macroalgae. He believes that diversity in morphologically simple algae, especially in such rich areas as New Zealand waters, is best discovered using molecular methods. The phylogeny of algae at higher levels (species relationships, generic–familial relationships) is also a research interest. Along with molecular techniques he likes to incorporate microscopy, life history,
and physiological studies to increase our knowledge of these understudied organisms. This is the second time Joe has won the Christensen Prize. In 2000, he won it with John A. West and Robert J. King for their paper ‘Evolutionary divergence in the Bostrychia moritziana/B. radicans complex (Rhodomelaceae, Rhodophyta): molecular and hybridization data’ (Phycologia 38: 234–244).

A NOTE OF THANKS

On behalf of the IPS, we would like to extend our appreciation to the following colleagues who participated in the judging process for this year’s Tyge Christensen Prize. In particular, Juliet Brodie is recognized for serving on both a specialist panel and the final judging panel. We thank all the following very warmly:

Juliet Brodie        Sandra Lindstrom
Matthew Dring        Ichiro Mine
Steve Dudgeon       Taizo Motomura
Max Hommersand       Jeanine Olsen
Mark Johnson         Charley O’Kelly

Christine A. Maggs, Chair, Christensen Prize Committee, and IPS Vice President/President Elect

Dennis Hanisak, IPS President

Addendum

Bailey, J.C., Gabel J.E. & Freshwater D.W. 2004. Nuclear 18S rRNA gene sequence analyses indicate that the Mastophoroideae (Corallinaceae, Rhodophyta) is a polyphyletic taxon. Phycologia 43: 3–12.

We have gratefully been informed by Drs Paul Silva and Giovanni Furnari that our new combination Hydrolithon pachydermum (Foslie) Bailey, Gabel & Freshwater was invalidly published according to Article 33.3 of the ICBN. In our original paper [Phycologia 43: 8] the basionym, its author, and place were not cited.

The basionym that should have been cited is Lithophyllum onkodes (Heydrich) Heydrich f. pachydermum (‘pachyderma’) Foslie, Algologiske notiser, Konge. Norske Vidensk. Selsk. Skr. 1904(2): 5, 9 pp.