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The Mayfly Newsletter

Peter M. Grant

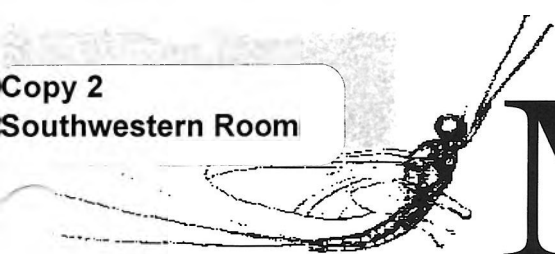
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THE MAYFLY NEWSLETTER

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Vol. 6 No. 1

Southwestern Oklahoma State University, Weatherford, Oklahoma 73096-3098 USA

November 1995

VIIIth in Switzerland: Smashing!

The VIIIth International Conference on Ephemeroptera was held 14-18 August 1995 in Lausanne, Switzerland, on the Dorigny Campus.

An informal reception was held Sunday evening for those arriving early and the conference officially began Monday morning. Dean Prof. Jean-Claude Bünzli presented the welcoming address to the participants.

Dr. Rainer Willmann presented the invited lecture entitled, "Phylogeny and the Consequences of Phylogenetic Systematics." The entire paper session on Monday was devoted to phylogeny. Lively discussions ensued after several of the presentations. The first day ended with the poster session.

Two sessions were presented on Tuesday, "Systematics and Phylogeny" and "Methods and Ultrastructure."

Jean-Marc Elouard demonstrated software that he developed called GODET (Gestion et Organisation des Données Ecologiques et Taxinomiques). This program is capable of integrating bibliographic, systematic and field data. The software and an instruction manual should be available by March 1996. The second poster session followed.

Tuesday evening was extra special - a dinner cruise on Lac Lemman aboard the yacht *Savoie*. The music, provided by Anne Freitag and Claire Hofmann, was fantastic, the scenery was beautiful, the food was delicious and the wine was plentiful. A spectacular fireworks display topped off this incredible evening.

During the dinner cruise plaques were presented

to the conference convenors, Michel Sartori and Peter Landolt, and certificates to their many assistants in appreciation of their efforts in conducting this fabulous conference.

On Wednesday, the morning program focused on life histories. That afternoon a field trip to the Jura Mountains was arranged. We saw much of the beautiful Swiss countryside and had the opportunity to collect in the springs of the Orbe River. Participants were treated to a picnic and were serenaded by a herd of cattle wearing bells.

Dr. Bernhard Statzner opened the session on ecology and biodiversity Thursday morning with his invited paper, "Complexity of Concepts in Theoretical Ecology and Patterns Observed in Stream Insects." The afternoon session dealt with biogeography and distribution. Participants

were treated to a special video by Tom Fink and Sandor Andrikovics showing the unusual swarming behavior of *Palingenia longicauda*.

The business meeting followed the paper session. See the report on page 2.

A joint symposium on mayflies and stoneflies was held Friday morning. Dr. Jean-Pierre Ribaut's invited paper, "Protection of Endangered Species," started this session. The third poster session completed presentations for the day. That evening, a stonefly welcome and mayfly farewell party was held.

Overall, ninety participants had an unforgettable five days at an extremely successful international conference.

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We Mean Business...

Report on the business meeting at the VIIIth International Conference.

On the first day of the conference, Bill Peters, Chair of the Permanent Committee, welcomed participants to the largest International Conference on Ephemeroptera to date, both in terms of number of participants and number of presentations. Bill also introduced several topics for participants to consider in preparation for the business meeting on Thursday.

The Permanent Committee made three decisions:

(1) Two new members will be elected to the Committee from the participants at this conference. Nominations are to be given to John Flannagan by the end the field trip on Wednesday.

(2) A subcommittee was formed composed of three members of the Permanent Committee (Javier Alba-Tercedor as Chair, John Flannagan, Vladimir Landa) and three volunteers from the participants (John Brittain, Tom Fink, Elda Gaino). They are to discuss the advantages and disadvantages of forming an international association of ephemeropterists and to report their findings during the business meeting on Thursday.

(3) The Permanent Committee received two proposals for the IXth International Conference in 1998: Argentina (Eduardo Dominguez) and China (Gui Hong). Registration packets included copies of both proposals. The Permanent Committee will determine the location of the next conference and will ask the participants at this conference to ratify that decision on Thursday.

Bill Peters congratulated Michel Sartori and Peter Landolt for their efforts in organizing this conference.

The business meeting on Thursday began with the announcement that the Permanent Committee selected Argentina for the site of the IXth International Conference on Ephemeroptera in 1998. A motion was made for the participants at the business meeting to ratify this decision. The motion passed.

John Brittain and Elda Gaino were elected to the Permanent Committee by the conference participants.

The subcommittee reported their finding as to whether an international association on Ephemeroptera should be formed.

One advantage of such an association would be the availability of more funds, generated by dues, for the operation of administrative offices (phone calls, postage, plaques, office supplies), offsetting expenses to publish and mail *The Mayfly Newsletter*, increasing the size of scholarships (even though John Flannagan

invests the currently available funds, the gifts are more symbolic than significant), and funding the publication of *Eatonia* (Bill Peters mentioned that this publication has been updated and is best distributed on computer diskettes).

Other advantages include the higher probability of obtaining funding from one's university to attend a conference that is sponsored by a formally recognized international association and the opportunity to request money from sponsoring organizations to hold a conference.

Disadvantages of an association would be payment of dues, increased accounting and increased formality.

A final decision was not made about establishing an international association. Bill Peters and Vladimir Landa will contact other international associations to identify additional advantages and disadvantages and to determine the procedure for setting up such an association.

In the meantime, the Permanent Committee might consider publishing a summary of its successes to document itself as a serious professional organization.

It was pointed out, however, that the Permanent Committee already has significant expenses with the production of an international conference. Committee members require funds for international phone calls, office supplies, postage, and plaques for convenors.

Because of these expenses, the Permanent Committee recommended that those, who wish to support the International Conferences on Ephemeroptera, may do so by donating US\$30.00 to the organization. If someone cannot afford \$30.00, then any amount will be accepted. However, no one will be excluded from participation if he/she cannot afford a donation. Eighty per cent of the donations will be placed into the scholarship fund and the other twenty per cent will be used to pay administrative expenses.

Donations should be sent to John Flannagan, Freshwater Institute, 501 University Crescent, Winnipeg, Manitoba, R3T 2N6, Canada. An international money order in Canadian funds or a bank note would be preferred.

Bill Peters will send personal letters to everyone addressing the need for additional operating funds.

[Editor's note: Ephemeropterists are encouraged to use *The Mayfly Newsletter* to continue the discussion on any of the above topics.]

Slides, Color Slides

Verena Lubini has copies of mayfly and stonefly slides (24 mm x 36 mm) for sale. The cost is SFr. 25 per slide (for less than 10 slides) and SFr. 20 per slide (for more than 10 slides) plus postage. For countries such as Russia, Poland, etc., the price will be lower depending on the purchaser's financial situation.

Slides may be purchased from Verena at Eichhalde 14, CH-8053 Zurich, Switzerland (fax or phone number: 0041 1 422 82 02).

See the following chart for a list of available slides.

| Ephemeroptera | |
|---|--|
| <i>Baetis alpinus</i> (Pictet) - L | <i>Heptagenia sulphurea</i> (Müller) - I m |
| <i>Baetis rhodani</i> (Pictet) - L | <i>Oligoneuriella rhenana</i> (Imhoff) - L |
| <i>Caenis beskidensis</i> Sowa - L | <i>Palingenia longicauda</i> (Olivier) - L, SI m; emergence of larva on water surface, SI molting m (5-7 slides), copula |
| <i>Cloeon dipterum</i> (Linne) - I f, L | <i>Potamanthus luteus</i> (Linne) - I f |
| <i>Ecdyonurus dispar</i> (Curtis) - SI f | <i>Rhithrogena degrangei</i> Sowa - L |
| <i>Ecdyonurus venosus</i> (Fabricius) - L | <i>Rhithrogena germanica</i> Eaton - L, SI |
| <i>Epeorus alpicola</i> (Eaton) - L (dorsal and ventral view) | <i>Rhithrogena iridina</i> (Kolenati) - SI f, SI m, I m |
| <i>Ephemera danica</i> Müller - L, SI, I f | <i>Rhithrogena semicolorata</i> (Curtis) - L, I m |
| <i>Habroleptoides confusa</i> Sartori & Jacob - L, I m | Head with "turban-eyes" (Baetidae) - front view |
| Plecoptera | |
| <i>Brachyptera risi</i> (Morton) - I, copula | <i>Nemurella pictetii</i> Klapalek - I |
| <i>Dictyogenus alpinus</i> (Pictet) - L | <i>Perla grandis</i> Rambur - L, I f, E |
| <i>Dinocras cephalotes</i> (Curtis) - L, emergence, I m + f | <i>Perlodes dispar</i> (Rambur) - I m |
| <i>Isoperla grammatica</i> (Poda) - L, I | <i>Perlodes microcephalus</i> (Pictet) - L, I, E |
| <i>Leuctra albida</i> Kempny - L | <i>Protonemura lateralis</i> (Pictet) - I |
| <i>Leuctra braueri</i> Kempny - L | <i>Taeniopteryx kühtreiberi</i> Aubert - L |
| <i>Leuctra inermis</i> Kempny - N | |

Codes: L = larva, N = nymph, I = imago, SI = subimago, m = male, f = female, E = exuviae

Research Summaries

Tianqui Wang

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Currently, I am working with Dr. W. P. McCafferty on the phylogeny and higher classification of Pannota based on strict cladistic analysis.

Our recent study showed that some of the traditional family concepts in this suborder should be corrected, especially in the polyphyletic Ephemerellidae. One typical problem in this suborder is the frequent absence of synapomorphies, even at the family level. Moreover, some families consist of unrelated genera.

One extreme example is *Melanemerella* Ulmer, 1920 which should be moved out of not only Ephemerellidae, but also Pannota. The larva of *Melanemerella* is still unknown. Since it is critical to the higher classification of Ephemeroptera, we hope it will be reared soon. The type locality is Espirito Santo, Brazil. The result should be a great contribution to mayfly research.

The type specimen (one female imago) shows that the larva of *Melanemerella* could have abdominal gills 1 but lacks gills 7, similar to the leptophlebiid *Massartella* of South America. However, this hypothesis could be completely proven only after the association of the larval and alate stages.

The goals of our research on pannote mayflies are to evaluate comparative character states and their polarities, to deduce the most parsimonious cladogram, to propose phylogenetic classification above the generic level, and finally to provide illustrated descriptions and keys to the revised superfamilies, families, and subfamilies of Pannota.

Our recent publications discuss the phylogeny of the *Timpanoga* complex, the larva and adult association of *Teloganella*, and one new genus (*Provonshaka*) from Madagascar.

Sung Jin Lee

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I am studying the life history of five species of Korean Ephemeroidea: *Ephemera strigata*, *Ephemera orientalis*, *Potamanthus yooni*, *Rhoenanthus coreanus* and *Ephoron shigae*. These five species are widely distributed in Korean streams but life history information on them is limited.

Two *Ephemera* species are also distributed widely and well known in Japan. A comparison of the life history between Korean and Japanese species is very interesting to me. I am also interested in substrate selection. Substrate is probably a significant factor limiting their distribution.

Shelley Ball

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I am a first year Ph.D. student at the University of Missouri-Columbia.

My interests are in the evolutionary ecology of alternative reproductive modes (facultative and obligate parthenogenesis, ovoviviparity) in mayflies and, in particular, the evolution and ecological consequences of facultative parthenogenesis.

I am interested in the fitness consequences of parthenogenesis and why some populations of some species contain both sexually and asexually reproducing individuals.

I am also interested in mayfly phylogenetics.

Comparative Analysis by Independent Contrasts

Free Software Package of Version 2 Now Available

Version 2 of Comparative Analysis by Independent Contrasts (CAIC) is now available. CAIC computes phylogenetically independent contrasts from comparative data, allowing valid statistical testing of adaptational hypotheses. Unlike previous versions, this version runs on any Macintosh. It is also simpler to use. The manual has also been updated and expanded. As well as providing an introduction to the logic of independent contrasts, it gives guidance on using CAIC to test hypotheses of correlated evolution among traits, rate variation among traits or taxa, and grade shifts.

The package can be downloaded via anonymous ftp or from the World-Wide Web. Using ftp, the server is evolve.zps.ox.ac.uk and CAIC is in [//packages/CAIC/CAIC.sea](http://packages/CAIC/CAIC.sea). Using WWW, CAIC's page is <http://evolve.zps.ox.ac.uk/CAIC/CAIC.html>.

A paper describing the new version has recently been published: Purvis, A. and A. Rambaut. 1995. Comparative analysis by independent contrasts (CAIC): an Apple Macintosh application for analysing comparative data. *Computer Appl. Biosciences* 11:247-251.

For further information, contact Andrew Rambaut using e-mail, andrew.rambaut@zoology.ox.ac.uk.

Eric Whiting (1954-1995)

The following obituary was provided by Dale Parker. Eric passed away on 28 April 1995.

Eric was raised in the Senlac district of west central Saskatchewan. He received his B.Sc. Honours from the Biology Department at the University of Saskatchewan. In 1978 he completed his M.Sc. on the impact of urban runoff on stream invertebrates with Hugh Clifford at the University of Alberta. He returned to the University of Saskatchewan to work on the biogeography of heptageniid mayflies for his Ph.D. under the supervision of Dennis Lehmkuhl. Eric completed his Ph.D in 1985.

After completing his Ph.D, Eric worked in the Biology Department at the University of Saskatchewan as a laboratory instructor and lecturer for a number of classes. He also lectured for one year (1988-89) at St. Francis Xavier University, Antigonish, Nova Scotia.

He influenced thousands of students through his contagious enthusiasm for all aspects of nature, his ability to make complex concepts easy to understand, and his patient approach to teaching. Many of these students now have careers in biology of their own.

Eric was also a competent researcher. He authored or coauthored a number of scientific papers on mayfly taxonomy (including descriptions of two new genera), biogeography, and environmental impacts. He continued this research even though it was not funded. Prior to his death, Eric was working on the biogeography of the mayfly fauna of Nova Scotia.

Eric was a member of the North American Benthological Society and the American Entomological Society.

Eric will be sadly missed by all who knew him.

New Publications on Mayflies

Current Directions in Research on Ephemeroptera (ISBN 1-55130-075-3), edited by Lynda Corkum and Jan Ciborowski, has just been published. This work contains the proceedings of the VIIth International Conference on Ephemeroptera, which was held at the University of Maine, Orono, USA, 3-6 August 1992. It is available from Canadian Scholars' Press, Inc., 180 Bloor St. West, Suite 402, Toronto, Ontario M5S 2V6, Canada. Phone (416) 929-2774, FAX (416) 929-1926. The price is \$40.00 (Canadian or US) plus \$8.00 shipping and handling.

Argentina Proceedings of VIIth International Conference New Zealand

Fauna of New Zealand: Leptophlebiidae will be published early 1996. This book, written by David Towns and William Peters, provides a guide to identification of all life stages of the New Zealand species. To purchase a copy, contact Fauna of New Zealand, Library, Mt. Albert Research Centre, Private Bag 92-169, Auckland, New Zealand. Phone 064-9-815-4211, FAX 064-9-815-4201. The pre-publication price is US\$30. Make checks payable to Manaaki Whenua Press.

Just in time for the IXth International Conference, "Los Ephemeroptera en Argentina" (*Fauna de Agua Dulce de la República Argentina*, Museo de La Plata, Vol. 33, Fasc. 1) by Eduardo Dominguez, Michael Hubbard and Manuel Pescador is also available. Write to Dra. Zulma Ageitos de Castellanos, Calle 9 entre 502 y 503, 1897 Gonnet, Buenos Aires, Argentina. The price is US\$15 plus \$2 shipping (can be sent via Western Union).

Address Update - New, Corrections, Changes

Changes or additions to the mailing and e-mail addresses published in issue 5(2) are listed below. New or corrected mailing addresses are printed in upper case letters. New or corrected e-mail addressees are in lower case letters.

Updated addresses will be published as they become available. A complete list of mailing and e-mail addresses will probably be published every two years.

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Apr./Oct.

This newsletter is published twice a year, usually in the spring and fall. To be more consistent, I hope to publish an issue in April and October (came close with this issue!) of each year. This means I'll be working on the issues during March and September - good times for you to submit material for inclusion.

Keep those cards and letters coming in.

Mayfly Movie?

A production company in Montreal is currently working on a new television series about insects. This series will focus on new approaches to the world of insects, on analogies between the activities of humans and insects, and on current work in the field of entomology.

If you have any suggestions for the show or have film or video footage of insects, contact Denis Blaquiére at denblack@vir.com.ca.

SIL in 1998

The XXVIIth SIL Congress will be held on the Belfield Campus of University College Dublin, 9-15 August 1998. The conference theme is "water of life" (in Irish, Uisce beatha - the etymological origin of "whiskey"). For further information, write to XXVII SIL Congress, UCD Environmental Institute, University College Dublin, Richview, Clonskeagh, Dublin 14, Ireland.

1994 Mayfly Bibliography

[Editor's note: This bibliography was published as the Ephemeroptera portion of the 1994 (1995) North American Benthological Society's *Current and Selected Bibliographies on Benthic Biology*.]

The following is a list of current publications dealing with Ephemeroptera that have been published up to and during 1994 and have not appeared in previous NABS Bibliographies. To facilitate locating abstracts and addresses of authors, the name of the index (abbreviated), volume, and abstract or item number follow each reference. Abbreviations are as follows: *Biological Abstracts* (BA); *Biological Abstracts/Reports, Reviews, and Meetings* (BA/RRM); *Current Contents - Agriculture, Biology, and Environmental Sciences* (CC); *Dissertation Abstracts International* (DAI); *Entomological Abstracts* (EA); *Masters Abstracts* (MA); and *Zoological Record - General Insects and Small Orders* (ZR). Citations for CC, DAI, and MA include the volume, issue number in parentheses (for CC), and page number on which the reference is found. References without an abstract number were obtained from the original reprint. I would appreciate receiving a reprint of any article that deals with mayflies, especially if it includes scientific names, so that it may be included in next year's bibliography. Also, I would like to be informed of any corrections or omissions in this or past bibliographies. Suggestions are always welcome. Please send all correspondence to Peter M. Grant, Department of Biological Sciences, Southwestern Oklahoma State University, Weatherford, Oklahoma 73096-3098 USA, phone (405) 774-3294, e-mail grantp@swosu.edu.

- Adamek, Z.; Sukop, I. 1992. Invertebrate communities of former southern Moravian floodplains (Czechoslovakia) and impacts of regulation. *Regul. Rivers Res. Manage.* 7: 181-192.
- Bae, Y. J.; McCafferty, W. P. 1994. Microhabitat of *Anthopotamus verticis* (Ephemeroptera: Potamanthidae). *Hydrobiologia* 288: 65-78. [BA 98:145477]
- Barber J. H. M. 1994. South African mayflies - A renewed emphasis. *S. Afr. J. Sci.* 90: 565-566. [CC 26(10):18]
- Barger, M. A.; Janovy, J., Jr. 1994. Host specificity of *Rhabdochona canadensis* (Nematoda: Rhabdochoniidae) in Nebraska. *J. Parasitol.* 80: 1032-1035. [BA 99:66994]
- Bass, D. 1994. Community structure and distribution patterns of aquatic macroinvertebrates in a tall grass prairie stream ecosystem. *Proc. Okla. Acad. Sci.* 74: 3-10.
- Bauernfeind, E. 1992. Die Eintagsfliegen der Traun (Insecta: Ephemeroptera). *Kataloge des OO Landesmuseums N.F.* 0(54): 93-98. (In Austrian)
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