

The Mayfly Newsletter

Volume 6 | Issue 2 Article 1

5-1-1996

The Mayfly Newsletter

Peter M. Grant Southwestern Oklahoma State University, peter7grant@gmail.com

Follow this and additional works at: https://dc.swosu.edu/mayfly



Part of the Biology Commons, Entomology Commons, Systems Biology Commons, and the Zoology

Commons

Recommended Citation

Grant, Peter M. (1996) "The Mayfly Newsletter," The Mayfly Newsletter. Vol. 6: Iss. 2, Article 1. Available at: https://dc.swosu.edu/mayfly/vol6/iss2/1

This Article is brought to you for free and open access by the Current Newsletters at SWOSU Digital Commons. It has been accepted for inclusion in The Mayfly Newsletter by an authorized editor of SWOSU Digital Commons. An ADA compliant document is available upon request. For more information, please contact phillip.fitzsimmons@swosu.edu.



Vol. 6 No. 2

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

May 1996

Mayflies as Food: A Confused Story From South America

M. T. Gillies

Not long ago a story appeared in a little English journal, called *Petits Propos Culinaires*, which publishes scholarly articles on aspects of food and cooking. It cited the 17th century Jesuit Bernabé Cobo, whose *Historia del Nuevo Mundo* was republished with notes in 1890-93. According to the English article, which was on the diet of the Incas, "Mayfly larvae, Ephemerids, which develop on the highland lakes during Lent, were also consumed, either raw and alive in great fistfuls, or else prepared for storage."

This story seemed very unlikely to me, given the fact that any large mayfly from lakes will belong to one of the burrowing families of Ephemeroidea. This suspicion was confirmed for me by Dr. Claude Dejoux of the French organization, ORSTOM, who from his experience of Lake Titicaca, suggested that the insects concerned were a large *Chironomus* or else amphipods from under stones at the riverine end of the lake.

The next move was to check out the original account. This was done for me by a South American friend living in Oxford, and it transpired that the account given in the cooking journal was entirely erroneous. What Bernabé Cobo actually said (my translation) was:

"The chiclu or chi-che is a little animal peculiar to the Indies, concerning which it is not certain whether it is a kind of a worm or a fish, since it is taken to be a fish because the Indians, and the Spaniards in imitation of them, use it as such. It is small, long, dark coloured and with many feet like those of the prawn (or shrimp), it breeds in rivers between stones and rocks, the Indians eat them just as they are taken from the river and I have seen them sold fresh in Indian villages; and by keeping them alive in a seething heap, in this way the Indians eat them by the handful with as much pleasure as if they were comfits. They also keep them for sauce, preparing them as follows: after toasting and grinding them they shape them into little cakes (as is done with

caterpillars) which keep for a long time and from which with plenty of chili added they make a sauce, very delicious and appetising for the Indians, and not badly received by the Spaniards, especially those born in this land whom we call Creoles. This sauce is eaten with fish or anything else and is used both on ordinary days and in Lent. The chiclu is of a hot temperament and the Indians have noticed about it that it has the property of provoking the veneral act and that it also provokes urine.

Inside This Issue:

Obituaries	2
Research requests, publications	3
Research summaries	4
Summer courses and workshop.	5
Announcements	6
Updated addresses	7
Taxonomic database	8

"Footnote: the chiclu is the worm or larva of a species of Ephemera. The fact that its maximal development in both number and volume coincides with Lent in some places in Peru has led to this natural phenomenon being taken for a miracle provided yearly for the express purpose of providing the faithful, who live near rivers and valleys barren of fish, with some licit and grateful food, which may replace it during that period of abstinence."

The most likely mayfly to fit this description is *Euthyplocia* or possibly *Campylocia*. Does anyone have any comments?



Luis E. Peña G. 1921-1995

Sr. Luis E. Peña Guzmán, the distinguished Chilean naturalist, was born 21 January 1921 and died 27 September 1995 at El Portozuela, 16 km north of Santiago, after a long illness.

Knowledge of South American mayflies, especially of Chile, was greatly advanced because of the work of Sr. Peña, who was affectionately known as Lucho to his friends. He collected the material for the four papers on Chilean mayflies by Georges Demoulin, spent months in the field with George Edmunds and Manuel Pescador, and reared mayflies in Cordova, Argentina, for Edmunds.

He was always a "muy sympatico" field companion, a superb organizer for life in the field, and he handled the normal stresses of field work with a delightful humor. He organized more than 445 field collecting expeditions throughout South America and worked with an impressive array of well known entomologists and other biologists.

Lucho specialized in Coleoptera, especially Tenebrionidae, and butterflies of Chile. He has more than 400 species named after him, apparently more than any other person.

His service of collecting the insects for others will be carried on by Alfredo Ugarte-Peña, and his collection will be curated by Pedro Vidal. [Submitted by George F. Edmunds, Jr.]

Frederick P. Ide

Professor Frederick Palmer Ide, B.A. 1928, M.A. 1930, died 19 January 1996, in his ninety-second year. Professor Ide was an Instructor, 1930-1933; Lecturer, 1933-1939; Assistant Professor of Biology, 1939-1941; and Assistant Professor of Entomology, 1941-1943. His war service was with Transport Canada as an Assistant Meteorologist, specifically with that portion of the organization which had responsibility for war-time transatlantic flights originating in Canada. Professor Ide had pre-war training in meteorology and he maintained a life-long interest in the responses of insects to weather and climate. Professor Ide resumed his university career: Assistant Professor of Entomology, 1945-1950; Associate Professor of Zoology, 1950-1962; Professor of Zoology, 1962-1970; Professor Emeritus, 1970-1996. Professor Ide received the University of Toronto Sesquicentennial Long Service Honour Award in 1977.

It was through his insects and weather expertise that he was called on to advise on the spraying of forest insects, especially in New Brunswick. Professor Ide's greatest interest was in the systematics of aquatic invertebrates and stream ecology. He amassed large databases on the fauna of selected streams in south-central Ontario; these faunal surveys were repeated in recent years and the comparisons, which spanned 30-50 years, provided excellent evidence on the adverse biological effects of the continuing acidification of these streams.

Professor Ide had an encyclopedic knowledge of what organisms were found where in southern Ontario. I recall a student exiting the elevator with a bucket of live clams: Professor Ide barely glanced down and said, "I see you've been collecting on the French River." To the incredulous student he added, with that twinkle in his eye, "They only look like that in the French River."

Professor Ide retired to his house in Washago (his mail went to Wasaga) and when his strength waned, he entered Birchmere Lodge in Orillia and more recently the Almar Nursing Home, where he died after a brief illness.

The Department of Zoology, at the University of Toronto, has established a "Frederick P. Ide Memorial Fund" for graduate fellowships and travel to scientific conferences. Dr. Ide left a bequest to the Department of Zoology and the department would like to add to it. Donations to the fund can be made through the Department of Zoology, University of Toronto, Toronto, Ontario, Canada M5S 3G5. [Written by Harold Harvey, submitted by Linda Corkum]

Electrogena Carlo Belfiore

During the last mayfly conference in Switzerland, an informal meeting, promoted by Peter Landolt, was held to discuss the genus *Electrogena*. I had the task to coordinate the taxonomic work on this genus.

During this meeting, we decided that every local worker will study his own material, to describe new species, point out new records, etc. Part of the material (from each population: more than 15 half-grown and full-grown larvae, with 1st and 7th gills attached; and a few adults for each recognized species) will be sent to me for global revision based on numerical methods.

I will also try to keep all interested workers in contact, informing them periodically about new diagnostic characters, needs of material, and other novelties coming from local workers. Whenever needed, I may directly collaborate with anyone who may have problems with the definition of local species.

Individuals who are participating in this study include

Javier Alba-Tercedor, Granada, Spain Sandor Andrikovics, Eger, Hungary Ernst Bauernfeind, Wien, Austria Carlo Belfiore, Napoli, Italy Jochen Fischer, Mainz, Germany Arne Haybach, Mainz, Germany Udo Jacob, Cuxhaven, Germany Gilles Jacquemin, Vandoeuvre Les Nancy, France Malgorzata Klonowska-Olejnik, Krakow, Poland Nikita Kluge, Sankt Petersburg, Russia Peter Landolt, Fribourg, Switzerland Peter Malzacher, Ludwigsburg, Germany M. Angeles Puig, Blanes, Spain Michel Sartori, Lausanne, Switzerland Thomas Soldan, Ceske Budejovice, Czech Republic Yanka Vidinova, Sofia, Bulgaria Peter Weichselbaumer, Tulfes, Austria Dasa Zabric, Ljubljana, Slovenia

Individuals who are interested in participating or have questions about *Electrogena* are urged to contact Carlo Belfiore, Dipartimento di Zoologia, Università di Napoli "Federico II," via Mezzocannone, 8, I-80134 Napoli, Italy.

Mayflies of Austria

A Key to the Austrian Species of Mayflies, Part II, has recently been published by Ernst Bauernfeind (Bauernfeind, E. 1994. Bestimmungsschlüssel für die österreichischen Eintagsfliegen [Insecta: Ephemeroptera]. Teil II. Wasser u. Abwasser, Suppl. 4/94:1-96). Together with Part I, a total of 110 species are covered, including 429 figures, mostly original drawings by the author. An update to the checklist published in Part I is also included. Write to the author at Naturhistorisches Museum Wien, 1. Zool. Abt. Postfach 417, Burgring 7, A-1014 Wien, Austria.

Cartography of Aquatic Insects of Switzerland

Sandra Knispel

A Swiss project on the cartography of aquatic insects began in 1993, taking into account the following groups: Ephemeroptera, Plecoptera, Trichoptera, Coleoptera and Heteroptera.

During 1996-1997, this project will publish three atlases on the distribution of these groups. The CSCF, Swiss Center for Cartography of the Fauna, continues to collect data to continuously update the distribution of these species.

We invite anyone, who has data on mayflies (or the other groups) collected in Switzerland, to send us a list or to contact us.

To be useful, the listing has to include: species; country; state or region; name of the river; locality; date; numbers of males, females, larvae, nymphs (last stage larvae) or exuviae; collectors; and determinator.

For mayflies, contact Michel Sartori, Musée Zoologique, CP 448, CH-1000, Lausanne 17, Switzerland.

For the other groups, contact Alain Badstuber, CSCF, Terreaux 14, CH-2000, Neuchâtel, Switzerland.

VIIth International Mayfly Conference Proceedings Still Available

This work contains the proceedings of the Seventh International Conference on Ephemeroptera, which was held at the University of Maine in Orono, 3-6 August 1992.

Most of the papers presented at the conference are reproduced in this volume. The papers are grouped under broad topics by the editors, including water quality, distributional patterns, life history, ecology, morphology and phylogeny, and systematics.

Price Reduced!

The volume is dedicated to Dr. George Edmunds, Jr. Dr. W. P. McCafferty outlines the contributions that Dr. Edmunds has made to the study of Ephemeroptera and provides a list of his publications.

With the special form this book can be purchased at a 20% discount (CAN/US \$40.00 + \$8 shipping).

This book will again be at the NABS and IAGLR conference "Book Display" areas.

To obtain a form, write to the editors, Linda Corkum and Jan Ciborowski, at Department of Biological Sciences, University of Windsor, Windsor, Ontario N9B 3P4, Canada, E-mail corkum@server.uwindsor.ca or contact Peter Grant (see address in publication box on page 8).

Research Summaries

Sriyani Dias

Department of Zoology, University of Kelaniya, Dalugama, Kelaniya, Sri Lanka

Life cycles and the seasonal feeding ecology of the larvae of *Baetis rhodani* (Pictet) and *B. scambus* Eaton (Ephemeroptera) collected from the River Ely, South Wales, were studied from January to November 1992. Possible mechanisms of co-existence were investigated.

The population of each species was dominated by medium sized larvae in the summer months. Individuals with black wing pads were present in large numbers in spring but also in small numbers in summer and autumn. Only a few mature larvae of *B. scambus* were present in autumn. Very small larvae of *B. scambus* were not recovered. Several interpretations are possible - none unambiguously certain.

Organic detritus formed 30-75% of the food in the gut depending on season. Fifteen taxa of diatoms were identified in the gut and the periphyton. The diatoms, Navicula spp., were important components in the diet of both species of larvae collected from the field. In laboratory experiments, these diatoms were not ingested, whether provided alone or as a mixture. Components observed in the guts closely followed their apparent availability in the river, but Cladophora sp. was not generally eaten. Seasonal electivity indices (Jacobs' Index) suggested trivial differences in the choice of diatom species. Baetis rhodani larvae grew larger and ingested larger diatoms. Food overlap indices (Schoener's Index) showed little difference between the two species.

In an experimental stream, B. rhodani tended to feed from upper surfaces of stones during daylight but B. scambus used undersides and the darker places. Baetis rhodani larvae showed territorial aggression. Baetis scambus avoided contact with its own species and with B. rhodani.

There were small differences in the mandibles (right: sclerotized ridge, left: bristles), maxillae (number of palp segments) and labium (one or two rows of bristles) but no functional difference was apparent.

IXth International Conference Argentina, 1998

Eliria (Lil) H. Haigh

Institute for Water Research (Zoology Department), Rhodes University, Box 94, Grahamstown 6140, Republic of South Africa LIL@iwr.ru.ac.za

My one area of work this year is to design a laboratory, suitable for the rearing of invertebrates (mayflies being one of these), for ecotoxicological testing. I am not able to travel to the USA or Europe this year and would like to correspond with people who have facilities of this type at their disposal.

Joe Napolitano

114 Long Hall, Box 340365, Department of Entomology, Clemson University, Clemson, South Carolina 29634-0365 USA JNAPOLI@clemson.edu

I am a second year M.S. student at Clemson University studying the distribution, population density and habitat requirements of *Dolania americana* in the Upper Three Runs Creek drainage in South Carolina. My survey includes drift netting for exuviae during emergence and sand sampling for larvae at 23 sites in six different streams in the basin. I am quantifying the status of the current *Dolania* population and comparing my results to previous surveys. *Dolania americana* is currently listed in category 2 of the Federal Registry, and although endangered status may be appropriate, more information, like this survey, must be accumulated to make a rational decision.

Claudia Burgess

Department of Biological Sciences, Southwestern Oklahoma State University, Weatherford, Oklahoma 73096-3098 USA grantp@swosu.edu

Earlier collections of *Cercobrachys etowah* Soldan, from a sandy bottomed stream in western Oklahoma (USA), indicated that these mayflies are sparsely distributed along the margins of the stream. A specially designed sampler was constructed to collect the upper 2 cm of substrate (in which *C. etowah* burrows) to quantify the composition of substrate particles. Results indicate that the substrate composition is composed of much finer particles along the margins where *C. etowah* has been collected.

The next stage of research will be to attempt to collect substrate samples that contain larvae of *C. etowah* and to compare the composition of particle sizes of these samples with those that do not contain larvae.

EPT in NC

Two courses on aquatic insects will be offered this summer at the Highlands Biological Station in North Carolina.

Taxonomy and Natural History of Southern Appalachian Mayflies, Stoneflies, and Caddisflies (1-12 July 1996) will consider the natural history and taxonomy of caddisflies (Trichoptera), mayflies (Ephemeroptera), and stoneflies (Plecoptera), including the systematics, ecology, and behavior of larvae and adults, with emphasis on those aspects important in sport fishing, ecological studies, and biological water quality monitoring.

Students will be involved in collections from mountain stream habitats and identifications and instruction in a laboratory setting.

General zoology or permission of the instructor is a prerequisite. Entomology is recommended but

Summer Courses

not essential. The maximum enrollment is 12 students.

Research on Mayflies, Stoneflies, and Caddisflies (15-26 July 1996) is an extension of the Taxonomy and Natural History course and is offered to students who have successfully completed that course. Students will participate in selected research projects with Dr. John Morse, Clemson University. The maximum enrollment is three students.

Three semester hours of credit at the advanced undergraduate-graduate level are available for each course through either the University of North Carolina - Chapel Hill or Western Carolina University. The enrollment deadline is 15 May 1996.

For further information, including a syllabus and course application, contact Highlands Biological Station, P.O. Box 580, Highlands, North Carolina 28741 USA or E-mail bruce@wcu.edu.

The instructor, John Morse, may be contacted by phone (864) 656-5049 at Clemson University or Email jmorse@clemson.edu.

Maine-ly Mayflies

Mayflies are one of the most important and diverse groups of insects in aquatic ecosystems. A knowledge of mayfly taxonomy is fundamental to an understanding of mayfly diversity and distribution. This seminar on mayflies, 4-10 August 1996, will focus on field and laboratory methods for sampling, rearing, preserving, and identifying both nymphs and adults. Field trips during the day and at night will be used to obtain live specimens. Laboratory studies will focus on identifying nymphs and adults to the genus and species level. Special attention will be given to the families Baetidae, Heptageniidae, and Ephemerellidae. Participants are encouraged to bring their own specimens for study and to make their own specimen reference collection. An extensive taxonomic literature file and representative reference specimens will be available.

Dr. Steven K. Burian, the instructor for this seminar, is Assistant Professor of Biology at Southern Connecticut State University. He is a specialist on the taxonomy and systematics of Eastern Nearctic Ephemeroptera with a particular interest in the fauna of New England and Atlantic Canada. His active research programs involve studies of the taxonomy and ecological biogeography of mayflies of Eastern North America. He has conducted extensive surveys of mayflies in Maine and Connecticut.

Summer Workshop

This is the ninth year that Eagle Hill Field Research Station is offering workshops. These programs meet all day, Monday through Friday, and combine intensive field and laboratory studies with lectures and discussions.

For further information contact Joerg-Henner Lotze, Station Director, Eagle Hill Field Research Station, P.O. Box 9, Steuben, Maine 04680-0009 USA, phone (207) 546-2821, FAX (207) 546-3042, E-mail eaglhill@maine.maine.edu.

Mayflies in on the Web

"The Mayflies of North America" is located on the World Wide Web via the Mayfly Central home page at Purdue University. This database is described in a recently published article: McCafferty, W. P. 1996. The mayflies (Ephemeroptera) of North America online. Entomol. News 107:61-63.

Information available in this database includes higher classification of mayflies, distribution, nomenclature, and a species list (673 species and subspecies). User input is solicited.

As information on the mayflies of other major geographic regions becomes available, it will be added to this database.

This database may be located using the URL http://www.entm.purdue.edu/entomology/mayfly/mayfly.html.

Mongolian Mayflies

Yuri M. Marusik is planning a trip to western Mongolia in June or July of this year. He is inquiring about two things: individuals to accompany him on this trip and individuals who would be willing to purchase specimens that he collects.

Yuri's special interest is spiders but other arthropods, including aquatic insects, could be collected.

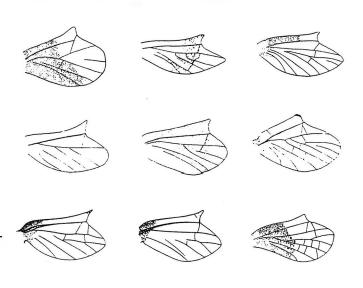
You may contact Yuri at IBPN RAS, K. Marx Pr. 24, 685010 Magadan, Russia; phone (41322) 25801; FAX (41322) 20166; or E-mail ibpn@ibpn.magadan.su (indicate his name in the subject line). [From Entomology Discussion List, Entomo-L]

Erratum

There is an error in the 1994 Mayfly Bibliography, published in the last newsletter. The reference Gillies (1994) on *Deleatidium* should be deleted. It is correctly listed as Wuillot and Gillies (1994) in the same bibliography.

NABS Info

Access to information about the North American Benthological Society is available on the Internet through Gopher, including the NABS Annual Bibliography, membership directory, taxonomic consultants, job resources, and sources of aquatic biology information. This information can be accessed from the gopher server at gopher.nd.edu. Select the following menu items in sequence: "Notre Dame Academic and Research Data," "Aquatic Biology." [From the Spring 1996 issue of the NABS Bulletin.]



Mayfly Video - PAL Version -

Ken Wood has announced that his mayfly video is now available in PAL version. This one hour video examines the nymphs of 60 genera (mostly North American). For each genus the collection record is shown as well as some features of the entire nymph and detailed anatomy of the labrum, labium, maxillae, mandibles and hypopharynx.

Copies of this video are available, at cost, from Angelika Stauder, Holbienstrasse 19, 79100 Freiberg, Germany.

Address Update - New, Corrections, Changes

Changes or additions to the mailing and E-mail addresses published in issue 5(2) are listed below. Updated addresses will be published as they become available. Please inform the editor of any changes to postal or E-mail addresses.

Z ADAMEK RSCH INST FISH CULTURE HYDROBIOL S BOHEMIAN UNIV VIDENSKA 717 691 23 POHORELICE CZECH REPUBLIC

J E BRITTAIN UNIVERSITY OF OSLO j.e.brittain@toyen.uio.no

S DIAS DEPARTMENT OF ZOOLOGY UNIVERSITY OF KELANIYA KELANIYA SRI LANKA

E DOMINGUEZ
FAC CIENCIAS NATURALES
UNIV NACIONAL DE TUCUMAN
MIGUEL LILLO 205 4.000 TUCUMAN
ARGENTINA
postmaster%eduardo@untmre.edu.ar

E GAINO UNIVERSITY OF GENOA zoologia@igecuniv.cisi.unige.it (Subject: Elda Gaino)

E H HAIGH INST WATER RES ZOOLOGY DEPT RHODES UNIVERSITY BOX 94 GRAHAMSTOWN 6140 REPUBLIC OF SOUTH AFRICA LIL@iwr.ru.ac.za

M D HUBBARD FLORIDA A&M UNIVERSITY mhubbard@famu.edu

N KLUGE LENINGRAD STATE UNIVERSITY igor@hq.bio.lgu.spb.su (Subject: Nikita Kluge, Department of Entomology)

D KURY MURBACHERSTRASSE 34 CH 4056 BASEL SWITZERLAND

G MCKAY PO BOX 6015 INDIANAPOLIS, IN 46206-6015 USA D MCSHAFFREY MARIETTA COLLEG mcshaffd@mcnet.marietta.edu

J NAPOLITANO
114 LONG HALL BOX 340365
DEPT ENTOMOLOGY CLEMSON UNIVERSITY
CLEMSON SC 29634-0365
USA
JNAPOLI@clemson.edu

S PARNRONG
DEPT ECOL EVOLUTIONARY BIOLOGY
MONASH UNIVERSITY
CLAYTON VICTORIA 3168
AUSTRALIA
supatra.parnrong@sci.monash.edu.au

MA PUIG
CENTRE D'ESTUDIS AVANCATS DE BLANES
puig@azathoth.ceab.es

A RASMUSSEN UNIVERSITY OF FLORIDA akra@gnv.ifas.ufl.edu

M SALAS
DEPT ECOLOGY AND BIODIVERSITY
THE UNIVERSITY OF HONG KONG
POKFULAM ROAD
HONG KONG
msalas@hkusua.hku.hk

J A SANTIAGO-BLAY
DEPT ECOLOGY AND EVOLUTION
1101 E 57TH ST
UNIV CHICAGO
CHICAGO, IL
60637 USA
blay@pondside.uchicago.edu

K G SIVARAMAKRISHNAN CENT RES AQUAT ENT DEPT ZOOLOGY MADURA COLLEGE (AUTONOMOUS) MADURAI TAMIL NADU 625011 INDIA

M SNEEN
EA ENGIN SCI TECHNOLOGY
444 LAKE COOK ROAD SUITE 18
DEERFFIELD IL 60015
USA
mes@eaeng.mhs.compuserve.com

A STAUDER HOLBEINSTR 19 79100 FREIBURG GERMANY

(continued on p. 8)

ASC Taxonomic Expertise Database Under Development

The Association of Systematic Collections (ASC) has been funded by the National Biological Service, in cooperation with five other federal agencies and the National Museum of Natural History, to develop a Taxonomic Resources and Expertise Directory (TRED). Under this project, ASC is developing two databases: a database of taxonomic experts and a database of research-quality systematics collections and associated information resources. The TRED will be made available over the Internet for use by anyone interested in locating taxonomic resources. ASC will analyze the data to help governmental agencies assess gaps in taxonomic knowledge and human resource needs and develop a strategy to fill these gaps.

ASC is coordinating this survey and database with similar databases being created by colleagues in Mexico, Canada, the UK, and elsewhere. This survey seeks information from researchers anywhere in the world but with special emphasis on those familiar with North American taxa (except worldwide for marine taxa).

To be part of this database, completion of a simple questionnaire is required, which takes about ten minutes. It can be filled out online at http://www.ascoll.org/TRED/. You may also request a copy via E-mail at ascinfo@ascoll.org (put the word TRED in the subject line of your message).

If you do not have access to the World Wide Web or would like to have a paper copy, please contact the ASC office at 1725 K Street NW, Suite 601, Washington, DC 20006-1401, (202) 835-9050, or FAX (202) 835-7334. [Editor's note: The information in this article is reprinted from the February 1996 issue of the ASC Newsletter with permission.]

Address Update

(continued from p. 7)

P J SUTER
DEPT ENVIR MAN ECOL
LA TROBE UNIV
ALBURY WODONGA CAMPUS
PO BOX 821
WODONGA VICTORIA 3689
AUSTRALIA
p.suter@aw.latrobe.edu.au

D TOWNS
AUCKLAND CONSERVANCY
DEPARTMENT OF CONSERVATION
PO BOX 68 908
NEWTON AUCKLAND
NEW ZEALAND
dtowns@ihug.co.nz

J ZLOTY
DEPARTMENT OF BIOLOGICAL SCI
UNIVERSITY OF CALGARY
CALGARY ALBERTA
CANADA T2N 1N4
izloty@acs.ucalgary.ca

The Mayfly Newsletter is the official newsletter of the International Conferences on Ephemeroptera and is published twice a year to facilitate communication among ephemeropterists. Subscriptions to the Newsletter are free. To place your name on the mailing list or to contribute information for the next issue, contact Peter M. Grant, editor, The Mayfly Newsletter, Department of Biological Sciences, Southwestern Oklahoma State University, Weatherford, Oklahoma 73096-3098 USA, phone (405) 774-3294, FAX (405) 774-3795, E-mail grantp@swosu.edu. This publication was authorized by the Dean of Arts and Sciences and was printed at a cost of \$225.00 for 500 copies.

Past issues of

The Mayfly Newsletter

are still available.

Contact the editor (address above) to obtain copies.