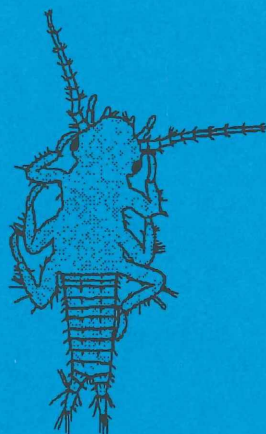
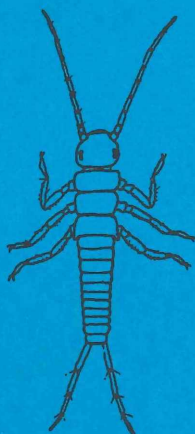
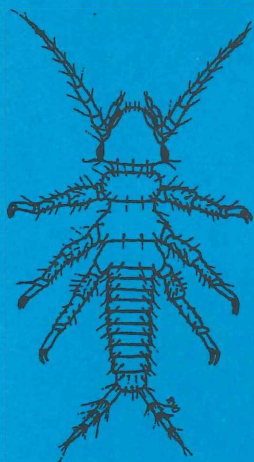

PERLA

Newsletter and Bibliography
of the
International Society of Plecopterologists



PERLA No. 17, 1999

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PERLA
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International Society of Plecopterologists
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COVER ILLUSTRATION

First instars of *Hydroperla crosbyi* (Oberndorfer & Stewart 1977), *Zealeuctra claasseni* (Snellen & Stewart 1979) and *Isoperla lata* (Sandberg & Szczytko 1998) (left to right). Relatively little attention has been given to the morphology of Plecoptera first instars that are unpigmented, less hairy, with few antennal and cercal segments, without ocelli, with a few ommatidia and absence of or less developed gills in gilled genera; in contrast to the striking differences of these characters in late instars of most genera. Harper (1979) studied 24 species representing 15 genera and 7 families from Ontario and illustrated the habitus of 13 of them, and Sephton and Hynes (1982) described and illustrated the hatchlings of 25 Australian species and reviewed the status of knowledge of first instar morphology with a table of characters from previous studies.

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PERLA SUBSCRIPTION POLICY
(As revised by vote of the participants in the
XII International Symposium
in Lausanne, Switzerland, August, 1995,
and the Standing Committee at the
XIII International Symposium in
Tucuman, Argentina, August, 1998)

Dues for membership in the International Society of Plecopterologists are \$15 U.S. per year. Members will automatically receive PERLA. Libraries or other institutions may receive PERLA by making a \$10 annual donation, or through an exchange of publications agreement approved by the Managing Editor and Editorial Board. Five dollars (\$5) of the dues will become part of the Scholarship Fund of the Society, to be used for helping active and deserving workers or students participate in future symposia

Persons or institutions who have no support or are financially unable to pay dues may continue to receive PERLA by writing a brief note to the Managing Editor requesting a waiver of dues and to be retained on the mailing list.

It is therefore important that you respond to this receipt of PERLA 17 in one of the following ways, in order to be kept on the mailing list for PERLA 18: (1) pay your annual dues, (2) make a \$10 donation (institutions), or (3) request a waiver. A form and self-addressed envelope are included with this issue, (PERLA 17) for your convenience in responding.

You may send your dues or donation in the form of a personal check, bank note, cashier's check, or postal money order designated in U.S. funds to the Managing Editor. Because of high bank costs for exchange in some countries, you may send cash, in which case the Managing Editor will respond with a personal acknowledgment if it is received.

Dues and donations are used to help pay the costs of publishing and mailing PERLA, for Lifetime Achievement Award plaques presented by the Society at International Symposia and for the Scholarship Fund. The Managing Editor will make a financial report to the International Committee at each International Symposium Business Meeting or at any other time when requested.

**HISTORICAL LIST OF
INTERNATIONAL PLECOPTERA SYMPOSIA**

Symposium	Place	Time	Organizer(s)
I.	Lausanne, Switzerland	Sept., 1956	Jaques Aubert
II.	Vienna, Austria (Symposium II within Framework of International Congress of Entomology)	Aug., 1960	E. Pomeisl
III.	Ploen, Germany	Sept., 1963	J. Illies
IV.	Abisko, Swedish Lapland	July, 1968	P. Brinck & S. Ulfstrand
V.	Washington, D.C., USA	Sept., 1974	R.W. Baumann
VI.	Schlitz, Germany	Aug., 1977	J. Illies & P. Zwick
VII.	Nara, Japan	Aug., 1980	Teizi Kawai
VIII.	Toulouse, France	Aug., 1983	C. Berthélemy
IX.	Marysville, Australia	Feb., 1987	Ian Campbell
X.	Granada, Spain	July, 1989	J. Alba-Tercedor
XI.	Treehaven Biological Station, Wisconsin, USA.	Aug., 1992	S. W. Szczytko
XII.	Lausanne, Switzerland	Aug., 1995	P. Landolt & M. Sartori
XIII.	Tucumán, Argentina	Aug., 1998	E. Dominguez

REPORT ON
THE IX INTERNATIONAL CONFERENCE
ON EPHEMEROPTERA
AND XIII INTERNATIONAL SYMPOSIUM
ON PLECOPTERA

The XIIIth International Symposium on Plecoptera was held jointly with the IXth International Conference on Ephemeroptera August 16-23, 1998, in Tafi del Valle, a small town in the mountains at about 2000m above sea level near the city of Tucuman in northwestern Argentina. Several workers interested in both mayflies and stoneflies, and some stonefly workers, attended the mayfly conference portion August 16-19. A joint session on mayflies and stoneflies was held Aug. 20, and the stonefly symposium continued on through the 23rd. More than 75 participants from 25 countries attended

The meetings were planned and convened by Dr. Eduardo Dominguez of the Facultad de Ciencias Naturales, Universidad Nacional de Tucuman, and his organizing committee. He opened with a welcoming address, thanking the many contributors and sponsors (26 were listed in the program). Eduardo and his wife Maria were gracious hosts, providing excellent facilities and superb opportunities for fellowship, local cultural and folklore entertainment and food, field trips and help with arranging post-conference tours. Highlights of the informal portion of the meetings were special evening receptions, luncheons, conference dinners, day-tours and collecting trips to area streams, historic native Quilmes ruins and a local ranch and cheese factory. The Standing Committee has formally expressed its appreciation for the hard work and planning by Eduardo and his committee, and we echo the feeling expressed in the Mayfly Newsletter by Editor Peter Grant - **Fantastico!**

The joint session and stonefly portion of the program are reprinted here, including the invited lecture by Jack Stanford and invited video presentation by Ken Stewart. Papers from these meetings will be published in the Proceedings. Eduardo informed your managing editor that the reviewing process for the Proceedings was near completion in March, 1999, and that the manuscripts were being sent to authors for changes and corrections.

PROGRAM
JOINT SYMPOSIUM ON MAYFLIES AND STONEFLIES
XIII INTERNATIONAL SYMPOSIUM ON PLECOPTERA
THURSDAY 20

9:00 Registration of Plecoptera Symposium

10:00 Symposium Opening Ceremony and Welcome Address

10:30 COFFEE BREAK

JOINT SYMPOSIUM ON MAYFLIES AND STONEFLIES
Chairman: Peter LANDOLT

11:00 "Importance of floods on the Mayfly and Stonefly populations in Spanish temporary streams". PUIG, M. A.; H. RIOS & M. FERRERAS-ROMERO.

11:20 "Functional classification of *Klapopteryx kuscheli* by gut content analysis and food preference experiments". ALBARINO, R. & D. ANON SUAREZ.

11:40 "Production of Ephemeroptera and Plecoptera: LANDOLT, P.; J. THUER & D. STUDEMANN.

12:00 LUNCH

14:30 COMPUTER DEMONSTRATION by Dr. J. M. ELOUARD

15:30 COFFEE BREAK

16:00 POSTER PRESENTATIONS: JOINT SYMPOSIUM

- 1. - "Epirhithral communities of Mayflies (Ephemeroptera) of the Odra river basin (Czech Republic)". MERGL, A.**
- 2. - "A comparison of methods for analysis of the life history of *Pteronarcys californica* (Plecoptera) in an Alberta river". TOWNSEND, G. D. & G. PRITCHARD.**
- 3. - "Stoneflies of Taiwan within the Oriental stonefly fauna diversity". SIVEC, I. & P. S. YANG.**
- 4. - "Seasonal variation of the Neotropical Community of Ephemeroptera on four streams". MALDONADO, V.; B. PEREZ & C. CRESSA.**

17:00 COMPUTER PRESENTATION: "Multimedia, Plecoptera, Ephemeroptera, and general entomology: use of CD ROM and WWW technology for teaching and learning. NELSON, C. R.; R. A. OURSO & M. TRAUTWEIN.

18:30 INVITED LECTURE: "To burrow or not to burrow: the ecology of mayflies and stoneflies at the interface between surface and ground water" by DR. JACK STANFORD.

FRIDAY 21

**Joint Day Field Trip: from Tafi del Valle to Amaicha del Valle and Quilmes
Archaeological Ruin**

SATURDAY 22

SECTION I: ECOLOGY AND SYSTEMATICS

Chairman: Claudio FROEHLICH

**9:00 "The African *Neoperla* (Plecoptera: Perlidae) revisited: towards an overdue
revision". ZWICK, P.**

**9:20 "Egg development of *Dinocras cephalotes* (Plecoptera: Perlidae) at its
altitudinal limit". SAND, K. & J. E. BRITAIN.**

**9:40 "A taxonomic study on the family Perlidae from China
(Plecoptera: Perloidea)". DU Y.**

**10:00 "Levels of genetic differentiation and variability in populations of *Dinocras
cephalotes* (Curtis, 1827) in central Italy (Plecoptera, Perlidae)".
FOCHETTI, R.; V. IANNILLI; V. KETMAIER & E. DE MATTHAEIS.**

10:30 COFFEE BREAK

**11:00 VIDEO PRESENTATION "Vibrational communication and
mate searching behavior of Arctoperlarian Stoneflies".
STEWART, K. W.**

12:30 LUNCH

**14:30 "Colombian *Anacroneuria* (Insecta: Plecoptera: Perlidae):
Biodiversity and distribution". STARK, B. P. & M. del C. ZUNIGA**

**14:50 "Adaptation to hypoxia by hyporheic stoneflies". ELLIS, B. K.; P. J.
WATSON & J. A. STANFORD.**

**15:10 "Longitudinal and seasonal variation of winter stoneflies (Plecoptera:
Capniidae) of the southern Sierra Nevada, California, USA".
NELSON, C. R. & D. GIULIANI**

**15:30 "A synopsis of the Neotropical Perlidae (Plecoptera)".
STARK, B.**

16:00 COFFEE BREAK

16:30 POSTER PRESENTATIONS

**1. - "*Guaranyperla*, a new genus in the Gripopterygidae (Plecoptera).
FROEHLICH, C.**

2. - "Morphology of hammer and drumming signals of *Gibosa* and *Kiotina* (Perlidae)". HANADA, S. & H. MARUYAMA.
3. - "Description of the nymph of *Kempnyia tijucana* Dorville & Froehlich (Plecoptera, Perlidae), with notes on its development and biology". DORVILLE, L.F. & C.G. FROEHLICH.
4. - "*Sphaeronemoura*, a new genus of the Amphinemurinae (Plecoptera, Nemouridae) from Asia". SHIMIZU, T. & I. SIVEC.
5. - "Imaginal biology of *Hemimelaena flaviventris* (Pictet, 1841) (Plecoptera, Perlodidae)". TIerno DE FIGUEROA, J. M.; J. M. LUZON ORTEGA & A. SANCHEZ-ORTEGA.
6. - "Taxonomic study of *Leptoperla* and *Riekoperla* Stoneflies (Gripopterygidae: Plecoptera) in Australia". TSYRLIN, E.
7. - "Eggs of the Spanish Stoneflies (Plecoptera)". UBEROPASCAL, N. A.; A. G. SOLER & M. A. PUIG.
8. - "Plecoptera fauna of Capniidae of Russia and adjacent territories (Within the limits of the former USSR)". ZHILTZOVA, L. A.
9. - "On the morphology and fine structure of the alimentary canal of *Paragnetina media* (Walker)". KAPOOR, N. N.
10. - "Systematic and Biogeographical relationships of Plecoptera (Insecta) between Korea and far East Russia". KIM, J. S. & J. BAE.
11. - "Zonation and Zoogeographical characteristics of the west Carpathian (Slovakia) stonefly fauna". KRNO, I.

17:30 Open Discussion Group & Business Meeting

18:30 INVITED LECTURE: "Mayflies and Stoneflies in tropical streams: is there a link between biodiversity and functional significance? By Dr. DAVID DUDGEON.

20:00 Folklore Exhibition

SUNDAY 23

9:30 Visit to Estancia "Las Carreras"

12:00 Symposium Lunch and Life Time Awards

15:30 End of Symposium

PARTICIPANTS



XIII INTERNATIONAL SYMPOSIUM ON PLECOPTERA

1998 LIFETIME ACHIEVEMENT AWARDS

Presentation of Lifetime Achievement Awards to Plecopterologists who have dedicated their professional lifetimes to our science, and made exemplary contributions, has become a tradition of our society. The first two awards were made in 1992 at Treehaven, to Noel Hynes and Bill Ricker (announced in PERLA 11). 1995 awards at the Lausanne Symposium were presented to the late Jacques Aubert, Teizi Kawai and Ian McLellan (announced in PERLA 14).

The Standing Committee agreed to award this honor in 1998 to three colleagues: Drs. Claudio Froehlich of Brazil, Lidija Zhiltzova of Russia and Peter Zwick of Germany. Claudio and Peter are both charter members of the International Committee and were not aware of their own nominations and therefore voted only on the other two nominees. Presentation of these awards to Claudio Froehlich and Lidija Zhiltzova were made by Peter Zwick who was then surprised with his award presented by Ken Stewart. Photos, texts of the presentations, and the list of papers on Plecoptera by each awardee follow.



**Lifetime Achievement Awardees: Peter Zwick,
Lidija Zhiltzova and Claudio Froehlich**

**Laudationes and Presentations
of the Lifetime Achievement Award to
DR. CLAUDIO FROEHLICH
and
DR. LIDIJA ZHILTZOVA
read by Peter Zwick on behalf of the
International Association of Plecopterists**

CLAUDIO GILBERTO FROEHLICH

During our field trip, we heard of the lamentable fate of the Quilmes Indians; they lost their independence and were successively ruled by the Inca, the Jesuits, and the Spanish government, until they were eventually expelled from their native country, or committed suicide to avoid slavery. In connection with the acquisition of overseas colonies by the

various European powers, natural history specimens, both animals and plants, landed in European collections. When C. H. BURMEISTER (1839) first recognized the stoneflies as an independent insect order for which he created the name Plecoptera, among the 26 species he knew from all over the world there were also *Semblis gracilis* (now *Tupiperla gracilis*) and a few other Brazilian Plecoptera. The synopsis by F. J. PICTET (1841) covered a world fauna of almost 130 species, including a good share of South American taxa. Subsequently, knowledge of South American Plecoptera increased only slowly, by occasional studies (e.g., BLANCHARD, 1851; GERSTAECKER, 1873; MABILLE, 1891).

Around the turn of the century, a new era of Plecoptera taxonomy was opened by pioneer papers based on the study of genitalia of European specimens preserved in fluid (MORTON, 1894; KEMPNY, 1898, 1899; KLAPALEK, 1896). Unfortunately, the first two authors discontinued working on stoneflies, and KLAPALEK in his numerous subsequent works never lived up to the standards that he had vividly advocated. Instead, he, ENDERLEIN (several papers between 1905 and 1909) and mainly NAVAS (numerous papers between 1900 and 1936) reverted to superficial descriptions of pinned specimens. These authors flooded the South American and World literature with inadequate descriptions raising only the number of nominal species, but not really increasing knowledge of the animals.

Adequate taxonomic studies of Plecoptera began again to be published in the late twenties and thirties, e.g., by DESPAX in France, and by FESTA in Italy. After the war, interest in stoneflies increased significantly, culminating in the First International Symposium on Plecoptera organized by the late J. AUBERT at Lausanne, in 1956. Two of the participants, J. AUBERT (1956) and mainly J. ILLIES (several papers between 1958 and 1977) published important studies on South American Plecoptera.

P. BRINCK indirectly made an equally valuable contribution to the study of South American stoneflies by training a young Brazilian scientist, CLAUDIO GILBERTO FROEHLICH. Claudio had started his career with work on terrestrial planarians, under the late E. MARCUS, at Sao Paulo. I first met Claudio at the Abisko Plecoptera Symposium (1968), when he had completed some studies on Swedish Plecoptera, and a very interesting and well illustrated one on Brazilian Gripopterygidae. I hoped that more papers on the Brazilian fauna would follow quickly, but CLAUDIO worked as a limnologist and about ten years elapsed until he published again on the order. However, then another study followed, and another one, and one more, and now CLAUDIO is in full swing and is regularly producing excellent papers on Brazilian Plecoptera, dealing with one group after the other in a systematic way. About 20 papers are published today, and I know of some others in print, including a revision of the difficult and diverse genus *Tupiperla*. CLAUDIO also introduced students to the study of Plecoptera and through his activities, a large part of the South American Subcontinent is now well studied, by a resident South American student; much in the way in which New Zealand has become "MCLELLAN'S LAND", south-east Brazil has become "FROEHLICH'S AUTONOMOUS STONEFLY REPUBLIC".

The INTERNATIONAL ASSOCIATION OF PLECOPTERISTS recognizes and honours CLAUDIO'S long continued successful work; it is my great pleasure to present CLAUDIO with the LIFETIME ACHIEVEMENT AWARD, wishing him health and many years of continued work on these fascinating animals!

The Plecoptera Publications of C. G. Froehlich

- BRINCK, P. & FROEHLICH, C.G. (1960a): On the Stonefly fauna of western Lule Lappmark. Swedish Lapland. - Förhandl. Kungl. Fysiograf. Sällsk. (Lund) 30 1: 1-19.
- BRINCK, P. & FROEHLICH, C.G. (1960b): The reproductive organs of the Plecopteron *Isoperla grammatica* (Poda, 1761). - Ent. Tidskr. (Stockholm) 81: 53-62.
- FROEHLICH, C.G. (1960): Some Gripopterygids and Notonemourines (Plecoptera) from South America. -Lunds Univ. Arsskr. (Lund) (n. F. 2) 56, 13: 3-23.
- FROEHLICH, C.G. (1962): On the muscles of the reproductive apparatus of *Isoperla grammatica* (Poda). - Verh. XI. int. Kongr. Ent. Wien 3: 269-270.
- FROEHLICH, C.G. (1964): Estudos sobre Plecópteros Brasileiros. I. As Paragripopterygidae da Estação Biológica de Paranapiacaba,: 1-45. - Dissertation, São Paulo.
- FROEHLICH, C.G. (1969): Studies on Brazilian Plecoptera 1. Some Gripopterygidac from the Biological Station at Paranapiacaba, Stato of Sao Paulo. - Beitr. neut. Fauna (Stuttgart) 6, 1: 17-39.
- FROEHLICH, C.G. (1979): The genus *Eutactophlebia*. - Gewässer und Abwasser (Düsseldorf) 64: 70-71.
- FROEHLICH, C.G. (1984): Brazilian Plecoptera 2. Species of the *serrana* group of *Kempnyia* (Plecoptera). - Aquatic Insects (Lisse) 6 (3): 137-147.
- FROEHLICH, C.G. (1984): Brazilian Plecoptera 3. *Macrogynoplax veneranda* sp.n. (Perlidae: Acroneuriinae). - Anns. Limnol. (Toulouse) 20 (1-2): 39-42. (English, French abstract).
- FROEHLICH, C.G. (1984): Brazilian Plecoptera 4. Nymphs of perlid genera from southeastern Brazil. - Anns. Limnol. (Toulouse) 20 (1-2): 43-48. (English, French abstract).
- FROEHLICH, C.G. (1988): Brazilian Plecoptera 5. Old and new species of *Kempnyia* (Perlidae). - Aquatic Insects (Lisse) 10 (3): 153-170.
- FROEHLICH, C.G. (1990): Brazilian Plecoptera. 6. *Gripopteryx* from Campos Do Jorado, State of Sao Paulo (Gripopterygidae). - Stud. Neotrop. Fauna Environ. 25 (4): 235-247.
- FROEHLICH, C.G. (1990): Size variation in *Kempnyia* (Plecoptera: Perlidae). pp. 347-350 In: CAMPBELL, I.C. (ed.). Mayflies and stoneflies: life histories and biology. - Kluwer Academic Publishers, Dordrecht, The Netherlands. 366 pp.

- FROEHLICH, C.G. (1991): Flight periods of *Kempnyia* and *Macrogynoplax* (Plecoptera: Perlidae) in Southeastern Brazil. pp. 353-357
In: ALBA-TERCEDOR, J. & A. SANCHEZ-ORTEGA (eds.) Overview and Strategies of Ephemeroptera and Plecoptera. - The Sandhill Crane Press, Inc. (Gainesville, Florida) 588 pp.
- FROEHLICH, C.G. (1993): Brazilian Plecoptera: 7. Old and new species of *Gripopteryx* (Gripopterygidae). - Aquatic Insects (Lisse) 15 (1): 21-38.
- FROEHLICH, C.G. (1994): Brazilian Plecoptera 8. On *Paragripopteryx* (Gripopterygidae). - Aquatic Insects (Lisse) 16 (4): 227-239.
- FROEHLICH, C.G. (1996): Two new species of *Kempnyia* from southern Brazil (Plecoptera: Perlidae). - Mitt Schweiz. Entomol. Ges. (Lausanne) 69: 117-120.
- FROEHLICH, C.G.: Brazilian Plecoptera 8. On *Tupiperla* (Gripopterygidae). - (submitted, got copy for review from Claudio)
- DORVILLE, L.F.M. & C.G. FROEHLICH (1997): *Kempnyia tijucana* sp. n. from southeastern Brazil (Plecoptera, Perlidae). - Aquatic Insects 19(3): 177-181.
- RIBEIRO-FERREIRO & FROEHLICH, New Species of *Macrogynoplax* Enderlein, 1909 from North Brasil (Plecoptera, Perlidae, Acroneuriinae). - Aquatic Insects, in print.

LIDIJA ANDREJEVNA ZHILTZOVA

When I started my thesis on the anatomy and phylogeny of the Plecoptera under the late Prof. ILLIES, in April 1965, the first specimens he gave me to dissect were large larvae of the South American *Notoperla archiplatae*. He made all his collection available to me, but I soon found that there was very little well preserved European and other Holarctic material suitable for dissection; therefore, I planned on collections of my own. I started looking at literature, for a general overview of available information but also specifically to learn what I might expect to collect when and where.

Some of the most splendidly illustrated papers I came across were in Cyrillic script; I had to consult a dictionary to read the author's name: LIDIJA ANDREJEVNA ZHILTZOVA. Most of the fascinating taxa described in her papers were from the Caucasus, and

the diversity of that fauna was one of the reasons for my wife and I travelling to Anatolia, in 1970, to collect on the accessible side of the Soviet border.

We obtained a number of the same species in the Turkish Pontic Mountains, and I recognized how excellently the published illustrations by L. A. ZHILTZOVA matched the specimens.

I was therefore thrilled to meet L.A. ZHILTZOVA at the occasion of the International Congress of Limnology, at Leningrad, in 1971. She was in her office in the Zoological Institute, under the portrait of S. G. LEPNEVA, and I had the opportunity to examine specimens from her rich collection. My admiration for Dr ZHILTZOVA'S excellent work turned into sheer amazement - the microscope she used (and is still using today!) was optically distinctly inferior to what I was used to. I began to realize that even more effort and care than I had anticipated had been invested in Dr ZHILTZOVA'S papers.

This meeting led to our first cooperation, together with Dr I.M. LEVANIDOVA, who was also at Leningrad in 1971. Many years elapsed until we met again. However, we remained in correspondence and I had the privilege of receiving all of the many excellent Plecoptera papers by Dr ZHILTZOVA, and could follow her expanding scientific activities over many years.

What I would have said about your work, LIDIJA, it is very similar to what a much admired senior colleague has written about your work, and it is my pleasure to read to you from a letter that Dr W. E. RICKER has sent here, on this occasion:

"In February of 1936 I made my first visit to Russia, actually only a 5-day stay in Moscow. At that time I had done very little with Plecoptera, but one of the people I met was Dr A. V. MARTYNOV. He had in 1928 published a work on the nemourids and leuctrids of the Caucasus, and he presented me with a copy. During the next 15 years or so the tragedies of the war distracted everyone from science, and nowhere more than in the USSR. Nevertheless, by 1953, apparently, it was possible for a young investigator to start collecting aquatic insects, and in 1956 she published her first paper - which,

like Dr. MARTYNOV'S, was based on material from the Caucasus mountains. In almost every year since then, Dr ZHILTZOVA, you have produced one or more papers or reviews. You have extended the range of your studies to central Asia, to Mongolia, to Siberia and to the Far East. Working at times with other Russian and western European investigators, you have been describer or co-describer of 117 species of stoneflies that I know about, and there are probably others. The last one was the amazing *Levanidovia mirabilis*, described with Dr TESLENKO, in which the epiproct is attached underneath the tip of the undivided 10th tergite – a primitive condition found elsewhere in the northern hemisphere only in one peltoperlid genus.”

”From the very beginning, Dr ZHILTZOVA, your work has been notable for the excellence of its illustrations, which are of a clarity and beauty that some of us have never even attempted. You have also taken pains to describe and illustrate the differences among closely related species, and to identify poorly described ones, as did the late great JACQUES AUBERT. And what interests me particularly is that you and your colleagues have cast your eyes on our pet genera of western North America and have found most of them on the western side of Beringia as well as the eastern. These include *Paracapnia*, *Paraleuctra*, *Paraperla*, *Perlomyia*, *Suwallia*, *Sweltsa*, *Triznaka* and *Utaperla*.”

Dr RICKER concludes by writing: "And so, Ladies and Gentlemen, it gives me the greatest pleasure to laud Dr. ZHILTZOVA as one of this year's recipients of the LIFETIME ACHIEVEMENT AWARD OF THE INTERNATIONAL ASSOCIATION OF PLECOPTERISTS.”

The scientific work of Dr ZHILTZOVA is very largely based on her own collecting, and extensive field work in the Ukrainian

Carpathians, the Caucasus, the Central Asian Soviet Republics, and the Soviet Far East. Field work was usually performed walking, or on horseback, under difficult conditions, at 4000m or higher in the Pamirs. She was often by herself, occasionally together with colleagues collecting other material.

Let me add that LIDIJA'S admirable scientific achievement was made under often difficult circumstances, and in addition to important family obligations. Lidija has two children and 5 grandchildren, and for many years has cared for YURY, her ill husband, by herself, at home. Lidija continues working today, at the age of 72, and is presently producing a synopsis of her life work. With the technical help of colleagues, her taxonomic monograph of the Plecoptera of a very large part of the Palaearctic region will hopefully be available in a few years, in English.

About 100 high quality papers authored or co-authored by L. A. ZHILTZOVA have resulted from this life-long dedication to Plecoptera studies. I am honoured and pleased to present to you, LIDIJA, in the name of the INTERNATIONAL ASSOCIATION OF PLECOPTERISTS, the LIFETIME ACHIEVEMENT AWARD. LIDIJA, my sincere congratulations! I wish you health and good luck, also for your continued scientific work!

LIDIJA ZHILTZOVA'S RESPONSE

Dear Colleagues, dear Friends,

It is a great pleasure for me to be here, in Tucuman, and to take part in the XIIIth International Symposium on Plecoptera. On this occasion allow me to express my sincere gratitude to the Standing Committee with Professor P. Zwick at the head and the Organizing Committee headed by Dr. E. Dominguez for the kind invitation and financial support, which has made it possible for me to come here. I also express my sincere gratitude to the members of the Organizing Committee for the excellent organization of the meeting, the utmost care they have taken and enormous concern they have shown in getting things done for this Symposium to take place in the exotic town of Tucuman.

The Plecoptera meetings have all been well arranged and discussions have been fruitful. We owe this to Dr. E. Dominguez and his colleagues through whose untiring efforts, excellent facilities have been provided, which has helped to make the entire meeting a desired success and a pleasant experience. I join everyone here present in congratulating them on this success and in extending my heartfelt thanks.

I also wish to thank all the participants in this meeting who have, by their excellent presentations and useful discussions, greatly contributed to its success. Thank you again and again.

L. A. Zhiltzova

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**Laudation and Presentation
of the Lifetime Achievement Award to
DR. PETER ZWICK
read by Ken Stewart on behalf of the
International Association of Plecopterists**

I am sure this award has been a big surprise to LIDIJA and CLAUDIO, and now for another big surprise.

I have had the great honor in the past two symposia in Treehaven and Lausanne of presenting, on behalf of the International Committee, Lifetime Achievement Awards to BILL RICKER of Canada (who just turned 90 years young) and IAN MCLELLAN of New Zealand. Today, I am deeply honored further in being able to present on behalf of the committee this award to our colleague and friend, PETER ZWICK. I must confess now that Francene and I conspired with PETER's lovely wife Heide, in the disguise of negotiating for a German tablecloth, in order to find out more about his life and professional career. Heide did confide in us that assembling and sending PETER's Vita and Bibliography has been difficult because "of his inquisitive nature about correspondence". I only hope I can adequately emphasize here today the important contributions that PETER has made to the advancement of knowledge of our science.

PETER was born in Berlin on November 1, 1941, and he took an early interest as a child in nature, especially insects. His mother supported PETER's interest, giving him literature and equipment left by his father, who had been an entomologist. As a schoolboy, he was particularly interested in beetles, and assembled his own collection while in contact with other collectors in the German Entomological Society at Berlin.

He studied biology from 1961-1965 at the "Freie Universität Berlin" and at the "Christian Albrechts - Universität" at Kiel where he met the late Professor Dr. JOACHIM ILLIES who nurtured his interest in Plecoptera. ILLIES was leader of the Limnologische Fluss-Station (LFS) at Schlitz, that is still part of the Max Planck Institute of Limnology at Plön, which is the oldest institute within the Max Planck Society. PETER then moved to Schlitz to work on his thesis under the supervision of Professor ILLIES, and also became acquainted and made friends with the late Prof. J. AUBERT, C. BERTHELEMY, W. HENNIG and J. RAUSER. He finished his dissertation in 1969 on "The phylogenetic system of Plecoptera" and became employed as a scientific assistant at the field station in Schlitz.

PETER met many of the "masters" of Plecopterology at the IV Plecoptera Symposium in Abisko in 1968, and he has attended all of our symposia since. In March, 1972, Peter became Visiting Scientist at Monash University in Melbourne, Australia and with his young family spent a year there lecturing and collecting (particularly Blephariceridae). On a tour to western Australia, while camping in the semi-desert and waiting for supper in the evening, PETER was collecting insects, as usual, and NOEL HYNES was watching him and said to Mary: "Look, this boy is a real entomologist!" Publication of his work "Australian Blephariceridae (Diptera)" led to his habilitation at the University of Kassel in 1978, where he lectured as a private docent ("Privatdozent") from 1975 to 1989, teaching entomology and limnology; some of his work at the LFS was part of the classic bioproductivity studies in the Breitenbach stream near Schlitz.

The unexpected sudden death of Prof. ILLIES in 1982 led to PETER's appointment as leader of the field station in Schlitz in May, 1983. As result of Prof. ILLIES and then PETER's leadership, the LFS was given tenure and the status of a permanent working group within the Max Planck Institute of Limnology. Also, PETER had been Managing Editor of the journal "Aquatic Insects, International Journal of Freshwater Entomology", that had been founded by Illies in 1979; after ILLIES' premature death, PETER remained as sole Editor. Since 1980, PETER, together with Prof. JURGEN SCHWOERBEL, has been editor of a book series called "Süßwasserfauna von Mitteleuropa" (Freshwater fauna of Middle Europe) and responsible for all publications concerning insects. Also, for a few years he has been on the advisory boards of "Bolletino della Societa Entomologica Italiana" and "Entomologische Nachrichten und Berichte" (Bulletin of the Entomological

Society in Italy - Entomological news and reports), and Annales de Limnologie.

PETER's list of publications contains more than 170 titles, the majority on Plecoptera. These titles include approximately 115 on Plecoptera, 31 on Coleoptera, 32 on Diptera, 2 on Ephemeroptera, 2 on Ciliata, and 1 each on Planipennia and Trichoptera; and they cover a wide array of biological disciplines from taxonomy and morphology to various aspects of ecology and conservation

PETER's contributions to our science and to the ongoing success of this International Society have been enormous. Highlights include:

1. His tireless promotion of our international family - through its periodic symposia, communication among our members and committee as its secretary, maintaining contacts between workers in former socialist countries and us in the free world (often under difficult circumstances), helping members with professional matters and transfers of study specimens, and personal assistance such as being Lidijas help guide for her trip here to Tucumàn.
2. His contribution as Editor of Aquatic Insects.
3. His scholarly and research contributions, that have led to the over 170 excellent and continuing publication titles, of which the ones on Plecoptera are detailed in the following bibliography.

Let me finish by saying that we honor you today Peter with this Lifetime Achievement Award, that in small token expresses our appreciation and admiration for all of your contributions and your friendship, - and we know that we can anticipate many more contributions in the future. I consider it one of the greatest honors of my professional life to have had the opportunity to know and work with you personally and particularly to have been able to present you with this award, on behalf of the committee and the membership.

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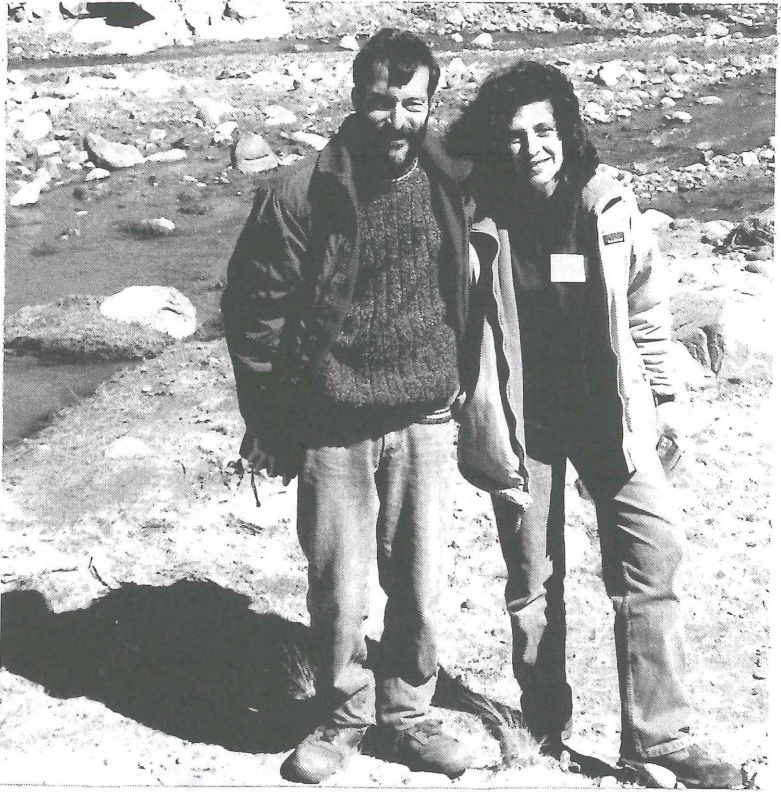
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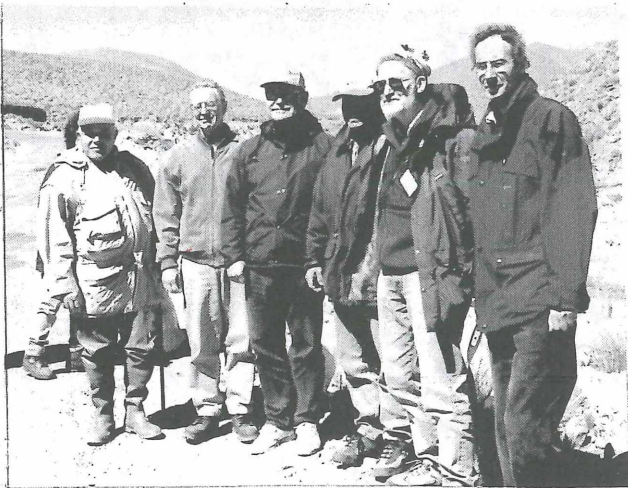
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SYMPOSIUM PHOTOS



Organizer, Eduardo and his wife, Maria
(photo by Stan Szczytko)

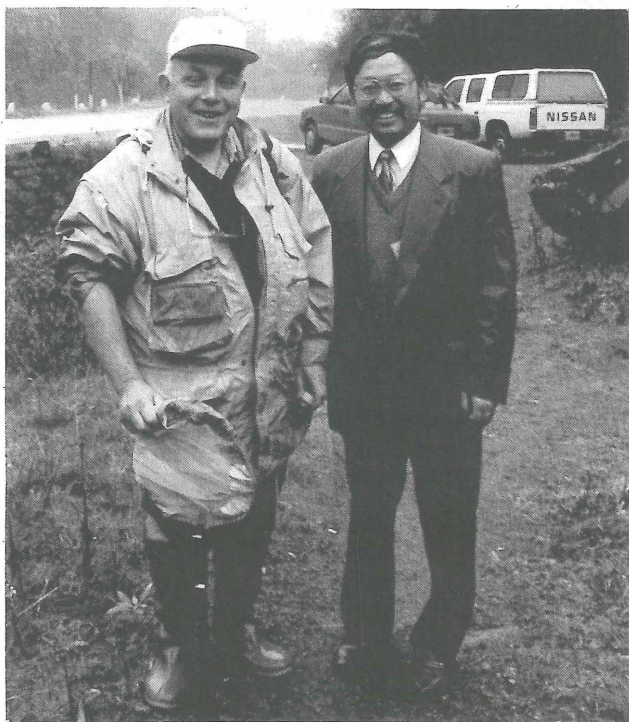


Standing International Committee (Zwick, Froehlich, Stewart, Szczytko,
Sivec, Brittain)(Photo by Yuzhou Du)

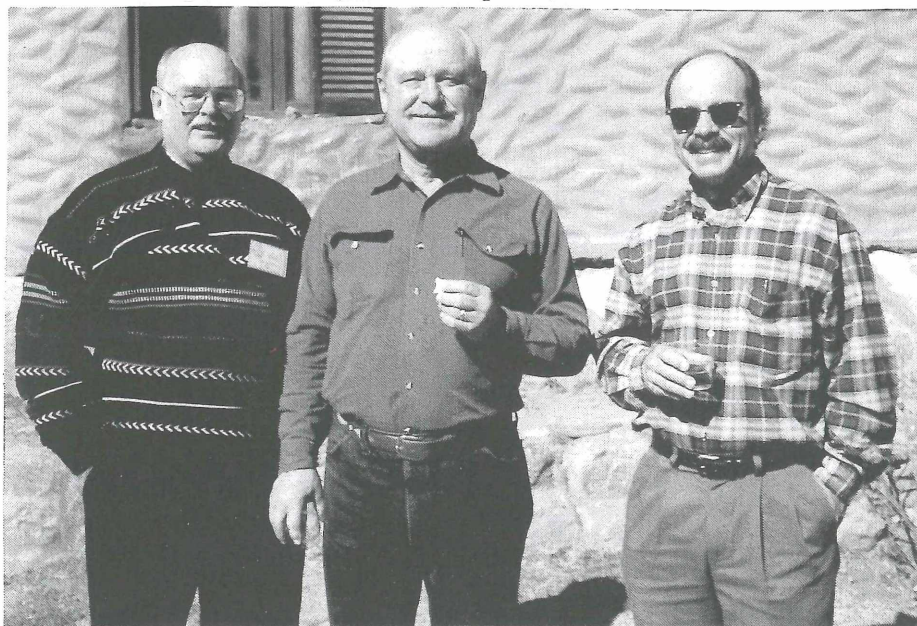
**“Typical”
Plecoptera
Collector
(Riley Nelson)
and gear.
(photo by Stan
Szczytko)**



**Perlidae enthusiasts
(Ignac Sivec, Bill
Stark, Yuzhou Du)
on field trip**



Peter Zwick and Yuzhou Du on field trip
(Yuzhou Du photo)



Proud Prof Ken Stewart (center) and two of his students,
Bill Stark and Stan Szczytko. (photo by Francene Stewart)



Participants at Symposium dinner



Peter Zwick presenting to Lidija Zhiltzova



Ken Stewart presenting to Peter Zwick

CURRENT RESEARCH ON PLECOPTERA

This section is intended to keep society members current on research in progress by other members, workers and students. Please use Editor Stewart's e-mail address (inside front cover) or conventional mail to submit a brief, informative description of your current work, for the next PERLA (18).

Research in Dr. Boris C. Kondratieff's Lab., Colorado State University.

1. Completing with R. F. Kirchner, R. W. Baumann and B. J. Armitage a project on "The Stoneflies of Ohio".
 2. Completing with R. W. Baumann and P. P. Harper a project on "The Stoneflies of Atlantic Canada".
-

Research in Dr. K. W. Stewart's Lab, University of North Texas

1. Doctoral student John Sandberg (John completed his Master's under Dr. Stan Szczytko; see bibliography) has begun a study of the systematics, behavior and ecology of the stonefly genus *Isogenoides* Klapalek of North America. Objectives are to: (1) comparatively describe all life stages of the currently recognized 9 species, (2) resolve species delineation of problematical species (example: *I. hudsonicus* Hanson, previously synonymized with *I. frontalis* (Newman)), (3) correlate the nymphs of all species through rearing, (4) utilize reared virgin adults to determine the drumming and possible search behaviors of selected species, (5) determine the life histories and voltinism of at least one eastern and one western species. This work should result in a complete revision of North American species with illustrated keys to all life stages and greater knowledge of the behavior and ecology of selected species.

If you have preserved *Isogenoides* material or are working in the field with any of the species, please contact John at jbs001@students.cas.unt.edu.

2. Former doctoral student Dr. Kevin Alexander, now at Wayne State College in Wayne, Nebraska, has had his doctoral work on "Revision of the stonefly genus *Suwallia* Ricker", accepted for publication in Transactions of the American Entomological Society. It should be published sometime in mid 1999.
3. Ken Stewart and Stan Szczytko are working to rear and describe the currently unknown nymphs of all western North American *Isoperla*. We have a manuscript in preparation on the nymphs of *I. decolorata*, *I. katmaiensis*, *I. denningi* and *I. roguensis*, and Ken Stewart will try to collect and rear nymphs of *I. baumanni*, *I. gravitans* and *I. tilasqua* in early May, 1999.
4. Ken Stewart and Bill Stark have begun an update and 2nd Edition of their 1988 "Nymphs of North American Stonefly Genera (Plecoptera)". If you have comments or suggestions resulting from your use of this book, and especially the keys, please contact us.
5. Ken Stewart and Mark Oswald continue in their preparation of a book manuscript on "Stoneflies of Alaska and Northwestern Canada".

Research in Dr. Bill P. Stark's Lab, Mississippi College.

Bill continues to work on *Anacroneuria*; papers have just been published on the fauna of Costa Rica and Panama, and Peru and Bolivia (see bibliography), and a paper dealing with Surinam, Guyana and Venezuela is in press. The Ecuadoran fauna is scheduled for completion in 1999. Bill also continues to work on several Scanning Electron projects on various genera with undergraduate student workers at Mississippi College and high school teachers. (For details see Rolling Stonefly News, Vol. 8, July 1998)

Ignac Sivec of the Slovenian Museum of Natural History

continues to work on the fauna of Taiwan, and on a revision of *Rhopalopsole* (Leuctridae). In May, 1998, he visited Bill Stark, Riley Nelson and Stan Szczytko for a collecting trip through northern California, and in July, 1998, he visited with Du Yuzhou in China. He is also working on the genus *Perla* and various other projects.

Mike Shaver is a graduate student at Iowa State University working on the master's project "Survey of the Stoneflies of Iowa", under Greg Courtney. He would be interested in corresponding with anyone who has done work in Iowa or has information on previous work with stoneflies in the state.

David Buchwalter is a graduate student at Oregon State University, working on a project on the Deschutes River, looking at the effects of temperature on fecundity, growth and morphological features of external gills in *Pteronarcys californica*.

J. Manuel Tierno de Figueroa of Granada University, Spain, is collaborating with Dr. A. Sanchez-Ortega and Dr. P. Membiela, on a book of Iberian Plecoptera and other stonefly projects.

Kay Edly is a graduate student at the University of Illinois, working on the habitat and diet selection of the two perlid stoneflies *Acroneuria lycorias* and *Paragnetina media* at study sites in Michigan, under Steve Kohler.

Ian McLellan of Westport, New Zealand, has just completed a revision of *Zelandoperla* (Gripopterygidae) that is in the hands of the editor of the New Zealand Journal of Zoology, and he

continues with the on-going projects on South American material in Gripopterygidae and the systematics of a number of new species in New Zealand Notonemouridae and Gripopterygidae. He has also compiled a checklist of New Zealand Plecoptera that has been printed in the New Zealand Limnological Society's December, 1998 Newsletter. Ian has given permission for us to reprint that list in this issue of PERLA, since many of us would have difficulty in accessing the newsletter. (See separate article of this checklist).

Dr. Kevin Alexander of Wayne State College, Wayne, Nebraska, is working on "The Stoneflies of Eastern Nebraska", aquatic insects of the Elkhorn River and Sand Hills, and various biomonitoring projects.

Dr. Andy Sheldon of the University of Montana is working with Dick Baumann on the biogeography of Great Basin Plecoptera. He will be actively collecting in the spring and summer of 1999. In Montana, he has continued collecting in five neighboring drainages in the Bitterroot Mountains; an intensive faunistic project with a lot of adult material from many locations in a fairly small geographic area. In 1999 he will concentrate on filling the temporal and spatial gaps, and will apply some new analytical techniques to patterns of distribution and diversity. He has also begun life history studies of *Setvena*, *Doroneuria* and some *Isoperla* species. (Andy says he has never met a perlodid that he didn't like). The first output from this project is a paper by Hughes et al. on *Yoroperla* genetics that should appear in Freshwater Biology soon.

Dr. Richard Baumann of Brigham Young University is working with several colleagues, as noted here, on zoogeographic studies of: Ohio, Atlantic Canada the Great Basin. In addition his present graduate student, Ron Call, is close to completing an interesting survey of the stoneflies of Southern Utah.

ANNOUNCEMENTS

Update on Plecoptera Catalogue Update

In PERLA 16, I informed of a project to update Plecoptera world catalogues and called for suggestions. The catalogue project was also discussed at the Plecoptera Symposium at Tafi del Valle; Dr NEU-BECKER follows several suggestions made at this occasion. She established an ACCESS databank and made good progress with the references part, despite the fact that she works only half time. We expect to have all literature on Plecoptera (far over 5000 titles) in uniform format in the databank very soon and consider to cover all new publications this year and next, year 2000 included.

Next, we will now tackle the taxonomic portion of the project. Presently, we are still developing and testing databank formats for the various taxonomic levels from suborder to species. It will be quite some time still until we can work with the developing catalogue and produce lists of regional species, provide information on what is published where about a particular species, and so on, but once complete the Plecoptera catalogue databank should be a very versatile and flexible research tool.

We received several kind offers of help, for which we are grateful. At this moment, we cannot make use of these offers, but will take them up at a later date. The greatest help each of you can presently provide is making reprints of new publications available; thank you all in advance!

Peter Zwick

SIXTH NORTH AMERICAN PLECOPTERA SYMPOSIUM

May 25-27, 2000

The Sixth North American Plecoptera Symposium will be held May 25-27, 2000 in Provo, Utah. It is scheduled to correspond with the North American Benthological Society meeting, that will take place May 29-June 1 in Keystone, Colorado. This is a perfect time of year for traveling and collecting in the Rocky Mountains and will allow participants a minimum of a day to drive from Utah to Colorado to attend both meetings.

Plecopterologists will be hosted by Brigham Young University, which will provide space for the papers and posters at the Monte L. Bean Life Museum. Friday night we will stay at Timpanogos Lodge, which is located in the Wasatch Mountains, adjacent to the Sundance Ski Resort. Saturday will be a field trip day to the Uinta Mountains, weather permitting.

Housing and food will be available at reasonable prices at the student dormitories, that are just east of the museum. In addition, motels are located in the Provo area for those that would rather stay in a nicer place. Many fine eating establishments are found in the valley, offering a wide variety of cuisine.

Skiers and olympic games enthusiasts may come early or stay late and examine the preparations that are underway for the winter olympic games in 2002. For those that may be flying to attend the meeting, excellent connections are available at the Salt Lake City airport.

FOR FURTHER INFORMATION ON THE SIXTH NORTH AMERICAN PLECOPTERA SYMPOSIUM PLEASE CONTACT:

**Richard W. Baumann
Monte L. Bean Life Science Museum
Department of Zoology
Brigham Young University
Provo, Utah 84602-5254
801-378-5492
richard_baumann@byu.edu**

Standing Committee Decisions on Increase of Dues for the Society (Includes Subscription to PERLA) and scholarship Applications

Members of the Standing Committee (J. Brittain, C. Froehlich, L. Sivec, K. Stewart, S. Szczytko, and P. Zwick) met in Tucuman and decided to increase the annual dues and subscription to PERLA from \$10. to \$15. Discussion about this centered on the need for more stable and predictable help from the Society in the form of scholarships. Therefore, \$5. of each future \$15. dues payment will be set aside for such scholarships. (See Subscription Policy this issue)

Plecopterists who have limited or no institutional support, need financial assistance, and would like to attend and present a paper at the next symposium in Italy in the year 2001, should therefore send a letter of application for a scholarship to Peter Zwick (address on inside back cover). The application should include the following information: Name, age, highest education or degree level, address, subject of research, bibliography, projected title of paper to be presented, and projected expenses. Awards will be decided by the Standing Committee.

Mayfly and Stonefly Committee Meet

The Standing Committee for the International Symposium on Plecoptera and the Permanent Committee of the International Conferences on Ephemeroptera held a joint meeting after the excursion to the archaeological ruins on Friday during the conference in Argentina.

The ephemeropterists had earlier voted to hold the next conference (2001) in Perugia, Italy. Ilda Gaino extended the same invitation to also host the stonefly conference. Since most of the plecopterists were not present at the mayfly business meeting, during which the Perugia location was chosen, they

decided to vote for the site of their 2001 conference at the stonefly business meeting. At that meeting they decided to accept Professor Gaino's invitation for a joint meeting in Italy.

Several recommendations were made regarding our joint meetings:

***If a convenor chooses to host both conferences, he or she should submit a proposal to both committees for consideration.**

***Since plecopterists and ephemeropterists will both be voting on future conference venues, it would be more practical to hold a joint business meeting to consider the next site.**

***Costs for future joint meetings could be reduced by holding joint business meetings, dinners, field trips, sharing guest speakers, etc.**

Book on Proceedings of the VIII International Conference on Ephemeroptera and XII International Symposium on Plecoptera (Published 1997)

**Ephemeroptera & Plecoptera:
Biology – Ecology – Systematics**

Copies of the Proceedings are still available. Books can be ordered for the price of US\$50 (shipping included) accompanied by a bank or postal check.

**POST CHECK CCP: 17-8359-8 Congres 95 or SBS.
1002 Lausanne: GO-544'829'0 Congres 95 or BANK
CHECK/BANKSCHECK/CHEQUE BANCAIRE.**

Mail your request to the following address: Dr. Peter Landolt, University of Fribourg, Institute of Zoology, Perolles, CH-1700 Fribourg, SWITZERLAND, phone ++41 26 300 88 72, fax: ++41 26 300 97 41, or email him at Peter.Landolt@unifr.ch.

Photo Guide Book on American Stoneflies

A book has just been published by Bill Stark, Stan Szczytko and Riley Nelson (1998 : American Stoneflies: A Photographic Guide to the Plecoptera. The Caddis Press, P.O. Box 21039, Columbus, Ohio, USA 43221-0039). The book has over 230 quality color photographs of nymphs and adults and an accompanying text with an introductory chapter, a chapter on stoneflies and trout and individual chapters on each stonefly family. Descriptive and geographic information is provided for each stonefly genus and for many stonefly species throughout North America. The book should increase the visibility of our beloved stoneflies to the lay public and be of great interest to flyfishers and flytiers wanting to learn more about colors, morphology and biology of stoneflies. Cost is \$50. Plus shipping, and can be ordered from the Caddis Press, address given above.

Illinois Natural History Survey Plecoptera Holdings now on Internet.

As part of the Illinois Natural History Survey's attempt to make their collections useful to a wider range of scientific, management and lay public, they are increasing the accessibility of their collections through building specimen-level databases and serving them to the Internet: currently 2 million specimens, including nearly 300,000 insects, have been entered into those databases. Most of these specimen records are now available via the web. They are also georeferencing specimen locations and serving maps via the web for some taxa. Please see www.inhs.uiuc.edu for more information.

Don Webb, Kathy Zeiders and Ed DeWalt have recently completed and served to the Internet the entire Plecoptera specimen database. They are currently soliciting responses from curators and private Plecoptera collections nationally, and internationally.

Proposal of Prof. Elda Gaino to Organize the Joint Meeting in Perugia, Italy, in 2001

Xth International Conference on Ephemeroptera and XIVth International Symposium on Plecoptera Prof. Elda Gaino, Instituto de Zoologia del'Universita di Perugia, Via Elce di Sotto, 06123 - Perugia, Italy, email Gaino@unipg.it

Location

Perugia is the main town of Umbria Region, located in Central Italy. Perugia is about 200 km northeast of Rome and 150 km south of Florence and stands on a "star-shaped" hill at about 500 m above sea level. Perugia retains many sights of its glorious and long history which has its roots in the Etruscan age. In any village tourists can find some memories of the past. In addition to its historical sites, Umbria shows beautiful landscapes with gentle hills, high mountains, rivers and lakes.

I am proposing to organize the conference at the University of Perugia. Perugia has good connections with the motorway and railway networks. People flying to the conference must use the airports in Rome and go on to Perugia by train or bus.

Schedule

The conference could be held during the last week of August or the first week of September. Usually, after the middle of August, finding accommodations is easier and hopefully, cheaper. (The latest information from Prof. Gaino in Jan., 1999, was that the conference dates will probably be 5-10 (possible to 11) August 2001.)

Accommodations

Perugia is a tourist town and offers various kinds of accommodations. I will do my best to obtain reasonable prices. In addition, there are camping sites (10km from Perugia), youth hostels and a lodge reserved for university researchers (only a few rooms available).

Registration fee

To make the fee affordable I am planning to apply for funds from several different sources.

Approximately, the fee could be \$200 (at this time, 1\$=1800lire). The registration fee will include: a) cost for the conference rooms, b) coffee breaks, c) field trip (one-day excursion), d) conference dinner, e) program, abstract book copy of the proceedings, and f) souvenirs. The proceedings will be published in a special number of the *Rivista di Idrobiologia*, University of Perugia.

Field trip

The field trip will be organized to allow people to collect specimens along one of the many streams of the region.

Accompanying persons

Perugia offers many opportunities: Museums, palaces, churches, medieval and archaeological sites, etc. Guided tours will be arranged.

Post conference travel

A form will be sent to the participants with some proposals to visit the main Italian towns (e.g. Rome, Florence, Venice).

A CHECK LIST OF NEW ZEALAND PLECOPTERA

Compiled by Ian McLellan

Correct to 25 October 1998

P.O. Box 95

Westport, NEW ZEALAND

I compiled this list because I have had a few inquires for a species list and/or species numbers at odd intervals. Mainly people ringing and expecting me to count them up on the spot or to know the number! To be quite candid I had not really bothered about the numbers. I hadn't realized the total was so high. I guess the exercise will be useful for others as well. There are 95 described species and a number still to be described. The total will be over a hundred and may be as high as 110.

SUBORDER ANTARCTOPERLARIA Zwick, 1973

FAMILY AUSTROPERLIDAE Tillyard, 1921

Genus *Austroperla* Needham, 1905

Austroperla cyrene (Newman, 1845)

FAMILY EUSTHENIIDAE Tillyard, 1921

Genus *Stenoperla* McLachlan, 1866

Stenoperla helsoni McLellan, 1996

Stenoperla hendersoni McLellan, 1996

Stenoperla maclellani Zwick, 1979

Stenoperla prasina (Newman, 1845)

FAMILY GRIPOPTERYGIDAE Enderlein, 1909

Subfamily Zelandoperlinae McLellan 1977

Tribe Zelandoperlini McLellan 1977

Genus *Zelandoperla* Tillyard, 1923

Zelandoperla agnetis McLellan, 1967
Zelandoperla decorata Tillyard, 1923
Zelandoperla denticulata McLellan, 1967
Zelandoperla fenestrata fenestrata Tillyard, 1923
Zelandoperla fenestrata pennulata McLellan, 1967

Genus *Rungaperla* McLellan, 1977

Rungaperla campbelli (Illies, 1963)
Rungaperla longicauda (Illies, 1963)

Tribe Megaleptoperlini McLellan 1977

Genus *Megaleptoperla* Tillyard, 1923

Megaleptoperla diminuta Kimmins, 1938
Megaleptoperla grandis (Hudson, 1913)

Tribe Acroperlini McLellan 1977

Genus *Acroperla* McLellan, 1977

Acroperla flavescens (Kimmins), 1938
Acroperla christinae McLellan 1998
Acroperla spiniger (Tillyard, 1923)
Acroperla samueli McLellan, 1977
Acroperla trivacuata (Tillyard, 1923)

Genus *Apteryoperla* Wisely 1953

Apteryoperla monticola Wisely, 1953
Apteryoperla illiesi McLellan, 1977
Apteryoperla nancyae McLellan, 1977
Apteryoperla ramsayi McLellan, 1977
Apteryoperla tillyardi McLellan, 1977

Genus *Aucklandobius* Enderlein 1909

Aucklandobius complementarius Enderlein 1909
Aucklandobius gressitti Illies, 1963

Aucklandobius kuscheli (Illies, 1974)

Aucklandobius turbotti (Illies, 1963)

Genus *Holcoperla* McLellan, 1977

Holcoperla angularis (Wisely, 1953)

Holcoperla jacksoni McLellan, 1977

Holcoperla magna McLellan 1983

Genus *Nesoperla* Tillyard, 1923

Nesoperla fulvescens Tillyard, 1923

Nesoperla johnsi McLellan, 1977

Genus *Rakiuraperla* McLellan, 1977

Rakiuraperla nudipes McLellan 1977

Genus *Taraperla* McLellan, 1998

Taraperla ancilis (Harding and Chadderton) 1995

Taraperla howesi (Tillyard) 1923

Taraperla pseudocyrene McLellan 1998

Subfamily Antartoperlinae Enderlein 1909

Genus *Vesicaperla* McLellan, 1967

Vesicaperla dugdalei McLellan, 1977

Vesicaperla eylesi McLellan, 1977

Vesicaperla kuscheli McLellan, 1977

Vesicaperla substirpes McLellan, 1967

Vesicaperla townsendi McLellan, 1977

Genus *Zelandobius* Tillyard, 1921

Confusus Group

- Zelandobius alatus* McLellan, 1993
- Zelandobius albofasciatus* McLellan, 1993
- Zelandobius brevicauda* McLellan, 1977
- Zelandobius childi* McLellan, 1993
- Zelandobius confusus* Tillyard, 1923
- Zelandobius cordatus* McLellan, 1993
- Zelandobius dugdalei* McLellan, 1993
- Zelandobius foxi* McLellan, 1993
- Zelandobius gibbsi* McLellan, 1993
- Zelandobius illiesi* McLellan 1969
- Zelandobius inversus* McLellan, 1993
- Zelandobius jacksoni* McLellan, 1993
- Zelandobius kuscheli* McLellan, 1993
- Zelandobius macburneyi* McLellan, 1993
- Zelandobius mariae* McLellan, 1993
- Zelandobius montanus* McLellan, 1993
- Zelandobius ngaire* McLellan, 1993
- Zelandobius patricki* McLellan, 1993
- Zelandobius peglegensis* McLellan, 1993
- Zelandobius takahe* McLellan, 1993
- Zelandobius wardi* McLellan, 1993

Furcillatus Group

- Zelandobius auratus* McLellan, 1993
- Zelandobius furcillatus* Tillyard, 1923
- Zelandobius pilosus* Death, 1990
- Zelandobius truncus* McLellan, 1993
- Zelandobius unicolor* Tillyard, 1923
- Zelandobius uniramus* McLellan, 1993

SUBORDER ARCTOPERLARIA Zwick, 1973

FAMILY NOTONEMOURIDAE

Austrocercella Group

Genus *Spaniocerca* Tillyard, 1923

Spaniocerca acuta McLellan, 1991

Spaniocerca bicornuta McLellan, 1987

Spaniocerca longicauda McLellan, 1977

Spaniocerca minor Kimmins, 1938

Spaniocerca zelandica Tillyard, 1923

Spaniocerca zwicki McLellan, 1991

Notonemoura Group

Genus *Halticoperla* McLellan and Winterbourn, 1968

Halticoperla gibbsi McLellan, 1991

Halticoperla tara McLellan, 1991

Halticoperla viridans McLellan and Winterbourn, 1968

Genus *Notonemoura* Tillyard, 1923

Notonemoura alisteri McLellan, 1968

Notonemoura latipennis Tillyard, 1923

Notonemoura spinosa McLellan, 1991

Notonemoura winstanleyi McLellan, 1991

Spaniocercoides Group

Genus *Cristaperla* McLellan, 1972

Cristaperla eylesi McLellan, 1991

Cristaperla fimbria (Winterbourn, 1965)

Cristaperla waharoa McLellan

RUSSIAN *PTERONARCYS* UNDER STUDY

Peter Zwick
Limnologische FluBstation
Max-Planck-Institut for Limnologie
Postfach 260
D-36105 Schlitz, GERMANY

Many years ago, Dr. I. M. Levanidova, the grand old lady of the aquatic entomologists in the Biology and Pedology Institute of the Academy of Sciences at Vladivostok, invited me to visit and work with her team. Unfortunately, only in June 1998 had I an opportunity to follow this kind invitation. I was very warmly received by Dr Levanidova and her group; although Dr Levanidova is long retired she continues working on Trichoptera and maintains an active contact with her fellow limno-entomologists. A few days were spent in the laboratories at Vladivostok with study of already available collections and in preparation of intended field work. The colleagues at Vladivostok had excellently prepared the trip; tents, mattresses and all necessary camping equipment, collecting

gear, ethanol – you name it, they had it! We travelled with a vehicle resembling a small army truck; it was not the fastest possible, but very good for the purpose. Valeri, our driver, took us safely along well paved roads, gravel roads, logging tracks and across all kinds of rough terrain, between Vladivostok and Khabárovsk. We spent 17 very pleasant days in the field, camping in the wild, cooking meals on campfires; supplies were obtained in village shops and often directly from the farmers. I was very impressed with what I saw of the life of the local people. One could also virtually see the causal connection between lack of conveniences in every day life (especially running tap water) and clean rivers: there is no wastewater.

We found our way to many streams thanks to Dr Michail Tiunov, a bat expert, who was our scout and field guide and knew to match maps (actually rather good) and reality; he also helped us collecting. At stream sites, Valeri serviced the truck, while the rest of us rushed to collect. Dr Valentina Teslenko and cand. Tatiana Arefina were beating the vegetation with nets, for stoneflies and caddisflies, respectively. Micha's wife, Dr Tatiana Tiunova, collected mature mayfly larvae and handled them very cautiously, because the larvae then travelled with us in field rearing equipment, until they made it to the adult stage. I have to admit that I myself was not mainly after Plecoptera, but collected net-winged midges (Diptera: Blephariceridae); the Far East Russian fauna includes some very interesting taxa of doubtful affinities of which I wanted (and obtained!) good fresh material for morphological study and phylogenetic analysis.

Of course, I also collected some Plecoptera. I was mainly fascinated by large numbers of both *Pteronarcys reticulata* and *P. sachalina* in mixed mating associations or evening swarms over the rivers, and was wondering how so many large larvae of two sibling species can coexist, what their development and life-cycles may be, etc. Therefore, whenever possible I made random collections of larvae and exuviae for size class analyses, and pinched 10 egg masses from

ovipositing females, 2 of *sachalina*, the other of *reticulata*. From then on, we travelled with both a mayfly and a stonefly Kindergarten; the stoneflies survived to Schlitz. There are now data on temperature data of egg development, on increment of larvae at moults, and time spent in particular instars. The largest larvae in my breeding trays are now in instar 9 and well over 20 mm long.

Dr Teslenko and myself will merge our data on the animals and will meet at Schlitz in April/May, to work on Russian *Pteronarcys* life cycles and to produce a joint paper on the subject.

In Search of Rare *Allocapnia*
(Capniidae)

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Of the forty-one eastern North American species of the winter stonefly genus *Allocapnia*, numerous species are rather geographically widespread in distribution (Ross and Ricker 1971). Adults of this genus can often be collected abundantly from riparian vegetation by beating or searching trees, and from bridges (Ross and Ricker 1971, Poulton and Stewart 1991). However, there are several non-Ozark species that are considered geographically restricted and rare. Between February 21-26, 1999, we attempted to recollect *A. brooksi* Ross 1964, *A. cunninghami* Ross and Ricker

1971 and *A. perplexa* Ross and Ricker 1971. We visited the type localities in middle and eastern Tennessee. These species were originally collected over 30 years ago. Nonpoint source pollution, primarily from poor agricultural practices has been a historic impact on the watersheds of the lower relief regions of Tennessee. In addition, increased urbanization has also caused further deterioration of these remarkably diverse systems.

After considerable effort, we collected only three males of *A. brooksi* from the type locality, Gists Creek (incorrectly listed by Ross and Ricker 1971 as Guess Creek) just west of Sevierville on US 441. The Gists Creek watershed is currently impacted by heavy siltation and organic enrichment from agricultural activities and the expansion of city of Sevierville. *Allocapnia rickeri* Frison and *A. recta* (Claassen) also occurred at this site, but more abundantly. *Allocapnia rickeri* seems especially resilient to siltation and organic pollution. We collected three additional males of *A. brooksi* from two small streams of Holston River system in Sullivan County. This species is now recorded from four streams in Hawkins, Sevier, and Sullivan counties, Tennessee.

The rheocrene streams at the type locality of *A. cunninghami*, Turners Station and near Westmoreland have been extremely degraded by poor agricultural practices, especially siltation and organic enrichment. Some of the organic enrichment may be do to septic system leakage. We located one rheocrene, a tributary of Little Trammel Creek, that was still relatively pristine, and a small series of adults of *A. cunninghami* was collected along with *A. rickeri*, *A. recta* and *Zealeuctra fraxina* Ricker and Ross. As Ross and Ricker (1971) mentioned, this "local relict" appears to be restricted to the Karst country of the Tennessee-Kentucky border. This species is known only from three streams in Sumner County, Tennessee and one stream in Cumberland County, Kentucky.

We did not successfully recollect *A. perplexa*. All the streams in the vicinity of the type locality, near Bransford Tennessee are heavily impacted by agriculture and other poor land management practices. *Allocapnia perplexa* is known from five specimens. *Allocapnia rickeri* did occur at some of the above streams. These streams are also near the vicinity of the type locality of *Hydroperla rickeri* (Stark), another endemic of this area.

During our collecting trip, we also collected a large series of *A. smithi* Ross and Ricker from Edmonson County, Kentucky. This species is another rather geographically restricted species (Ross and Ricker 1971).

We strongly urge whatever agencies and organizations responsible for water quality management, make efforts to try to protect these unique watersheds of middle and eastern Tennessee.

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(CALENDAR YEAR 1998 AND EARLIER)

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