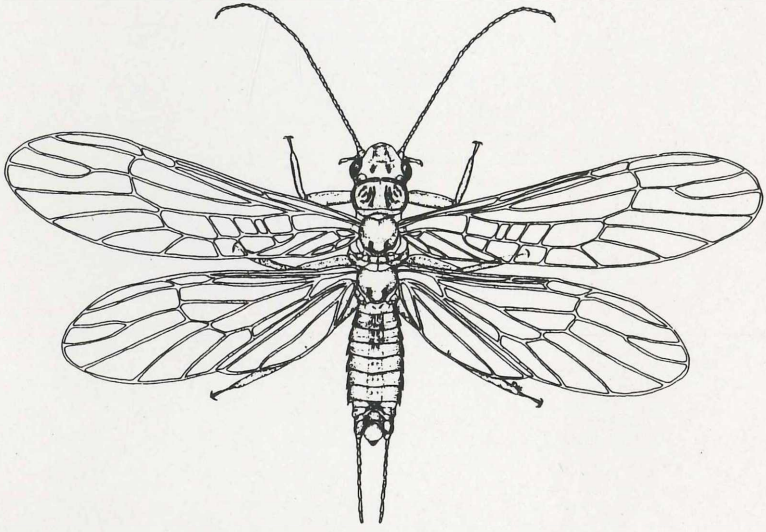
P E R L A

Newsletter and Bibliography of the International Society of Plecopterologists



PERLA No. 14, 1996

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PERLA
Annual Newsletter and Bibliography of the International Society of Plecopterologists
Available on Request to the Managing Editor

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COVER ILLUSTRATION

The cover illustration for this year's PERLA 14 was drawn by student/artist Joel Chirhart, while working in the Aquatic Insect Laboratory of the University of North Texas. It is a habitus of a male *Sweltsa oregonensis* (Frison). The Managing Editor solicits your submittal of any drawing of a stonefly nymph or adult for use on the cover of PERLA 15 next year.

PERLA SUBSCRIPTION POLICY
(As revised by vote of the participants in the XII International Symposium in Lausanne, Switzerland, August, 1995)

Dues for membership in the International Society of Plecopterologists will be $10 U.S. per year. Members will automatically receive PERLA. Libraries or other institutions may receive PERLA by making a $5 or $10 annual donation, or through an exchange of publications agreement approved by the Managing Editor and Editorial Board.

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 14 in one of the following ways, in order to be kept on the mailing list for PERLA 15: (1) pay your annual dues, (2) make a $5 or $10 donation (institutions), or (3) request a waiver. A form and self-addressed envelope are included with PERLA 14 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, and for Lifetime Achievement Award plaques presented by the Society at International Symposia. Any excess of funds over actual costs may be used under direction of the International Committee for such purposes as scholarships to help deserving plecopterologists or students attend and participate in international symposia. The Managing Editor will make a financial report to the International Committee at each International Symposium Business Meeting.

REPORT ON THE VIII INTERNATIONAL CONFERENCE OF EPHEMEROPTERA AND XII INTERNATIONAL SYMPOSIUM ON PLECOPTERA

The meetings were held on the Dorigny Campus of the College Propédeutique in Lausanne, Switzerland, August 14-20, 1995. The mayfly conference papers and posters were presented August 14-17, followed by a joined symposium of mayfly and stonefly workers on August 18, and the stonefly symposium on the 19th and 20th.

Fifty-six papers and 41 posters were presented by participants during the scientific portion of the meetings. Four of the daily sessions were opened by thought-provoking invited lectures by Rainer Willmann on "Phylogeny and the consequences of phylogenetic systematics," Bernhard Statzner on "Complexity of concepts in theoretical ecology and patterns observed in stream insects," Jean-Pierre Ribaut on "Protection of endangered species," and Jean-Carlo Pedroli on "River management: facts and perspectives."

Convenors Michel Sartori of the Museum of Zoology, Lausanne, and Peter Landolt of the Institute of Zoology, Fribourg, were gracious hosts, providing excellent facilities for the well-planned scientific meetings and many opportunities for fellowship, entertainment and superb Swiss cuisine. Highlights of the informal portion of the meetings were special lunches, welcoming and farewell parties, conference and symposium dinners, and field trips to the Jura Mountains on August 16, and to the Prealps east of Lausanne on August 20.

A special presentation of a Lifetime Achievement Award, posthumously, to the late Professor Jaques Aubert was made to his wife Madame Cécile Aubert and his son, by Peter Zwick during the Plecoptera Symposium on August 19, on behalf of the Standing Committee for the International Symposia on Plecoptera. The committee had unanimously selected Professor Aubert for this award prior to his death, and we were all saddened that he did not have the opportunity to personally enjoy receiving this honorary award. The full text of the obituary and words read by Peter in memory and honor of Jaques Aubert that accompanied this presentation and a bibliography of Jaques Aubert's papers on Plecoptera are present under a separate heading below.

A business meeting of the plenary assembly of Plecoptera participants was held on the evening of August 19, after a wonderful four-course Swiss buffet dinner at the La Fleur du Lac in Morges. During this meeting, presentations of two additional Lifetime Achievement Awards were made by the International Committee to Professor Teizi Kawai of Japan, and Ian McLellan of New Zealand (see below). Other important issues were discussed and decisions were made regarding a name for our International Association of Plecoptera workers, makeup and election procedures for the Standing Committee for the International Symposia, and subscription policies for PERLA.

Plenary Assembly Decisions

There was a discussion of the possible benefits to some members in adopting a more formal name for our association, and the need to establish procedures to provide for the continuity and membership of our Standing Committee and editorial and subscription policies for PERLA. Dr. Dick Baumann, in a letter, had suggested that some members might have a greater possibility of getting funding from their institutions for travel support to symposia if the meetings were held under a society name. There was also some indication that the mayfly people had found that formalizing their name led to possible scholarship funding for travel to symposia by an international funding agency (IUBP). This possibility will be further investigated by your International Committee.

Further discussion by the assembly centered around the need for expanded geographic and decision-making representation on the, more or less, governing Standing Committee. The original committee of C. G. Froehlich (Brazil), Teizi Kawai (Japan), Ian McLellan (New Zealand), K. W. Stewart (USA), and P. Zwick (Germany) was elected by the Plenary Assembly in Toulouse, France, several years ago and, largely due to the leadership and correspondence of Peter Zwick as its corresponding secretary, has kept the ongoing symposia very active and viable until now.

The other major item for discussion was the current financial status, editorial support, and subscription policies for PERLA. Managing Editor, Ken Stewart, indicated that PERLA was financially sound, and that the editorial board elected in Treehaven (R. W. Baumann, P. P. Harper, B. C. Kondratieff, I. D. McLellan, Shigekazu Uchida, and P. Zwick) are functioning very well in representing their respective regions regarding the annual bibliography in PERLA. A call was made by the Managing Editor for any ideas from the assembly that would further

improve the content and usefulness of PERLA to subscribers. The PERLA subscription account now enjoys tax-free status as a University account at Managing Editor Stewart's institution.

Following all of these general discussions, K.W. Stewart proposed the following:

1. That the name of our association be formalized to: The International Society of Plecopterologists, with the understanding that the assembly wished the future symposia to retain their simple, congenial, and informal nature.

2. That the Standing Committee for the Society be composed and elected as follows:

   a. that the present members (Froelich, Kawai, McLellan, Stewart, and Zwick) remain on the committee as charter members until they become inactive or resign; further that P. Zwick continue his effective role as corresponding secretary of the committee for as long as he is willing;

   b. that three additional members be elected at every other symposium plenary assembly (or in other words, serve for planning of two future symposia); these elected members could be reelected for consecutive terms;

   c. that the past organizer of a symposium be a member automatically for at least two future symposia (if a stonefly worker and if not already a member); this member would continue to serve until another stonefly worker organizes a symposium.

   The result of this proposal would be at present an eight- or nine-member committee. As charter member representation on the committee is inevitably reduced in the future, the delegates may wish to change the policy of election to insure at least a five-member committee.

3. That the subscription policy for PERLA be as follows:

   a. the society membership fee would be $10 annually, and all members would automatically receive PERLA;

   b. institutions and libraries could continue to subscribe to PERLA by making a $5 or $10 annual donation;

c. individuals or institutions could continue to receive PERLA by making a simple request for waiver to the Managing Editor.

Decisions. A large majority of the symposium attendants approved of the three Stewart proposals. The society name and PERLA subscription policy will therefore be adopted beginning with the current issue of PERLA (No. 14). It was discussed and decided by the assembly that every member present should submit a ballot nominating three candidates for the elected committee membership from among persons present at the Lausanne Symposium, excepting charter members as well as the last stonefly organizer, and those receiving the largest numbers of votes would be elected. Should one of them refuse to accept, the person ranking next would step in. Ballots were collected during the field trip and counted by Stewart, Szczytko, and Zwick.

New committee members elected were John Brittain (Norway), Ignac Sivec (Slovenia) and Peter Harper (Canada). Other participants receiving votes were Yu Isobe, Nina Sinitshenkova, V. Teslenko, G. Vincon, Lidija Zhiltzova, J. Alba-Tercedor, R. Fochetti, N. Kapoor, M. Marten, (a few other persons who were ineligible received votes).

The results were read to the attendants of the symposium; Drs. Brittain, Sivec and Harper accepted the nominations as did Dr. S.W. Szczytko (last stonefly organizer of an international symposium, Treehaven, 1992). Portions of the above deliberations were presented in Minutes to the Standing Committee in writing on August 30, 1995.

According to organizer Michel Sartori, a proceeding of papers presented at the conferences will be published in the fall of 1996.

Following is a list of participants of the Congress:

John C. Abbott, USA; Javier Alba-Tercedor, Spain; Kevin D. Alexander, USA; Sandor Andrikovics, Hungary; Malika Azzouz, Spain; Y.J. Bae, South Korea; Ernst Bauernfeind, Austria; Carlo Belfiore, Italy; Heidi Berner-Fankhauser, Switzerland; Per Brinck, Sweden; John E. Brittain, Norway; Andrea Buffagni, Italy; Steven K. Burian, USA; Maria del Carmen Zuniga de Cardoso, Colombia; Antonie Dorn, Germany; Martin Dresler, Germany; Jean-Marc Elouard, Madagascar; Christian Elpers, Germany; Corinne Favrel, France; Tom Fink, USA; John F. Flannagan, Canada; Romolo Fochetti, Italy; Claudio G. Froehlich, Brazil; Andreas Frutiger, Switzerland; Elda Gaino, Italy; Jean-Luc Gattolliat, Switzerland

Elizabeth Gibbs, USA; Michael Thomas Gillies, England; Adam Glazaczow, Poland; Tom Gonser, Switzerland; Wolfram Graf, Austria; Peter M. Grant, USA; Satoko Hanada, Japan; P.P. Harper, Canada; Yuka Hayashi, Japan; Arne Haybach, Germany; Jan Helesic, Czech Republic; Martha Rojas de Hernandez, Colombia; Claire Hofmann, Switzerland; Michael D. Hubbard, USA; Uwe Humpesch, Austria; Shin-Ichi Ishiwata, Japan; Yu Isobe, Japan; Udo Jacob, Germany; Gilles Jacquemin, France; Teresa Jazdzewska, Poland; Narinder Kapoor, Canada; Teizi Kawai, Japan; James H. Kennedy, USA; Toru Kishimoto, Japan; Wojciech Kittel, Poland; Malgorzata Klonowska-Olejnik, Poland; Nikita Kluge, Russia; Allen W. Knight, USA; Sandra Knispel, Switzerland; Gerald F. Kraft, USA; Ilja Krno, Slovakia; Daniel Küry, Switzerland; Genevieve L'Eplattenier, Switzerland; Vladimir Landa, Czech Republic; Peter Landolt, Switzerland; Claude Lang, Switzerland; Verena Lubini, Switzerland; Peter Malzacher, Germany; Michael Marten, Germany; J.M. Mathooko, Austria; Ian D. McLellan, New Zealand; Ingrid Müller-Liebenau, Germany; Najla Naceur, Switzerland; Cornelis Neet, Switzerland; Andrey Nesterovich, Belarus; Eugenia Novikova, Russia; James O'Connor, Ireland; Henrique Paprocki, Brazil; Jean-Carla Pedroli, Switzerland; Manuel L. Pescador, USA; Janice G. Peters, USA; William L. Peters, USA; M. Angeles Puig, Spain; Carlalberto Ravizza, Italy; Elisabetta Dematteis Ravizza, Italy; Manuela Rebora, Italy; Herbert Reusch, Germany; Pilar Riaño, Spain; Jean-Pierre Ribaut, France; William E. Ricker, Canada; Roland Riederer, Switzerland; Elzbieta Rosciszewska, Poland; Laurence Ruffieux, Switzerland; Rainer Rupprecht, Germany; Michel Sartori, Switzerland; Sandra Savoldi, Switzerland; William Shepard, USA; Truman Sherk, USA; Nina D. Sinichenkova, Russia; Ignac Sivec, Slovenia; Tomas Soldan, Czech Republic; Gabriel Soler, Spain; Arnold H. Staniczek, Germany; Bernhard Statzner, France; Kenneth W. Stewart, USA; Denise Studemann, Switzerland; Krisztina Szalai, Hungary; Stanley W. Szczytko, USA; Valentina Teslenko, Russia; Henn Timm, Estonia; Tatiana Tiunova, Russia; Béla Turcsanyi, Switzerland; Istvan Turcsanyi, Hungary; Philippe Usseglio-Polatera, France; Yanka Vidinova, Bulgaria; Gilles Vinçon, France; Paul Wagner, USA; Naoshi C. Watanabe, Japan; Armin Weinzierl, Germany; Wilfried Wichard, Germany; Rainer Willmann, Germany; Christoph Wyss, Switzerland; Dasa Zabric, Slovenia; Svetlana Zahradkova, Czech Republic; Lidija Zhiltzova, Russia; Peter Zwick, Germany.

NOTE: See Symposium Pictures on pages 25 and 26.

REPORT ON PLECOPTERA SYMPOSIUM SCHOLARSHIP DONATIONS, 1995

In response to the call for Plecoptera Symposium Scholarship Donations (PERLA 12, 1994, p. 5) in support of deserving colleagues to attend the XII. Symposium in Switzerland, August 1995, donations from 5 (five!) individuals were received. On behalf of the Standing Committee for the International Symposia on Plecoptera I would like to thank the donors sincerely. Special gratitude is expressed for one extremely generous gift which made up 90 % of the total 3800 DM received.

Our Swiss colleagues made it possible for several colleagues from the former Soviet Union to attend both the mayfly and stonefly symposia. They also took these colleagues on a several day tour of Switzerland, after the symposia. Three invited colleagues contributed interesting papers at the Plecoptera symposium. Although the related expenses were clearly higher than the sum I was able to pay, Dr. Landolt regarded our contribution to the total cost as adequate. The successful efforts and the support by the symposium organizers are much appreciated and gratefully acknowledged!

My bookkeeping was audited and found correct by Dr W.E. Ricker.

Had it not been for the one exceptional donation, we would have been in a very difficult position. I feel that a much better general response is needed to consider inviting deserving colleagues to attend future symposia!

Peter Zwick

LETTER FROM STANDING COMMITTEE FOR THE INTERNATIONAL SYMPOSIA ON PLECOPTERA

STANDING COMMITTEE FOR THE INTERNATIONAL SYMPOSIA ON PLECOPTERA

c/o **Limnologische Flußstation Schlitz**
des Max-Planck-Instituts für Limnologie

Prof. Dr. Peter Zwick

Schlitz, 9. September 1995

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CH-1000 Lausanne 17

Dear Professor Landolt,
Dear Doctor Sartori,

I am writing on behalf of the Standing Committee for the International Symposia on Plecoptera and on behalf of all our colleagues and friends who attended the XII. International Symposium on Plecoptera at Lausanne, which you and your collaborators organized, in conjunction with the VIIIth International Conference on Ephemeroptera.

The symposium attentands unanimously agreed that you did an extremely good job. You not only provided for adequate facilities for the scientific meetings and discussions of stonefly students, but did everything additional possible to make the entire meeting a very pleasant event. We all greatly appreciate the care with which everything was prepared and organized and are very grateful to you for your successful efforts to provide a pleasant and informative social program, plus one for accompanying spouses.

Special thanks are due to you for making it possible for several colleagues from former socialistic countries to attend the symposium. Your assistance with the funding of these persons is greatly appreciated and acknowledged. The presence of these colleagues, for the first time at International Stonefly Symposia, was very rewarding, certainly also for themselves. It was for the first time that a long-lasting barrier to scientific communication really fell down. I am sure, that these colleagues also very much enjoyed and appreciated the post-congress tour that you were able to arrange for.

Dear Doctor Sartori, dear Professor Landolt, the XII. International Stonefly Symposium at Lausanne was a complete success, from the very first to the last minute. Please accept our heartfelt thanks, and please also inform your collaborators of our gratefulness.

Yours very sincerely,

(Prof. Dr. P. Zwick, Head)

1995 LIFETIME ACHIEVEMENT AWARDS

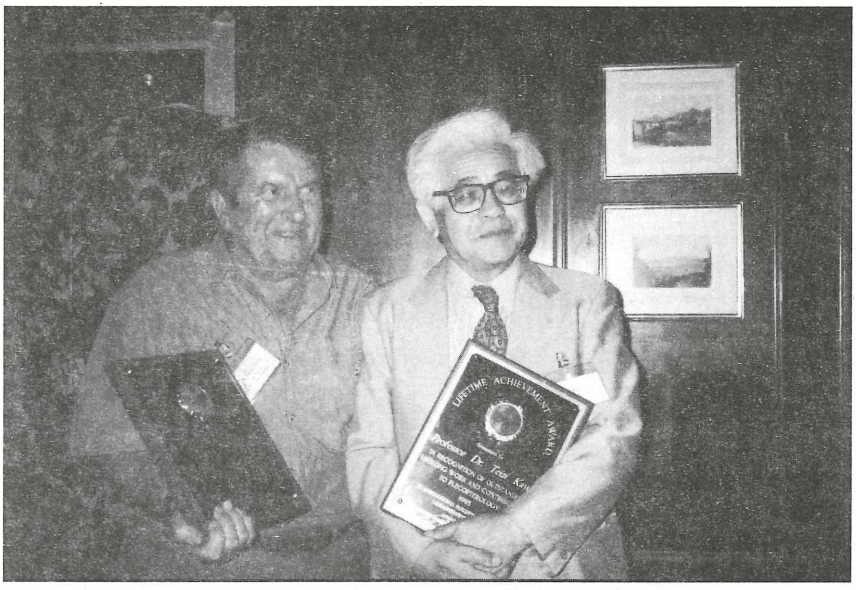
The International Committee decided in 1995 to continue the practice begun at the XI Symposium in Treehaven, Wisconsin, USA, of presenting Lifetime Achievement Awards to Plecopterologists who have made exemplary contributions to our science over most of their professional lifetimes. The first two awards were made at Treehaven to Noel Hynes and Bill Ricker (announced in PERLA 11).

The Committee unanimously agreed to award this honor in 1995 to three colleagues: Professor Dr. Jacques Aubert, Professor Dr. Teizi Kawai, and Ian McLellan. Professor Kawai and Ian McLellan, who are both charter members of the International Committee, were not aware of their own nominations, and therefore voted only on the other two nominees. Sadly for all of us, Professor Aubert died between the time of this selection and the Lausanne Symposium where he would have received the award. Professor Aubert's award was therefore presented posthumously during the symposium by Peter Zwick, along with an obituary reading and listing of his publications on stoneflies (see text of this presentation under Professor Jacques Aubert below).

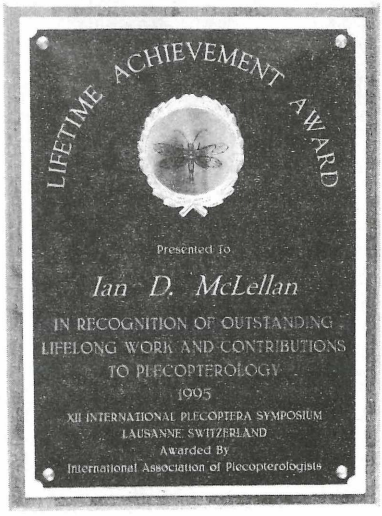
Presentation of Lifetime Achievement Awards to Teizi Kawai and Ian McLellan were made respectively by Peter Zwick and Ken Stewart during the Plenary Assembly on August 19, after the dinner at the La Fleur du Lac. Both recipients were very surprised and happy (see accompanying photos), and the assembly gave a resounding approval by applause and later personal congratulations. This was a very happy time for participants, reminding all of us of the friendly and family-like atmosphere that has characterized this now long tradition of international workers getting together to discuss their beloved stoneflies.

NOTE: See pictures on pages 11 and 12.

1995 LIFETIME ACHIEVEMENT AWARDS



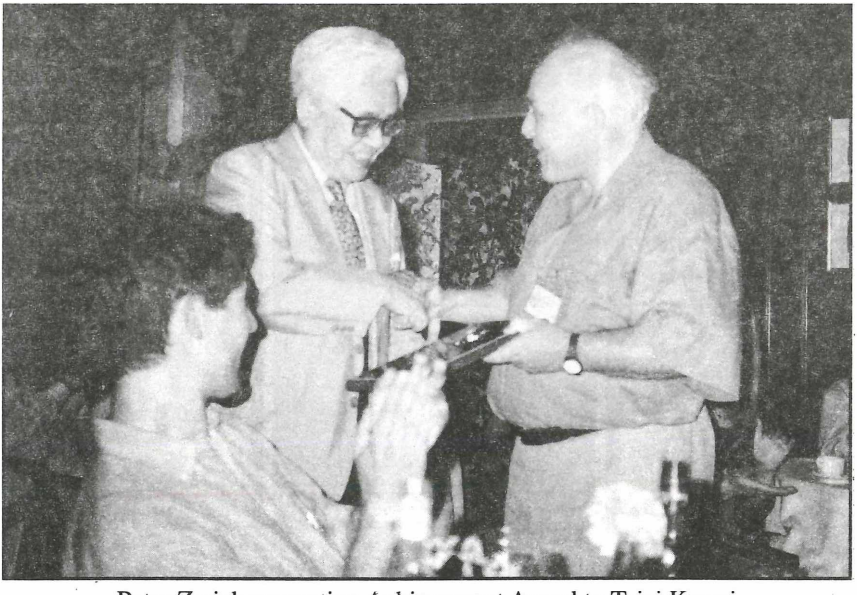
Ian McLellan and Teizi Kawai with 1995 Achievement Awards



Example of 1995 Achievement Award

1995 LIFETIME ACHIEVEMENT AWARDS

Ken Stewart presenting Achievement Award to Ian McLellan



Peter Zwick presenting Achievement Award to Teizi Kawai

Obituary read by P. Zwick in honour of the late Professeur Jacques AUBERT at the XII International Symposium on Plecoptera, Lausanne, 18-20 August 1995

Chère Madame Aubert, cher Monsieur Aubert,
dear friends and colleagues, ladies and gentlemen,

I am very sad, as we all are, that this little ceremony expressing our deep appreciation and admiration of the scientific work of Professeur Jacques AUBERT comes late, by a few days. I am very sorry that what was intended to please Professeur AUBERT has now to be said in the commemoration of this *grand maître de la plécoptérologie*, after his recent death. I am grateful to you, dear Madame Aubert, dear Monsieur Aubert, that you have come to participate in this ceremony, despite the sad circumstances.

The Standing Committee for the International Symposia on Plecoptera found it very easy to unanimously agree that in view of his outstanding success in our science Jacques AUBERT was the prime (although not the only) deserving candidate for the Lifetime Achievement Awards presented by our Society. It appears appropriate to separate the donation of his award from that of others, and to say a few words in the memory and honour of Jacques AUBERT now.

The publication list of Jacques AUBERT which I have before me includes more than 80 original publications on Plecoptera. These papers were published between 1943 and 1995, over a period of more than 50 years and constitute a very impressive life work in the strict sense of the word. In it, I recognize several distinct fields of special lasting importance and would like to say a few words on each of these focal points in Jacques AUBERT's work.

Jacques AUBERT's first paper on Plecoptera, in 1943, and one additional one, in 1947, dealt with Plecoptera chromosomes. Both of these papers were co-authored by Professor MATTHEY, under whom Jacques AUBERT was then a student. It may well be that Professor MATTHEY would have liked his student to procede in this direction; however, this line of research was not followed up further by Jacques AUBERT. This is by no means to be taken as an indication of lack of success with this work - to the contrary. These two papers on Plecoptera chromosomes were not only the first ones on the subject, they also remain the latest ones on it, even today. Could there be better evidence for the lasting importance of Jacques AUBERT's work?! Here, we have a first milestone of his Plecoptera research.

We all realize that stonefly faunistics and mainly stonefly taxonomy were the outstanding domain of Jacques AUBERT. His *Plécoptéres de la Suisse Romande* (1946) was a standard text on which many subsequent workers relied and from which they have drawn. It also laid the foundations of his work on the Plecoptera in the *Fauna Helvetica* (1959), which remains the best text for identification of central European Plecoptera today.

Remember that Jacques AUBERT was working near the cradle of our science, not far from Geneva where François Jules PICTET published his world monograph of Plecoptera (1842), introducing wing vein homologies to the study of the order. Jacques AUBERT's other Swiss forerunner was F. RIS who (together with K.J. MORTON in Scotland and P. KEMPNY in Austria) introduced the study of external Plecoptera genitalia, at the turn of the century. The work of forerunners does not always facilitate one's own work; in the present case, this is true of the notorious Reverend L. NAVAS who, throughout his lifetime, kept covering the world map with type localities of ever new taxonomic puzzles.

Jacques AUBERT showed in an exemplary way how to deal with such heritage: he looked at the PICTET-collection in Geneva and found it to contain near to no original material, i.e., there was nothing to worry about. The good work of RIS and his contemporaries posed also no problems, but the publications by NAVAS did. Jacques AUBERT accepted the challenge and tracked NAVAS' types down. Only after he had cleared the ground, Jacques AUBERT started naming new species of his own; I wish the same care were always taken by every worker in the field. Certainly, we are all deeply in Jacques AUBERT's dept and profoundly grateful to him for his studies on, and his invaluable lists of, the Plecoptera types of NAVAS; here we have a second milestone in Jacques AUBERT's life work.

Milestone three is, of course, Jacques AUBERT's own taxonomic work. He named more than 150 species (or subspecies) of Plecoptera, and almost every one is valid today. Jacques AUBERT's descriptions are generally brief and concise, concentrating on the essential, and together with the remarkably clear and correct illustrations (many of which were prepared for him by Madame PETITPIERRE) precisely identify the species. In the few cases where I ever borrowed types from Jacques AUBERT's collection this proved to be a superfluous exercise: the type always looked exactly as described and illustrated in Jacques AUBERT's paper!

A fine sense of humour was displayed in the only description by Jacques AUBERT which was accompanied by the illustration of a shrivelled (but nevertheless distinct) species of *Nemoura*, instead of the usual beautiful comprehensive illustrations of cleared genitalia. Jacques AUBERT named it *navasi*, in appreciation of NAVAS' work. I would not be surprized if the very peculiar head pattern of the animal had suggested to Jacques AUBERT, already at the time of the description, that *N. navasi* would ultimately sink, as a synonym of *N. fulviceps* KLAPÁLEK.

The list of species named by Jacques AUBERT is far too long to be read or projected here, but it is rewarding to look at it in a synoptic way. A plot of the origin of the new species against their respective year of description (Figure 1) nicely shows that in the early years of Jacques AUBERT's studies the war situation restricted him to his home country and that later adjacent and successively more and more distant regions to which Jacques AUBERT travelled on his motor cycle became accessible to him, and yielded new species. The relatively early end of descriptions from the Alps indicates no neglect; instead, Jacques AUBERT had simply exhausted the supply of new species! A new Alpine subspecies the description of which Jacques AUBERT co-authored, in 1995, is an exception; it is not shown in the graph, to avoid offsetting the time scale. The right portion of the graph shows Jacques AUBERT's work on exotic species; much of it is based on collections of his former colleague in Lausanne, F. SCHMID, who is now in Canada.

The impact of Jacques AUBERT's work is clearly reflected by the percentages of known species that he named in several regional faunas; Figure 2 provides examples. Jacques AUBERT named about 20% of the European Plecoptera, and over 80% of the Nemouridae in Assam (the only family Jacques AUBERT studied from there).

As we all know, taxonomic authorship is everlasting and never expires. Particularly when the species are valid (as nearly all of AUBERT'S are) they constitute a living monument of the author's successful work. Also, several stonefly taxa were named by other authors, to honour Jacques AUBERT (and others are still in print now):

Aubertiana Zhiltzova, 1995	[Central Asia]
Aubertoperla Illies, 1963	[Andes]
Brachyptera auberti Consiglio, 1957	[Sardinia]
Isoperla auberti Rauser, 1965	[Bulgaria]
Protonemura auberti Illies, 1954	[Germany]
Taeniopteryx auberti Kis et Sowa, 1964	[Romania]
Teutoperla auberti Illies, 1965	[Chile]
Leuctra vinconi aubertorum RAVIZZA & RAVIZZA DEMATTEIS, 1994	[Alps]

Finally, there is a fourth point of major importance in Jacques AUBERT's life work on Plecoptera; it is of particular significance in the context of the present symposium. It was Jacques AUBERT who in 1956 invited six European colleagues to attend the First International Symposium on Plecoptera, here in Lausanne, initiating a sequence of successful international symposia which are of vital importance to our science. The living tradition of these gatherings will also continuously be connected with his name.

Chère Madame Aubert, cher Monsieur Aubert, dear friends and colleagues, we are all very sad that Jacques AUBERT did not live to receive our grateful thanks for his contribution to stonefly science, of which this plaque is an expression. A lifetime work like that of Jacques AUBERT is impossible without loving support in the family and shared interest which was clearly seen when both Jacques AUBERT and his wife attended several of the later symposia.

I would like you, chère Madame Aubert, to accept this placque in your late husband's place. Please, be certain that his name and memory will remain alive and cherished among his fellow stonely students.

Jacques AUBERT's
papers on Plecoptera

AUBERT, J. & R. MATTHEY (1943): Le problème des hétérochromosomes chez les Perles (Plecoptera). - Arch. Julius Klaus-Stift. Vererb.-Forsch., Zürich, 18.

AUBERT, J. (1945): Le microptérisme chez les Plécoptères Perlariés. - Rev. Suisse Zool., Genéve, 52: 395-399.

AUBERT, J. (1946): Les Plécoptères de la Suisse Romande. - Mitt. Schweiz. ent. Ges., Lausanne, 20: 8-128.

AUBERT, J. (1947): Notes sur la collection de Plécoptères du Muséum d'Histoire naturelle de Genève (Coll. PICTET). - Rev. Suisse Zool., Geneve, 54: 545-552.

MATTHEY, R. & J. AUBERT (1947): Les chromosomes des Plécoptères. - Bull. biol. France. Belg., Paris, 81: 202-246.

AUBERT, J. (1948a): Plécoptères décrits par le R.P.L. NAVAS S.J. I. Notes sur quelques types du Musée de Barcelone. - Mitt. Schweiz. ent. Ges., Lausanne, 21: 180-184.

AUBERT, J. (1948b): Un Plécoptère nouveau des Préalpes vaudoises: *Leuctra autumnalis* n.sp. - Mitt. Schweiz. ent. Ges., Lausanne, 21: 469-470.

AUBERT, J. (1949a): Plécoptères helvétiques. Notes morphologiques et systématiques. - Mitt. Schweiz. ent. Ges., Lausanne, 22: 217-236.

AUBERT, J. (1949b): La répartition des Plécoptères dans le monde. - Mitt. Schweiz. ent. Ges., Lausanne, 22: 361.
AUBERT, J. (1949c): Les Plécoptères de la Suisse Romande. - C.R. 13. Congr. internat. Zool., Paris, 1948: 468.
AUBERT, J. (1949d): La répartition des Plécoptères dans le monde. - C.R. 13. Congr. internat. Zool., Paris, 1948: 468-469.
AUBERT, J. (1949e): Plécoptères helvétiques. Notes faunistiques et zoogéographiques. - Bull. Soc. Vaudoise Sci. Nat., Lausanne, 64: 321-360.
AUBERT, J. (1950a): *Nemoura undulata* RIS, un Plécoptère mal connu des Alpes suisses. - Mitt. Schweiz. ent. Ges., Lausanne, 23: 65-66.
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FIGURE 1: Origin and Year of Description of New Plecoptera Species by J. AUBERT

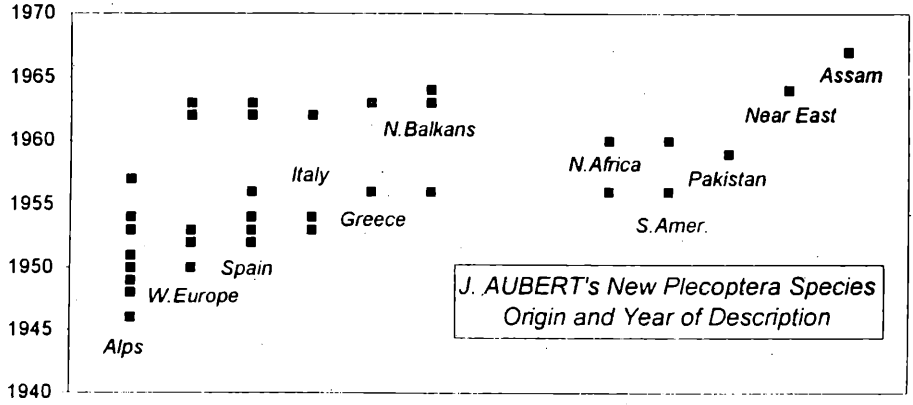
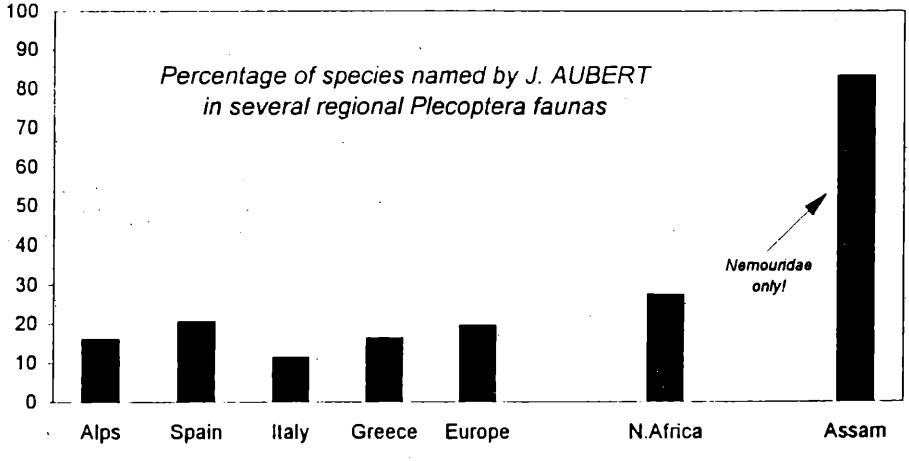
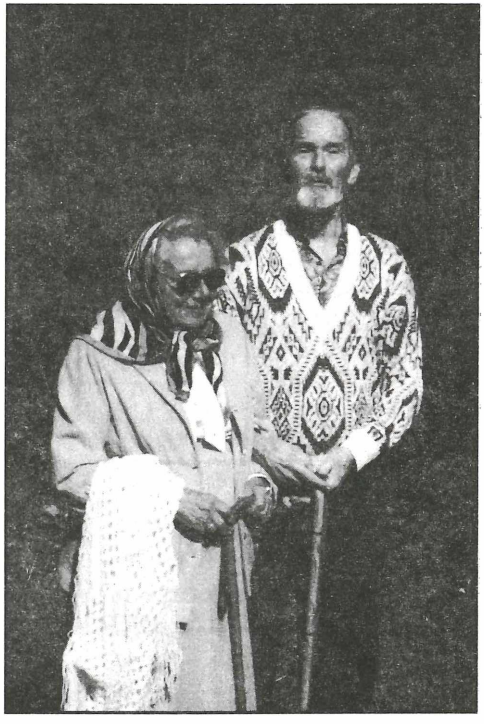
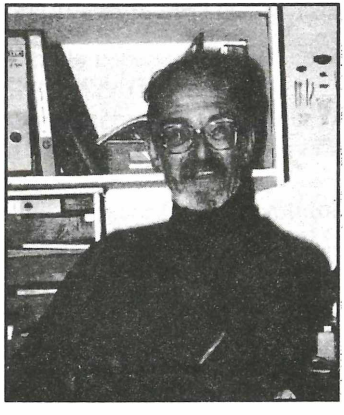


FIGURE 2: Percentage of Species Named by J. AUBERT



PROFESSEUR JACQUES AUBERT
AND MADAME CECILE AUBERT





OBITUARY NOTICE - Dr. Briant Richard Oblad

Submitted by R. W. Baumann

Dr. Briant Richard Oblad, a former student of Dr. Arden R. Gaufin at the University of Utah, passed away on March 25, 1993. Briant did a masters study on The Stoneflies of the Yampa River, Colorado in 1967 and 1968. He received his Ph.d. from the State University of New York, SUNY and at the time of his death he was teaching at the SUNY School of Environmental Science and Forestry in Syracuse, New York. Dr. Oblad was an author on the following paper on stoneflies.

STARK, B. P., B. R. OBLAD AND A. R. GAUFIN. 1973. An Annotated List of the Stoneflies (Plecoptera) of Colorado. Entomological News 84:269-277, 301-305.

ANNOUNCEMENTS

FIRST ANNOUNCEMENT OF XIIITH INTERNATIONAL SYMPOSIUM ON PLECOPTERA

The IXth International Conference on Ephemeroptera and XIIIth International Symposium on Plecoptera will be held jointly in Tucumán, Argentina in August, 1998. Tucumán is located in Northwestern Argentina, in a subtropical region, with a variety of environments close to San Miguel de Tucumán, the capital, which is easily accessible by plane, bus and train from Buenos Aires, Cordoba or Salta (the international airports). The event will take place in a small traditional town, to allow closer interaction among participants in a relaxed environment. Field trips are planned as well as special activities for accompanying persons as well as post-conference tours.

From a FAX to Peter Zwick by Dr. E. Dominguez, 7 Febr. 1996.

PRELIMINARY ANNOUNCEMENT - NAPS MEETING

The next meeting of the North American Plecoptera Society is tentatively scheduled to be held in Montreal, Canada, in late spring, 1997 (late May?). Specific dates are expected to be available by November, 1996. If you are interested in participating, contact Dr. Peter Harper or Dr. Boris Kondratieff (their addresses are on the inside front cover of this issue).

OFFER OF ACCOMODATION FOR STONEFLY RESEARCHER/COLLECTORS IN THE SAN FRANCISCO, CALIFORNIA AREA

Dr. David L. Nelson, M.D., is a hand surgeon and stonefly enthusiast, particularly from a fly-tying and fly-fishing perspective. He attended the 3rd North American Plecoptera Symposium in Fort Collins, Colorado, and wishes to maintain contact with the "stonefly world." He is graciously willing to help a stonefly researcher who wants to study at the California Academy of Sciences or collect in the San Francisco area by offering a place to stay for a while. If you anticipate being in this area on stonefly business and need a place to stay, please contact well ahead of time: Dr. David Lincoln Nelson, 56 Delmar Street, San Francisco, CA 94117 (Phone 415/864-7884).

Perhaps others in our society might wish to make a similar offer?

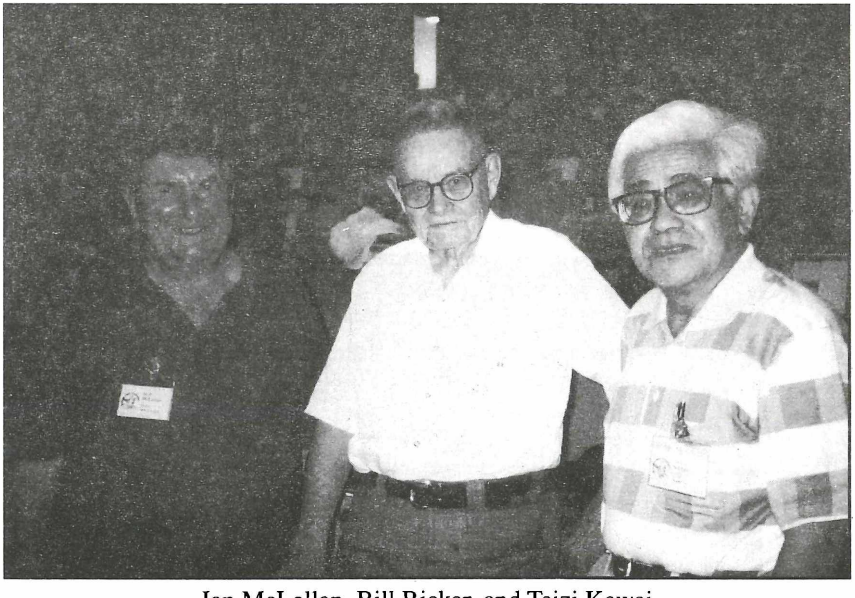
STONEFLY REPRINTS AVAILABLE

Over the last few years several aquatic entomologists have donated their reprints to the Monte L. Bean Life Science Museum at Brigham Young University. These include: Stephen W. Hitchcock, Briant R. Oblad, Reed Y. Oberndorfer, Richard L. Denton and Eugene C. Devenport. This has greatly increased the quality of our reprint collection. However, it has also resulted in the duplication of some of the papers on stoneflies (Plecoptera). I would like to make the duplicate reprints available to plecopterologists and invite anyone that is interested to submit the names of specific titles needed to Dr. Richard W. Baumann, Monte L. Bean Life Science Museum, Brigham Young University, Provo, Utah 84602, USA. Please do not make blanket requests but be realistic about your reprint needs.

VALUABLE STONEFLY PRINTS FOUND

During a recent move to a new office space, I came across several copies of the beautiful print of the nymph of Hesperoperla hoguei that Jean Ann Stanger Leavitt made for the 1982 NABS Meeting in Provo, Utah. I have seen the prints framed and hanging in the offices and homes of colleagues all over the world where stoneflies are appreciated. I will make the prints available to anyone that is interested for $15.00. This price includes postage to anywhere in the world. The funds raised will be donated to the Arden R. Gaufin Trust for stonefly research at the Monte L. Bean Museum. Please send all requests to Dr. Richard W. Baumann, Monte L. Bean Life Science Museum, Brigham Young University, Provo, Utah 84602, USA. Send funds as a check or money order made out to Richard W. Baumann, Monte L. Bean Life Science Museum.

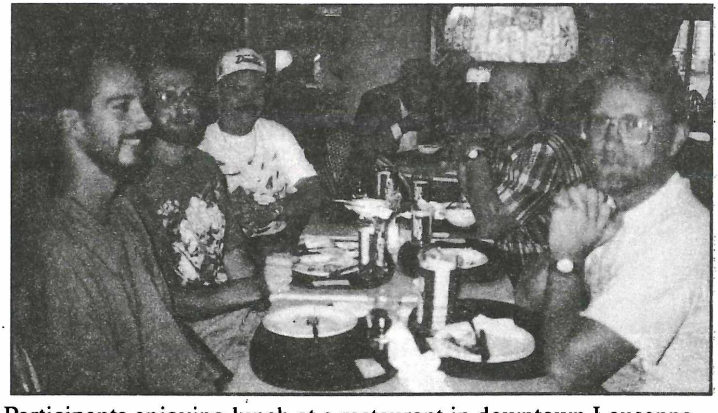
Participants enjoying the dinner at the La Fleur de Lac



Ian McLellan, Bill Ricker, and Teizi Kawai

Ian McLellan and Teizi Kawai - on the field trip

Heidi Zwick and Lidija Zhiltzova at Triglav National Park, Slovenia, September 1994



Participants enjoying lunch at a restaurant in downtown Lausanne

CURRENT RESEARCH ON PLECOPTERA AND REQUEST FOR STUDY SPECIMENS

This is a new and expanded section begun in PERLA 13. Below are several submissions of current Plecoptera research listed in alphabetical order by name of researcher. This information is presented exactly as it was received, with no editing. For any questions, please contact the submitting researchers directly. Please feel free to submit a paragraph and any requests for study material or other information from colleagues to the Managing Editor for publication in PERLA 15.

Masters research project "The Stonefly Fauna of the Raft River Mountains." Submitted by Dr. R. W. Baumann, Department of Zoology, Brigham Young University, Provo, Utah 84602, USA.

Richard M. Houseman is studying the stonefly fauna of the Raft River Mountains of Utah and Idaho. This interesting mountain range runs from east to west and is isolated from the nearest major ranges, Wasatch and Sawtooth, by the Lake Bonneville Basin and the Snake River Plain respectively. The northern streams drain into the Snake River and the southern streams drain to The Great Salt Lake.

Please send any specimens or useful information that might apply to this study to either Richard Houseman or Richard Baumann at the above address.

Ph.D. research project "The Zoogeographic Affinities of the Stonefly Fauna of the Northern Midwest with Special Emphasis on the Black Hills" Submitted by Dr. Richard W. Baumann, Department of Zoology, Brigham Young University, Provo, Utah 84602, USA.

Bret O. Huntsman is continuing his study of the stonefly fauna of the northern, midwestern portion of the United States. His emphasis is still the Black Hills but several questions could be answered by obtaining specimens from nearby states. The most poorly known states are North Dakota, Iowa and eastern South Dakota.

Please send literature information and specimems that would improve this study to Bret Huntsman or Richard Baumann at the above address.

The Aquatic Insects of NW Europe

A taxonomic handbook for the aquatic insects of NW Europe is being prepared and will be published in two volumes by Apollo Books in Denmark. The aim is to provide keys to genus, together with an account of their morphology, ecology, collecting methods and rearing techniques. As well as an extensive bibliography, each chapter will contain a species check-list for Denmark, Norway, Sweden, Finland, Russian Karelia, Iceland, the Faroes and Svalbard. The handbook is being edited by Anders Nilsson from Umeå University in Sweden. The stonefly chapter, which is now at the proof stage, has been written by John Brittain and Svein Jakob Saltveit from the University of Oslo (Submitted by John Brittain).

Research on "Plecoptera of Southwest Colombia: Bioindicators of Water Quality." Submitted by M. C. de Cardoso, Universidad del Valle, Facultad de Ingenieria, Departmento de Processos Quimicos y Biologicos, AA 25360, Cali, COLOMBIA.

Professor Maria del Carmen de Cardoso, Angela Martha Rojas de Hernandez and Dr. Bill P. Stark are working together to elucidate the biodiversity and water quality relationships of Plecoptera from southwestern Colombia. A monograph of Colombian Anacroneuria is expected to grow out of this study which is funded by Universidad del Valle and the Colombian Fund for Scientific Research and Special Projects, Francisco Jose de Caldas, CIENCIAS. In addition to the senior researchers, several undergraduate and graduate students are involved in the project.

Romolo Fochetti - Departamento di Scienze Ambientali, Università della Tuscia, v. S. Camillo de Lellis, 01100 - Viterbo, ITALY.
Gilles Vinçon - 38 bis, Rue du Drac, Grenoble, F-38000, FRANCE

Taxonomy of the genus *Tyrrhenoleuctra* in the Mediterranean area.

Populations belonging to the three species of the Circummediterranean genus *Tyrrhenoleuctra (T. minuta, T. tangerina, T. zavattarii)* from Spain, Tunisia, Algeria, Balearic Islands, Sardinia and Corsica, have been studied from the morphological point of view. It is suspected that the three nominal taxa are on the contrary a single

biological unit, since the morphological characters used in the taxonomy of the genus are variable and do not support the distinction of the three species. The examination of further material and the study of new characters are needed and are planned by the writers. A biochemical approach carried out by means of enzyme electrophoresis is also planned.

Graduate doctoral research on "Reproductive Ecology of Plecoptera." Submitted by S. Hanada, Department of Biology, Faculty of Science, Nara Women's University, Kitauoya-nishimachi, Nara 630, Japan.

"Ecological study of mating system in Plecoptera will be continued, and it will be my doctoral thesis. Evolution of drumming behaviors and searching system in Plecoptera will be discussed in relation to their life patterns during adulthood (e.g. emergence, reproductive system, encounter sites)."

Graduate research on "Daily Periodicities of Emergence and Oviposition in *Sweltsa*." Submitted by Dr. Y. Isobe, Department of Biology, Nara Women's University, Nara, 630, Japan.

"Yuka Hayashi is working on the daily periodicities of emergence and oviposition in *Sweltsa*, at a field station in Nara Prefecture. She will make the observations and time-interval collections of emerging adults and flying females during her third season. She is recognizing three species in the *Sweltsa*, expected to have different emergence timings, but the species names have not been determined."

Dr. Narinder N. Kapoor, Assoc. Professor, Graduate Program Director, Concordia University, Department of Biology, 1455 de Mainsonneuve Blvd. W., Montreal, QC,H3G 1M8, Canada,
e-mail: Kapoorn@vax2.Concordia.ca. Fax:848-2881,
Phone:O1-514-848-3403

Research area: Correlative physiological and morphological studies of plecopteran nymphs. Light, scanning electron and transmission electron microscopy of cuticular and subcuticular structures of plecopteran nymphs.

Research interests are primarily concentrated on the morphological, behavioral and physiological aspects of freshwater animals. Thirty-six papers have been published on various aspects of rearing, behaviour, gills, respiration, sensilla, gut, cuticular and subcuticular structures of plecopteran nymphs.

Research on "Egg Structure and Embryogenesis in Plecoptera." Submitted by Dr. Toru Kishimoto, Biological laboratory, Tsukuba International University, 6-3960-1 Manabe, Tsuchiura, 300, Japan. E-mail: QYM01062@niftyserve.or.jp

Dr. T. Kishimoto has worked on egg structure and embryogenesis of the Plecoptera, to examine the relationship of plecopteran families and the ecological significances of egg structures. The embryogenesis of Perlodidae, Perlidae, Nemouridae and Pteronarcyidae has been well studied, but that of the other families has been unknown or examined a little. He has a special interest on Scopuridae, Peltoperlidae, Pteronarcyidae and antarctoperlarian families and will actually examine the egg structure and embryogenesis of Scopuridae and Peltoperlidae. If you can supply any information of eggs of Pteronarcyidae and antarctoperlarian families, plase contact Dr. T. Kishimoto, at the above address.

Call for data on Swiss Stoneflies, Mayflies, Caddisflies, Coleoptera and Heteroptera

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

This project will result in 1996-97 in the publication of 3 atlases of distribution of the first groups. In the same time, the CSCF (Swiss Center for Cartography of the Fauna) continues to collect data in order to continuously update the distribution of these species.

We invite anyone who is interested in and gets data on stoneflies (or the other groups) collected in Switzerland to send us a list or 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, determinators.

Addresses:

for stoneflies,	for the other groups,
Sandra Knispel	Alain Badstuber
Musée zoologique	CSCF
CP 448	Terreaux 14
CH - 1000 Lausanne 17	CH - 2000 Neuchâtel

Gerald F. "Jerry" Kraft
Professor of Biology
Western Washington University
Bellingham, WA 98225

a. Stoneflies of Washington State. Updating the Hoppe and Jewett lists. Aiming for publication mid-1998.

b. Three graduate students (MS) (Completion dates June 1997)
Biology of Neaviperla forcipata.
Biology of Ostrocerca dimicki.
Stonefly populations (macroinvertebrate communities) in a glacier-melt stream and its groundwater-fed tributary.

c. Baseline survey and distribution studies of Washington State stream macroinvertebrate species. Planning collaborative projects with State and Federal agencies, Oregon State U., and other Universities.

I am interested in systematics, identification of nymphal stages, distribution, and ecology. I have a relatively complete stonefly collection for the State, and have examined several collections in the Region. I will visit Corvallis for a few days in March and again in July or August 1996 to study Jewett and Hoppe material. From now until the time I retire in June 1997, teaching will alternate with research quarters. After that date, I plan on full-time stream insect work.

I would like to see adults of the eastern Ostrocerca species. References to any Washington records and collections would be appreciated.

Ian McLellan (Research Associate, Landcare Institute, PO Box 95, Westport, New Zealand) is continuing his work on a systematic revision of Zelandoperlinae (Gripopterygidae). More extensive and intensive collecting in the past few years by colleagues in the Department of Conservation and our museums has brought to light a number of new taxa and the missing stages of described species.

Research on "*Flow management in mountain regulated rivers by water-transfer between bassins for hydropower production*". Submitted by Dr. M.A. Puig and Dr. A.de Sostoa*, Ecology Department, Centro de Estudios Avanzados de Blanes, Camí de Sta. Barbara s/n, 17300 - Blanes, Spain. (* Dept. Zoology, Fisheries Lab., Barcelona University). This research is sponsored by Spanish governmental Department of Industry.

Dr. M.A. Puig has worked four years into stonefly and mayfly population dynamics and food web changes associated to habitat disturbance. Final results are prepared for sending to publisher this year.

Research on "*Relationship among leaf breakdown and shredders in Mediterranean rivers*". Submitted by Dr. M.A. Puig (above address). This research is sponsored by Spanish governmental Department of Education and Science.

The shredder strategy is infra-represented in the Spanish Mediterranean streams because their arid and semi-arid basins have very few and temporal restricted C.P.O.M. inputs. This general pattern change in the north-east Spain with levels of mean annual precipitation about 1000 mm. The fluvial systems of this last area are the object of our actual research. In these streams, well forested, the community is dominated by *Brachyptera braueri, Brachyptera risi, Nemoura fulviceps, Capnioneura mitis and Capnia bifrons*. The shredder strategy importance of the three first species in the community will be studied for two years.

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Title of research:

1. Ultrastructure of egg capsules in Perlodidae stoneflies

2. The follicular cells diversification during choriogenesis in Perlodidae stoneflies

Two species are investigated: *Perlodes intricata* and *Isoperla grammatica* (both from French Pyrenees).

The project parallels similar studies which were done earlier on Perlidae.

Research on "A Revision of Andean Anacroneuria." Submitted by B. P. Stark, Department of Biology, Mississippi College, Clinton, MS 39058, USA.

Bill P. Stark is currently studying adult and mature nymphal specimens of Anacroneuria from Bolivia, Colombia, Ecuador, Peru and Venezuela. Stark would welcome material from any of these areas, or from lower MesoAmerica (Costa Rica/Panama), which he is also studying.

Research in Progress by K.W. Stewart, students and colleagues

Submitted by K.W. Stewart

1. Two projects are in progress on North American Plecoptera nymphs, to increase knowledge beyond the generic level of Stewart and Stark (1993). The logical continuation of their work is to comparatively study associated nymphs of all species within selected genera, with the ultimate goal of developing illustrated keys to species.

   a) "Nymphs of North American Taenionema species." K.W. Stewart and Jean A. (Stanger) Leavitt. Nymphs of both sexes of the seven species: atlanticum, grinnelli, jewetti, oregonense, pacificum, pallidum and raynorium have been studied and comparatively illustrated. We have only female nymphs of T. kincaidi and T. umatilla and a good series of T. jacobii that are being drawn.

Therefore, to complete this work we need the following associated nymphs: male kincaidi, male umatilla and male and female californicum and uinta. Our immediate priority is to revisit localities for these species and to rear them. We would very much appreciate a loan of reared or field-associated material of californicum, kincaidi, uinta and umatilla, or information on known locations of good populations of them.

b) "Nymphs of North American Isogenoides species." K.W. Stewart. I have accumulated some good series of reared nymphs of colubrinus, elongatus, frontalis, olivaceus and zionensis, and made preliminary sketches of them. I would like to see additional nymphs of these, and particularly need loan of additional nymphs of the eastern species doratus, hansoni, krumholzi and varians, or any information on location of populations.

2. Doctoral project of Kevin Alexander, submitted by Kevin D. Alexander, Dept. of Biological Sciences, University of North Texas, P.O. Box 5218, Denton, TX 76203-0218, USA.

"I am entering the last year on a revision of the chloroperlid tribe Suwalliini Surdick of the world which includes the genera *Suwallia* Ricker and *Neaviperla* Ricker. All types of North American species have been studied except for the type of *Neaviperla forcipata* (Neave) which has yet to be located. Collections of fresh material and field extrusion of aedaegi have been made for the last two summers and will continue for one additional summer. Also, Palearctic specimens kindly sent by international colleagues and collections borrowed from North American museums are currently being studied. The aedeagi continue to provide useful characters and indicate that material previously assigned to *Suwallia pallidula* (Banks) and *Suwallia autumna* (Hoppe) are probably complexes of several cryptic species. Additionally, I have a few potentially undescribed chloroperlid species in other genera collected in association with this project."

"Field study of North American species is continuing, but the greatest need is to obtain additional Palearctic specimens, especially of *Suwallia jezoensis* (Kohno) and *Suwallia asiatica* Zhiltzova and Levanidova which have remained unavailable for study. If you can provide any of the following material, please contact Kevin D. Alexander and/or Dr. Kenneth W. Stewart at the above address:

(1) any North American *Suwallia* or *Neaviperla* material containing males with extruded aedeagi;

(2) and Paleartic *Suwallia* or *Neaviperla* material, especially *S. jezoensis* or *S. asiatica.*

3. Nymph Book Revision. K.W. Stewart and B.P. Stark. We have begun the process of updating literature and obtaining reared nymphs representing genera described since 1988 for a complete revision of Stewart and Stark (1988; reprinted 1993) "Nymphs of North American Stonefly Genera (Plecoptera)." Our goal is to produce a compendium of knowledge, and latest illustrated keys to the nymphs of North American stonefly genera, to about the year 2000. We would appreciate suggestions from users of this book for correction of any errors or other improvement of the revision.

4. "Stoneflies of Alaska and Northwestern Canada." K.W. Stewart and M.W. Oswood. We have been working on this project and actively collecting in Alaska for about 15 years. The work will provide a "state-of-the-art" synthesis of information and illustrated keys to nymphs and adults of the over 150 species of stoneflies known in the region, covering Alaska and outlying islands, British Columbia, western Northwest Territories and the Yukon Territory. The University of Alaska Press has expressed interest in the manuscript for the book, that is in preparation. We intend to make our last collecting expedition in June-July 1996, through the Yukon and parts of the Mackenzie River Basin of the Northwest Territories. We would appreciate the loan of any adult or nymph collections of stoneflies from this region from any of you that we have not already contacted.

5. "Stoneflies of the Yukon Territory." K.W. Stewart and W.E. Ricker. This work on the biogeography and biology of the 71 stonefly species known to occur in the Yukon was recently completed as a book chapter. It is anticipated that the book "Insects of the Yukon," a project of the Biological Survey of Canada, will cover the major orders of insects, Araneae, Oribatei and fossils, and be in the hands of the printer by late 1996.

a) Henn Timm

b) Võrtsjärv Limnological Station, Institute of Zoology and Botany, EE2454 Rannu, Tartumaa, Estonia

c) "Elaboration of bioindication methods for the estimation of the state of environment" (1990-1995); new application for 1996 by the Institute of Environmental Protection (Estonian Agricultural Institute)

d) Estimation of water quality and prediction of environmental variables (pH, content of biogens etc.), using taxonomical composition of macroinvertebrates (among this Plecoptera larvae) in flowing waters.

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1. Study of South American Plecoptera. Submitted by Peter Zwick (P.O.Box 260, D-36105 Schlitz, Germany) and Ian D. McLellan (Box 95, Westport, New Zealand).

   "We are involved with large collections of South American Plecoptera from the United States National Museum (Courtesy Dr. O.S. Flint, Jr). So far we have completed a paper on the *Austronemoura* (Notonemouridae) and have sorted and identified most of the gripopterygids. Our next task is to describe new taxa, redefine genera and subfamilies and construct suitable keys, especially to larvae."

2. Study of African *Neoperla*. Submitted by Peter Zwick (P.O.Box 260, D-36105 Schlitz, Germany).

   "Over the years, I have studied abundant material of African *Neoperla*, including types of all nominal taxa. Because of the difficult association of sexes, many problems remain; mating pairs of at least some of the numerous species would be a gift from heaven. I intend to resume my long-interrupted studies now, beginning with redescriptions of types."

STONEFLY NAMES FROM CLASSICAL TIMES

W. E. Ricker

Recently I amused myself by checking the stonefly names that seem to be based on the names of real or mythological persons or localities of ancient Greece and Rome. I had copies of Bulfinch's "Age of Fable," Graves; "Greek Myths," and an "Atlas of the Ancient World," all of which have excellent indexes; also Brown's "Composition of Scientific Words." And I have had assistance from several colleagues. It turned out that among the stonefly names in Illies' 1966 Katalog there are not very many that appear to be classical, although I may have failed to recognize a few. There were only 25 in all, and to get even that many I had to fudge a bit. Eleven of the names had been proposed by Edward Newman, an English student of neuropteroids who published around 1840.

What follows is a list of these names and associated events or legends, giving them an entomological slant whenever possible. Greek names are given in the latinized form used by Graves, for example Lycus rather than Lykos. I have not listed descriptive words like Phasganophora (sword-bearer) unless they are also proper names. Also omitted are geographical names, no matter how ancient, if they are easily recognizable today -- for example caucasica or helenica.

alexanderi Hanson 1941, Leuctra. The name Alexander dates back to the Mycenaean age of about 1400-1200 B.C., where it occurs in the "Linear B" tablets. In Home it was the usual name of the Trojan prince who is better known as Paris. The fame of Alexander of Macedon has made it a common name throughout much of the world. Dr. Hanson named this Leuctra for Professor C.P. Alexander of the University of Massachusetts, a cranefly specialist.

arcadia Aubert 1956, Nemoura (Amphinemura). (Arcas = bear). In classical times Arcadia was a district in the central part of the Peloponnese, a mountainous and pastoral region where the people spoke a different dialect from that of their neighbours. It was a favorite haunt of the goat-god Pan.

aurora Ricker 1952, Allocapnia. Aurora was the goddess of dawn, one of whose favorites was Tithonus, a prince of Troy. She carried him up to the heavens and asked Zeus to make him immortal. This was granted, but she forgot to specify that he should remain eternally youthful. So Tithonus eventually became old and querulous, and when Aurora could stand it no longer she turned him into a cicada and sent him back to earth, where his shrill complaints can still be heard all summer long. Memnon, the son of Aurora and Tithonus, became King of the Egyptians, and brought assistance to Troy when it was being besieged. Their

sally had initial success, but the Greeks rallied and Achilles killed Memnon. Aurora mourned for her son, and her tears still wet the grass at dawn.

bellona Banks 1911, Isoperla. Bellona was a Roman goddess of war. In modern times a Bellona Club in London was the scene of the "unpleasantness" described in one of Dorothy Sayers' mysteries, and asteroid No. 28 has been given the name Bellona.

beroe Newman 1839, Leptoperla. Beroe was the nurse of one of Zeus's paramours, named Semele, who gave birth to Bacchus. Jealous Hera assumed the appearance of Beroe and tricked Semele into a fatal situation, but Bacchus survived.

Capnia Pictet 1841. This genus might have been named after Capaneus, an Argive prince who was one of the "Seven against Thebes." He was killed in that enterprise, but was restored to life by Asclepius, who had that unusual technical skill. Pluto complained to Zeus that Asclepius was repatriating too many of his guests, but Zeus pointed out that they would all be back sooner or later.

More prosaic is Brown's suggested derivation of Capnia from Greek kapnos (smoke), presumably because of the dark color of all its species.

cassida Barnard 1934, Aphanicercella. Most probably this is from Latin cassis, -idis, a cap. Nevertheless it would be interesting if Barnard had had in mind Cassandra, who was a daughter of Priam, King of Troy. She had the gift of prophecy, but it had been decreed that her prophecies, although true, would never be believed, as happened when she weepingly predicted the outcome of the great siege. When Troy fell, she became part of Agamemnon's booty, and bore him twin sons on their journey south. When they reached Mycenae, Agamemnon, Cassandra, and the two boys were all killed at the instigation of Agamemnon's embittered wife Clytaemnestra, whom he had forcibly married after killing her previous husband. She in turn was killed by her own son Orestes to avenge his father's murder; and on it went, providing abundant lachrymose material for a succession of Greek tragedians.

clio Newman 1839, Isogenus (now Clioperla). Clio was a sea nymph who was also the Muse of History. One story is that she was the mother of Linus, a musician whose fame became so great that he aroused the envy of Apollo, who eventually liquidated this competition.

clymene Newman 1839, Chloroperla (now Neoperla). Clymene was a nymph who became, by Apollo, the mother of Phaeton. This lad tricked his father into letting him drive the steeds that pull the Sun across the firmament. This he did so inexpertly that both heaven and earth were badly scorched, and Zeus finally had to hurl a thunderbolt and strike him dead. The Sun's chariot at once got

back onto its normal course, although it is not clear why this should have happened with no one at all holding the reins.

Another Clymene was a daughter of King Catreus of Crete who, suspecting that she and her sister Aerope were plotting against him, sold them both as slaves to Nauplius. However Nauplius married Clymene and they had two sons, one of them Palamedes, whom the ancient Greeks credited with having invented most of the letters of the alphabet.

Much later, Clymene's ghost was one of those that Odysseus conjured up from Hades using the rites and sacrifices prescribed by Circe the enchantress.

cydippe Newman 1839, Chloroperla (now Alloperla -- not recognizable to species). In Section 165 of Book 7 of his "Histories," Herodotus mentions that Cydippe was a daughter of Terillus, the deposed ruler of Himera on the north coast of Sicily. She was married to Anaxilaus of Phegium, who with her father negotiated an attack on Himera by a force of Carthaginians and others in 480 B.C. This was opposed and defeated by Gelon, ruler of Syracuse, who consequently was too busy that year to send any help to the Greeks, who had asked for assistance in repelling the invasion from Persia under Xerxes. However Greece managed to survive with assistance from Nature only. A northeast gale reduced the Persian fleet so severely that they later lost a great naval battle at Salamis, and in 479 their army was routed at Plate. What Cydippe thought or did during these stirring times is not on record.

cyrene Newman 1845, Chloroperla (now Austroperla). Cyrene was the daughter of a mortal father and a water nymph or Naiad. Like her mother, she was equally at home above water or underneath it. She became a famous huntress on Mount Pelion, pursuing and killing even boars and lions. Her prowess and her beauty attracted Apollo, who took her to Libya, where she bore Aristaeus, but she continued to stalk the fiercer fauna. Aristaeus became an apiarist, but suddenly his bees all died. Puzzled, he went to consult his mother, who happened to be visiting the Naiads' local underwater clubhouse. With some unwilling help from Proteus they learned both the cause and the remedy. Aristaeus had unwittingly caused the death of Eurydice, and to atone for this and to get back into business he must sacrifice four bulls and let their carcasses sit for nine days, exposed to vertebrate and insect scavengers. Returning to the place of sacrifice, Aristaeus was able to capture swarms of bees that emerged from the skeletons (though we may wonder whether they were not really blowflies).

Another tale is that Careen was the mother, by Ares, of the Thracian King Diomedes, he who owned the four carnivorous mares that Heracles had to capture as his eighth Labour.

dacica Klapálek 1907, Perla. Dacia was a Roman province situated north of the lower Danube River, having approximately the boundaries of modern Romania.

hesperiae Consiglio 1958, Nemoura.

Hesperoperla Banks 1938. Hespera was the Greek word for evening, and Hespere was one of the three sweetly-singing Hesperides, who lived near the western ocean. Hesperus was the planet Venus when seen as an evening star; it had not yet been identified with the morning star, Phosphorus.

ione Needham 1909, Perla; unidentifiable according to Illies. The name Ione was not in any of the indexes. Ion was the eponymous ancestor of the Ionians. Knocking off another letter, Io, daughter of Inachus, was a princess who fled or was abducted from Argos by a Phoenician trader. According to Herodotus, this was the beginning of the hostility between Europe and Asia that led to the siege of Troy and the Persian invasions under Darius and Xerxes.

Another story has Io fleeing to Colchis in the form of a heifer chased by Zeus in the guise of a 'gadfly' (Tabanus?).

Leuctra Stephens 1835, as subgenus of Nemoura. Leuctra is the name of a town on the west coast of the middle of the three southern extremities of Greece, about 40 km southwest of Sparta. A battle between Thebes and Sparta took place there in 371 B.C., in which Sparta was defeated, ending her 50-year dominance in Greece.

ligea Newman 1839, Isogenus (a nomen oblitum according to Illies). Newman's customary practice suggests a classical origin for this name. The match is with Ligys, the leader of the band of Ligurians who tried to steal a herd of cattle from Heracles, without success.

lycorias Newman 1839, Perla (now Acroneuria). Lycus ("wolf") was a member of an early dynasty at Athens, who became ruler of nearby Euboea. Later he was exiled and went to Asia Minor where Lycia was named after him.

myrmidon Mabille 1891, Perla (now Potamoperla). Graves says that myrmidon means "ant," but it was the name of a region in the central part of the main peninsula of Hellas. Its soldiers, led by Achilles at Troy, became a by-word for savagery in war or peace. Priam's grandson Aeneas, who according to Virgil escaped from Troy after the siege and sailed to Carthage, was asked by Queen Dido to tell the story of his misfortunes. These, he said, were so harrowing that on hearing them even a Myrmidon would break into tears.

naica Provancher 1876, Perla (now Sweltsa). The Naiads were nymphs of springs and fountains, all female apparently, so that for reproduction the cooperation of a god or a mortal was necessary. Careen history was outlined above. Another Naiad was less fortunate in her choice of a mate. She had three sons by Thyestes, a brother of Atreus, King of Mycenae. But there was no brotherly love between the two men, and although he was unable to touch Thyestes, Atreus managed to kill his sons.

oenone Neave 1929, Capnia. Oenone was a daughter of the river Oeneus in Phrygia, who was taught medicine by Apollo and the art of prophecy by the earth-goddess Rhea. She became a shepherdess in the region of Mount Ida near Troy, and pastured her flocks not far from those of Paris, before the latter had become identified as a son of Priam. The two became lovers, and had a son named Corythus. But Paris was stupid enough to become judge of a beauty contest, with many dire consequences for himself and others. Oenone was unable to dissuade Paris from going to Sparta to claim Helen; nevertheless, she offered to heal him if ever he were wounded. But when this actually happened during the siege of Troy, she at first refused her help because of jealousy of Helen, and although she relented almost immediately, it was then too late to save him. Tortured by remorse, she flung herself on Paris's funeral pyre and perished.

opis Newman 1839, Chloroperla (now Paracapnia). Opis, meaning "awe" according to Graves, was an alternative name for the moon goddess Artemis of the silver bow, about whom there are legends galore. One tells how she was tricked into shooting an arrow at her hunting companion Orion, who was swimming too far away to be recognizable, and unfortunately her aim was as accurate as usual. Artemis appealed to Zeus, who refused to restore Orion to life, but at Artemis's insistence he was given a choice spot up in the heavens where she would be with him from time to time.

Opis was also the Greek name for Akshad, a city on the Tigris River where Alexander in 324 B.C. held a great feast of reconciliation between Greeks and Persians. He had himself married a daughter of Darius III, and suggested to his generals that they too should make Persian alliances. But Alexander died the following year, and so too did his plan for one great Graeco-Persian empire.

orpha Frison 1937, Chloroperla (now Haploperla). This name may be related to that of Orpheus, who was a Thracian poet, singer and lyre virtuoso. He was one of the crew of Jason's ship Argo, and did much to keep up the spirits of those voyagers and to soothe incipient quarrels. When the Argo sailed past the Sirens, whose singing had been a fatal attraction for so many sailors, Orpheus played and sang even more harmoniously than they could. Thus the Argonauts were spared, and the Sirens died of frustration. Eventually, however, after many adventures, Orpheus was killed by the Maenads ("mad women").

plutonis Banks 1937, Nemoura (of uncertain position according to Illies). Pluto was King of the Underworld. His real name was Hades, but he was so much feared that it was considered very unlucky even to mention that name, so the placatory euphemism Pluto (the wealthy one) was substituted. There is a parallel here with the name Yahveh or Jehovah, which pious Jews have refused to pronounce since about 500 B.C., using Adonai (Lord) instead. Hades carried off and married his niece Core or Persephone, but her mother Demeter compelled Hades to let her spend nine months of each year above ground.

proteus Newman 1838, Pteronarcys. The name Proteus ("first man") appears in several legends. In one, he is Proteus the sea god, a son of Neptune, who could change his shape instantly into any form whatever, animal, vegetable or mineral. As a seer, he was famous for the accuracy of his forecasts, but he would prophesy only when captured and bound with chains. His favorite haunt was Pharos on the coast of Egypt, where he had a "herd" of hundreds of seals. Menelaus, King of sparta and husband of Helen, was blown off course when returning from Troy, and spent several years in southern waters, unable to get a favorable wind. Finally he went to seek advice from Proteus at Pharos. He and three companions donned sealskins and lay in wait from Proteus, captured and managed to hold him in spite of his successive transformations into a lion, a snake, a tree, a fire, a waterfall, and so on. When finally restrained, Proteus told Menelaus that his brother Agamemnon had been killed, and that he would obtain a southerly wind only after he had raised a cenotaph in his memory. This was done, and soon Menelaus and Helen were back in Sparta.

selene Consiglio 1959, as subspecies of Nemoura cinerea. Selene (moon) and Helius (sun) were children of Titans. Selene became infatuated with Endymion, a son of Zeus, by whom she had produced no less than 50 daughters! (For once, nothing is said about sons.) Selene is sometimes confused with Artemis, another moon goddess.

spio Newman 1839, Chloroperla (now Neoperla). Spio was a nereid or sea nymph, one of the many daughters of Oceanus and Doris.

thalia Newman 1839, Eusthenia (now Tasmanoperla).

thalia Ricker 1952, Alloperla (now A. severa Hagen 1861). Thalia ("festive") was the name of the Muse of Comedy, and also that of one of the three Charities or Graces. Thalia the Muse was mother of the Corybantes, the "crested dancers" of the festival of the winter solstice, now called Christmas.

vercingetorix Aubert 1963, Protonemura. Vercingetorix was a Celtic chieftain who resisted Roman expansion in Gaul about 50 B.C., but was eventually defeated and captured by Julius Caesar.

Addendum. Michael Ventris's reading of the "Linear B" tablets at Pylos shows that in Mycenaean times the ruler of a city-state had the title of Wanax, not Basileus as in Homer and classical Greek. If I had known this 50 years ago, I would certainly have described a species wanaxi, or perhaps even a subgenus Wanaxus. If anyone else likes the sound of the name, I would be pleased to see it used.

RECENT PLECOPTERA LITERATURE (CALENDAR YEAR 1995 AND EARLIER)

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