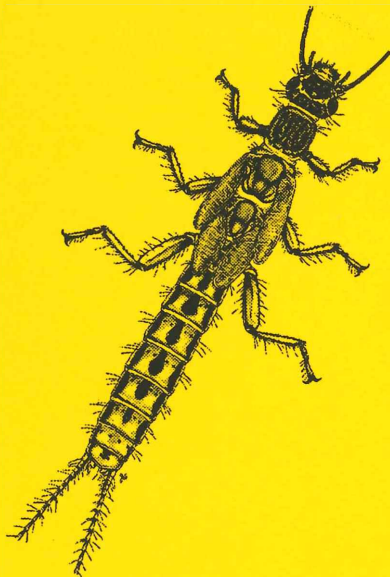

P E R L A
Newsletter and Bibliography
of the
International Society of Plecopterologists



PERLA No. 15, 1997

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University of North Texas
Denton, Texas 76203**

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 15 is the nymph habitus of *Paraleuctra occidentalis* (Banks) from the Flathead River, Montana, collected by Jack Stanford; drawn by Jean Stanger-Leavitt. The Managing Editor solicits your submittal of any drawing of a stonefly nymph or adult for possible reproduction on the cover of PERLA 16 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 15 in one of the following ways, in order to be kept on the mailing list for PERLA 16: (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 15 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.

**REQUEST FOR PLECOPTERA SYMPOSIUM
SCHOLARSHIP DONATIONS FOR THE XIII
INTERNATIONAL SYMPOSIUM ON PLECOPTERA,
TUCUMÁN, ARGENTINA, 1998**

In PERLA 12 (1994, p.5), Peter Zwick, on behalf of the Standing Committee for the International Symposium on Plecoptera, made a request for Scholarship Donations to support attendance and participation of international colleagues at the XII Symposium in Lausanne, Switzerland. He reported in PERLA 14 that 5 individuals made donations totaling 3800 DM (90% of the total came from one generous donor).

These funds, and special assistance from Peter Landolt and Michel Sartori, organizers of the Lausanne Symposium, made possible the participation of several colleagues from former socialistic countries that would otherwise not have been able to attend. Their presence for the first time at our Symposia added great dimension to our friendships and exchange of stonefly science (see letter from Standing Committee by Peter Zwick, PERLA 14, p.9).

Peter Zwick has asked the Managing Editor to include a new call for donations to the International Scholarship Fund to further promote invitations for deserving colleagues to participate in the upcoming XIII Symposium in Tucumán Argentina, in August, 1998. Your Standing Committee is hoping for a much better general response in donations to this fund, and Peter Zwick will be negotiating with Professor Dr. Eduardo Dominguez for additional support.

Will you please give serious consideration to making a donation to the Scholarship Fund as soon as possible? -- so that there will be adequate time to determine the number of scholarships and level of support possible for the Tucumán Symposium. Donations in amount of approximately \$500 US have already been committed by two individuals.

Please send your donations to: Professor Dr. Peter Zwick,
Limnologisch Flußstation, des Max-Planck-Instituts für Limnologie, D-
36105 Schlitz, Postfach 260, Germany. To reduce exchange costs, please send the donation in the form a check designated in German DM and specify "Plecoptera Symposium Scholarship Donation".

FIRST ANNOUNCEMENT OF
XIII INTERNATIONAL SYMPOSIUM
ON PLECOPTERA AND
IX INTERNATIONAL CONFERENCE ON EPHEMEROPTERA

FIRST ANNOUNCEMENT

Tafí del Valle - Tucumán
ARGENTINA



IX
**International Conference
on Ephemeroptera
19-21 August 1998**

XIII
**International Symposium
on Plecoptera
20-23 August 1998**

LOCATION

The IX International Conference on Ephemeroptera and the XIII International Symposium on Plecoptera will be held jointly in the village of Tafí del Valle. It is a small town of about 7,000 inhabitants, situated at a height of 2000 m above sea level at 107 km distance of San Miguel de Tucumán (capital of the province). Surrounded by high mountains, Tafí is a privileged site for its beauty, the mildness of its climate and the wealth of its cultural inheritance. The winter is the dry season in the region, with cold nights and mild, sunny days. The friendly environment in the town will permit the relaxed interaction among the participants.

PROGRAM

Oral and poster presentations on contributed papers by participants are invited. Poster presentations are strongly encouraged. Only one paper per Senior author will be accepted. It is intended that presentations will be published as conference proceedings. Manuscripts will be subjected to referees before acceptance for publication. Projection facilities for overhead transparencies and 35 mm slides will be provided.

It is planned to have conference on topics of general interest such as:

Systematics

Ecology

Biogeography

Water bodies conservation

Field trips, social events and visits to traditional places will be included in the activities.

SCHEDULE (preliminary)

August 1998

17-21: IX Conference on Ephemeroptera

20: Mayfly-Stonefly joint Symposium

21: Joint Field Trip

20-23: XIII Symposium on Plecoptera

POST CONFERENCE TOURS

Several post-Congress tours will be arranged to different places in Argentina after August 23, 1998. Among the choices will be tours in Bariloche (Patagonia); Iguazú falls (NE Argentina), and Humahuaca (NW Argentina).

ACCOMMODATIONS

Accommodations will be available in hotels and motels of different categories and prices. Meals can be taken individually in diverse restaurants.

FEES (provisional)

Participant at:

Ephemeroptera Conference: US\$ 150

Plecoptera Symposium: US\$ 125

Both Congresses: US\$ 220

Fees include: Abstract, Program and Proceedings, morning and afternoon coffee, Conference field day, Congress dinner and Souvenir.

DEADLINE

Further information about the scientific program, accommodation, availability of congress scholarship will be provided in the second announcement.

If you wish to receive more information please request no later than May 30, 1997 to:

Dr. Eduardo Dominguez

Mayfly-Stonefly Congress Facultad de Ciencias Naturales (INSUE)

Universidad Nacional de Tucumán

Miguel Lillo 205

4.000 Tucumán, ARGENTINA

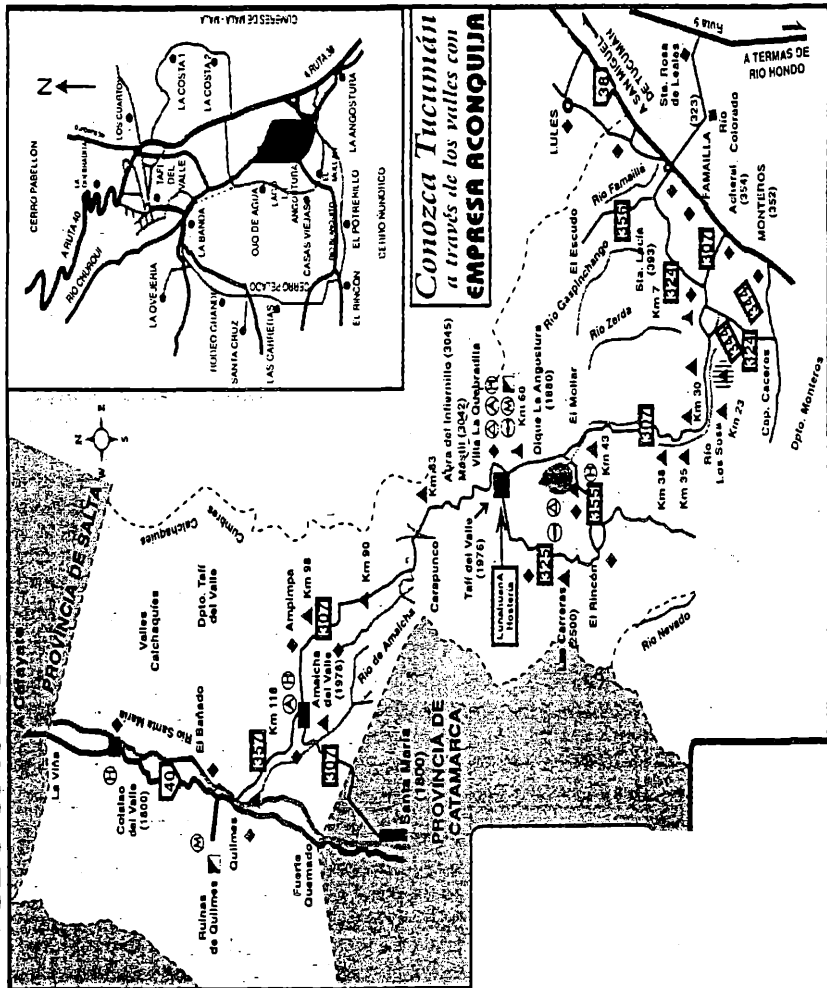
FAX# 54(81)248025

E-mail: mayfly@unt.edu.ar

Editor's Note: Since Dr. Dominguez had no further update of information at presstime of this issue of PERLA, you should contact him, even though later than the above May 30 deadline, if you are interested in receiving further announcements.

REFERENCIAS GEOGRÁFICAS - ACCESOS

GEOGRAFICAL REFERENCES - ACCESS



REFERENCIAS

- Ruta Nacional
- Ruta Provincial
- Ruta Pavimentada
- Ruta Enclavada
- Huella o Proyecto
- Campamento D.P.V.
- Campamento con radio
- Vivero
- Posta Turística
- Centro Asistencial
- Hoteles - Hostelerías
- Camping
- Museos
- Artesanías
- Arqueología
- Pesca
- Altura sobre nivel del mar

REFERENCES

- National Road
- Provincial Road
- Paved Road
- Gravelled Road
- Path or Planned Road
- Provincial Road Direction
- Camp equipped with radio
- Camp equipped with telephone
- Plant Nursery
- Tourist Relay
- Medical Centre
- Hotels - Inns
- Camping Site
- Museums
- Artesanías market
- Archaeological site
- Fishing site
- Minimal level

Obituary in honor of the late
Professor Arden R. Gaufin

1911-1997

By: R.W. Baumann

Arden R. Gaufin was born in Salt Lake City, Utah December 25, 1911 and passed away on January 8, 1997. He married Ruth Lund in September 1936 and they were the parents of two children: Richard and Marilyn. Arden attended the University of Utah where he received his BS and MS degrees and then he went to Iowa State University, where he received his PhD in 1950. His doctoral dissertation was a study of the production of the bottom fauna of the Provo River, Utah.

He was very interested in the idea of using aquatic macroinvertebrates as indicators of the relative health of flowing water ecosystems. His first position after graduating was at the Public Health Service Environmental Health Center at Cincinnati, Ohio. There he met Clarence Tarzwell and together they championed the idea that aquatic insects were really twenty-four hour instream indicators of stream conditions. In fact, he served on the Public Health Service National Advisory Council which established water pollution control standards in the 1960's. It was during this time that Arden became one of the early members of the Midwest Benthological Society. Arden was an avid supporter of this organization that is now the very successful North American Benthological Society.

Arden taught at the University of Utah and University of Montana where he was Professor of Biology. He also spent many summers from the late 1950's to the early 1970's at the University of Montana Biological Station, Flathead Lake Montana. These summers in Montana and the nearby states and Canadian provinces were some of the highlights of his life.

When Arden became interested in stoneflies he contacted several colleagues such as John Hanson, Stan Jewett, Bill Ricker, and Herb Ross for help and advice. They encouraged him and the result was a positive surge of interest in the stonefly fauna of the Intermountain West that extended into the rest of North America. The earliest papers that Arden wrote on Plecoptera were published in 1955, (The Stoneflies of Utah) and 1956 (The Stoneflies of Ohio). Although these were only lists, they began what was to be a fruitful career as Arden encouraged promising students to study his beloved stoneflies. In fact, many

colleagues would say that Arden's greatest contribution to plecopterology is the many students that he influenced. He was always ready to listen to new ideas and would willingly seek funding to support a new graduate student. His help

extended not only to those that are included as co-authors in the following list of stonefly references but to many others that studied other aspects of aquatic biology. Arden helped many students begin successful careers in biology and for this we owe him a debt of gratitude.



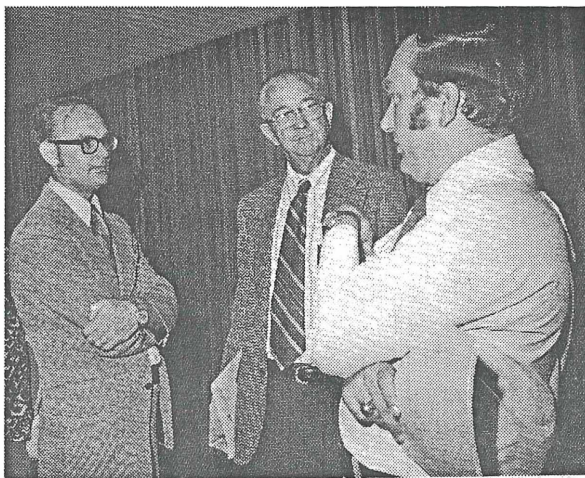
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Papers on Stoneflies (Plecoptera)**

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Drs. Bill Stark, Arden Gaufin and Charles Nelson at the 1974 International Plecoptera Symposium in Washington, D.C.

COLLECTING TRIP TO THE YUKON TERRITORY

Last June, 1996, two Texans, Ken Stewart and John Abbott, ventured up North to one of the last great frontiers in North America on a week-long stonefly expedition. We flew into Fairbanks, Alaska late on the night of June 19 where we met Mark Oswood from the University of Alaska at Fairbanks. We were immediately introduced to two of the things Alaska is famous for; long days, it was perfectly light at midnight, and the mosquitoes which gave us no mercy as we walked from the airport terminal to the car.

Dr. Oswood graciously arranged for us to use a four-wheel drive suburban on our trek across Northwestern Canada. We stocked up on supplies and started out on our journey by noon the next day. We headed southeast towards Tetlin Junction and then back North on the "Top of the World Highway" (Taylor Highway) towards Dawson and the beginning of the Dempster Highway. The Dempster is one of only two roads in North America that cross the Arctic Circle. It is a scenic 395 km north to Inuvik on this road. We collected nearly every stream and river, including the Klondike, Blackstone, Ogilvie, Peel and Mackenzie crossing this rugged terrain. By pure chance we found ourselves camping on the Arctic Circle the night of the Summer Solstice (June 22). After making our way back down the Dempster Highway, we continued heading south on the Klondike Highway collecting at such fortuitous sites as the Stewart River at Stewart Crossing. From here we headed east on the Robert Campbell Highway, a definite contender for "dustiest road in North America," until we reached the Ross River where we headed north on the Canol Road as far as possible. Much of the road was closed due to a forest fire. Continuing our trek south, again collecting every stream we came across, we landed in Watson Lake, from where we headed back west to Whitehorse, the capital of the Yukon. On our way back North we connected up the Alaska Highway and enjoyed scenery like the Saint Elias Mountains, Kluane Lake and Tetlin National Wildlife Refuge that only the far North can produce. We arrived back in Fairbanks on the 29th for a couple of days of relaxation before flying

back to Dallas. This trip was one of the last in a series to document the diversity of stoneflies in Alaska and Northwestern Canada for a book being written by Ken Stewart and Mark Oswood. The book will extend knowledge of western Nearctic stonefly distributions particularly in Alaska, British Columbia, the Yukon and western portions of the Northwest Territories.

We have identified material from only about 10% of these collections to date, and have good series of the following species.

Alloperla serrata Needham & Claassen
Alloperla severa (Hagen)
Arcynopteryx compacta (McLachlan)
Capnia confusa Claassen
Capnia nearctica Banks
Capnia pileata Jewett
Diura knowltoni (Frison)
Eucapnopsis brevicauda Claassen
Hesperoperla pacifica (Banks)
Isocapnia grandis (Banks)
Isogenoides colubrinus (Hagen)
Isoperla decolorata (Walker)
Isoperla petersoni Needham & Christensen
Nemoura arctica Esben-Peterson
Paraleuctra occidentalis (Banks)
Perlomyia utahensis Needham & Claassen
Plumiperla diversa (Frison)
Pteronarcella badia (Hagen)
Pteronarcys dorsata (Say)
Sweltsa coloradensis (Banks)
Taenionema pacificum (Banks)
Taenionema pallidum (Banks)
Triznaka signata (Banks)
Utaperla sopladora Ricker

REPORT ON THE FIFTH NORTH AMERICAN PLECOPTERA SYMPOSIUM

The Fifth North American Plecoptera Symposium was held by the North American Plecoptera Society (NAPS) June 6-8, 1997, at the Université de Montreal, Quebec, Canada. The hosts, Peter and Françoise Harper, planned a very interesting and scientifically stimulating meeting consisting of presented papers and poster sessions, and informal discussions. Great fellowship was enjoyed by the 27 participants during an evening dinner at one of Montreal's fine restaurants, the Ouzeri, and during the several other activities including visits to the University of Montreal Insect Collection and Montreal Insectarium, and field trips to the University Biological Station and Mont-Tremblant Provincial Park. Delicious and bountiful lunches and a BBQ at the Biological Station were prepared with the personal touch of Françoise Harper and Louise Cloutier. Participants had the pleasure and opportunity to visit again with Bill Ricker and Noel Hynes.

Eleven papers, three posters, a video on vibrational communication in insects and a demonstration of an Interactive CD textbook of aquatic entomology were presented in the Friday and Saturday sessions:

A. PAPERS:

1. **Neoperla coosa, a new stonefly species from the Coosa-Little River basin of Alabama, USA** presented by Angela D. Smith and Bill P. Stark
2. **The Nemouridae (Plecoptera) of Eastern North America** presented by Richard W. Baumann
3. **Life cycle of *Isoperla lata* Frison (Plecoptera; Isoperlinae) in a central Wisconsin trout stream** presented by John B. Sandberg and Stanley W. Szczytko.
4. **Winter stoneflies of Ohio** presented by Brian J. Armitage and Lynne Kettler.
5. **Genetic structure of *Yoraperla brevis* (Peltoperlidae) populations: gene flow within and among montane streams** presented by Jane M. Hughes, Peter B. Mather, Andrew L. Sheldon, and Fred W. Allendorf.

6. **The *Sweltsa onkos* complex** presented by B. C. Kondratieff and R. F. Kirchner.
7. **Systematics of the stonefly genus *Suwallia* Ricker (Plecoptera: Chloroperlidae)** presented by Kevin D. Alexander and Kenneth W. Stewart.
8. **Stoneflies of Indian Creek watershed, Southwest Pennsylvania, USA** presented by Jane Earle.
9. **Review of the Perlodid genus *Yugus* (Perlodinae: Perlodini)** presented by Charles H. Nelson.
10. **Leuctridae of Eastern North America** presented by P. Harper.
11. **Plecoptera species and distribution in Pennsylvania.** E. C. Masteller presented by Brian Arimtage).

B. POSTERS:

1. **A virtual field guide to common North American aquatic insects** presented by C. Riley Nelson, Bob Ourso, and Michelle Trautwein.
2. **Southeastern *Alloperla* (Plecoptera: Chloroperlidae): a scanning electron microscopy study** presented by Mark Lyon and Bill P. Stark.
3. **Scanning Electron Microscopic Images of Stonefly Nymphs** presented by Narinder N. Kapoor.

C. SPECIAL PRESENTATIONS:

1. Demonstration of the “Tree of Life” and presentation of an interactive CD textbook of aquatic entomology by Riley Nelson.
2. Presentation of a Video “Vibrational communication and mate-searching behaviour of Arctoperlarian stoneflies” (28 minutes) by Kenneth Stewart.

OTHER ANNOUNCEMENTS

The 9th International Symposium on Trichoptera will be held in Chiang Mai, Thailand, from 5 to 10 January 1998. Fellow plecopterists are welcome. For information, write to:

Dr. Hans Malicky
Sonnengasse 13
A - 3293 Lunz am See, Austria

Proceedings of the VIII International Conference on Ephemeroptera and XII International Symposium on Plecoptera.

Dr. Michel Sartori has announced in March, 1997, that Proceedings of the Lausanne Symposium will be published at the beginning of April, 1997, and are normally available at the end of that month. Persons who attended the joint stonefly and mayfly meeting will receive a free issue, and each first author of contributed, reviewed papers will receive 100 reprints.

Tape Available on Bill Ricker's Professional Life.

A video tape entitled "**A Passion for Science; Bill Ricker: A Scientific Journey**" was produced by Rod Langley and Associates in 1994. It is a fascinating story of Bill Ricker's professional life in fish population dynamics, lake studies, salmon biology and plecopterology. Among his many awards was the Lifetime Achievement Award for exemplary and continuing contributions to knowledge of the Plecoptera in 1992, at the Treehaven Symposium. The videotape is distributed by:

Image Media Services
Unit 150, 12140 Horseshore Way,
Richmond, BC Canada V7A4V5;
Tel. 604/272-7707 FAX 604/272-7798.

COMPILED BIBLIOGRAPHY ON PLECOPTERA TO BE MADE AVAILABLE.

Our colleague, Dr. Carlalberto Ravizza, has kindly informed your Managing Editor that he has, over the past year, compiled a Plecoptera bibliography from PERLA 1-14, the catalogues of Claassen (1939), Illies (1966), and Zwick Handbuch (1980), and that he wishes to make his corrected, scanned files available to all interested colleagues in the form of a diskette to be passed around like a chain letter and/or for publication in PERLA.

Since I (Ken Stewart) received this gracious offer in the mail just a few days before PERLA 15 went to press, I have decided to publish the entire bibliography in PERLA 16 next year. I will indicate again at that time how grateful we all are at having this extensive resource made available to us by Dr. Ravizza and for this work being initially brought to my attention by Peter Zwick.

REVIEW OF THE CHLOROPERLID STONEFLY GENUS SWELTSIA IN EASTERN NORTH AMERICA

This review has revealed that *S. onkos* Ricker is a complex of at least three species. The true *onkos* is restricted in distribution from Atlantic Canada, Quebec and Ontario south to Pennsylvania. Species 1 is distributed throughout the Cumberland and Allegheny Plateaus of Ohio, Kentucky, West Virginia, Virginia and Tennessee. Species 2 is restricted to the Appalachian Highlands of Virginia. We will be publishing the results of this study this fall. Submitted by B. C. Kondratieff and R. F. Kirchner.

**ANNOUNCING a 28-minute videotape
"VIBRATIONAL COMMUNICATION AND
MATE-SEARCHING BEHAVIOR OF STONEFLIES"**

(Presented at the Plenary Session of the North American Benthological Society Annual Meeting in San Marcos, TX, May, 1997)

This tape reviews the vibrational mode of intersexual communication in insects; insect groups that have adopted it, characteristics, signaling methods, and information content of signals. Emphasis is on the Plecoptera (stoneflies) that appear to have evolved the most advanced and complex system of vibrational language known in insects. Contains examples of major patterns of drumming and tremulation in Arctoperlarian stoneflies (photos of stoneflies, oscillographs of signals while you hear the signals, videotaped drumming duets) discussion, evidence and examples of our hypothesis on evolution of drumming in stoneflies, and animations and videotaped sequences of search patterns of selected species of stoneflies in the laboratory and field, in relation to their vibrational signaling.

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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.

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

Submitted by K.W. Stewart and Kevin Alexander

Suwalliini Revision

This summer, we are completing our revision of the stoneflies of the monophyletic chloroperlid genus *Suwallia* Ricker and the monotypic genus *Neaviperla* Ricker that presently constitute the tribe Suwalliini Surdick. *Suwallia*, previously composed of six Nearctic and nine Palearctic species, has remained a problematic genus because of a lack of detailed comparative study of external and internal genitalia and less weighted but useful characters such as pigment patterns. Our approach to revision of the tribe has been to revisit North American type localities for topotypes, collect fresh males for aedeagal extrusion and detailed examination of the button-like epiproct, hemitergal processes and aedeagus using both dissecting and scanning electron microscopy. Palearctic species have been obtained from Japan, Russia and Mongolia for further study without the benefit of fresh material having extruded aedeagi. We have found the genotype *Suwallia pallidula* (Banks) to be composed of at least four cryptic species based on lobation, spinule patterns and patches of sclerotization of the aedeagus as correlated

with pigment patterns and other external characters. Five undescribed species of Nearctic *Suwallia* have been discovered. Several species are redescribed, one species of *Alloperla* is transferred to *Suwallia* and one species of *Suwallia* is raised from synonymy. A generic level rearrangement is made. Keys to adults and a synopsis of the phylogeny is also presented. This work is being presented at the conference in Montreal, and is anticipated to be published within one year.

Life History of *Perlinella drymo*

We have completed one year of field sampling for a study of the life history of *Perlinella drymo* (Newman) from Williams Creek, Cook County, Texas. Williams Creek is a first order stream with a substrate of coarse limestone gravel. The stream dried completely during the summer of 1996, except for occasional small pools which were fed by the remnants of Davidson Spring flowing from Trinity Sands. We have collected seven stonefly species from this small, intermittent stream making it one of the most diverse stonefly faunas known in the state of Texas. We are specifically looking at what survival strategies *P. drymo*, as well as other stonefly species, utilize to survive in this intermittent stream.



Kevin Alexander at Williams Creek, Texas

RECENT PLECOPTERA LITERATURE (CALENDAR YEAR 1996 AND EARLIER)

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