

PERLA

Annual Newsletter and Bibliography of
The International Society of Plecopterologists



Hesperoperla hoguei Baumann and Stark
Photograph by Bill P. Stark

PERLA NO. 26, 2008

Department of Bioagricultural Sciences
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International Society of Plecopterologists
Available on Request to the Managing Editor

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PERLA SUBSCRIPTION POLICY

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

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

It is therefore important that you respond to this receipt of PERLA 26 (2008) in one of the following ways, in order to be kept on the mailing list for PERLA 27 (2009): (1) pay your annual dues, (2) make a \$10 donation (institutions), or (3) request a waiver. A form and self-addressed envelope are included with this issue, (PERLA 26) for your convenience in responding. NO CREDIT CARD CHARGES CAN BE ACCEPTED.

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

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

Members or institutions whose dues remain unpaid for two consecutive years, or have not been granted exchange, waiver or emeritus status, will be dropped from the PERLA mailing list.

ANNOUNCEMENTS

Third call for the International Joint Meeting on Ephemeroptera and Plecoptera 2008

Dear colleagues,

The XII International Conference on Ephemeroptera and the XVI International Symposium on Plecoptera is rapidly approaching. So far more than 100 participants (including 20 accompanying persons) from 30 countries are already registered for the meeting. The deadline for regular registration fees and submission of abstracts ends by of February 28, so there is not much time left! So I cordially invite all colleagues who want to attend the meeting to register soon and submit their abstracts by the end of February.



To do so please visit the conference website at <http://www.jointmeeting08.naturkundemuseum-bw.de> for further instructions. **All participants are also requested to pay their conference fees by the end of February to qualify for the regular conference fees.** Please make also sure to arrange your accommodation soon, the contingents we arranged with some hotels are only reserved until the end of February. There are only a few places left at the International Youth Hostel (4 beds, Feb 1st), but there are still 18 beds available at the International student hostel (Feb 1st). Please check the website for an update on availability.

There will be a major update of the conference site in March. All registered participants and those who have subscribed to the conference newsletter will receive a respective notifier by e-mail. Then you will be able to learn more about the specifications to prepare your poster or talk.

I look forward to meeting you in Stuttgart!

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Participants from 30 countries will be in Stuttgart, Germany, June 8-14, 2008 for the XII International Conference on Ephemeroptera and the XVI International Symposium on Plecoptera.

The International Society of Plecopterologists have awarded more than US \$3,400 to Tomas Ruginis, Lithuania, Maribet Gamboa, Venezuela, Olga Loskutova, Russia, and Giovany Guevara Cardona, Chile to attend our meeting in Stuttgart. Dr. John Brittain is thanked for his hard work in the evaluation process.

Below are instructions for persons interested in hosting future international conferences and symposia provided by Dr. John E. Brittain.

How to host a conference

Representatives from the International Conferences on Ephemeroptera and the International Society of Plecopterologists have established a set of guidelines for submitting proposals to host the joint conferences. These guidelines are:

Preliminary proposals

Preliminary proposals to host a conference may be submitted six years prior to the year of the proposed conference, but a final vote on the conference site will not be made until three years prior to the actual conference date.

Final proposals

1. Proposals should be submitted at least one month prior to the conference during which the proposal will be officially presented.
2. A copy of this proposal should be sent to the chair of each committee – International Conference for Ephemeroptera (Michel Sartori, michel.sartori@vd.ch) and the International Society of Plecopterologists (John Brittain, j.e.brittain@nhm.uio.no).
3. Proposal should be submitted by e-mail. This facilitates distribution of the proposal to the members of the two committees.
4. Proposals should contain detailed information regarding plans to host the conference.

Ninth North American Plecoptera Symposium at Sagehen Creek Field Station, California June 2009

Dr. William D. Shepard
Essig Museum of Entomology
201 Wellman Hall
University of California
Berkeley, California 94720 USA
william.shepard@CSUS.edu

The **Ninth North American Plecoptera Symposium** will be held at the Sagehen Creek Field Station (Sagehen), in the Sierra Nevada of California during the last half of June 2009. This is the site of field collecting during the first NAPS meeting, 26 years ago. Sagehen is in the Tahoe National Forest, on the eastern slope of the northern Sierra Nevada, 20 mi north of Lake Tahoe and 8.4 mi north of Truckee, California. Sagehen Creek runs through the station grounds, and it is **FULL** of stoneflies. This is the site of a long study on stonefly emergence in the mid-late 1960s by Andy Sheldon. Collecting will be allowed in the Sagehen Creek during the off-hours of the meeting, and collecting is good in many nearby areas. One afternoon will be available for individual collecting during the meeting, as done previously.

The field station is currently undergoing renovation so information on housing on the website is generally not reflective of conditions to be available in 2009. For instance, by then all housing will be propane heated. Freezing temperatures have been recorded every day of the year, so be prepared for cold weather. However, most summer days are quite nice and often very warm. Parking is very limited so carpooling is encouraged.

Those flying will want to consider arriving in Reno, Sacramento, Oakland or San Francisco. Flight costs vary greatly depending on departure and arrival points, so check all of these airports for arrival potentials. There will be no shuttle to Sagehen. There are no recreation activities at the station, except for hiking, birding, etc. However, numerous types of recreation are available before or after the meeting in surrounding areas such as Lake Tahoe, Reno, Sacramento and the San Francisco Bay area. These same areas offer outstanding collecting opportunities as well.

The meeting dates have not yet been selected due to considering other activities at Sagehen. But, they will involve 3-4 days during the last half of June 2009. Currently the approximate cost will be \$50.00 per day, covering room, food and registration. The meeting is sponsored by the Essig Museum of Entomology at the University of California, Berkeley. Co-leaders are Bill Shepard (logistics) and Andy Sheldon (program). Information on Sagehen can be obtained at <http://sagehen.berkeley.edu>. I recommend the "Information Sheet" and the "Sagehen Creek Field Station (PDF)". Other material is also available, so if you are thinking about conducting research there, investigate further.

Please send a notice of Intent to Attend, with an APPROXIMATE number of attendees, to Bill Shepard at william.shepard@CSUS.edu. Those responding will be sent registration material later. No housing will be assigned until close to the meeting time due to ongoing changes. However, most beds are singles. At a later date there will also be a Request for Abstracts sent out. There will be an additional notice of the meeting in the PERLA 27, 2009 but it is expected to be so close to the actual meeting that the short time will potentially hamper making plans for attending.

BioBlitz Needs Volunteers

In 2008, a BioBlitz will take place in the Santa Monica Mountains National Recreation Area, California, U.S.A. sponsored by National Geographic and the National Park Service in collaboration with Santa Monica Mountains Conservancy and California State Parks. Registration for volunteer scientists is now open. It will begin May 30, 2008. If interested contact BioBlitz@ngs.org to be notified when online registration begins. There will be lots of good opportunities to collect aquatic insects.

Member News

PETER ZWICK AWARDED THE 2007 ERNST-JÜNGER-Prize for Entomology

Named after writer and entomologist ERNST JÜNGER, this prestigious German entomological award was presented to Prof. Dr. Peter Zwick in September 2007 at Schloß Wilflingen, Germany, in honor for his outstanding entomological research. The Baden-Württemberg Federal Minister of Science, PETER FRANKENBERG, honored PETER ZWICK as "a scientist whose entomological life work is characterized by its outstanding

excellence and extraordinary diversity, thus receiving highest reputation and esteem worldwide.” PETER ZWICK was one of the first German entomologists to realize the relevance of WILLI HENNIG’S modern approach to systematics. He consequently adopted the principles of phylogenetic systematics in his own work and thereby helped to propel the worldwide acceptance of HENNIG’S modern approach to phylogeny. PETER ZWICK’S monograph “Plecoptera” was published in 1980 and is to date referred as milestone in the research of stoneflies. The high quality of PETER ZWICK’S work became obvious when his conclusions regarding the phylogeny of stoneflies became fully confirmed by recent molecular analyses. Peter Zwick is not only known as specialist in Plecoptera. He has also done numerous revisions of other aquatic insect groups including the Blephariceridae (Diptera).

PETER ZWICK retired last year as head of the Limnologische Fluß-Station in Schlitz. Over the past 37 years, while serving on the Max-Planck-Institut für Limnologie, ZWICK has published over 230 scientific articles. Under his guidance the Breitenbach, a small creek running across the of the field station, became one of the best-known streams, as it was the object of basic research on the ecology of rhithral ecosystems. For more than 25 years PETER ZWICK also published the international scientific journal “Aquatic Insects” as well as the insect volumes of “Süßwasserfauna von Mitteleuropa.“

Submitted by Dr. Arnold Staniczek

Additionally Prof. Zwick was also recently honored by having five patronyms proposed in a single paper: Stark, Bill P. and Ignac Sivec. 2008. **New Stoneflies (Plecoptera) from Asia.** *Illiesia* 2008 4(1): 1-10. *Kamimuria zwicki* sp. n. and *Neoperla peterzwicki* sp. n. are described from specimens collected in South Korea and East Kalimantan, Indonesia respectively, *Agnatina zwicki* sp. n. from Sichuan, China, *Neoperla schlitz* from Kerala State, India, and *Haploperla zwicki* sp. n. and *Isooperla peterzwicki* sp. n. are described from Thai specimens. Each species is compared with related congeners and a provisional key for males of the *Neoperla borneensis* species subgroup is provided.

Dr. R. E. DeWalt, Illinois Natural History Survey, Illinois, USA

DeWalt, R. E¹, S. A. Grubbs², Y. Cao¹, J. Heilveil³. Stoneflies in the Middle Midwest, Deviation from Historical Expectations, Contemporary Risks, and Phylogeography of a Rapidly Changing Fauna. ¹Illinois Natural History Survey, 1816 S Oak St., Champaign, IL, 61820. ²Western Kentucky University, Biological Sciences, Bowling Green, KY 42101. ³State University of New York, College at Oneonta, Oneonta, NY 13820.

Since late 2005, the authors have been investigating the status of stoneflies in the Midwest to determine if the devastating losses seen in Illinois are representative of areas with similar glacial and cultural history. Changes in the assemblage are being studied at two scales: local and regional. Up to 30 historically well-sampled sites will be compared head-to-head with recent efforts. The regional approach will use diffuse museum specimen data to reconstruct the historical assemblage. Modeling of natural occurrence probabilities will be done using presence/absence (using other species records as negatives) data and landscape variables that have been found to explain stonefly distributions in the past. These models will generate "expectations" for species where enough data are available. Seasonal data will be collected from a large number of least

impacted streams in the Midwest, USA and Canada to yield natural occurrence probabilities from RIVPACS type models. Cumulative probabilities will yield species richness expectations. Several high quality sites and a large number of randomly chosen sites will be sampled to test the model, yielding “observed” values. The ratio of observed/expected species richness will provide an index of “assemblage intactness” each site. Molecular phylogeography using new specimens of several species of *Allocaenia* and other more highly vagile stoneflies will determine post-glacial dispersion of these species across the Midwest, testing the hypotheses of Herb Ross and Bill Ricker and measuring the effect of dispersal ability on the types of pathways taken northward. A resubmission of an National Science Foundation Biotic Surveys & Inventory proposal in January of 2008 asks for funding to conduct this work over a 3-yr period. The proposed funds will support a PhD student at the University of Illinois, a MS student at Western Kentucky University, and the molecular work in New York. Preliminary results demonstrate great losses of Perlidae and some Perlodidae with slow single and multi-year life cycles.

L. Fennema¹ & R. E. DeWalt². Historic Assemblage, Range Loss and Extirpation of *Acroneuria* Stoneflies in Illinois. ¹University of Illinois, Department of Entomology, Champaign, IL 61820. ²Illinois Natural History Survey, 1816 S Oak St., Champaign, IL, 61820.

Historic *Acroneuria* (Plecoptera: Perlidae) specimens from the Illinois Natural History Survey have been re-evaluated and their taxonomy updated. The assemblage consisted of six species: *Acroneuria abnormis*, *A. evoluta*, and *A. perplexa* originally inhabited the largest streams, including the Mississippi and Ohio rivers. *Acroneuria internata*, *A. frisoni*, and *A. filicis* inhabited medium to small rivers and sometimes occurred in streams <5 m wetted width. Extirpations include *A. internata* and *A. perplexa*, while all other species have experienced severe range reductions. *Acroneuria frisoni* was widespread in Illinois, occupying nearly 46,000 km² area. Today it occupies around 900 km². Distances between historic locations and nearest known populations for all these species range from 100 to 300 km. Recolonization must overcome dispersal corridors that consist of unsuitable habitat and poor water quality. We are working on a scheme to reintroduce *A. frisoni* to central Illinois. Re-evaluation of the distribution of these species allows Illinois to add them to a list of species in need of conservation and allows aquatic biologists to know the extent of loss from pre-settlement times. A manuscript is nearly ready for publication.

Dennis Heimdahl, University of Iowa Hygienic Laboratory, Iowa City, Iowa.

Research Project: The reintroduction of stoneflies to a previously channelized spring run, that was recently restored in northeast Iowa, with Dr. Mike Osterholm, Luther College.

Currently no Plecoptera have been found in the spring during summer and fall sampling. Additional sampling will be done through the winter, spring, and early summer to determine if any populations are present. If no populations are found, stoneflies from nearby springs will be reintroduced to see if viable populations can be established.

Ian McLellan, The joint paper by Peter Zwick and I on South American Gripopterygidae has finally been published. I am still working on new species of New Zealand notonemourids, gripopterygids, a eustheniid and South American gripopterygids and identifying stoneflies for various institutions through out New Zealand. A paper on additions to *Zelandobius* (Antarctoperlinae) has just been published in Illiesia. Otago University Ph.D student Graham McCulloch is constructing a DNA based phylogeny of New Zealand stoneflies and so far his phylogeny is similar to the present NZ morphological phylogeny.

The website on New Zealand stoneflies which Stephen Pawson and I are constructing is nearing completion.

<http://entdocs.landcareresearch.co.nz/WebForms/SearchForm.aspx> an interesting website that has appeared recently is a full text searchable interface to the Bibliography of New Zealand Entomology.

Dr. Ken W. Stewart, University of North Texas, Denton, Texas.

1. A manuscript with co-author N.H. Anderson on description of the nymphs of the nemourids *Soyedina producta*, *Ostrocerca dimicki* and *Malenka bifurcata* has been submitted to Transactions of the American Entomological Society.
2. A manuscript on the life history and development of nymph generic characters of *Sweltsa adamantea* from an Oregon summer-dry stream is in preparation with N.H. Anderson. Data are from a 15-year project collecting adults in emergence traps and nymphs, monthly.
3. Ken visited Boris Kondratieff's lab last summer to examine and borrow nymphs of *Megarcyx* species; this to begin a study with Boris with the goal of comparatively describing and developing an illustrated key to nymphs of all 5 North American species.
4. A project with Bill Stark to correlate and describe additional nymphs of *Sweltsa* is well underway.
5. The 2nd Edition of Encyclopedia of Insects, with Ken's contribution chapter on Plecoptera is scheduled for publication in 2008.
6. There is continuing progress on a study of the stoneflies of Nunavut with Donna Giberson of the University of Prince Edward Island, on additions to the stoneflies of Alaska with Dick Baumann, and new species of California *Capnia* with Dick Baumann and Riley Nelson.
7. A manuscript by Jane Earle and Ken on describing the nymph of *Strophopteryx appalachia* and a key to *Strophopteryx* nymphs has been accepted for Proceedings of the Entomological Society of Washington.

Dennis Stradner, Steven Weiss & Wolfram Graf

A molecular (mtDNA) phylogeny of the genus *Siphonoperla* Zwick, 1967 (Chloroperlidae)

We are investigating variation in the mtDNA COI gene fragment across the genus *Siphonoperla*. To date, there are eleven described species in the genus, as well as a number of subspecies. The genus ranges from the Atlas Mountains of North Africa to Armenia, with most species occurring in Europe. Our data support the recent description

of a new micro-endemic in the South Eastern Alps of Austria (*S. ottomoogi*), and despite its morphological resemblance to *S. montana*, show that it is very distantly related. Sequence diversity among the widely distributed *S. torrentium*-complex is very high, and together with clear geographic structure suggests that this lineage may contain more than one species. To our knowledge, this is the first phylogenetic study of European Plecoptera and new insights are expected in terms of hypotheses concerning the origin of alpine taxa and their distributional response to the ice ages.

Robert Zuellig and B. C. Kondratieff

Continuing studies of *Perlesta* in the eastern U.S. has indicated numerous undescribed populations. Special efforts are being made to collect fresh material including gravid females. Additionally, a publication is approaching submission on the stoneflies of Missouri.

ILLIESIA, International Journal of Stonefly Research, is entering its fourth year of publication. Volume 3 (2007) includes 18 articles can be accessed and downloaded without cost from the website: <http://www2.pms-lj.si/illiesia/>
Editors, Ignac Sivec and Bill Stark invite you to consider **Illiesia** as an outlet for your stonefly research.

Article:

Modoc County, California Stoneflies (Plecoptera)

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³Department of Biology, 322 M.L. Bean Museum, Brigham Young University, Provo, Utah, 84602

Abstract

By virtue of its remote location in the extreme northeastern corner of California, Modoc County (Map) remains as one of the most infrequent areas collected for stoneflies in the state. Jewett (1960) listed only *Zapada oregonensis* (Claassen) and *Isoperla fulva* Claassen from a single 1946 collection made by W.F. Barr and H.P. Chandler at Eagleville, Stark & Nelson (1994) included a single record of *Yoraperla nigrisoma* (Banks) from a 1967 collection made 8 miles north of Fandango Pass on Willow Creek by E. Evans, and Stanger & Baumann (1993) gave two records of *Taenionema pallidum* from the Buck Creek Ranger Station and from 6 miles northwest of Cedarville. Only 12 individual stoneflies are included among these records.

Most of the western 2/3 of the county is incorporated into the Modoc National Forest where water management practices have centered on reservoir construction, but in the eastern third of the county a narrow north-south corridor of national forest and wilderness extends along the Warner Mountains from northern Lassen County into Oregon. Eagle Peak (elevation 3,015 m) in the South Warner Wilderness is the highest point in this range and two passes, Fandango Pass (elevation 1859 m) and Cedar Pass (elevation 1935 m) provide access to streams at higher elevations in the Warners. In this report results of a survey made in the northern half of the Warner Range on May 21, 1998 by Stark and three colleagues, C.R. Nelson, S.W. Szczytko and I. Sivec at six sites; a short trip in July 1998 taken by R. W. Baumann and R. D. Call yielded specimens from two sites; and a more extensive survey on 22-24 May 2007 by B.C. Kondratieff and R.W. Baumann includes 16 sites also listed in Table 1.

Table 1. Modoc Co., California sites surveyed for stoneflies. Sites 1-6 were surveyed May 21, 1998, sites 7-24 were surveyed 22-24 May 2007, and sites 25-26 on 30 July 1998.

Stream	Road	Location
1. New Pine Cr.	Hwy 2	1 mile east Hwy 395
2. Willow Cr.	crossroad	0.1 mile south CR 9, below Buck Cr.
3. South Fk. Davis Cr.	CR 30	3.1 mile east Hwy 395
4. trib. S.Fk. Davis Cr.	CR 30	3.2 mile east Hwy 395
5. Cedar Cr.	off Hwy 299	east of Cedar Pass
6. Thomas Cr.	off Hwy 299	1 mile west Cedar Pass
7. Middle Fk. Fitzhugh Cr.	CR 40	north of CR 24
8. Mill Cr.	-----	Mill Cr. Falls Campgnd.
9. Rush Cr.	-----	Upper Rush Cr. Campgnd.
10. Soup Cr.	-----	below Soup Springs Campgnd.
11. Thomas Cr.	Hwy 299	Cedar Pass
12. South Fk. Pine Cr.	FR 5	-----
13. Unnamed stream	off Hwy 299	below Stough Reservoir Campgnd
14. trib. Joseph Cr.	CR 118	Joseph Creek Basin
15. Harvey Cr.	-----	north Coyote Creek Rd
16. South Fk. Pit R.	Hwy 64	east of Likely
17. Lassen Cr.	Rt 30	west of Fandango
18. South Fk. Parker Cr.	FR 31	-----
19. North Fk. Pit R.	Hwy 395	-----
20. Rush Cr. springs	-----	Upper Rush Cr. Campgnd.
21. Rush Cr.	C6	Upper Rush Cr.
22. Soup Spring	-----	Soup Spring Campgnd.
23. Johnson Cr.	off Hwy 299	-----
24. Horse Head Spring	off Hwy 299	-----
25. seep, Stough Campground	off Hwy 299	-----
26. Van Ripper Spring S of Eagleville Rd	42	-----

Results

A minimum of 32 species of stoneflies were collected at the 26 sites listed in Table 1. The following list includes sites where each respective species was collected. Site numbers and locality data are given in Table 1.

Capniidae:

Eucapnopsis brevicauda Claassen: Present at 15 sites, this is the second most common stonefly in the survey. 104 males and 151 females were collected.

Capnia gracilaria Claassen: 25 males and 22 females were taken at site 5.

Capnia sp.: 34 unidentified females were collected from sites 2, 3, 6, 7, 8, 12, 13, and 14.

Leuctridae:

Moselia infuscata (Claassen): 25 males, 22 females, and 2 nymphs were taken from sites 9, 10, 12, and 15.

Paraleuctra occidentalis (Banks): 16 males and 21 females were taken from sites 1, 3, 4, 7, 12, 13, and 14.

Paraleuctra vershina Gaufin & Ricker: 162 males and 119 females collected at sites 2, 8, 9, 10, and 24.

Perlomyia collaris Banks: 6 males and 4 females were collected at sites 6, 8, and 17.

Nemouridae:

Malenka depressa (Banks): 44 males and 39 females were taken at sites 1, 10, 15, 20, 21, 24, 25, and 26.

Malenka sp.: 1 male of a possible new species was collected at site 13.

Prostoia besametsa (Ricker): 23 males and 57 females were found with collections made at sites 1, 3, 4, 5, 6, 12, and 18.

Podmosta delicatula (Claassen): 11 males and 18 females were taken at sites 2, 6, 11, 15, 17, and 18.

Soyedina sp.: A single female specimen was taken in a seep at site 1.

Visoka cataractae (Neave): 2 females were taken from site 3.

Zapada cinctipes (Banks): 5 females were taken at sites 8 and 10.

Zapada frigida (Claassen): 1 male and 1 female were taken at site 1.

Zapada oregonensis (Claassen): 83 males and 49 females were collected from sites 1, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13 and 15.

Zapada sp.: 2 unidentified females were taken at site 18.

Taeniopterygidae:

Doddsia occidentalis (Banks): 1 female at site 3.

Oemopteryx vanduzeeae (Claassen): 2 males were taken at site 23.

Taenionema pallidum (Banks): 33 males and 54 females were taken from sites 1, 2, 6, 11, 17, 18, and 19.

Chloroperlidae:

Paraperla frontalis (Banks): 1 female and an exuviae were taken at sites 8 and 9.

Sweltsa coloradensis (Banks): 32 males and 2 females were collected at sites 9 and 15. Unidentified *Sweltsa* nymphs, possibly of this species, were taken at sites 10 and 17.

Peltoperlidae:

Sierraperla cora (Needham & Smith): 5 males, 10 female, and 7 nymphs were collected from sites 3, 5, 7, 9, 14, and 21.

Yoraperla nigrisoma (Banks): 72 males, 22 females, and 22 nymphs were taken at sites 4, 6, 7, 9, 10, 13, 14, 15, 20, and 22.

Perlidae:

Calineuria californica (Banks): 8 nymphs were taken at sites 7, 8, 9, 10, and 11.

Doroneuria baumanni Stark & Gaufin: 11 nymphs were taken at sites 3 and 6.

Hesperoperla pacifica (Banks): 1 female was taken at site 9.

Perlodidae:

Diura knowltoni (Frison): 1 female was taken at site 6.

Isoperla marmorata Needham & Claassen: 34 males and 64 females were taken at sites 9, 15, 16, 19, and 21.

Isoperla quinquepunctata (Banks): 6 males and 1 female were taken at site 19.

Skwala curvata (Hanson): 7 males and 6 females were taken at sites 8, 12, and 18.

Pteronarcyidae:

Pteronarcys princeps Banks: 1 male, 2 females and 1 nymph were taken at sites 9 and 21.

Discussion

Records are given for 32 species of stoneflies (4 of these identified only to genus level) from 26 localities in Modoc County, California. All but three of these (*Taenionema pallidum*, *Yoraperla nigrisoma*, *Zapada oregonensis*) represent new county records, however, none of the species were unexpected for this region.

Literature Cited

Jewett, S.G. 1960. The stoneflies (Plecoptera) of California. Bull. Calif. Ins. Surv. 6:125-177.

Stanger, J. & R.W. Baumann. 1993. A revision of the stonefly genus *Taenionema* (Plecoptera: Taeniopterygidae). Trans. Am. Entomol. Soc. 119:171-229.

Stark, B.P. & C.R. Nelson. 1994. Systematics, phylogeny and zoogeography of genus *Yoraperla* (Plecoptera: Peltoperlidae). Entomol. Scand. 25:241-273.



Map of Warner Mountains in Modoc County, California, USA.

RECENT PLECOPTERA LITERATURE (CALENDAR YEAR 2007 AND

EARLIER). Papers made available after 1 February 2008 will be included in the next issue. **If papers were missed, please bring these to the attention of the Managing Editor.** Dr. Peter Zwick is thanked for providing additions to this present list.

- Andrahennadi, R. M. Wayland, and I. J. Pickering. 2007. Speciation of selenium in stream insects using x-ray absorption spectroscopy. *Environmental Science and Technology* 41(22): 7683-7687.
- Baumann, R. W. and J. J. Lee. 2007. *Paracapnia humboldta* (Plecoptera: Capniidae), a new winter stonefly from Northern California, U.S.A. *Illiesia* 3(3): 17-9.
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