

# **PERLA**

**Annual Newsletter and Bibliography of  
The International Society of Plecopterologists**



*Sierraperla cora* (Needham & Smith) (Peltoperlidae), Big Spring, Mt. Shasta City Park, California,  
USA.

Photograph by Bill P. Stark

## **PERLA NO. 29, 2011**

Department of Bioagricultural Sciences  
and Pest Management  
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Fort Collins, Colorado 80523 USA

**PERLA**  
**Annual Newsletter and Bibliography of the**  
**International Society of Plecopteroologists**  
**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.**

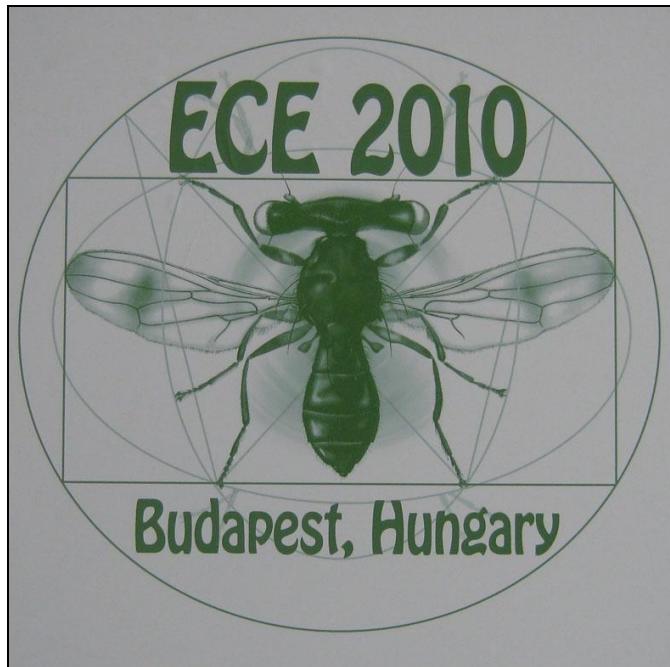
**It is therefore important that you respond to this receipt of PERLA 29 (2011) in one of the following ways, in order to be kept on the mailing list for PERLA 30 (2012): (1) pay your annual dues, (2) make a \$10 donation (institutions), or (3) request a waiver. A form and self-addressed envelope are included with this issue, (PERLA 29) 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 when 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.**

**9th European Congress of Entomology at Budapest, Hungary, 22-27  
August 2010**



The Ninth ECE was held at the Europa Congress Center, Budapest, Hungary and included a Plecoptera section organized by Drs. Ignac Sivec and Dávid Murányi. This meeting section included seven oral presentations and four posters, covering topics such as stonefly taxonomy, distribution, conservation, life history, and phylogeography:

**R. Fochetti , B. Gaetani, S. Fenoglio, T. Bo, T. Kovács, M. J. López-Rodríguez & J. M. Tierno de Figueroa.** Systematics, biogeography and genetic structure of the genus *Besdolus* Ricker, 1952.

**M. Gamboa & J. Arrivillaga.** Molecular genetics of four morphological species of *Anacroneuria* genus (Plecoptera: Perlidae) in sympatric speciation. It's Implications on taxonomical, phylogenetical, speciation.

**J. M. Tierno de Figueroa, B. Gaetani, J. M. Luzón-Ortega, M. J. López-Rodríguez & R. Fochetti.** On the identity of *Isoperla curtata* Navás, 1924: a behavioural and molecular approach.

**D. Murányi & I. Sivec.** Plecoptera of the Balkans: history of investigations, and the present knowledge on distributional patterns.

**W. Graf.** The stonefly-fauna (Insecta: Plecoptera) of Austria: Diversity, ecology and zoogeography.

## A. Popijač & I. Sivec. Recent findings of rare and endangered stoneflies (Insecta: Plecoptera) in Croatia.

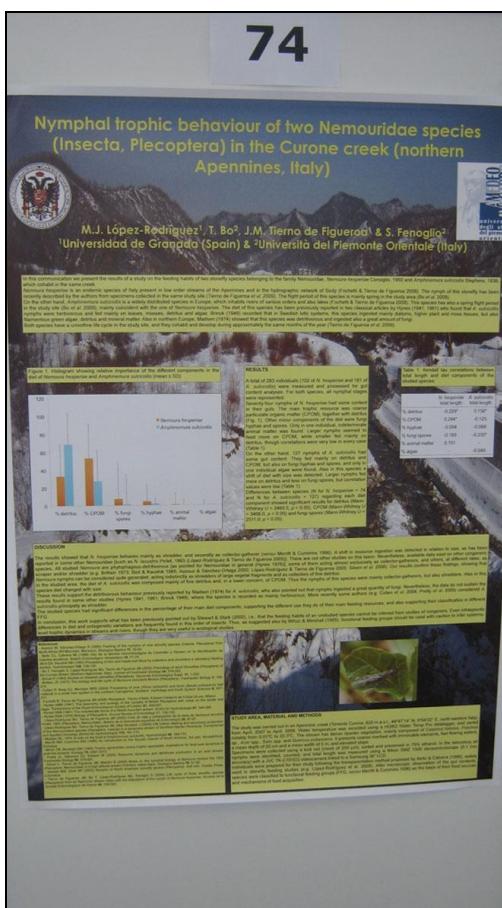
## I. Sivec. Is there a future of classical taxonomy?

**J. M. Tierno de Figueroa & M. J. López-Rodríguez.** Review of the status of two threatened stonefly species (Plecoptera) in southern Iberian Peninsula.

**M. J. López-Rodríguez, T. Bo, J.M. Tierno de Figueroa & S. Fenoglio.** Nymphal trophic behaviour of two Nemouridae species (Insecta, Plecoptera) in the Curone Creek (northern Apennines, Italy).

**J. M. Tierno de Figueroa, J. M. Luzón-Ortega & M. J. López-Rodríguez.** Study of flight period and adult size variations in an altitude gradient in Río Trevélez (southern Iberian Peninsula).

**M. J. López-Rodríguez & J. M. Tierno de Figueroa.** Preliminary data on the biology of the cavernicolous stonefly *Protoneura gevi* (Plecoptera: Nemouridae).



A poster by M. J. López-Rodríguez, T. Bo, J.M. Tierno de Figueroa & S. Fenoglio.



**Dr. David Muranyi co-organizer of Plecoptera section enjoying a close-up of course, of a stonefly.**



**Dr. Romolo Fochetti and Maribet Gamboa visiting the Budapest Museum.**

## **2011 XIIIITH INTERNATIONAL CONFERENCE ON EPHEMEROPTERA, XVIITH INTERNATIONAL SYMPOSIUM ON PLECOPTERA IN JAPAN**

The dates are **June 5-11, 2011**. The meeting will be held at the Sei-sen-ryo Lodge.

[http://www.keep.or.jp/shisetu/seisen\\_ryo/](http://www.keep.or.jp/shisetu/seisen_ryo/)

Access the meeting website for further information and details:

<http://cse.ffpri.affrc.go.jp/yoshi887/jointconference2011.html>

### **Schedule and preliminary scientific program**

June 5 (Sun)	Transportation from airports  Registration  Welcome party
June 6 (Mon)	Sessions on phylogeny, systematics, taxonomy
June 7 (Tue)	Sessions on Ecology, life history, reproduction, biology, physiology
June 8 (Wed)	Mid-conference trip; the upper stream of the Chikuma River  Barbecue party
June 9 (Thu)	Sessions on community and conservation ecology
June 10 (Fri)	Sessions on biogeography, distribution, morphology, ultrastructure  Farewell party
June 11 (Sat)	Post conference trip; Narai-Jyuku You can do some sightseeing and collect aquatic insects ( <i>Scopura</i> , <i>Bleptus</i> , etc.)  Transportation to cities and airports

### **Meeting Deadlines**

February 28, 2011: Regular registration, Abstract submission

### **Tentative Fees**

Student	35000Jp Yen (US\$ 388)
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Regular	50000Jp Yen (US\$ 554)
Accompanying person	30000Jp Yen (US\$ 332)

**For further details please contact:**

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**Plecoptera scholarships Awarded, XVIIth International Symposium on Plecoptera in JAPAN**

Subscriptions to **Perla**, together with donations and income from the conference auctions, enable the The Standing Committee of the International Society of Plecopterologists to award scholarships to Plecoptera conferences. These are awarded primarily to younger students or workers from countries where it is difficult to obtain funding to attend such conferences.

The Committee has awarded a total of US\$4,300 for three travel scholarships to attend the International Joint Plecoptera-Ephemeroptera Conference in Kiyosato, Japan, June 2011. The recipients are **Ms. Ram Devi Tachamo Shah** (US \$1,300), **Mr. Lucas Silveira Lecci** (US\$2,500) and **Mr. Louis Boumans** (US\$500). Ms Shah is from Nepal and she will be presenting her work on the biodiversity, distribution and sensitivity of mayflies and stoneflies in the Central Himalaya. As her work covers both Ephemeroptera and Plecoptera she has been granted a joint scholarship from both the Plecoptera and Ephemeroptera Committees. The second recipient of a Plecoptera scholarship is Lucas Silveira Lecci, a PhD. student at the University of Sao Paulo, Brazil. He will present his studies of the Gripopterygidae from the Paranapiacaba Mountains of south-eastern Brazil. Louis Boumans, a PhD. student at the University of Oslo is the third recipient. He will present his project on the intraspecific variation in western Palaearctic stoneflies, in particular short-winged populations. These three students have also been awarded free registration by the Japanese conference organisers.

In addition, the following six students of Plecoptera have been awarded free registration by the Japanese conference organisers (presentation topic given in parentheses): **Susanna Cherechesova**, North Ossetian State University, Russia (Plecoptera of River Urshdon, North Ossetia); **Valentina Teslenko**, Far East Russian Academy of Sciences, Vladivostok, Russia (Biodiversity of stonefly fauna in the Amur Basin); **Purevdorj Surenkhорloo**, Mongolian Benthological Society (Mongolian endemic Plecoptera); **Olga A. Loskutova**, Institute of Biology, Komi Scientific Centre, Syktyvkar, Russia (Variation in wings and body size of *Arcynopteryx compacta*); and **Jindřiška Bojková**, Masaryk University, Czech Republic (Changes in diversity & distribution of Plecoptera in the Czech Republic after 50 years) [John Brittain].

## TENTH NORTH AMERICAN PLECOPTERA SYMPOSIUM

The Tenth North American Plecoptera Symposium will be held in Pennsylvania in the late spring or early summer of 2012. Please contact **Dr. R. Edward DeWalt**, [edewalt@inhs.uiuc.edu](mailto:edewalt@inhs.uiuc.edu) or **Jane Earle**, [janeearle7@msn.com](mailto:janeearle7@msn.com) for additional information.

## ILLIESIA

**Illiesia**, International Journal of Stonefly Research has completed publication of Volume 6 with the inclusion of 25 individual articles submitted by 20 authors. Articles are given rigorous peer review under direction of the Advisory Board and Editors and with the assistance of many colleagues who agree to review manuscripts. Editors are Ignac Sivec, Slovenian Museum of Natural History, and Bill P. Stark, Mississippi College. The Advisory Board includes Boris Kondratieff, Richard Baumann, Kenneth Stewart, Stan Szczytko, C. Riley Nelson, Charles H. Nelson, John Brittain, Takao Shimizu, Claudio Froehlich, Wolfram Graf and Peter Harper, and journal formatting is under the direction of Mia Sivec and Mojimir Stangelj. We thank you for your continued support and invite your submissions for consideration for Volume 7. Questions or submissions should be sent to [isivec@mrc.pms-lj.si](mailto:isivec@mrc.pms-lj.si) or [stark@mc.edu](mailto:stark@mc.edu). The Illiesia website is located at <http://www2.pms-lj.si/illiesia/>

## MEMBER NEWS

Drs. **J. Manuel Tierno de Figueroa** and **Manuel J. López-Rodríguez**, University of Granada (Spain) are working on nymphal biology (life cycle, feeding and secondary production) in southern Spain and northern Italy, in collaboration with Drs. **Luzón-Ortega, Fenoglio and Bo**. Moreover, physiological studies on digestive enzyme activities of stoneflies are being carried out in collaboration with Drs. **Sanz** and **Trenzado**. Also, they carry on studying the only known population of a *Protonemura gevi*, a cavernicolous stonefly species recently described by these authors, and they are collaborating with Dr. **Luzón-Ortega** in a study of the drumming calls of several species of stoneflies from Spain. They are also collaborating with **Dr. Fochetti** in genetic approaches for the resolution of taxonomical problems of stoneflies, particularly in the genera *Besdolus* and *Isoperla*, and with **Dr. Derka** in some nymphal biology studies of species inhabiting streams with constant temperature in Slovakia. Finally, they are also working at the community level in several streams from the southern Iberian Peninsula.

## The Plecoptera collection at the Natural History Museum in Oslo digitalized and georeferenced

Louis Boumans ([louis.boumans@nhm.uio.no](mailto:louis.boumans@nhm.uio.no))

The Natural History Museum in Oslo (NHMO) houses a large alcohol collection of Norwegian stoneflies. About half of this collection is rather well curated; the other half is

unsorted material. Most of the material was collected by the late Albert Lillehammer (1930-1992), who worked extensively on the biology and taxonomy of Norwegian stoneflies. In 2010 the Museum received a grant from Artsdatabanken, the Norwegian Biodiversity Information Centre, for the georeferencing and quality assurance of Lillehammer's stonefly collection. After a few months' of work, we have now delivered 4280 georeferenced, collection-based records covering all provinces of Norway. Most specimens were collected between 1965 and 1975, and identified by Lillehammer himself. The data will be published through [www.artsdatabanken.no](http://www.artsdatabanken.no) as well as the GBIF portal.

## New research project on aquatic insects at the University of Oslo

**Louis Boumans** ([louis.boumans@nhm.uio.no](mailto:louis.boumans@nhm.uio.no))

In February 2010, I started as a Ph.D. candidate at the Natural History Museum of the University of Oslo on a research project on speciation in Nordic Aquatic Insects. My plan is to investigate a number of the taxonomic issues raised by morphological and behaviour variation in Nordic species using molecular techniques. The central topic is loss (and gain?) of flight ability both in stoneflies and craneflies (Tipulidae). This phenomenon shows fairly small-scaled geographical variation, which calls for a phylogeographic approach. I also intend to take up the issue of body asymmetry in the mayfly *Heptagenia dalecarlica*, which is reversed relative to other species of the genus. In addition, part of my duties consists of building a DNA barcode library for Plecoptera and some other groups. I am looking forward to collaborate with colleagues working on similar topics, and exchange samples for the purpose of phylogeographic analyses. A more detailed project description can be found under the link below:

<http://www.nhm.uio.no/english/research/ncb/research/projects/aquatic-insects>

**R. Edward DeWalt and Massimo Pessino, University of Illinois, Illinois Natural History Survey, Champaign, Illinois 61820, [edewalt@inhs.uiuc.edu](mailto:edewalt@inhs.uiuc.edu), [pessino1@illinois.edu](mailto:pessino1@illinois.edu).**

We have been working on two large projects: phylogeography of two eastern North American stoneflies (*Allocapnia granulata* and *Acroneuria frisoni*, Capniidae and Perlidae, respectively) and reconstruction of the natural range of stonefly species in the Midwest (Illinois, Indiana, Michigan, Ontario, and Wisconsin). Ember Chabot (MS working on *A. frisoni*) has finished her thesis, finding that the west slope Appalachian Mt. refugium contributed most to recolonization of once glaciated areas, while the Ozark Mts. refugium contributed little to repopulating the north. A reintroduction of *A. frisoni* to eastern Illinois based on Indiana populations has failed but will be rekindled this spring. Work on *A. granulata* is ongoing with populations from Oklahoma, Alabama, Mississippi, and Virginia to be added the analysis.

Modeling of natural range of Midwest species is still in the data collection phase with over 24,000 specimen records having been gathered.

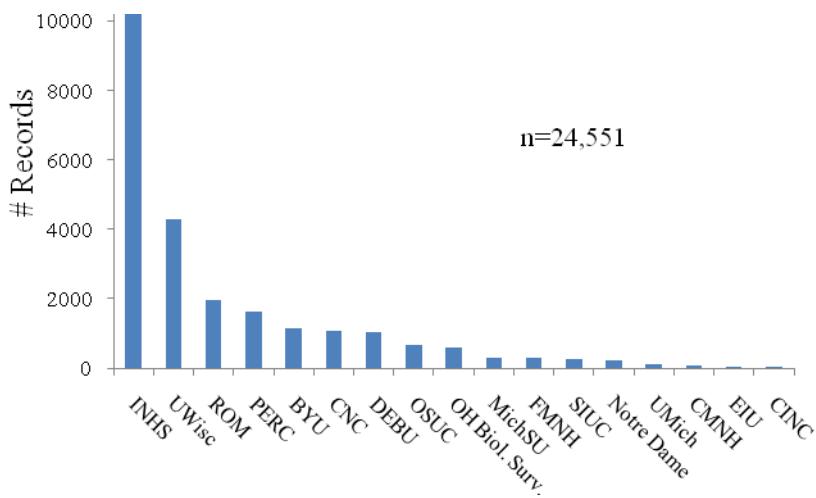


Fig. 1. Number of specimen records from each institution.

We have modeled natural range for 40 species (Fig. 2, *Acroneuria abnormis* for instance) and overall species richness (Fig. 3) in Illinois. Models and observed data correlated closely. Modeling of the entire Midwest will commence in spring, 2011.

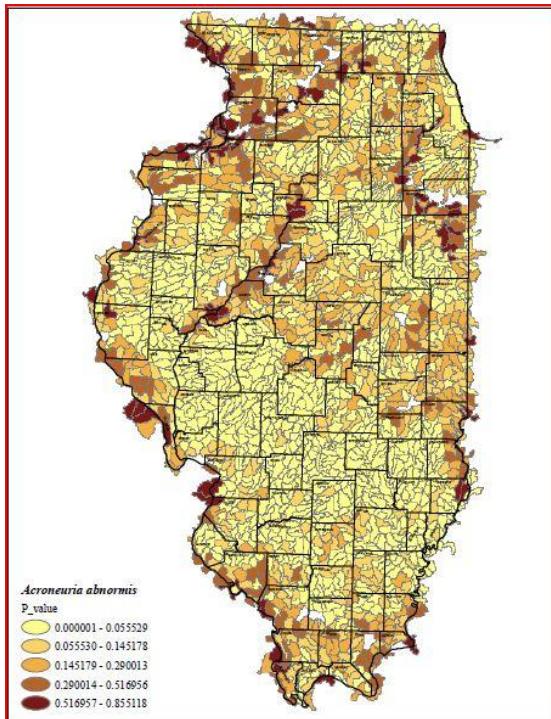


Fig. 2. Probability of occurrence for *Acroneuria abnormis* (Newman) in IL HUC12 drainages.

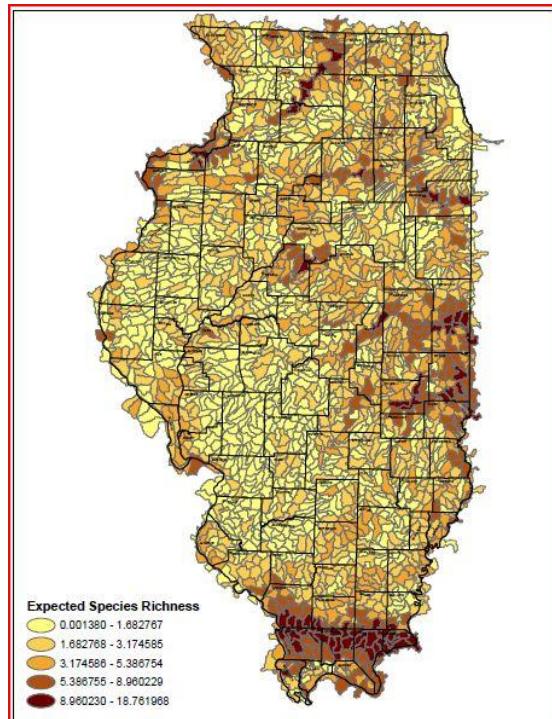


Fig. 3. Expected species richness for stoneflies in IL HUC12 drainages.

## ARTICLE

# COLLECTING ENDEMIC AND RARE STONEFLIES (PLECOPTERA) IN CALIFORNIA, U.S.A.

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### Introduction

California is a remarkable state in regard to its geographical and biological diversity. Death Valley in the southeast is 86 m below sea level, the lowest point in the United States, and Mount Whitney (4,417 m) is the highest point in the contiguous 48 states. It has been estimated that there are more than 27,000 species of insects that occur in California (Ballmer 1995). The myriad of freshwater aquatic habitats in California support an amazing number of aquatic insect species (Usinger 1956, McElravy et al. 1989), including stoneflies. Jewett (1956) in the classic volume: "Aquatic Insects of California," listed 93 species of stoneflies from the state and then in 1960, he listed 101 species, noting that this number would increase. Currently, there are at least 186 species of stoneflies recorded from California (Stark et al. 2009, Baumann and Kondratieff 2009, Kondratieff and Lee 2010, Lee and Baumann 2010, Baumann and Kondratieff 2010). What makes California unique among all other states of the United States is that 39% of the 186 species or 72 species are only known from the state. For example, Nelson and Baumann (1987) described fifteen new species of *Capnia* in a single publication, all endemic to California.

A collecting trip was organized by John B. Sandberg of Chico, California to occur from April 25-29, 2010 to collect endemic or rare taxa of California stoneflies, especially in the central Sierra Nevada foothills.

### Materials and Methods

Adult stoneflies were collected using a beating sheet and specimens were preserved in 80% ethanol. Additionally, nymphs were collected from selected streams and returned to Colorado State University for rearing. Material was studied using Wild M-8 stereomicroscopes. Specimens listed in this study are located at Brigham Young University, Provo, Utah (BYUC) and Colorado State University, Fort Collins, Colorado (CSUC).

## **Results and Discussion**

We visited only six (Butte, El Dorado, Nevada, Plumas, Tehama, and Yuba counties) of the 58 California counties but collected fifty species of stoneflies, and of these 11 or 22% were endemic taxa (Table 1). A group of stonefly species restricted to intermittent streams of the western slope of the Central Sierra Nevada foothills (Storer and Usinger 1963) were especially targeted. These species included *Nemoura spiniloba* Jewett, *Oemopteryx vanduzea* (Claassen), *Suwallia sierra* Baumann and Bottorff, *Sweltsa californica* (Jewett), *Cosumnoperla hypocrena* Szczytko and Bottorff, *Isoperla acula* Jewett, *I. adunca* Jewett, and *I. miwok* Bottorff and Szczytko. These small streams are dry in the summer and autumn (Levick et al. 2008, Szczytko and Bottorff 1987), but support a diverse mayfly, stonefly, and caddisfly fauna during the wet period, but are often not sampled for adult stoneflies. The stoneflies of these unique aquatic systems were just recently elucidated through the efforts of Richard L. Bottorff (Szczytko and Bottorff 1987, Bottorff et al. 1990, Baumann and Bottorff. 1997). In all 14 species could be classified as uncommon or rare California stoneflies (Table 1). *Paraleuctra projecta* (Frison) is a new state record for California (Stark and Kyzar 2000, Stark et al. 2009).

## **Acknowledgments**

John Sandberg and his colleagues, Brady Richards, Dan Pickard, and Joe Slusark from the Aquatic Bioassessment Laboratory at California State University, Chico, California enticed us to travel to their backyard in Central California with the promise that we would indeed be rewarded with many rare and exciting stonefly species, most of them in the adult stage. In addition, we took advantage of the fact that we were going to be in California at this ideal collecting time and asked Richard Bottorff and his brother Loren to show us some of their choice collecting sites near Placerville. The result was that we were abundantly rewarded and were able to collect almost all of the species that we targeted and several more that were an added bonus. We thank these colleagues profusely because we know that we would not have been nearly as successful without their help. John B. Sandberg is thanked for reviewing the manuscript. Bill Stark is thanked for checking the numbers of species known from California.

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Table 1. STONEFLIES COLLECTED APRIL 25-29, 2010 IN NORTH CENTRAL CALIFORNIA. \* indicates uncommon or rare taxa; m=male(s), f=female(s), and n=nymph(s).

NEMOURIDAE

*Malenka depressa* (Banks)

Acorn Creek, Skunk Canyon, abv Folsom Lake	70 m	61 f
Butte Creek, Humboldt Rd, Cherry Hill Cmpg	28 m	14 f
spring, Big Chico Creek, Hwy 32	13 m	14 f
Greenwood Creek, Hwy 49, nr Coloma	1 m	2 f
Gurnsey Creek, Hwy 36, Gurnsey Creek Cmpg		1 m
Campbell Creek, North Table Mountain, Cherokee Rd	30 m	28 f

\**Nemoura spiniloba*

(Jewett)	stream, W Martinez Creek, S El Dorado	3 m 5 f
<i>Prostoia besametsa</i> (Ricker)	Oregon Gulch, Red Bridge, Oregon City	2 f
	South Fork American River, Hwy 50, Riverton	1 f
	Little Last Chance Creek, Hwy, 284, Chilcoot Cmpg	1 f
	Butte Creek, Humboldt Rd, Cherry Hill Cmpg	13 m 5 f
<i>Soyedina nevadensis</i> (Claassen)	South Fork Calf Creek, Hwy 32, nr Potato Patch Cmpg	2 m 2 f
	spring, Big Chico Creek, Hwy 32	33 m 7 f
	Little Chico Creek, Schott Rd	1 m
	Gurnsey Creek, Hwy 36, Gurnsey Creek Cmpg	1 m
	Butte Creek, Humboldt Rd, Butte Meadows Cmpg	1 f
<i>Zapada cinctipes</i> (Banks)	Butte Creek, Humboldt Rd, jct Colby Creek	1 m 2 f
	South Fork Calf Creek, Hwy 32, nr Potato Patch Cmpg	1 f
	Gurnsey Creek, Hwy 36, Gurnsey Creek Cmpg	10 m 6 f
	Little Last Chance Creek, Hwy 284, Chilcoot Cmpg	3 m 5 f
	Slate Creek, Hwy 32, Deer Creek	1 m
<i>Zapada frigida</i> (Claassen)	South Fork American River, Hwy 50, Riverton	1 m 1 f
<i>Zapada oregonensis</i> (Claassen)	South Fork Calf Creek, Hwy 32, nr Potato Patch Cmpg	2 m
	Butte Creek, Humboldt Road, Butte Meadows, Cmpg	10 m 1 f
	Butte Creek, Humboldt Road, Cherry Hill Cmpg	3 m
	Butte Creek, Humboldt Road, jct Colby Creek	3 m 2 f
	spring, Hwy 36, mm 94, nr Childs Meadow	1 f
	Gurnsey Creek, Hwy 36, Gurnsey Creek Cmpg	5 m 4 f
	Slate Creek, Hwy 32, Deer Creek	1 m
CAPNIIDAE		
<i>Capnia excavata</i> Claassen	Butte Creek, Humboldt Road, Butte Meadows Cmpg	2 f
	Butte Creek, Humboldt Road, Cherry Hill Cmpg	1 f
	South Fork Calf Creek, Hwy 32, nr Potato Patch Cmpg	3 f
	spring, Big Chico Creek, Hwy 32	1 f
	Greenhorn Creek, Hwy 70, Quincy	1 m 7 f
<i>Capnia quadrituberosa</i> Hitchcock	Butte Creek, Humboldt Road, jct Colby Creek	1 f
<i>Eucapnopsis brevicauda</i> Claassen	Spanish Creek, Hwy 30, Keddie Resort	3 f
	Butte Creek, Humboldt Road, Butte Meadows Cmpg	16 m 14 f
	Butte Creek, Humboldt Road, Cherry Hill Cmpg	5 m 9 f
	Butte Creek, Humboldt Road, jct Colby Creek	12 m 13 f
	Little Chico Creek, Schott Road	1 m
	Middle Fork Feather River, Hwy 70, Camp Layman	2 m
	Greenhorn Creek, Hwy 30, Quincy	2 m 1
	Gurnsey Creek, Hwy 36, Gurnsey Creek Cmpg	1 m 3 f
	stream, W Martinez Creek, S El Dorado	1 m 1 f
	Slate Creek, Hwy 32, Deer Creek	2 m 1 f
<i>Mesocapnia</i> sp.	Greenwood Creek, Hwy 70, S E Quincy	1 m
LEUCTRIDAE		
* <i>Megaleuctra complicata</i> Claassen	spring, Big Chico Creek, Hwy 32	1 f
<i>Moselia infuscata</i> (Claassen)	South Fork Calf Creek, Hwy 32, nr Potato Patch Cmpg	20 m 8 f
	spring, Big Chico Creek, Hwy 32	18 m 10 f
	Little Chico Creek, Schott Road	8 m 5 f
	spring, Hwy 36, mm 94, nr Childs Meadow	10 m 8 f
<i>Paraleuctra occidentalis</i> (Banks)	Butte Creek, Humboldt Road, Butte Meadows Cmpg	4 m 2 f
	Butte Creek, Humboldt Road, jct Colby Creek	4 m 5 f
	spring, Big Chico Creek, Hwy 32	1 m

	Greenhorn Creek, Hwy 70, Quincy	7 m 6 f
<i>Paraleuctra projecta</i> (Frison)	Butte Creek, Butte Creek Ecological Preserve	1 m
	spring, Hwy 36, mm 94, nr Childs Meadow	24 m 5 f
	South Fork Calf Creek, Hwy 32, nr Potato Patch Cmpg	10 m 20 f
<i>Paraleuctra vershina</i> Gaufin & Ricker	Little Chico Creek, Schott Road	5 m 10 f
	Spanish Creek, Hwy 70, Keddie Resort	1 m
<i>Perlomyia collaris</i> Banks	South Fork Calf Creek, Hwy 32, nr Potato Patch Cmpg	1 m 1 f
<i>Perlomyia utahensis</i> Needham & Claassen	Gurnsey Creek, Hwy 36, Gurnsey Creek Campg	1 m 1 f
	Butte Creek, Humboldt Road, Cherry Hill Cmpg	1 m 1 f
	Butte Creek, Humboldt Road, jct Colby Creek	15 m 11 f
<b>TAENIOPTERYGIDAE</b>		
* <i>Oemopteryx vanduzeea</i> (Claassen)	Acorn Creek, Skunk Canyon, abv Folsom Lake	2 f
	North Fork American River, Hwy 49, nr Auburn	1 f
	South Fork American River, Hwy 49, Coloma	1 f
	Blue Tent Creek, Hwy 49, N Coloma	2 f 1 n
	Campbell Creek, Table Mountain, Cherokee Rd	7 m 12 f
	Deadman Creek, Church Mine Rd, S E El Dorado	6 m 4 f 1 n
	French Corral Creek, Pleasant Valley Road	2 m 7 f
	stream, W Martinez Creek, S El Dorado	2 m 9 f
	Oregon Gulch, Red Bridge, Oregon City	1 m 8 f
	Sweetland Creek, Hwy 49, Sweetland	2 m 4 f
	Middle Fork Feather River, Hwy 70, Camp Layman	3 m 8 f
<i>Taenionema pacificum</i> (Banks)	Greenhorn Creek, Hwy 70, S E Quincy	1 m 1f
	Spanish Creek, Hwy 89, Keddie Resort	7 m 9 f
	South Fork American River, Hwy 50, Riverton	2 m 3 f
	Butte Creek, Humboldt Road, Butte Meadows Cmpg	1 f
<i>Taenionema raynorium</i> (Claassen)	Butte Creek, Humboldt Road, jct Colby Creek	1 f
	Middle Fork Feather River, Hwy 70, Camp Layman	1 m 1f
	Greenhorn Creek, Hwy 70, Quincy	23 m 21 f
	Slate Creek, Hwy 32, Deer Creek	1 m 4 f
<b>PTERONARCYIDAE</b>		
<i>Pteronarcys californica</i> Newport	South Fork American River, Hwy 49, Coloma	2 m 1f
	Big Chico Creek, Big Chico Ecological Reserve	7 m 4 f
	Yuba River, Hwy 20, Hammon Grove Park	1 f
<b>PELTOPERLIDAE</b>		
<i>Yoraperla nigrisoma</i> (Banks)	Gurnsey Creek, Hwy 36, Gurnsey Creek Cmpg	1 m 1f
	Slate Creek, Hwy 32, Deer Creek	3 m 1 f 2 n
<b>PERLODIDAE</b>		
* <i>Cosumnoperla hypocrena</i> Szczytko & Bottorff	Blue Tent Creek, Hwy 49, nr Coloma	10 m 8 f 9 n
	Campbell Creek, Table Mountain, Cherokee Rd	1 n
	Cooper Canyon Creek, 3 miles W Pilot Hill	16m 3 f
	Deadman Creek, Church Mine Road, S El Dorado	11 m 9 f
	stream, W Martinez Creek, S El Dorado	45 m 29 f 20 n
<i>Cultus aestivalis</i> (Needham & Claassen)	North Fork American River, Hwy 49, nr Auburn	1 m
<i>Cultus pilatus</i> (Frison)	Big Chico Creek, Big Chico Reserve	1 m 7 f
<i>Cultus tostonus</i> (Ricker)	Butte Creek, Butte Creek Ecological Preserve	1 m 1 f
* <i>Frisonia picticeps</i> (Hanson)	Butte Creek, Humboldt Road, Butte Meadows Cmpg	3 m 3 f
	Butte Creek, Humboldt Road, Cherry Hill Cmpg	2 m 2 f
	Butte Creek, Humboldt Road, jct Colby Creek	2 m

<i>*Isoperla acula</i> Jewett	Blue Tent Creek, Hwy 49, nr Coloma	1 m 1 f
<i>*Isoperla adunca</i> Jewett	Blue Tent Creek, Hwy 49, nr Coloma	4 m 6 f
<i>Isoperla marmorata</i> Needham & Claassen)	Sweetland Creek, Hwy 49, Sweetland	2 m 1 f
	Acorn Creek, Skunk Canyon, abv Folsom Lake	6 m 8 f
	South Fork Calf Creek, Hwy 32, nr Potato Patch Cmpg	4 m 2 f
	Big Chico Creek, Big Chico Creek Reserve	2 m
	Greenwood Creek, Hwy 49, nr Coloma	1 m
	South Fork Yuba River, Pleasant Valley Rd, Bridgeport	1 m
	Campbell Creek, Table Mountain, Cherokee Rd	13 m 6 f
	French Corral Creek, Pleasant Valley Road	2 m 1 f
	Oregon Gulch, Red Bridge, Oregon City	2 m 1 f
	Butte Creek, Butte Creek Preserve	2 m 2 f
	Big Chico Creek, Big Chico Creek Reserve	1 m
	Yuba River, Hwy 20, Hammon Grove Park	187 m 175 f
<i>*Isoperla miwok</i> Bottorff & Szczytko	South Fork American River, Hwy 49, Coloma	21 m 27 f
<i>Isoperla pinta</i> Frison	Middle Fork Feather River, Hwy 70, Camp Layman	6 m 4 f 3 n
<i>Isoperla quinquepunctata</i> (Banks)	South Fork American River, Hwy 49, Coloma	1 f
<i>Isoperla roguensis</i> Szczytko & Stewart	Big Chico Creek, Big Chico Creek Reserve	1 m
<i>Osobenus yakimae</i> (Hoppe)	Yuba River, Hwy 20, Hammon Grove Park	9 m 13 f
<i>*Perlinodes aureus</i> (Smith)	South Fork American River, Hwy 50, Riverton	1m
	Butte Creek, Humboldt Road, Butte Meadows Cmpg	16 m 4 f
	Butte Creek, Humboldt Road, Cherry Hill Cmpg	2 m 1 f
	North Fork Feather River, Hwy 36, Chester	4 m
	Slate Creek, Hwy 32, Deer Creek	1 f
	Butte Creek, Humboldt Road, Butte Meadows Cmpg	1 n
<i>*Rickera sorpta</i> (Needham & Claassen)	Butte Creek, Humboldt Road, Butte Meadows Cmpg	1 f
<i>Skwala curvata</i> (Hanson)	Little Last Chance Creek, Hwy 284, Chilcoot Cmpg	13 m 2 f 3 n
<i>*Susulus venustus</i> (Jewett)	spring, Big Chico Creek, Hwy 32	1 m
	spring, Hwy 36, mm 94, nr Childs Meadow	1 m 9 f 3 n
	Gurnsey Creek, Hwy 36, Gurnsey Creek Cmpg	1 f
PERLIDAE		
<i>Calineuria californica</i> (Banks)	Butte Creek, Butte Creek Ecological Preserve	1 f
	Greenhorn Creek, Hwy 70, S E Quincy	1 n
	Yuba River, Hwy 20, Hammon Grove Park	1 m
<i>Hesperoperla pacifica</i> (Banks)	South Fork American River, Hwy 49, Coloma	1 m 1 f
	Butte Creek, Butte Creek Ecological Preserve	1m
	Big Chico Creek, Big Chico Creek Reserve	5 m 5 f 1 n
	Yuba River, Hwy 20, Hammon Grove Park	2 m 1 f
CHLOROPERLIDAE		
<i>*Bisancora rufiformis</i> Surdick	Acorn Creek, Skunk Canyon, abv Folsom Lake	2 m
	North Fork American River, Hwy 49, nr Auburn	1 m 4 f
	South Fork American River, Hwy 49, Coloma	18 m 22 f
	Greenwood Creek, Hwy 49, nr Coloma	4 m 8 f
	Yuba River, Hwy 20, Hammond Grove Park	3 m 2 f
	South Yuba River, Pleasant Valley Road, Bridgeport	27 m 14 f
	South Fork American River, Hwy 49, Coloma	4 m 10 f
<i>Paraperla frontalis</i> (Banks)	Blue Tent Creek, Hwy 49, nr Coloma	148 m 142 f
<i>*Suwallia sierra</i> Baumann & Bottorff	Campbell Creek, North Table Mountain, Cherokee Rd	61 m 42 f

<i>Sweltsa borealis</i> (Banks)	Cooper Canyon Creek, Hwy 49, W Pilot Hill Deadman Creek, Church Mine Road, S El Dorado French Corral Creek, Pleasant Valley Road Oregon Gulch, Red Bridge, Oregon City stream, W Martinez Creek, S El Dorado	65 m 63 f 76 m 74 f 5 n 13 m 13 f 3 m 1 f 31 m 39 f
* <i>Sweltsa californica</i> (Jewett)	South Fork Calf Creek, Hwy 32, nr Potato Patch Cmpg spring, Big Chico Creek, Hwy 32	11 m 4 f 5 m 3 f
	Acorn Creek, Skunk Canyon, abv Folsom Lake North Fork American River, Hwy 49, nr Auburn	m 3 f 2 n 2 f
	Deadman Creek, Church Mine Road, S E El Dorado Greenwood Creek, Hwy 49, nr Coloma	4 m 9 f 5 m 8 f
	Sweetland Creek, Hwy 49, Sweetland North Fork American River, Hwy 49, nr Auburn	1 f 3 m 7 f
	South Fork American River, Hwy 49, near Coloma Butte Creek, Butte Creek Ecological Preserve	3 m 3 f 21 m 20 f
	Big Chico Creek, Big Chico Creek Reserve Greenwood Creek, Hwy 49, nr Coloma	22 m 29 f 5 m 10 f
	Yuba River, Hwy 20, Hammond Grove Park South Yuba River, Pleasant Valley Rd, Bridgeport	1 m 1 f 3 m 2 f
<i>Sweltsa pacifica</i> (Banks)	Butte Creek, Humboldt Road, Cherry Hill Cmpg	2 m 1 f 2 n
<i>Sweltsa umbonata</i> Surdick		

**RECENT PLECOPTERA LITERATURE (CALENDAR YEAR 2010 AND**

**EARLIER).** Papers made available after 1 February 2011 will be included in the next issue. **If papers were missed, please bring these to the attention of the Managing Editor.** Drs. Dávid Murányi and Peter Zwick are thanked for reviewing and providing additions to this present list.

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Photo by Bill P. Stark