

PERLA

Annual Newsletter and Bibliography of The International Society of Plecopterologists



Capnia valhalla Nelson & Baumann (Capniidae), ♂. California: San Diego Co. Palomar Mountain,
Fry Creek.

Photograph by C. R. Nelson

PERLA NO. 30, 2012

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

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TABLE OF CONTENTS

Subscription policy.....	4
2012 XIIIth International Conference on Ephemeroptera, XVIIth International Symposium on Plecoptera in JAPAN.....	5
How to host a conference.....	6
2012 LIFETIME ACHIEVEMENT AWARDS, Dr. John Hanson.....	7
Tenth North American Plecoptera Symposium.....	9
Illiesia.....	9
Plecoptera Species File—An update.....	10
Member News.....	11
Articles:	
Ian McLellan’s collection of Plecoptera now at New Zealand Arthropod Collection (NZAC), Auckland.....	13
Modeling Presettlement Range of Stoneflies in Midwest, USA and Canada.....	15
Interesting Winter Emerging Stoneflies (Plecoptera: Capniidae) from Southern California.....	16
Other Meetings.....	23
Recent Plecoptera Literature.....	23

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.

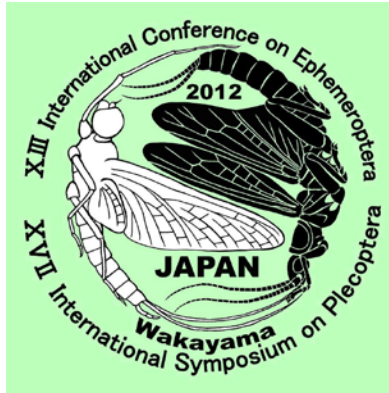
Persons or institutions who have no support or are financially unable to pay dues may continue to receive PERLA by writing a brief note to the Managing Editor requesting a waiver of dues and to be retained on the mailing list.

It is therefore important that you respond to this receipt of PERLA 30 (2012) in one of the following ways, in order to be kept on the mailing list for PERLA 31 (2013): (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 30) 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.



**2012 XIIIITH INTERNATIONAL CONFERENCE ON
EPHEMEROPTERA, XVIIITH INTERNATIONAL SYMPOSIUM ON
PLECOPTERA IN JAPAN**

3-9 June 2012, Wakayama City, Japan

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

June 3 (Sun)	Registration Welcome party
June 4 (Mon)	Sessions: Phylogeny, systematic, taxonomy
June 5 (Tue)	Sessions: Ecology, life history, reproduction, biology, physiology
June 6 (Wed)	Mid-conference trip (World Heritage Area in southern Wakayama). Barbecue party
June 7 (Thu)	Sessions: Community and conservation ecology
June 8 (Fri)	Sessions: Biogeography, distribution, morphology, ultrastructure Farewell party
June 9 (Sat)	Post conference trip

For further details please contact:

Dr. Tasuhiro Takemon: takemon@wracs.dpri.kyoto-u.ac.jp

Dr. Koji Tojo: ktojo@shinshu-u.ac.jp

A message from the Permanent Committee of the International Conferences on Ephemeroptera and the Standing Committee of the International Society of Plecopterologists

Dear friends and colleagues,

On behalf of our respective committees we wish to encourage you to attend the forthcoming conference in Wakayama City, Japan. The meeting was due to be arranged in June this year, but unfortunately had to be postponed due to the tragic events resulting from the tsunami. Our Japanese colleagues have made considerable efforts to rearrange the conference in a new location. Your attendance will be recognition of the outstanding spirit shown by our Japanese colleagues in organizing this conference. This will be a unique opportunity to meet your colleagues in a friendly atmosphere and share your enthusiasm for mayflies and stoneflies. We also encourage you to support the auction, even though you may be unable to attend. A successful auction is essential in raising funds for travel scholarships. Finally, we request your proposals for the 2015 joint conference.

Permanent Committee of the International Conferences on Ephemeroptera: Javier Alba-Tercedor, John E. Brittain, Ian Campbell, Eduardo Domínguez, John Flannagan, Elda Gaino, Donna Giberson, Peter Grant, Michael Hubbard, Peter Landolt, Michel Sartori, Tomáš Soldán, Arnold Staniczek

Standing Committee of the International Society of Plecopterologists: John E. Brittain, J. Manuel Tierno de Figueroa, Claudio Gilberto Froehlich, Peter P. Harper, Boris Kondratieff, Yu Isobe, Ignac Sivec, Kenneth W. Stewart, Stanley W. Szczytko.

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 (**Dr. Michel Sartori**, michel.sartori@vd.ch) and the International Society of Plecopterologists (**Dr. 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.

2012 LIFETIME ACHIEVEMENT AWARDS

The International Committee continued 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 field over their professional lifetimes. Previous awards have been made to **Noel Hynes**, **Bill Ricker** (announced in Perla 11), **Jacques Aubert**, **Teizi Kawai**, **Ian McLellan** (announced in Perla 14), **Claudio Froehlich**, **Lidija Zhiltzova**, **Peter Zwick** (announced in Perla 17), **Kenneth Stewart**, **Elisabetha Ravizza Dematteis**, **Carlaberto Ravizza** (announced in Perla 20), **Richard Baumann**, **Bill Stark** (announced in Perla 23), **Peter Harper**, and **Ignac Sivec** (announced in Perla 27). Traditionally, the publication of the the overview of the awardee's professional accomplishments is published in the issue of Perla after the conference. However, the Committee felt it was appropriate to present the overview of one of the 2012 awardees before the June meeting in Japan in this issue of Perla. The two reasons were that Dr. John Hanson advancing age (97 in April, 2012) and the fact that he has already been told of the award.

JOHN F. HANSON

Charles H. Nelson

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John F. Hanson was a student of the pre-eminent insect morphologist Guy Chester Crampton. In fact upon the latter's retirement in 1947, he succeeded Crampton as Assistant Professor of Insect Morphology in the Department of Entomology at the University of Massachusetts. There 'Doc', as he was affectionately known by students, spent much of his career teaching courses in insect morphology, evolution, and forest entomology.

As early as 1938 John Hanson's first publication, "Studies on the Plecoptera of North America. I." was indicative of his avid interest in stoneflies. Successive contributions on the records and descriptions of new species and/or genera of Leuctridae, Capniidae, and Perlodidae provided further evidence of his fascination with stoneflies and his capacity to conduct original investigations. These studies were based on numerous field-collecting trips in eastern and western North America. The line drawings that accompanied each paper were always skillfully done and carefully crafted to depict the diagnostic characters that readily distinguished the relevant taxonomic groups. Several papers reflected his interest in thoracic sternal plate morphology and what it could inform about stonefly relationships. He also produced papers on enhanced techniques for studying insects on such subjects as improving and accelerating KOH clearing of specimens, a foot-focusing device for the stereomicroscope, a dripless dispensing bottle, and trays for filing and storing liquid preserved specimens. With Jacques Aubert he produced a bibliography of stoneflies that bridged some of the period between the Claassen catalog and the more inclusive Illies and Zwick catalogs. Many of his papers appeared in the *Bulletin of the Brooklyn Entomological Society* where he served for a number of years as editor.

John Hanson was also successful in securing funding from Sigma Xi, John Simon Guggenheim Memorial Foundation (as a Fellow) and the National Institutes of Health (NIH), which provided financial support for research and for several graduate and undergraduate students. It was working on the latter grant on the studies of Plecoptera of the Eastern Seaboard States that I was introduced to the excitement of conducting stonefly research.

His published doctoral dissertation the “Comparative Morphology and Taxonomy of the Capniidae (Plecoptera)” is a publication that stands as an authoritative contribution to the phylogenetic and taxonomic relationships of the genera within this family. Per Brinck in a paper that surveyed milestones in Plecoptera research as part of a history detailing a century of progress in the natural sciences (1853 -1953) remarked about the type of future work that would be necessary “what is needed is comparative morphological investigations like the excellent study of J. F. Hanson on the Capniidae”.

Upon his retirement in 1980, John Hanson’s Plecoptera collection with its types and many thousands of specimens was provided to the United States Museum of Natural History at the Smithsonian Institution. There it is available for use by present and future generations of workers in Plecoptera.

In his acknowledgment of the lifetime achievement award ‘Doc’ wrote, “The time I spent studying Plecoptera I very much enjoyed. I wish there had been more time.” A sentiment that very likely speaks for many of us.

TENTH NORTH AMERICAN PLECOPTERA SYMPOSIUM

The **Tenth North American Plecoptera Symposium** will be held in northcentral Pennsylvania in **2013**. Final arrangements were unavailable by the deadline for this issue of Perla. The time frame will be late May to early June. Meeting dates will set to avoid conflicts with the 2013 SFS (NABS) meeting, which has not yet been scheduled, and other activities at the facility. The facility has lodging on site for up to 30 people, meeting and recreation rooms, and open grounds with a picnic area, hiking trail, and a stream.

Those who have not previously responded with an intent to attend should contact **Jane Earle** at janeearle7@msn.com or at **20 Red Fox Lane, Mechanicsburg, PA 17050, USA**. Information will be send to responders when available. Requests for abstracts will be sent later this year.

ILLIESIA

Illiesia, International Journal of Stonefly Research has completed publication of Volume 7 with the inclusion of 28 individual articles submitted by 31 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 8. Questions or submissions should be sent to isivec@mrc.pms-lj.si or stark@mc.edu. The Illiesia website is located at <http://www2.pms-lj.si/illiesia/>

PLECOPTERA SPECIES FILE—AN UPDATE

R. Edward DeWalt, University of Illinois, Illinois Natural History Survey, 1816 S Oak St., Champaign, IL, 61820, dewalt@illinois.edu.

Plecoptera Species File (PlecSF) was presented as a global resource at the 2008 International meeting. I said at that time that that Dr. Zwick's database would be

Plecoptera Plecoptera Species File (Version 1.0/4.0)
Home Search Taxa Glossary Key

Search for

Statistics for order Plecoptera:

Authors	598	
Publications	644	
References	2276	
Citations	15363	
Depositories	92	
Images	total: 55	unique taxa: 32
Sound recordings	total: 2	unique taxa: 2
End points in keys	total: 16	unique taxa: 16
Specimen records	total: 1076	unique taxa: 769
Superfamilies	total: 10	valid: 5; not valid: 5
Families	total: 47	valid: 30; not valid: 17
Subfamilies	total: 30	valid: 21; not valid: 9
Tribes	total: 19	valid: 14; not valid: 5
Genera	total: 495	valid: 389; not valid: 106
Subgenera	total: 3	valid: 2; not valid: 1
Species	total: 4438	valid: 3705; not valid: 733
Subspecies	total: 105	valid: 91; not valid: 14
Names at all levels	total: 5263	valid: 4361; not valid: 902

Usage of this website since Sep 1 2010 11:11AM: 356705 sessions
(Most of these "sessions" come from robotic web crawlers. The number of "hits" was not counted, but would be much larger.)

Show statistics for:
(any valid taxon at rank of genus or higher)

imported and checked against existing data and that updates would be conducted on a frequent basis. This has been accomplished and now PlecSF has 3,705 valid species names in the database. Since the International Meeting, we have:

- annually sent names to the Catalogue of Life (CoL)
- shared names with the Integrated Taxonomic Information Service (ITIS)
- shared names with the Global Biodiversity Information Facility (GBIF) using Integrate Publishing Toolkit (IPT) in Darwin Core Archive (DwC-A)

- implemented Life Science Identifiers (LSIDs)—providing a persistent identifier for each taxon
- created a faunal list search for species by Biodiversity Information Standards (TDWG) geographic units and providing a URL link to the search results
- built Google maps interface for specimen data
- added general distribution data for North America, Europe, Asia, and South America
- added private species files; scientists may use this as private space to work on revisions and fold these data back into the system as publications go to print.

We are currently adding new features to make Species Files easier and more efficient to use: new help documentation including a manual and video tutorials (1 mo.), the ability to export nomenclatural data in near publication ready format (rapid generation of catalogues, 5-6 mo.), new and improved key construction software in dichotomous,

matrix, and pictorial formats (4-5 mo.), and direct export of data in Encyclopedia of Life (EoL) formats (6-8 mo.).

While we routinely search for new stonefly publications in *Illiesia*, *Zootaxa*, and *Zookeys* and others, send us bibliographic information or PDFs of articles to help us keep PlecSF up to date. We would also like to have properly attributed images and sound files of taxa to post on PlecSF.

MEMBER NEWS

DR. DÁVID MURÁNYI FULBRIGHT GRANT TO STUDY AT BRIGHAM YOUNG UNIVERSITY, PROVO, UTAH, U.S.A.

Dr. Dávid Murányi from the Hungarian National Museum in Budapest received a Fulbright postdoctoral grant to study at the Aquatic Entomology Laboratory, Monte L. Bean Life Science Museum, Brigham Young University, Provo, Utah for five months. His reason for coming was to utilize the large Plecoptera collection and to study with **Richard Baumann** and **Riley Nelson**. He arrived on September 1, 2011 and left on January 31, 2012. Dávid was accompanied by his wife Szilvi and their two year old son Andris. The family lived in the Wymount Terrace married student apartments on the BYU campus, located at the base of the Wasatch Mountains. Nearby Rock Canyon provided a place for the family to escape into the mountains often for hiking and other recreational activities.

While at BYU, Dávid began a study of the Capniidae fauna of the Balkan Mountains that morphed into a study of the capniid genera of most of the Northern Hemisphere. He also began his study on the Balkan *Amphinemura*. His additional goals for the Balkan fauna were not realized but he had many opportunities to learn about the Nearctic fauna and to look at taxa that he had never before seen. He also researched an interesting collection of stoneflies that were collected from waterfalls in Iran in 2004 by Bill Shepard. Dávid took every opportunity to collect stoneflies in Utah and was also a part of the “Southern California Winter Stonefly Expedition,” led by Boris Kondratieff and two other colleagues, Riley Nelson and John Sandberg.

David brought and excellent collection of Palearctic Plecoptera with him as a gift to the BYU and helped to curate our specimens from Europe and northern Asia. In addition, we shared literature, techniques and experiences that were useful to all concerned. Dávid was a pleasure to work with and we were sad when he and his family needed to return home to Hungary.

Dick Baumann and Riley Nelson

Dr. Maribet Gamboa is working with molecular adaptation of stoneflies under hipoxia, as a postdoc student in **Dr. Michael Monaghan’s** lab in IGB, Germany. Also, she is trying to associate adults and nymphs using molecular tools in combination with wing

morphometrics. Additional work includes molecular taxonomy on: *Siphonoperla* with **Dr. Wolfram Graf**, *Capnia* with **Dr. Dávid Murányi**, and more than 30 stoneflies species in collaboration with **Dr. Kozo Watanabe**. Finally, she is also working in spatial and temporal distribution of stoneflies in Venezuela with **Dr. Maria Mercedes Castillo**, and on predictions of global climate change on their community structure in Venezuela.

Drs. J. Manuel Tierno de Figueroa and **Manuel J. López-Rodríguez**, University of Granada (Spain), carry on working on nymphal biology (life cycle, feeding and secondary production) in Spain and Italy, in collaboration with **Drs. J.M. Luzón-Ortega** (Hydraena S.L.L., Spain), **S. Fenoglio** and **T. Bo** (Università del Piemonte Orientale, Italy) and **J. Garrido** and **J. Rúa** (Universidad de Vigo, Spain). Moreover, physiological studies on digestive enzyme activities and antioxidant defences of stoneflies are being carried out in collaboration with **Drs. A. Sanz** and **C. Trenzado** (University of Granada, Spain). Also, with **Dr. J.M. Luzón-Ortega**, they are studying the drumming calls of several species of stoneflies from Spain, as well as stonefly distribution in the Iberian Peninsula. They are also collaborating with **Dr. R. Fochetti** (Università della Tuscia, Italy) in genetic approaches for the resolution of taxonomical problems, and with **Dr. T. Derka** (Comenius University, Slovakia) in some nymphal biology studies of species inhabiting streams in Slovakia. A study on DNA quantification is being made in collaboration with some colleagues of the Genetic Department from Universidad de Granada (Spain). Finally, they are also working at the community level (mainly on trophic webs) in several streams from southern Iberian Peninsula.

Current projects of **Gilles Vinçon**:

- * with **Sandra Knispel** and **Verena Lubini**: the new Plecoptera to the Swiss Fauna.
- * with **Dávid Murányi**: new contribution to the knowledge of the Turkish Stoneflies.
- * with **Dávid Murányi**: revision of the genus *Dictyogenus*.
- * with **Dávid Murányi**: revision of the genus *Rhabdiopteryx*.
- * with **Dávid Murányi**: revision of the *Leuctra inermis* group.
- * with **Dávid Murányi**: revision of the *Nemoura marginata* group.
- * with **Dávid Murányi** and **Tibor Kovacs**: revision of the West Palearctic species of *Perlodes*.
- * with **Dávid Murányi**, **Tibor Kovacs** and **Aref Dia**: description of a new *Perlodes* from Lebanon.
- * with **Wolfram Graf**: description of a new species or subspecies close to *Nemoura undulata* from Austria and Slovenia.
- * with **Ignac Sivec**: description of a new species close to *Leuctra armata* from Slovenia
- * alone: description of a new species close to *Leuctra concii* from the Italian and French Ligurian Alps.

Research activities of **Jane Earle** janeearle7@msn.com

I am continuing studies of the distribution and habitat preferences of Pennsylvania stoneflies and GIS mapping and preparing publications on new records and distribution

of Pennsylvania Taeniopterygidae and Capniidae. Also, in conjunction with the Pennsylvania Biological Survey (PABS) I have developed state conservation rankings for all Pennsylvania stonefly species based on NatureServe's global rankings for use with the Pennsylvania Natural Heritage Program. I am also participating in meetings with PABS to adopt criteria for state conservation rankings for other Pennsylvania aquatic invertebrates.

ARTICLES

Ian McLellan's collection of Plecoptera now at New Zealand Arthropod Collection (NZAC), Auckland

Trevor Crosby, New Zealand Arthropod Collection (NZAC), Landcare Research, Private Bag 92170, Auckland 1142, New Zealand
CrosbyT@LandcareResearch.co.nz

Ian McLellan passed away on 28 November 2008 after a short illness (Patrick & Pawson 2009). Ian was a Research Associate of Landcare Research (previously Entomology Division, DSIR, Nelson then Auckland) and it was agreed, and stated in his will, that his collection was to be deposited with the New Zealand Arthropod Collection (NZAC) at Landcare Research, Auckland. From the mid-1960s Plecoptera specimens collected by NZAC researchers were sent routinely to Ian to study at his Westport home. This note is to record that in February 2011 Ian's collection was received at NZAC, Auckland.

Ian's Plecoptera collection consists of some 3530 tubes of ethanol-stored New Zealand specimens identified to species plus about 300 tubes of specimens from other countries. The collection is in good condition, and currently housed in 2 metal filing cabinets, each with 11 drawers about 250 mm wide, 360 mm long, and 80 mm deep. The New Zealand Plecoptera material is contained in 14 drawers. Cardboard dividers are in each drawer to separate tubes of different species. Holotypes are in this collection: in Ian's publications the holotypes are stated to be deposited at NZAC (earlier DSIR), but it was agreed by NZAC that Ian could look after them in his collection while he was actively researching the group.

Shortly before his death, in a project with Dr. Steve Pawson of Scion, Christchurch, Ian provided information on New Zealand's Plecoptera for the website www.stoneflies.org.nz. As part of this project, each tube in his collection with a New Zealand species had a NZAC barcode label added, and then the collecting details (including georeferencing data) were recorded in Excel spreadsheets alongside records from other collections. The significance of Ian's collection is shown by the fact that it contains about half the total number of Plecoptera records for all New Zealand collections. A spreadsheet of the collecting details for any New Zealand stonefly species now can be downloaded by anyone from the website.

In addition to the Plecoptera, Ian's collection contains several hundred tubes of various Diptera families, particularly Thaumaleidae, Empididae, and Blephariceridae.

Literature Cited

Patrick, B. and S. Pawson. 2009. Obituary. Ian Dudley McLellan 1924–2008. *New Zealand Entomologist* 32: 91–94. [PDF available <http://www.ento.org.nz/nzentomologist/>]

Pawson, S. and I. D. McLellan. 2007. Stoneflies of New Zealand. www.stoneflies.org.nz [accessed 15 March 2011].



McLellan Cabinets



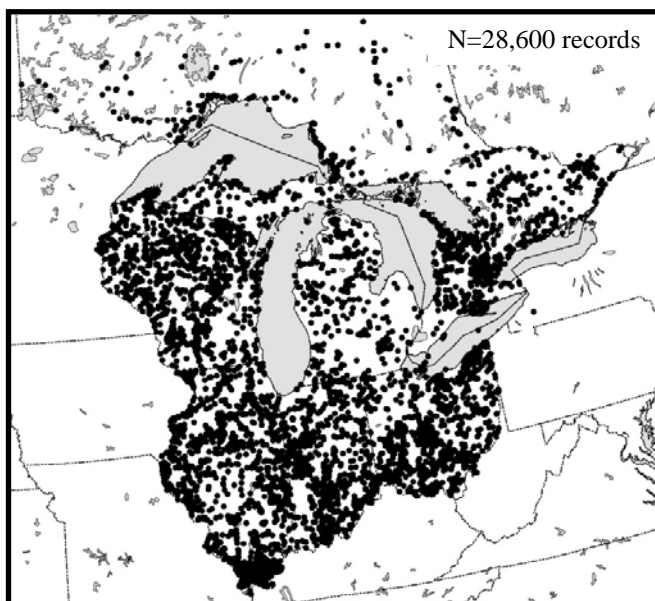
A typical drawer in the McLellan Cabinet

Modeling Presettlement Range of Stoneflies in Midwest, USA and Canada

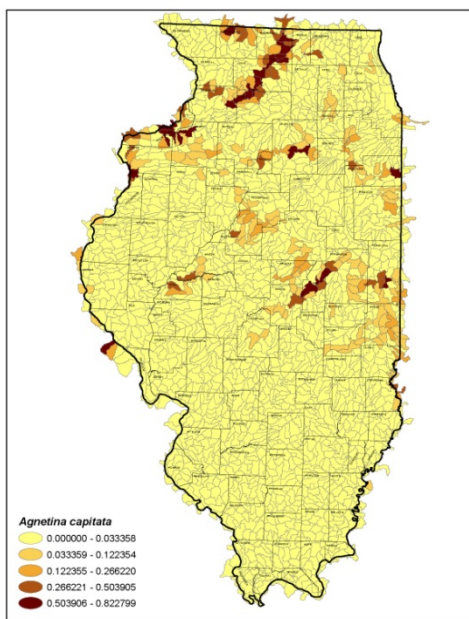
R. Edward DeWalt¹, Yong Cao¹, Scott Grubbs², Leon Hinz¹, Tari Tweddale¹, Jason L. Robinson¹, and Massimo Pessino¹

¹University of Illinois, Illinois Natural History Survey, 1816 S Oak St., Champaign, IL, 61820. ²Western Kentucky University, Department of Biology, Bowling Green, KY 42101

We have assembled a team of taxonomists, ecologists, GIS specialists, and students to work on a USA National Science Foundation funded project to model the natural range of up to 160 species of stoneflies inhabiting a portion of the Midwest of USA



and Canada. Species records come from museum specimens from 22 regional institutions and from trusted literature records. Most specimens were re-examined, label data were digitized and a unique identifier associated with each pin or vial. Georeferencing was conducted to whatever level the data permitted. Modeling is being conducted at the



USGS HUC12 level with physical and climate data being used from a variety of sources at this scale. This project is generating probability of occurrence values for each HUC12 (as seen below for Illinois). The pattern of highest probability (for instance, ≥ 0.5) HUC12 occurrences will be taken as pre-European settlement range. This will be the expectation for the region. Subsets of data held in reserve are being used to test the model; we also plan to request

funding to do independent, random sampling within HUC12s to determine observed values. These will help in the generation of range loss and objective criteria for species vulnerability assessment.

Our team has also received funding from the US Fish and Wildlife Service to determine the effects of predicted climate change on the distribution of stoneflies, mayflies, and caddisflies in much of the upper Midwest, USA. We will use the climate changes predicted from several CO₂ emissions scenarios over the 21st century to determine how distributions may shift. The resulting information will be key to understanding climate related threats to aquatic insects and in the conservation of species and habitats.

Interesting Winter Emerging Stoneflies (Plecoptera: Capniidae) from Southern California

C. Riley Nelson, John B. Sandberg, Dávid Murányi, and B. C. Kondratieff

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Introduction

Southern California has been recognized as a hotspot for biodiversity (Myers et al. 2000). The region is circumscribed by high mountains of the Transverse Ranges, to the North, the San Gabriel's, to the northwest by the Santa Susana's, and to southeast by the Santa Ana's (Hogue 1974). Several streams have formed deep canyons in the San

Gabriel's and Santa Ana's, and merge into three major river systems, the Los Angeles, the San Gabriel, and Santa Ana rivers (Hogue 1974). This area is particularly attractive for collecting aquatic insects because of the geologic isolation for this region (Yerkes et al. 1965). Streams of the Transverse Ranges have retained much of their aquatic insect faunas despite heavy human pressure on these waterways flowing into a metropolitan area of over 12 million people. It has been estimated that about one-third of California's native flora and 487 native vertebrates are known to occur in this region (California Department of Fish and Game 2005). It has also been documented that endemism and diversity of invertebrates are high (Ward 2005; Bond *et al.* 2006, Vandergast et al. 2007, Baumann and Kondratieff 2011). This is apparently true for the Plecoptera, with at least five known only from in or near the Los Angeles Basin in southern California. Unique species such as *Calileuctra dobryi* Shepard and Baumann (Shepard and Baumann 1995), *Capnia coyote* Nelson and Baumann, *C. palomar* Nelson and Baumann, *C. teresa* Claassen, and *C. valhalla* Nelson and Baumann (Nelson and Baumann 1987) are apparently restricted to this region of California.

We took a collecting trip to the area from January 8-13, 2012 to obtain fresh material especially for the study of the Capniidae, both for morphological and molecular studies. We were pleased with the amount and diversity of the material we collected in the Capniidae as well as in the Nemouridae, Taeniopterygidae, and Leuctridae. We additionally collected immatures of Pteronarcyidae, Perlodidae, Chloroperlidae, and Perlidae as well.

Material and Methods

Adult stoneflies were collected by searching at the water's edge and by using a beating sheet. We preserved specimens in either 80% or 100% ethanol. Additionally, nymphs were collected from selected streams and returned to Colorado State University for rearing or preserved for further study. We examined and identified our preserved material in our various laboratories using Wild M-8 and Olympus SZX12 stereomicroscopes. Specimens listed in this study are located at Brigham Young University, Provo, Utah (BYUC); Colorado State University, Fort Collins, Colorado (CSUC); The Sandberg California Stonefly Collection (SCSC); and the Hungarian National History Museum, Budapest (HMNI).

Results and Discussion

A total of 2,485 specimens were collected representing at least 15 species. Several of the southern California *Capnia* endemics, *C. coyote*, *C. palomar* (Fig. 1), *C. teresa*, and *C. valhalla* (Front Cover) were collected (Table 1). At least three species of *Mesocapnia*: *M. lapwae* (Baumann & Gaufin), *M. porrecta* (Jewett) (Baumann & Gaufin 1970), and *M. sp.* We had difficulty in sorting all individuals to "species," as some individuals from several localities showed epiproct characteristics of either *M. lapwae*, *M. frisoni* (Baumann & Gaufin), or exhibited intermediate morphologies. Perhaps molecular studies using the specimens collected during this trip will help resolve these issues.

Two of the nemourid species collected, *Malenka californica* (Claassen) [as presently treated] and *Zapada cinctipes* (Banks) and the perlid *Calineuria californica* (Banks) are common widespread western North American species, whereas the

nemourids *M. biloba* (Claassen) and *Soyedina nevadensis* (Claassen) are more restricted in distribution. *Malenka biloba* (Fig. 2) is known from southern half of California and northern Baja Mexico and *S. nevadensis* from California and Nevada.

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Table 1. Plecoptera species collected in southern California during January 7-13, 2012. Total numbers of males (♂), females (♀), and nymphs (N) collected by all authors are presented. CRN number =C. R. Nelson field number.

CALIFORNIA: San Bernardino Co., San Gabriel Mountains, 3 miles S Cajon Junction, Swarthout Canyon Road, N 34.27484 W 117.45277, 822 m, 08-Jan-2012, CRN10099

Capnia teresa 1♂

Mesocapnia lapwae 1♂, 5♀, 2 N

Malenka sp. 1 N

Taenionema sp. 2 N

San Bernardino Co., San Gabriel Mountains, Sheep Creek, Sheep Canyon Truck Trail, 1.3 mi north of Lytle Creek, N 34.27917 W 117.49435, 1013 m, 08-Jan-2012, CRN10100.

Mesocapnia sp. 1 N

San Bernardino Co., San Gabriel Mountains, Lytle Creek, Applewhite Picnic Area, N 34.26011 W 117.49628, 1029 m, 08-Jan-2012, CRN10101.

Perlomyia collaris 3♂, 2♀

Malenka biloba 143♂, 119 ♀, 16 N

Calineuria californica 2 N

San Bernardino Co., San Gabriel Mountains, Mount Baldy Road, San Antonio Creek, at San Antonio Falls, N 34.27313 W 117.63637, 1942 m, 08-Jan-2012, CRN10102.

Capnia gracilaria 1 ♂

C. palomar 2 ♂

C. teresa 8 ♂, 4 ♀

Malenka biloba 1 ♂

Malenka sp 1 ♀

Zapada cinctipes 4 ♂, 1 ♀, 2 N

San Bernardino Co., San Gabriel Mountains, Mount Baldy Road, San Antonio Creek, 2 mi North of Mount Baldy Village, N 34.25425 W 117.64118, 1618 m, 08-Jan-2012, CRN10103

Capnia teresa 117 ♂ 33 ♀ 2 N

Mesocapnia porrecta 1 ♂ 2 ♀

Malenka californica 17 ♂, 6 ♀, 1 N

Zapada cinctipes 8 ♂, 5 ♀

Sweltsa sp. 1 N

Calineuria californica 1 N

Isoperla sp. 1N

San Bernardino Co., San Bernardino Mountains, Seeley Creek, Hwy 138, Camp Seeley, Crestline, tributary of Mohave River, N 34.25470 W 117.30473, 1334 m, 09-Jan-2012, CRN10105.

Capnia coyote 215 ♂, 42 ♀, 22 N

Mesocapnia lapwae 5 ♂, 5 ♀

M. porrecta 40 ♂, 24 ♀, 15 N

Malenka biloba 1 ♂, 1 ♀

Taenionema sp. 1 N

Sweltsa sp. 1 N

San Bernardino Co., San Bernardino Mountains, Sawmill Creek, crossing below Cedar Pines Park, N 34.26102 W 117.34245, 1356 m, 09-Jan-2012, CRN10106.

Mesocapnia porrecta 28 ♂, 29 ♀

Paraleuctra sp. 1 ♀

Malenka sp. 5 ♀

Zapada cinctipes 5 ♂, 2 ♀, 3 N

Taenionema 3 N

Calineuria californica 5N

San Bernardino Co., San Bernardino Mountains, East Fork of West Fork of Mohave River, Miller Canyon Road, off Hwy 138, N 34.27132 W 117.29157, 1118 m, 09-Jan-2012, CRN10107.

Capnia coyote 118 ♂, 32 ♀

Mesocapnia lapwae 9 ♂, 13 ♀, 9 N

San Bernardino Co. San Bernardino Mountains, unnamed tributary of East Fork of West Fork of Mohave River, Hwy 138 N 34.26507 W 117.28699, 1191 m, 09-Jan-2012, CRN10108.

Capnia coyote 7 ♂, 4 ♀

Mesocapnia lapwae 57 ♂, 55 ♀

M. porrecta 10 ♂, 4 ♀

San Bernardino Co. San Bernardino Mountains, Snow Fork, Hwy 18, 3 miles west of Big Bear Lake, N 34.24503 W 117.02787, 2185 m, 09-Jan-2012, CRN10109.

Capnia palomar 1 ♂

C. teresa 1 ♂

Malenka sp. 1 ♀

Soyedina nevadensis 1 ♂, 3 N

Zapada cinctipes 2♀, 1 N

San Bernardino Co., San Bernardino Mountains, Santa Ana River, Hwy 38, jct Wildhorse Creek, N 34.16837 W 116.81517, 1954 m, 09-Jan-2012, CRN10111.

Capnia teresa 9♂, 3♀

Zapada cinctipes 1♂, 3♀

San Bernardino Co., San Bernardino Mountains, Santa Ana River, Seven Oaks Road bridge, N 34.18610 W 116.91906, 1591 m, 09-Jan-2012, CRN10112.

Capnia teresa 246♂, 56♀

Zapada cinctipes 3♂, 3♀

CALIFORNIA: Riverside Co., San Jacinto Mountains, Fuller Mill Creek, Hwy 243, Fuller Mill Creek Picnic Area, N 33.79893 W 116.74905, 1561 m, 10-Jan-2012, CRN10113.

Capnia palomar 3♂

C. teresa 37♂, 23♀, 2 N

Mesocapnia lapwae 1♂

M. sp. 2♂

Malenka californica 2♀

Zapada cinctipes 8♂, 4♀, 1 N

Sweltsa sp. 1 N

Calineuria californica 1 N

Riverside Co., San Jacinto Mountains, Tahquitz Creek, Humber Park above Idyllwild, N 33.76439 W 116.68756, 1963 m, 10-Jan-2012, CRN10114.

Zapada cinctipes 1♀

Riverside Co., San Jacinto Mountains, Coldwater Creek Canyon Trail, above Keenwild Ranger Station, off Hwy 243, N 33.70570 W 116.71574, 1416 m, 10-Jan-2012, CRN10115.

Mesocapnia lapwae 5♂, 5♀, 11 N

Taenionema sp. 1 N

Riverside Co., San Jacinto Mountains, Hurkey Creek, Hwy 74, Hurkey Creek Campground, N 33.67990 W 116.68121, 1380 m, 10-Jan-2012, CRN10116.

Mesocapnia lapwae 19♂, 20♀

Taenionema sp. 4 N

Riverside Co., San Jacinto Mountains, Strawberry Creek, Hwy 74, ca. 3 miles west of Mountain Center, N 33.71085 W 116.76941 882 m 10-Jan-2012, CRN10118.

Capnia teresa 6♂, 2♀

Mesocapnia lapwae 9♂, 17♀, 4 N

Malenka sp. 1♀, 1 N

Zapada cinctipes 3 N

Taenionema sp. 27 N

CALIFORNIA: San Diego Co., Palomar Mountain, Fry Creek, Fry Creek Campground, Road S-6, N 33.34466 W 116.88013, 1462 m, 11-Jan-2012, CRN10119.

Capnia coyote 1♂

C. palomar 19♂, 1♀

C. valhalla 2♂

Mesocapnia lapwae 6♂, 6♀

M. porrecta 11♂

M. sp. 21♂, 15♀, 3 N

Malenka biloba 17♂, 7♀, 1 N

Zapada cinctipes 1♂

Sweltsa sp. 2 N

San Diego Co., Palomar Mountain, Iron Springs Creek, Road S-6, N 33.33277 W 116.87142, 1467 m, 11-Jan-2012, CRN10120.

Capnia palomar 1♂

C. teresa 3♂

Mesocapnia porrecta 12♂, 14♀

Malenka biloba 3♂, 2♀

M. californica 14♂, 16♀

Zapada cinctipes 5♂, 7♀

CALIFORNIA: Orange Co., Santa Ana Mountains, Trabuco Creek, Trabuco Canyon at point of narrowing, N 33.67360 W 117.54151, 419 m, 11-Jan-2012, CRN10123.

Mesocapnia lapwae 10♂ 8♀, 5 N

Malenka biloba 1♂ 2♀, 5 N

Calineuria californica 3 N

Taenionema sp. 1 N

CALIFORNIA: Los Angeles Co. San Gabriel Mountains, Placerita Creek, East of I-5, Waterfall Trail, Placerita Canyon County Park, N 34.36963 W 118.44392, 613 m, 12-Jan-2012, CRN10125.

Mesocapnia lapwae 25♂, 14♀, 26 N

Malenka biloba 2♂, 4♀, 1 N

Los Angeles Co., San Gabriel Mountains, Arroyo Seco Creek, Switzer Campground, Hwy 2, N 34.26586 W 118.14425, 1001 m, 12-Jan-2012, CRN10126.

Capnia gracilaria 12♂, 3♀, 1 N

Mesocapnia lapwae 50♂, 52♀, 5 N

Malenka biloba 24♂, 25♀, 3 N

Los Angeles Co., San Gabriel Mountains, small stream, Hwy 2, 1.5 air miles East of Switzer Campground, N 34.26829 W 118.11785, 1280 m, 12-Jan-2012, CRN10127.

Mesocapnia lapwae 1♂ 3♀

Taenionema sp. 2 N

Los Angeles Co. San Gabriel Mountains, Soldier Creek, Soldier Creek Trail, below Crystal Lake Campground, N 34.32034 W 117.83323 1637 m, 13-Jan-2012, CRN10131.

Mesocapnia porrecta 1♂, 3♀

Malenka biloba 1♂, 1♀, 1 N

M. californica 3♂, 5♀

Soyedina sp. 1♀, 2 N

Zapada cinctipes 3♂, 3♀

Calineuria californica 7 N

Los Angeles Co. ,San Gabriel Mountains, Soldier Creek, below Crystal Lake Recreation Area, Crystal Lake Road, 7 road miles North of Coldbrook Campground, N 34.31779 W 117.83659, 1614 m, 13-Jan-2012, CRN10132.

Mesocapnia porrecta 2♂, 1♀

Malenka biloba 1♂

M. californica 4♂, 4♀

Soyedina nevadensis 2♂, 2♀

Zapada cinctipes 3♂, 3♀

Los Angeles Co., San Gabriel Mountains, Soldier Creek at Falling Springs, 2.3 road miles North of Coldbrook Campground, Hwy 39, N 34.30136 W 117.83829, 1177 m, 13-Jan-2012, CRN10134.

Capnia teresa 1♂

Malenka biloba 5♂, 3♀

M. californica 12♂ 13♀

Soyedina sp. 1 N
Zapada cinctipes 16♂, 9♀
Calineuria californica 2 N
Isoperla sp. 2 N

Los Angeles Co., San Gabriel Mountains, Soldier Creek, Coldbrook Campground, Hwy 39 N 34.29393 W
117.83950, 1024 m, 13-Jan-2012, CRN10135.

Capnia teresa 1♀
Mesocapnia porrecta 14♂, 9♀
Malenka biloba 3♂, 4 ♀
Malenka californica 1♂, 6♀
Zapada cinctipes 2♀
Calineuria californica 2 N

Los Angeles Co., San Gabriel Mountains, Coldbrook Creek, Coldbrook Campground, Hwy 39 N 34.29393
W 117.83950, 1024 m, 13-Jan-2012, CRN10136.

Capnia teresa 1♂
Mesocapnia porrecta 9♂, 10♀
Malenka biloba 2♂



Figure 1. *Capnia palomar* ♂. California: San Diego Co., Palomar Mountain, Fry Creek,



Figure 2. *Malenka biloba*. California: Los Angeles Co., San Gabriel Mountains, Arroyo Seco Creek, Switzer Campground, Hwy 2.

OTHER MEETINGS

The 1st Annual World Congress of Biodiversity-2012 (WCBD-2012) will be held April 25-28, 2012, in Xi'an, China.

The 3rd International Forum for Surveillance and Control of Mosquitoes and Mosquito-borne Diseases will be held at Suzhou, Jiangsu, China, May 27-31, 2013. Contact Dr. Rudy Xue at xueamcd@yahoo.com and Dr. Tongyan Zhao at aedes@263.net

The International Congress of Entomology will be held August 19-25, 2012 in Daegu, South Korea.

Entomology 2012, the 60th Annual Meeting of the Entomological Society of America, will be held November 11-14, 2012 in Knoxville, Tennessee.

RECENT PLECOPTERA LITERATURE (CALENDAR YEAR 2011 AND EARLIER). Papers made available after 1 February 2012 will be included in the next issue. **If papers were missed, please bring these to the attention of the Managing Editor.** Drs. J. Manuel Tierno de Figueroa and Peter Zwick are thanked for reviewing and providing additions to this present list.

Aagaard, K. and T. Bongard. 2011. Disentangling the effects of heterogeneity, stochastic dynamics and sampling in a community of aquatic insects. *Ecological Modelling* 222: 1387-1393.

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Allocapnia mystica Frison (Capniidae), ♂. Webster Co., Mississippi, USA.
Photograph by Bill P. Stark