# **PERLA**

# Annual Newsletter and Bibliography of The International Society of Plecopterologists



Beloneuria stewarti Stark & Szczytko (Perlidae), USA: Tennessee, Polk County, Goforth Crk, 25 May 2006.

One of the species of Plecoptera named in honor of Dr. Kenneth W. Stewart Photograph by Bill P. Stark

PERLA NO. 31, 2013

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

### **PERLA**

# Annual Newsletter and Bibliography of the 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.

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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 31 (2012) in one of the following ways, in order to be kept on the mailing list for PERLA 32 (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 29) for your convenience in responding.

You may send your dues or donation in the form of a personal check, bank note, cashier's check, or postal money order designated in U.S. funds to the Managing Editor. Because of high bank costs for exchange in some countries, you may send cash, in which case the Managing Editor will respond with a personal acknowledgment when received. NO CREDIT CARD CHARGES CAN BE ACCEPTED.

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.

# ON THE XVII INTERNATIONAL SYMPOSIUM ON PLECOPTERA AND THE XIII INTERNATIONAL CONFERENCE ON EPHEMEROPTERA

Charles H. Nelson, Department of Biological and Environmental Sciences, The University of Tennessee at Chattanooga, Chattanooga, TN 37403

After a postponement of this meeting for one year owing to the devastating effects of the tsunami, an air of anticipation and enthusiasm characterized the XVII International Symposium on Plecoptera and the XIII International Conference on Ephemeroptera, held June 3 – 9 in Wakayama, Honshu, Japan. Dominated by the beautiful Wakayama Castle on Mt. Torafusu, the conference site meeting was located in the Big-Ai Convention center and excellent accomodations were provided by the Hotel Landmark located within the center. Sixty-four registrants from twenty countries attended two keynote addresses, seven oral presentation sessions and two poster presentations sessions. These sessions covered a diverse variety of subjects that included paleontology, biodiversity, distribution, ecology, life history, morphology, molecular data, phylogeny, taxonomy, and physiology.

Among the many highlights of the conference was a special event that included an exhibition of the 'Wadiko' Japanese Drum used in ceremonies in shrines and temples and an exciting demonstration of 'karate' martial art that originated in the Ryukyo (Okinawa) Islands in the 19<sup>th</sup> Century.

The mid-conference field trip to the Nye River and Dome Village was an opportunity for participants to collect as well as enjoy assisting school children in the field with collecting and conducting taxonomic identifications. A sumptuous barbeque at the Dome Village campsite was followed by a delightful evening viewing the luminescent flights of the Japanese aquatic firefly.

The Japanese restaurant, GANKO, was the site for a superb conference dinner with many courses that included a wide variety of sushi. Surrounded by lovely gardens, this former villa of a wealthy businessman was a delightful setting for this important occasion.

For those who could not get enough of the beautiful Japanese countryside our hosts conducted a post-conference trip to the home of the naturalist, Kumagusu Minakata, that also included some hiking along the UNESCO World Heritage Site 'Kumano-Kodo' pilgrimage route and a visit to the Kumano Hongu Taisha Shrine.

The conference participants certainly express our appreciation to the Organizing Committee for their commendable efforts that went into making the conference a great success: Yasuhiro Takemon, Kyoto University (chairperson); Mayumi Yoshimura, Forestry and Forest Products Research Institute (secretary-general); Koji Tojo, Shinshu University (vice-chairperson); Yu Isobe, Nara Bunka Women's College (gifts), Akikazu

Soichiro Mukaiyama, Toyonaka City (event); Shigekazu Uchida, Aichi University of Industrial Technology (sponsors); Kazuhisa Inada, Himeji High School (logo) and Toru Kishimoto, Toshihito Fujitani, Takao Shimizu.

Taira, Osaka Prefecture University (accompanying person program, post conference trip);

PROGRAM			
Meeting Schedule			
Sunday, June 3			
18:00-21:00	Registration of participants at the Hotel Landmark		
Social Event			
19:00-20:00	Welcome refreshments and drinks at the Hotel Landmark		
Monday, June 4			
9:00-10:00	Registration		
Opening Ceremony			
10:00-10:15	Opening and welcome address by Yasuhiro Takemon (Conference Chairperson)		
10:15-10:25	Welcome address from the Governor of Wakayama Prefecture		
10:25-10:35	Welcome address from the Mayor of Wakawama City		
	Opening and welcome address from Michel Sartori and John Brittain (International Committee Chairs)		
Keynote Address I			
11:00 -12:00	Tokeshi, M  Comparative biodiversity of Ephemeroptera and Plecoptera from Asian to global perspectives		
12:00-12:15	Conference picture		
12:14-14:10	Noon recess		
Oral Presentation I:	Past-Present-Future (Chair: J. Brittain)		
14:10-14:30	Alba-Tercedor, J., J. M. Poquet, R. Rodríguez-López  Predicting the effect of global warming on mayfly and stonefly families in the Iberian Mediterranean area of Spain		
14:30-14:50	Bojková, J., T. Soldán, S. Zahrádková Plecoptera taxocenoses and degredation of watercourses in the Czech Republic: changes after 50 years		

14:50-15:40	Coffee break		
15:40-16:00	Godunko, R. J., A. H. Staniczek Revision of fossil Metretopodidae (Insecta: Ephemeroptera) in Baltic amber		
16:00-16:20	Tojo, K.  Evolutionary origin of the insect wing: Approach from		
Special Event	Ephemeropteran embryology		
17:30-19:00	Presentation of 'Wadaiko' Japanese Drum Presentation of 'Karate' martial art		
Tuesday, June 5			
Keynote Address II			
9:30-10:30	Tanida, K <b>Historical overviews of aquatic entomologists and insects in Japan</b>		
10:30-11:00	Coffee break		
Oral Presentation II: E	Siodiversity, Distribution, Faunistics (Chair: T. Soldan)		
11:00-11:20	Sartori, M., J. L. Gattolliat, M. T. Monaghan Origin, diversification and the future of Macaronesian mayflies (Ephemeroptera)		
11:20-11:40	Bolortsetseg, E., B. Badamdorj The Mayfly (Ephemeroptera) studies of streams, rivers, and lakes of Mongol Altai Mountain		
11:40-12:00	Nelson, C. <b>Log-series statistical distribution in Plecoptera classification</b>		
12:00-14:00	Noon recess		
Oral Presentation III: Ecology, Morphology, Physiology (Chair: P. Zwick)			
14:00-14:20	Sekine, K., K, Tojo The origin and expansion of unisexual populations in the geographically parthenogenetic mayfly <i>Ephoron shigae</i> (Polymitarcyidae)		
14:20-14:40	Barber-James, H. M., F. C. de Moor A scanning Electron Microscopy study of mating adaptations in the Prosopistomatidae (Ephemeroptera)		

14:40-15:00 Sato, H., Y. Degawa

Not gills, but fungi: Harpellales, a fungal order inhabiting the gut of aquatic insects

15:00-15:30 Coffee break

15:30-15:50 Conference site proposals

#### Poster Session I: Phylogeny, Systematics, Taxonomy

15:50-17:30

Zrelli, S., M. Boumaiza, M. Bejaoui, J. L., Gattolliat, M. Sartori New data and revision of the Ephemeroptera of Tunisia

Lecci, L. S., C. G. Froehlich, P. C. Bispo

Phylogenetic analysis of the genus *Gripoteryx* (Pictet 1841) (Plecoptera: Gripopterygidae), based on morphology

Ishiwata, S.

Revision of the genus *Drunella* (Insecta: Ephemeroptera: Ephemerellidae) from Japan

Yoshinari, G., M. Nakamura, S. Uchida A new species of *Togoperla* (Perlidae) from Japan

Salles, F. F., Y. Shimano, E. D. G. Soares, L. R. R. Faria Revision of *Oligoneuria* Pictet (Ephemeroptera: Oligoneuridae)

Zhou, C. F.

The nymph of *Gilliesia pulchra* Zhou (Ephemeroptera: Leptophlebiidae)

Gattolliat, J. L., L. Vuataz, M. Sartori

Mayfly fauna of Jordan: relevance of a barcoding gene for the association of ontogenetic stages

Boumans, L.

DNA barcoding of Norwegian stoneflies and of heptageniid mayflies

Vuataz, L., M. Sartori, A. Wagner, M. T. Monaghan

Toward a revised taxonomy of Alpine *Rhithrogen*a (Ephemeroptera: Heptageniidae): the utility of a barcode gene

Kato, Y., K. Tojo

Molecular phylogenetics of East Asian *Yoraperla* stoneflies (Plecoptera, Peltoperlidae)

Kato Y., K. Tojo

Molecular phylogenetic relationships of East Asian *Cryptoperla* stoneflies (Plecoptera, Peltoperlidae)

Takenaka, M., K. Tojo

Genetic structures of dipteromimid mayflies endemic to Japan (Ephemeroptera, Dipteromimidaeae)

Saito, R., K. Tojo

Genetic structures of the isonychiid mayfly *Isonychia japonica* (Ephemeroptera, Isonychiidae)

Morii, Y., M. Yoshii, T. Kishimoto, K. Tojo

Molecular biogeography of the scopurid stoneflies (Plecoptera, Scopuridae)

Maracci, S., N. Vuilleumier, M. Sartori

Aqualogue: an original scheme to record aquatic insect biodiversity

Kobayashi, S., Y. Takemon

Longitudinal patterns in taxonomic richness of Ephemeroptera and Plecoptera in a Japanese River

Wednesday, June 6

## Mid-Conference Trip to the Nye River and Dome Village

Thursday, June 7

## Oral Presentation IV: Ecology, Life History, Biology (Chair: Y. Takemon)

9:30-9:50	Pereira-da-Conceicoa, L. L., H. M. Barber-James A preliminary investigation of the diversity of Teloganodidae (Ephemeroptera) in South African rivers
9:50-10:10	López-Rodríguez, M. J., J. M. Tierno de Figueroa Life in the dark: on the biology of the cavernicolous stonefly <i>Protonemura gevi</i> (Insecta: Plecoptera)
10:10-10:30	Hitchings, T.  Life in turbulent water for <i>Deleatidium</i> (Ephemeroptera: Leptophlebiidae) from New Zealand
10:30-10:50	Boumans, L.  Incipient speciation: a distinct local population of Leuctra hippopus (Plecoptera) in Norway
10:50-11:20	Coffee break
11:20-11:40	Morii, Y., M. Yoshii, T. Kishimoto, K. Tojo Differences of eclosion pattern between two closely related scopurid stoneflies (Plecoptera, Scopuridae)

11:40-12:00	Ban, Y., T. Mita, M. Ishikawa Inspection of patchy emergence of mass-emerging mayfly, <i>Ephoron</i> shigae Takahashi (Ephemeroptera, Polymitarcyidae) from larvae side
12:00-12:20	Saltveit, S.J., J.E. Brittain Life cycle strategies in contrasting populations of the stonefly, Amphinemura standfussi (Plecoptera, Nemouridae)
12:20-14:00	Noon recess
Oral Presentation V:	Ecology (Chair: M. Sartori)
14:00-14:20	Avlyush, S., M. Schaeffer, D. Borchardt Life cycles and secondary production of mayflies (Ephemeroptera) in the Kharaa River, Mongolia
14:20-14:40	Manko, P. Microdistribution patterns of stonefly nymphs in small flysch river (Eastern Carpathians, Slovakia)
14:40-15:00	Ozolins, D.  Microhabitat preference of different mayfly larvae instars in medium sized lowland stream in Latvia
15:00-15:30	Coffee break
General Shows	
15:30-15:45	Yoshimura, M. Slide show of Mid-Conference trip
15:45-16:15	Alba-Tercedor, J. (use anaglyph glasses)

Poster session II: Morphology, Ecology, Life History, Physiology, Technical Information

Prosoptistoma pennigerum (Müller, 1785)

16:15-18:00

Bolortsetseg, E., J. Morse, B. Badamdorj

A gynander subimago *Baetis* sp. (Ephemeroptera, Baetidae) from Mongolia

Micro-computer tomography analysis techniques applied to mayflies, with a detailed study of the anatomy of the nymph of

Sekine, K., K. Tojo

The origin and expansion of unisexual populations in the geographically parthogenetic mayfly *Ephoron shigae* (Polymitarcyidae)

Helland, N. K. S., J. E. Brittain

Distribution of Plecoptera, Ephemeroptera and Trichoptera in

a Norwegian mountain stream system in relation to environmental variables

López-Rodríguez, M. J., C. E. Trenzado, J. M. Tierno de Figueroa, A. Sanz

Digestive enzyme activity and trophic behavior in two predator aquatic insects (Plecoptera, Perlidae). A comparive study

Tierno de Figueroa, J. M., M. J. López-Rodríguez, T. Bo, S. Fenoglio Life cycle and nymphal feeding of three high mountain Alpine macroinvertebrate species (Plecoptera and Ephemeroptera)

Koščo, J., P. Manko

The diet composition of *Perla marginata* larvae (Plecoptera: Perlidae) in a Eastern Carpathian flysch river

Wagner, A., M. Sartori

Ontogeny of tarsal claws in selected mayfly species (Ephemeroptera)

Ogany, Y.

Comparitive morphology of the epiproct in Japanese *Stavsolus* (Plecoptera: Perlodidae)

Loskutova, O., L. Zhiltzova

Wing and body size polymorphism in population *Arcynopteryx* compacta McL. (Plecoptera: Perlodidae) in the Ural Mountains (Russia)

Takemon, Y.

Diversity of the reproductive behavior in mayflies

Luzón-Ortega, J. M., M. J. López-Rodríguez, J. M. Tierno de Figueroa **Description of the drumming signal of** *Eoperla ochracea* (Kolbe, 1885) (Plecoptera: Perlidae)

Morii, Y., M. Yoshii, T. Kishimoto, K. Tojo

The parapatric distribution pattern derived from reproductive interference between two closely related scopurid stoneflies (Plecoptera, Scopuridae)

Grant, P., M. Walters, C. Wright

The life cycle and substrate preference of *Cercobrachys etowah* Soldan (Ephemeroptera: Caenidae) inhabiting a sandy bottom stream

Yoshimura, M.

Preference of tree types in adult *Kamimuria tibialis* (Plecoptera, Perlidae)

Kitchen, L., B. Peacock, C. Macadam

The Anglers' Monitoring Initiative – public engagement and river quality monitoring

# Lu, C. T., H. M. Lee, C. M. Linn, D. J. Wei, C. F. Tang A study of Forciomyia taiwana (biting midge) repellent

J. Alba-Tercedor

Studying the anatomy of wet specimens of mayflies of the genus Baetis (Insecta: Ephemeroptera) by scanning them into a liquid with the Skyscan 1172 high resolution micro-CT

### Auction

18:00	Closing of silent auction	
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Friday, June 8

Oral Presentation	<b>VII</b>	Systematics	Tavonomy	Riogeography (	Chair: A	Staniczak)
Orai Presentation	VI.	Systematics.	. Taxonomy.	. Diogeography (	Chair. A.	. Staniczeki

Oral Presentation VI: Systematics, Taxonomy, Biogeography (Chair: A. Staniczek)			
9:30-9:50	Salles, F. F., E. Soares, R. Hott Current knowledge of Brazilian Baetidae (Ephemeroptera)		
9:50-10:10	Gattolliat, H.  Biogeography of the Baetidae in South-East Asia: a generic and specific perspective		
10:10-10:30	Naranjo López, C., J. G. Peters  Mayflies (Ephemeroptera) of the Greater Antilles, with new records for Jamaica and the Dominican Republic		
10:30-10:50	Soldán, T., R. J. Godunko, P. Sroka, J. Bojková Mayfly (Ephemeroptera) species inventory of the Caucasus Mountains		
10:50-11:20	Coffee break		
11:20-11:40	Vuataz, L., M. Sartori, M. T. Monaghan Endemism and diversification in freshwater insects of Madagascar revealed by coalescent and phylogenetic analysis of museum and field collections		
11:40-12:00	Wakimura, K., Y. Takemon, A. Takayangi, K. Tanida, S. Ishiwata, N. Shimizu, M. Kato  Construction of a DNA database for Japanese mayflies for quick species identification		
Poster Prize			
12:00	Closing of ballots for poster prize		
12:00-13:40	Noon recess		

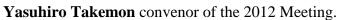
# Oral Presentation VII: Systematics, Taxonomy, Biogeography (Chair: C. Nelson)

Zhou, C.F.  The nymph of Gilliesia pulchra Zhou (Ephemeroptera: Leptophlebiidae)		
Surenkhorloo, P. Contribution to the East Palearctic and Nearctic species of Mesocapnia Raušer, 1968 (Plecoptera: Capniidae)		
Macadam, C., L. Kitchen, M. Dobson  Ephemeroptera in the UK: a national approach to monitoring and conservation management		
Coffee break		
Takemon, Y.  Biodiversity patterns and processes revisited from Asia		
Conference Dinner at GANKO Japanese Restaurant		
Saturday, June 9  Post-Conference Trip to Southern Wakayama		

Otherwise than noted, photographs courtesy of Charles Nelson.



Wakayama Castle overlooking Wakayama, Japan.







Shigekazu Uchida and Purevdorj Surenkhorloo discussing Palearctic stoneflies.



Manuel Tierno de Figueroa and Manuel Jesús López-Rodriguez reflecting on Iberian stoneflies.



Dr. Peter Zwick and Lucas Lecci collecting at the Nye River.



The master at work, **Dr. Peter Zwick**.



Participants and school children at the Dome Village.



Participants at the Conference Dinner held at GANKO.



Conference participants trying traditional Japanese drumming.
Photograph, courtesy John Brittain



Lifetime Achievement Award Recipients Drs. **John Brittain**, **Yu Isobe** and **John Hanson** (not pictured) with presenters Prof. **Peter Zwick** (for Isobe) and Dr. **Charles Nelson** (for Dr. **John Hanson**, see *Perla* 30).



Drs. Craig Macadam and Frederico Salles convenors for the 2015 (Scotland) and 2018 (Brazil) meetings, respectively.













# The XIVth International Conference on Ephemeroptera, The XVIIIth International Symposium on Plecoptera in 2015 in Aberdeen, Scotland

A partnership formed between Buglife–The Invertebrate Conservation Trust, The Riverfly Partnership, The Riverfly Recording Schemes, Freshwater Biological Association, the James Hutton Institute and The Natural History Museum London will host the joint meeting. The conference will use the world class facilities of the James Hutton Institute with field work in the Dee catchment which supports a wide range of UK Ephemeroptera and Plecoptera and offer access to world class collections the Natural History Museum, London.

Provisional dates are 31 May-6 June 2015.

Correspondence should be directed to: Craig Macadam

Email: craig.macadam@buglife.org.uk; Telephone: +44 (0)1786 460360



*Glen Tanar – location for the post-conference trip.* 

# The XV International Conference on Ephemeroptera, The XIX International Symposium on Plecoptera Brazil 2018

The 2018 Joint International Conference will be held in Espírito Santo State, Brazil, at Aracruz, a small town on the coast of the state, famous by its natural beauties, such as beaches, forests, rivers, mangroves, and very close to Vitória, the capital of Espírito Santo.

Organizers are **Dr. Frederico F. Salles,** Department of Agrarian and Biological Sciences, Federal University of Espírito Santo, São Mateus, Espírito Santo, 29932-540, BRAZIL and **Dr. Rodolfo Mariano L. S.,** Departament of Agrarian and Environmental Sciences, State University of Santa Cruz, Ilhéus, Bahia, Brazil.

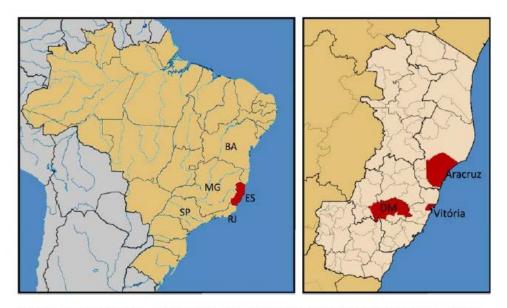


Figure 1.A. Location of the State of Espírito Santo (ES), and surrounding states: São Paulo (SP), Rio de Janeiro (RJ), Minas Gerais (MG) and Bahia (BA) / B. Location of the cities of Aracruz, Vitória and Domingos Martins (DM).



Lifetime Achievement Award Recipients. Dr. Charles Nelson holding the plaque for Dr. John Hanson (not pictured), Drs. John Brittain and Yu Isobe.

# 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), the late **Kenneth Stewart**, **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). The Standing Committee announced the award to **Dr. John Hanson** in Perla 30. At the XVII International Symposium on Plecoptera in

Wakayama, Honshu, Japan, **Drs. John Brittain** and **Yu Isobe** were presented with the award for their exemplary research on Plecoptera.

#### Dr. Yu Isobe

Dr Yu Isobe holds the position of professor at the Nara Bunka Women's College, in Nara, Japan. She has published extensively on the Plecoptera, maintaining the long Japanese tradition of excellence in stonefly research, including such scientists as Drs Ueno, Kohno and Kawai. In fact Dr. Isobe was a student of Dr Kawai with a doctoral thesis entitled, "Studies of ecological differentiation in four species of Perlidae (Plecoptera). She has focused very much on teaching and has had several students of Plecoptera, including Drs Yoshimura and Hanada.

# The publications of Dr. Yu Isobe on Plecoptera:

- Chino, Y. and Y. Matsui. 1974. On the adult, egg and 1/2/3 instar larvae of *Oyamia gibba*. Klapálek. Nature and Insects 9(7): 18-20. In Japanese.
- Kawai, T. and Y. Isobe. 1979. Some taxonomic relationships of the genera *Schistoperla* Banks and *Kiotina* Klapálek. Gewässer und Abwässer. 64: 74-76.
- Isobe, Y. 1981. On the life cycle of genus *Oyamia*. Biology of Inland Waters, 2: 37.
- Kawai, T. and Y. Isobe. 1984. Notes on the egg of *Scopura longa* Ueno (Plecoptera). Annales de Limnologie 20: 57-58.
- Isobe, Y. 1984. Egg number of each mass and the hatching rate in *Oyamia seminigra*. Biology of Inland Waters 3: 39. In Japanese.
- Kawai, T. and Y. Isobe 1985. Plecoptera. Pp 125-148. *In* Kawai, T. (ed.). An Illustrated Book of Aquatic Insects of Japan. Tokai University Press, Tokyo, Japan. 409pp. In Japanese.
- Uchida, S. and Y. Isobe. 1988. *Cryptoperla* and *Yoraperla* from Japan and Taiwan (Plecoptera: Peltoperlidae). Aquatic Insects 10: 17-31.
- Isobe, Y. 1988. Eggs of Plecoptera from Japan. Biology of Inland Waters 4: 27-39.
- Isobe, Y. 1989. Ecological speciation among the larvae of four large stonefly species. Pp. 68-84. *In* Shibatani, A. and K. Tanida (eds.). Recent Progress of Aquatic Entomology in Japan, Speciation and Habitat Partitioning. Tokai University Press, Tokyo, Japan. 184+21pp. In Japanese.
- Uchida, S. and Y. Isobe. 1989. Styloperlidae, stat. nov. and Microperlidae, subfam. nov. with a revised system of the family group Systellognatha. Spixiana 12: 145-182.

- Kawai, T. and Y. Isobe. 1990. Supplement 1 to Plecoptera in Kawai, T. (ed.) An Illustrated Book of Aquatic Insects of Japan. Biology of Inland Waters 5: 37. In Japanese.
- Isobe, Y. 1990. A catalogue of Plecoptera in Hyogo Prefecture (I). Hyogo Freshwater Biology, 36, 37: 115-120. In Japanese.
- Uchida, S. and Y. Isobe. 1991. Designation of a Neotype for *Kamimuria tibialis* (Pictet, 1841), and *K. uenoi* Kohno, 1947, spec., propr., stat. n. (Plecoptera, Perlidae). Aquatic Insects 13: 65-77.
- Hanada, S., Y. Isobe and K. Wada. 1992. Behaviors of adult stoneflies of *Microperla brevicauda* Kawai and *Kamimuria tibialis* (Pictet) (Plecoptera: Insecta). Biology of Inland Waters 7: 1-9. In Japanese.
- Kofuji, H., Y. Isobe and T. Kawai. 1992. Correlation between size of body parts (particularly mandibles) and wet body weight in aquatic insects. Japanese Journal of Limnology 53: 151-156.
- Hananda, S., Y. Isobe, K. Wada and M. Nagoshi. 1994. Drumming behavior of two stonefly species, *Microperla brevicauda* Kawai (Peltoperlidae) and *Kamimuria tibialis* (Pictet) (Perlidae), in relation to other behaviors. Aquatic Insects 16: 75-89.
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#### Dr. John Brittain

Dr. John E. Brittain has been studying Plecoptera and other aquatic insects for over 40 years. Initially, he took his Ph.D. on the ecology and distribution of Ephemeroptera and Plecoptera at the University of Wales, Bangor, U.K., before moving to Norway on a post-doctoral fellowship, where he worked together with the late Dr. Albert Lillehammer for a number of years. He has stayed in Norway ever since, obtaining a Norwegian dr. philos. degree in 1978. He was awarded a D.Sc. from the University of Wales in 1993 for his significant contribution to science. At present he is Senior Research Scientist at the Freshwater Ecology and Inland Fisheries Laboratory at the Natural History Museum, University of Oslo. In addition he holds the post of Adjunct Professor, in the Department of Ecology and Natural Resources, Norwegian University of Life Sciences and is a Senior Adviser at the Norwegian Water Resources & Energy Directorate, thus combining research, teaching and management.

Dr. Brittain has published extensively on aquatic insects, especially Plecoptera and Ephemeroptera, with a focus on their ecology, notably egg development, life cycles and their use as environmental indicators. The studies have largely been in Europe, especially in arctic and alpine areas, although sorties have been made to Canada and Australia. He is currently chair of the Standing Committee of the International Society of

Plecopterologists. In addition to research on freshwater biodiversity, Dr. Brittain has published widely in radioecology and environmental aspects of hydropower development.

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# TENTH NORTH AMERICAN PLECOPTERA SYMPOSIUM

#### TENTH NORTH AMERICAN PLECOPTERA SYMPOSIUM

Saturday June 8 to Tuesday June 11, 2013 Lamar, Pennsylvania

Co-sponsored by Lock Haven University of Pennsylvania and The Entomological Society of Pennsylvania

The Tenth North American Plecoptera Symposium will be held at the Lock Haven University's Sieg Center field station, located near Lamar, in southeastern Clinton County Pennsylvania, from Saturday afternoon June 8 to noon Tuesday June 11, 2013. Note this is a change in location from the earlier announcement.

This location is a private spot consisting of 44 acres of woodland in a gap in the mountains cut by Fishing Creek, a well-known trophy trout stream. The center has a main lodge with 2 large meeting rooms, a fireplace, kitchen, and separate bunkhouse sleeping rooms for men and women with adjacent bath facilities. Out of state and frequent NAPS attendees will be given preference for the on-site lodging. Motel rooms are available at the Lamar exit of I-80 about 7 miles away for those who do not wish to stay on site.

The Sieg Center is located in the Susquehanna River basin, in a scenic section of the northern edge of the Ridge and Valley Ecoregion. The Allegheny Front dividing the Ridge and Valley from the Appalachian Plateau Ecoregion is a short distance to the north. The site is a private holding within the Pennsylvania Game Commission-owned gamelands #295 and close to Bald Eagle, Sproul and Tiadaghton state forests. Maps and information can be found on the following websites: <a href="http://www.lhup.edu/sieg/">http://www.lhup.edu/sieg/</a>, <a href="http://www.lhup.edu/sieg/">www.dcnr.state.pa.us</a>, and <a href="http://www.pgc.state.pa.us">www.pgc.state.pa.us</a>.



The Sieg Center, Lamar, Pennsylvania

In addition to Fishing Creek, which flows through a limestone valley upstream of the site, several smaller, forested native trout streams with excellent stonefly habitat are ½ to 2 miles away. This location will allow us to walk or drive a short distance in the evening to look for stoneflies. Light trapping can also be conducted on site. A group field trip north to the Plateau through the picturesque lower Pine Creek valley and along the West Branch Susquehanna River is planned. This loop will provide access to a variety of stream sizes and a potential for diversity of stonefly species. Microscopes will be available to check your collections.

The closest airport to the Sieg Center is 30 miles to the west, at State College (SCE), website: <a href="http://www.universityparkairport.com/">http://www.universityparkairport.com/</a>, served by Delta, US Airways, and United. Cheaper flights are available at the larger Harrisburg airport 2½ hours south (MDT), website: <a href="http://www.flyhia.com">www.flyhia.com</a>. Harrisburg is served by United, American Eagle, US Airways, Air Canada, Frontier Airlines, and Allegiant Air. Direct flights to Harrisburg are available from Atlanta, Chicago, Charlotte, Denver, Newark, and Philadelphia. Car rentals are available at both airports. Arrival times can be coordinated for those wishing to share car rentals.

Please send notice of attendance, if not already submitted, or contact Jane Earle at <u>janeearle7@msn.com</u> for more information. Registration forms will be sent to responders in early April. Preliminary estimated costs are expected to be under \$200 per person for registration and meals; lodging is free.

Those wishing to make an oral or poster presentation, should submit abstracts in Word format to Jane Earle at <u>janeearle7@msn.com</u>. Abstracts should be around 250 words. More than one presentation may be acceptable, dependent upon the number of presenters and time constraints. Oral presentations will be 20 minutes long, including time for questions. Abstracts should be submitted by April 15, 2013.

### **ILLIESIA**

**Illiesia**, International Journal of Stonefly Research, completed publication of Volume 8 in December 2012. Twenty articles submitted by 31 authors based on material from the

Palearctic, Oriental, Neotropical and Nearctic regions were included in the 192 pages of this volume. Illiesia continues to offer rigorous peer review under direction of the Advisory Board and Editors, with assistance of colleagues who agree to review manuscripts. Editors are Ignac Sivec, Slovenian Museum of Natural History and Bill P. Stark, Mississippi College. The Advisory Board in 2012 included 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 Mojmir Stangelj. We thank you for your continued support and invite your submissions for Volume 9. Questions or submissions may be sent to <a href="mailto:isivec@mrc.pms-lj.si">isivec@mrc.pms-lj.si</a> or <a href="mailto:stark@mc.edu">stark@mc.edu</a>. The Illiesia website is located at <a href="mailto:http://www2.pms-lj.si/illiesia/">http://www2.pms-lj.si/illiesia/</a>.

# **OBITUARIES**



Photo: Courtesy C. R. Nelson

Kenneth W. Stewart, 1935-2012

Bill P. Stark, Stanley W. Szczytko, Boris C. Kondratieff, Richard W. Baumann and C. R. Nelson

Kenneth Wilson Stewart was born March 5, 1935 in Walters, Oklahoma and passed away on December 9, 2012 in Denton, Texas. He graduated from Hugoton High School, Hugoton, Kansas in 1953 and married Francene Brewer of Hugoton in 1956. He is survived by Francene, a daughter, Dana Ledford, two sons, Daryl Stewart and Dwight Stewart, their spouses and eight grandchildren.

Ken received his undergraduate degree in Forestry/Botany from Oklahoma State University (then Oklahoma A & M) in 1958 and continued his graduate work there, receiving a Masters in Entomology in 1959 and a PhD in Entomology/Zoology in 1963. He worked summers with the U.S. Soil Conservation Service as a Conservation Aid in 1954, with the U.S. Forest Service in 1956 as a Research Aid and with the U.S. Forest Service in 1958 as a Research Scientist. He taught Biology at Coffeyville (Kansas) College in 1960-61 and in 1961, took a position in the Department of Biological Sciences at the University of North Texas where he continued as a full time faculty member for 40 years and served as Department Chair from 1979-1983. In 1994, Ken received an appointment as Regents Professor from the Texas Board of Regents. During his career he mentored 25 Masters and 21 PhD students at the University on research topics as diverse as the life history of the Brown Recluse spider, pesticide tolerances in fish and insects, and scanning electron microscopy study of scale patterns on lepidopteran mouthparts. His early personal research interests centered on the interpond dispersal of microorganisms by various aquatic insects, but in 1968 he initiated a study of the reproductive morphology of the stonefly, *Perlesta placida* which led to a productive and successful career in aquatic entomology as one of the most enthusiastic of stonefly researchers. He and his students, followed the early work among European colleagues and advanced the study of "drumming", a percussion method of sound communication in stoneflies. His work on immature stoneflies initiated in 1978, led to his first book, "Nymphs of North American Stonefly Genera (Plecoptera)", published in 1988, with a 2<sup>nd</sup> edition published in 2002, and also led his to co-authorship of the Plecoptera chapter in Merritt & Cummins, and later in Merritt, Cummins and Berg. As much as he loved to collect, rear and describe immature stoneflies, a process that continued through several unfinished projects, nothing in his work could put a twinkle in his eye quite as effectively as the opportunity to share drumming signals with a first time audience. Although his work was not primarily in the field of systematics, he co-authored 28 stonefly species and six generic names, and has been honored through three patronyms, Beloneuria stewarti, Neoperla stewarti and Zealeuctra stewarti. His scientific publication record includes 191 journal articles, book chapters and books, with 137 of these dealing with stoneflies. He was active in numerous professional organizations including the Entomological Society of America, the American Entomological Society and the Society of Freshwater Science (formerly North American Benthological Society). He served the latter group as President in 1978-79 and was honored by that group with the Award of Excellence in Benthic Science in 1997. He also served the community of stonefly students through his long service to the International Society of Plecopterists as a permanent member of the

organizing committee and by serving on the board of Illiesia, International Journal of Stonefly Research. The International Society of Plecopterists recognized him with the Lifetime Achievement Award in 2001 and, in 2010, *Outdoor Life* recognized him as one of the Outdoor Life 25 leaders whose work has had major significance and impact on enthusiasts engaged in hunting and fishing.

Ken loved his family and enjoyed talking about their accomplishments and their time together at the cabin in Pitkin, Colorado. His interests and activities include a lifetime passion with scouting, hunting, fishing, and hobbies such as restoring vintage cars and woodworking. He was an active member of Highland Baptist Church in Denton. He will be sorely missed by all who knew him.

# A list of stonefly publications authored or co-authored by Ken.

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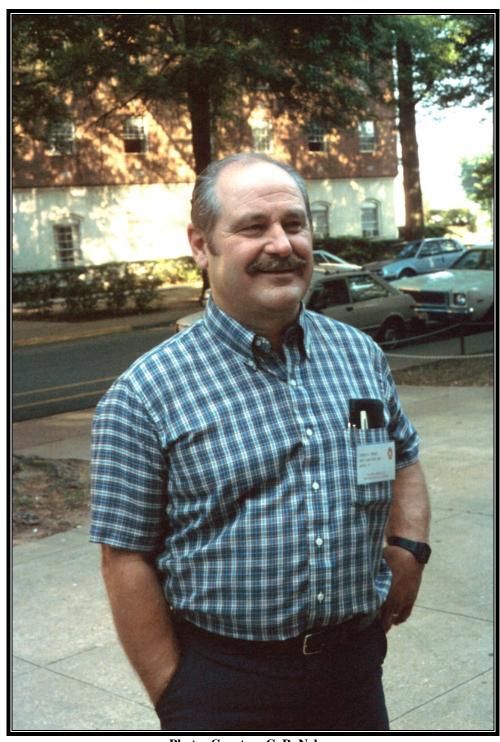
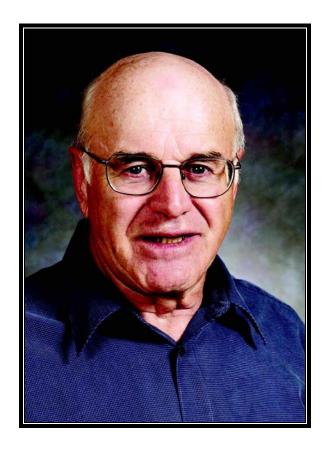


Photo: Courtesy C. R. Nelson



Dr. Donald Wayne Webb

By R. Edward DeWalt

It is with great sadness that I inform the community of the passing of Donald W. Webb on Wednesday, September 5, 2012. He was 73 years old. Don is survived by Lois, whom many of you know; his daughters Janice (Mark) Wettstone and Diane (David) McClain; grandchildren, Maggie McClain, Bradley McClain, Evan Wettstone, Ryan (Laura) McClain and Christopher McClain; and great-grandchildren, Tyler and Aiden McClain. Don loved his wife and family and always spoke of them with great pride.

Don began his career at the Illinois Natural History Survey (INHS) in 1966 and retired from the INHS in 2007 after 40+ years of distinguished service. In that time, Don authored or coauthored nearly 100 journal articles, book chapters, monographs, and proceedings. Don was heavily involved with the North American Benthological Society (NABS, now Society for Freshwater Science), serving as Treasurer and long-time (30 years) chair of the Literature Review Committee. The latter often required his considerable powers of political persuasion (well, more like crusty, straight talking for which he was famous!) to compel colleagues to take on subject editorships (of which he had two himself: Chironomidae and Ceratopogonidae), keep the subject editors on deadline, edit the different formats that came into him, and send in the final product to NABS. With the help of Ronald Hellenthal, these yearly bibliographies have been turned

into a searchable database. For his dedication to NABS he was given the Distinguished Service Award in 1999.

Don also worked tirelessly on aquatic Diptera keys for North America. He and Warren U. Brigham wrote the Aquatic Diptera chapter in the "Aquatic Insects and Oligochaetes of North and South Carolina". This was a major undertaking at the time and laid the groundwork for aquatic Diptera chapters in all editions of the Introduction to the Aquatic Insects of North America. In the latest edition (Merritt et al. 2008), Richard W. Merritt and Don produced keys to family for aquatic Diptera pupae and adults.

Don also published several faunistic and conservation related papers on the Plecoptera of Illinois. He was one of those responsible for beginning study of the changes in the Illinois stonefly fauna. His major contribution to this was his "The winter stoneflies of Illinois (Insecta: Plecoptera): 100 years of change" published in 2002, repeating the work of Theodore H. Frison conducted early in the 20<sup>th</sup> century. In that article, Don documented the decline of several winter stoneflies in Illinois, and in some cases demonstrated that weedy species were becoming more abundant. Don also coauthored five other papers documenting extinctions (*Isoperla conspicua* Frison and *Alloperla roberti* Surdick), extirpations, and range loss of summer and spring emerging stoneflies. I am personally indebted to Don for his help with these projects during the early part of my career.

Some interesting anecdotes: Rosemary Mackay wrote in her history of NABS ". . Don liked to come across as a crusty curmudgeon but he always had a twinkle in his eye to let everyone know that it was all in good fun." Don had a rejoinder to Will Rogers' saying that "I never met a man I didn't like." A bumper sticker on Don's office door stated, "Will Rogers never met Bobby Knight."

A portion of this article was abstracted from: Warwick, C. 2013. In Memorium-Don Webb. INHS Reports, Winter 2013 (409), 3.

# A list of stonefly publications authored or co-authored by Don.

- Webb, D. W. 1980. Primary insect types in the Illinois Natural History Survey Collection, exclusive of the Collembola and the Thysanoptera. Bulletin of the Illinois Natural History Survey 32: 55-191
- Harris, M. A. and D. W. Webb. 1994. The stoneflies (Plecoptera) of Illinois revisited. Journal of the Kansas Entomological Society 67: 340-346.
- DeWalt, R. E., D. W. Webb and M. A. Harris. 1999. Summer Ephemeroptera, Plecoptera, and Trichoptera (EPT) species richness and community structure in the lower Illinois River Basin of Illinois. Great Lakes Entomologist 32: 115-132.
- DeWalt, R. E., D. W. Webb and T. N. Kompare. 2001. The *Perlesta placida* (Hagen) complex (Plecoptera: Perlidae) in Illinois, new state records, distributions, and an identification key. Proceedings of the Entomological Society of Washington 103: 207-216.
- Webb, D. W. 2002. The winter stoneflies of Illinois (Insecta: Plecoptera): 100 years of change. Bulletin of the Illinois Natural History Survey 36: 195-274.

DeWalt, R. E., D. W. Webb and A. M. Soli. 2002. The *Neoperla clymene* (Newman) complex in Illinois, new state records, distributions, and an identification key. Proceedings of the Entomological Society of Washington 104: 126-137.

DeWalt, R. E., C. Favret and D. W. Webb. 2005. Just how imperiled are aquatic insects? A case study of stoneflies (Plecoptera) in Illinois. Annals of the Entomological Society of America 98: 941-950.

### MEMBER NEWS

Drs. J. Manuel Tierno de Figueroa and Manuel J. López-Rodríguez, University of Granada (Spain), carry on working on Plecoptera nymphal biology and ecology 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), R. Fochetti (Università della Tuscia, Italy), and J. Garrido (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 the distribution of the stoneflies in the Iberian Peninsula. A study on DNA quantification and a phylogenetic study on the cavernicolous stonefly *Protonemura gevi* are being made in collaboration with some colleagues of the Department of Genetic from the University of Granada (Spain). They are also working at the community level (mainly on trophic webs) in several streams from southern Iberian Peninsula. JMTdeF is also collaborating with **Dr. T. Derka** (Comenius University, Slovakia) in some nymphal biology studies of species inhabiting streams in Slovakia and, punctually, in taxonomy of stoneflies from SE Venezuela. Finally, they are also collaborating with some other plecopterologists and directing or co-directing the researches of B. Gaetani, I. Peralta-Maraver, J. Rúa and P. Vannucci.

# STANDING COMMITTEE OF THE INTERNATIONAL SOCIETY OF PLECOPTEROLOGISTS

#### Changes in the Standing Committee of the International Society of Plecopterologists

The Standing Committee of the International Society of Plecopterologists is responsible for ensuring the continuity of the International Symposia on Plecoptera. The committee also has the overall responsibility for the Perla funds and for allocating travel scholarships for attending the International Symposia. Sadly, Dr. Ken Stewart, a long-standing member of the committee, recently passed away, and for various reasons Drs Y. Isobe, P. Harper and C. Froehlich wished to step down from the standing committee. We have now appointed three new members, Drs Mayumi Yoshimura, Dávid Murányi and R. Edward DeWalt. All have an avid interest in Plecoptera and will certainly be an asset to the Committee. Dr. Yoshimura works in the Biodiversity Research Group of the Forestry and Forest Products Research Institute, Kyoto, Japan. She has published many papers on the distribution, ecology and physiology of stoneflies. She also did an excellent job as secretary general of the recent Wakayama conference. Dr. Murányi works at the

Hungarian National Museum in Budapest and was co-organiser of the Plecoptera session at the European Congress of Entomology in 2010. More recently he spent several months working on stoneflies at Brigham Young University, Provo, USA, with Drs. **R. Baumann** and **C. R. Nelson**. Dr. **DeWalt** is employed by the Illinois Natural History Survey, USA. As well as conducting extensive research on North American Plecoptera and other aquatic insects, he has taken the lead in developing and updating the database, *Plecoptera species file* (<a href="http://Plecoptera.SpeciesFile.org">http://Plecoptera.SpeciesFile.org</a>), an extremely useful website for Plecopterologists worldwide.

John E. Brittain, Chair, Standing Committee of the International Society of Plecopterologists

# **ARTICLES**

# Predicting Pre-European Settlement Ranges of Stoneflies in the Midwest USA

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Natural history collections hold tens of thousands of Plecoptera specimens, many of them collected before the worst degradation occurred. These are some of the most important specimen data for reconstructing past stonefly assemblages. Our objectives are to model the distribution of stonefly species within the region in order to produce pre-European settlement distributions for each species and species richness estimations across the region.

Our team has amassed ca. 24,000 Midwest stonefly specimen records from 24 museums and private collections and from new sampling within Illinois, Indiana, Michigan, Ohio, and Wisconsin. To date we have specimens from 4,486 unique locations (Fig. 1).

Using Maximum Entropy models, and over 100 environmental variables associated with USGS HUC12 scale watersheds (mean 70 km²), we have modeled 102 species to date. The cumulative output of the models was used to create an index of species richness at the HUC12 scale (Fig. 3). The species distribution models and index of species richness closely correspond to current known distributions and species richness hot and cold spots in the region.

Future work includes assessment of change of species traits distribution across the region, how well-sampled locations have changed with time, and how climate change might alter the original range of species and species richness over the next century.

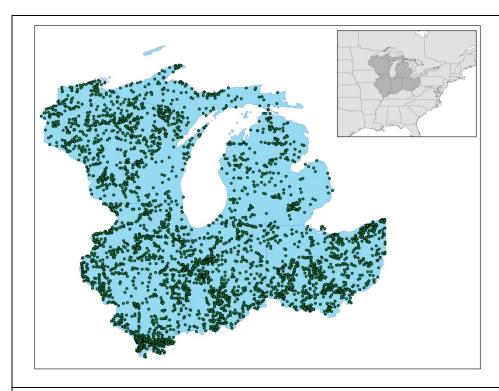


Fig. 1. Point locations for stoneflies within Midwest, USA.

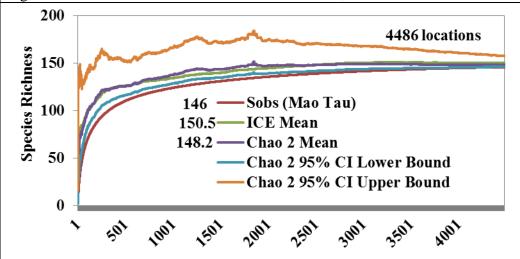


Fig. 2. Stonefly species richness in USA portion of Midwest. Sobs=observed. ICE and Chao 2 indicated predicted measures of species richness as computed in the program EstimateS.

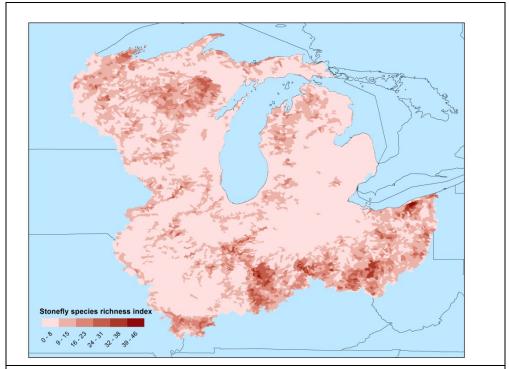


Fig. 3. Species richness index for the Midwest, USA.

## RECENT PLECOPTERA LITERATURE (CALENDAR YEAR 2012 AND

**EARLIER**). Papers made available after 1 February 2013 will be included in the next issue. **If papers were missed, please bring these to the attention of the Managing Editor**. Drs. Bill P. Stark, J. M. Tierno de Figueroa, and Peter Zwick are thanked for reviewing and providing additions to this present list.

Amore, V., B. Gaetani, A. M. Puig, and R. Fochetti. 2011. New data on the presence of hemocyanin in Plecoptera: Recomposing a puzzle. Journal of Insect Science 11: 1-20.

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Arimoro, F. O., G. E. Obi-lyeke, and P. J. O. Obukeni. 2012. Spatiotemporal variation of macroinvertebrates in relation to canopy cover and other environmental factors in Eriora River, Niger Delta, Nigeria. Environmental Monitoring and Assessment 184: 6449-6461.

Bailey, R. C., G. Scrimgeour, D. Cote, D. Kehler, S. Linke, and Y. Cao. 2012. Bioassessment of stream ecosystems enduring a decade of simulated degradation: lessons for the real world. Canadian Journal of Fisheries and Aquatic Sciences 69: 784-796.

Baumann, R. W. and R. G. Call. 2012. *Lednia tetonica*, a new species of stonefly from Wyoming (Plecoptera: Nemouridae). Illiesia 8: 104-110.

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Bojkova, J. and J. Kroca. 2012. Historic and current distribution of an endangered stonefly *Perla grandis* (Plecoptera: Perlidae) in the Czech Republic. Klapalekiana 47: 153-163.

Bojkova, J., K. Komprdova, T. Soldan, and S. Zahadkova. 2012. Species loss of stoneflies (Plecoptera) in the Czech Republic during the 20<sup>th</sup> century. Freshwater Biology 57: 2550-2567.

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Boumans, L., and J.E. Brittain. 2012. Faunistics of stoneflies (Plecoptera) in Finnmark, northern Norway, including DNA barcoding of Nemouridae. Norwegian Journal of Entomology 59(2): 196-215.

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Couceiro, S. R. M., N. Hamada, B. R. Forsberg, T. P. Pimentel, and A. Luz. 2012. Macroinvertebrate multimetric index to evaluate the biological condition of streams in the Central Amazon region of Brazil. Ecological Indicators 18: 118-125.

Crosby, T. 2012. Ian McLellan's collection of Plecoptera now at New Zealand Arthropod Collection (NZAC), Auckland. Perla 30:13-14.

Danger, M., J. Cornut, A. Elger, and E. Chauvet. 2012. Effects of burial on leaf litter quality, microbial conditioning and palatability to three shredder taxa. Freshwater Biology 57: 1017-1030.

DeWalt, R.E., Y. Cao, S. A. Grubbs, L. Hinz, T. Tweddale, J. L. Robinson, and M. Pessino. 2012. Modeling presettlement range of stoneflies in Midwest, U.S.A. and Canada. Perla 30:15-22.

- DeWalt, R. E., Y. Cao, T. Tweddale, S. A. Grubbs, L. Hinz, M. Pessino, and J. L. Robinson. 2012. Ohio USA stoneflies (Insecta, Plecoptera): species richness estimation, distribution of functional niche traits, drainage affiliations, and relationships to other states. Zookeys 2012 (178): 1-26. DI 10.3897/zookeys.178.2616
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Gamboa, M., M. Mercedes-Castillo, and R. Guerrero. 2012. *Anacroneuria* spp. (Insecta: Plecoptera: Perlidae) as paratenic hosts of *Pheromermis* sp. (Nematoda: Mermithidae) in Venezuela. Nematology 14:185-190.

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Grubbs, S. A. 2012. An amended redescription of the male of *Perlesta etnieri* (Plecoptera: Perlidae) plus new *Perlesta* state records. Illiesia 8: 111-113.

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Perlesta decipiens (Walsh) (Perlidae), USA: Illinois, Pope County, Lusk Creek, 20 May 2006.

Dr. Kenneth W. Stewart's first stonefly paper (written with Gerald Atman and Bernie Solon) was on the reproductive morphology and mating behavior of this common North American species.

Photo by Bill P. Stark