

SAFIT

SOUTHWEST ASSOCIATION OF FRESHWATER INVERTEBRATE TAXONOMISTS

Greetings!

Summer is upon us and SAFIT has been busy! We have had some issues with the website. Evil entities got into the website and installed “malware”. A big thanks to the Website Committee for getting rid the “malware” and for working on moving us to a new server.

The STE committee is expanding the STE in 2009 to cover the remainder of the SAFIT geographical region, namely, Utah. The updated STE will incorporate the accumulated STE changes, which in the interim are posted on the SAFIT Website.

The SAFIT officers will be contacting water quality oriented agencies in Nevada, Arizona and Utah to establish the SAFIT STE as the recognized standard for their programs as well.

Have a job opening that you want to announce, or are looking for a job? Let SAFIT know in the Newsletter! Looking for specimens of a certain species or a literature reference? Need material for research or comparative purposes? Let your colleagues know in the SAFIT Newsletter! Want a workshop on a particular group of organisms? Have references to sell trade or share? Looking for a collecting partner? Put it here in the SAFIT Newsletter! All appropriate requests, queries, non-commercial advertisements and announcements will be considered, and are free to the SAFIT membership.

Thanks!

The SAFIT Board

ANNOUNCEMENTS

Workshop on Crustacean Bioturbation <http://www.ub.edu/paleoneomed/workshop/>

SCCWRP will be hosting a seminar Wednesday, 16 September 2009 on Barcoding with associated discussion workshops being developed. Please see the SCCWRP website <http://www.sccwrp.org/> for details.

CABW will hold its 16th annual meeting 28 and 29 October 2009. This is a major change, as in previous years it has been held in November. As a result, the SAFIT meeting will be held 30 October 2009 (see below). This year the CABW meeting will have more workshops for those who are learning about the various aspects of bioassessment and using biomonitoring data. As in

previous years CABW will be held at the UC Davis Activities and Recreation Center (ARC) from 8 – 4 each of the two days. There is never any fee, but registration is required: Regional and State Water Board Staff should register at: <http://waternet/training/>, All other participants should register at: <http://www.waterboards.ca.gov/academy/> For additional details, please contact James Harrington at jharring@OSPR.DFG.CA.GOV

SAFIT MEETINGS

Annual Business Meeting announcement: The regular annual business meeting will be held 30 October 2009. The location of the meeting has not yet been determined, but will be emailed out to all concerned as soon as we have the details.

Workshops in the Works:

Proposed workshop on immature Chironomidae, Davis, 9-11 September 2009

This will be led by Peter Cranston, an entomology professor at UC Davis, and recognized authority on the Chironomidae.

Day 1. Wednesday 9 September 8.00 am to 4.30 pm. Briggs 122.

8.00-8.30. Introductions and exploration of individual backgrounds and needs from course.

8.30-9.45. Chironomid biology lecture– life-history, significance ecologically, nuisance issues, some autecology of significant taxa, fly-fishing, biogeography.

9.45 – 10.10. Coffee break.

10.10 – 11.50. Introduction to keying (and allied data) in Lucid interactive key, using a variety of existing and on-line guides. Use of glossary features (illustration and text).

11.50-1.15. Lunch break allowing time off campus.

1.15 – 4.30. Slide-making. Introduction to larval subfamily Lucid key, and exploring character images, diagnostic notes, and taxa. Subkey linkages to lower level (within subfamily).

Attendees will be provided with an individual version of the Lucid larval key updated for the workshop.

Day 2. Thursday 10 September 8.00 am to 4.30 pm. Briggs 122.

8.00. Continued slides tutoring (for novices). Lucid guide to smaller subfamilies, exploring the characters used via text and images.

Tanypodinae identification and character subsets and the 'start chart feature'

11.50-1.15. Lunch break allowing time off campus.

1.15. Chironominae and Orthocladiinae Lucid keys. Opportunity to examine Davis-made voucher slides. Common discussion of 'weird' larvae brought by attendees.

Brief introduction to pupal identification.

Day 3. Friday 11 September 8.00 am to 2.30 pm. Briggs 122. Voluntary participation.

8.00-11.50. Introduction to Chironomidae pupal identification via paper and Lucid keys. This key is very incomplete but will be used for guidance in morphology via an illustrated glossary.

Slide preparation of pupal specimens.

11.50-1.15. Lunch break allowing time off campus.

1.15- 2.30. Post lunch wrap-up with question session, mystery slides.

OTHER NEWS

The North American Plecoptera Symposium IX took place at the Sagehen Creek Field Station, University Of California, Truckee, CA 22-25 June 2009. It is a beautiful venue for a conference and Sagehen Creek and its numerous springs allow for abundant collecting opportunities. The following presentations were given:

Moderators: W. Shepard and A. Sheldon

The drumming signals of *Hesperoperla hoguei* and *Hesperoperla pacifica* (Plecoptera: Perlidae) from northern California. John Sandberg.

New records of winter stoneflies (Plecoptera: Capniidae) for Mississippi, and development of an annual winter stonefly count. Bill P. Stark (presenter) & Matthew B. Hicks.

Current range and regional genetic diversity of *Acroneuria frisoni* Stark & Brown, 1991: A prelude to reintroduction of the species to eastern Illinois. Ember R. Chabot (presenter), R. Edward DeWalt & Rosanna Giordano

Life history of *Cosumnoperla hypocrena* (Plecoptera: Perlodidae): Adaptation to a California intermittent stream. Richard L. Bottorff.

A review of undescribed taxa of eastern Nearctic *Isoperla* (Plecoptera: Perlodidae). S. W. Szczytko & B. C. Kondratieff (presenter)

Phylogeography of Great Basin sky island populations of *Doroneuria baumanni* (Plecoptera: Perlidae). Alicia S. Schultheis, Jackie Y. Booth, Lisa R. Perlmutter & Andrew L. Sheldon (presenter).

The influence of introduced trout on the Perlidae of the High Sierra: Contrasting fishless and trout-stock paired headwater streams in Yosemite National Park. David B. Herbst (presenter), Erik L. Silldorff & Scott D. Cooper.

Notes on the *Diura* population of Mount Washington, New Hampshire, USA. Charles H. Nelson.

The *Alloperla leonarda* group of eastern North America (Plecoptera: Chloroperlidae). Michele R. Willett & Bill P. Stark (presenter).

Stoneflies in the canopy--- Que pasa? William D. Shepard (presenter) & Richard W. Baumann.

Preliminary nymph descriptions of four *Isoperla* species (Plecoptera: Perlodidae) from California and Oregon with an introduction to mouthpart characters used for separation of western species. John Sandberg

A picture is worth a thousand words. Continuing studies of the distribution of Pennsylvania stoneflies. Jane Earle.

Testing some of Ross & Ricker's *Allocapnia* hypotheses of Wisconsinan post-glacial dispersion using population genetic variation in *Allocapnia granulata* (Claassen, 1924). R. Edward DeWalt (presenter) & Rosanna Giordano.

Sagehen Creek Field Station: Environments and research programs. Jeff Brown.

Preliminary report of the drumming signals for 19 stoneflies (Plecoptera) from northern California John Sandberg.

Two new genera of Brachypterainae (Plecoptera: Taeniopterygidae) from North America. Richard W. Baumann (presenter) & Boris C. Kondratieff.

Tropical stoneflies: Low diversity or different rules? Andrew L. Sheldon.

Correction of a misidentification of *Capnia umpqua*, including a description of a new species. C. Riley Nelson (presenter) & Richard W. Baumann.

Acroneuria filicis Frison: an assessment of geographic variability using scanning electron microscopy, and the plausibility of new species descriptions. Scott A. Grubbs & R. Edward DeWalt (presenter).

Poster Session:

New descriptions of North American *Taenionema* nymphs (Plecoptera: Taeniopterygidae). Kenneth W. Stewart.

A scanning electron microscopy study of Mississippi Leuctridae with a description of a possible new species in the *Leuctra ferruginea* complex. Audrey B. Harrison & Bill P. Stark.

The North American Plecoptera Symposium X will take place in the Great Lakes Region, 2012. SAFIT members collected the following stoneflies and caddisflies during the symposium and on the dispersal flight:

2009 NAPS Sagehen Creek and vicinity field collection results:

Plecoptera	<i>Haploperla chilnualna</i> (c)
Capniidae	<i>Plumiperla</i> sp. (1 female) (c)
<i>Eucapnopsis brevicauda</i> (a)	<i>Sweltsa</i> sp. (d)
Leuctridae	<i>Sweltsa borealis</i> (complex?) (a)
<i>Paraleuctra vershina</i> (a)	<i>S. pacifica</i> (a)
Nemouridae	<i>S. townesi</i> (a)
<i>Malenka cornuta</i> complex (b)	<i>Triznaka pintada</i> (c)
<i>M. marionae</i> (a)	Peltoperlidae
<i>Podmosta delicatula</i> (a)	<i>Sierraperla cora</i> (b)
<i>Soyedina nevadensis</i> (a)	<i>Soliperla sierra</i> (b)
<i>Zapada oregonensis</i> (a)	<i>Yoraperla nigrisoma</i> (a), (b)
Chloroperlidae	Perlodidae
<i>Alloperla</i> sp. (a)	<i>Isoperla mormona</i> (c)
<i>Alloperla chandleri</i> (much variation in epiproct – some <i>A. fraterna</i> ?) (a), (b)	<i>Isoperla sobria</i> (a)
	<i>Rickera sorpta</i> (a)
Trichoptera	
Rhyacophilidae	<i>R. norcuta</i> (b)
<i>Rhyacophila ecosia</i> (b)	<i>R. oreta</i> (a), (b)
<i>R. nevadensis</i> (a)	<i>R. velora</i> (b)

R. verrula (b)***Glossosomatidae****Anagapetus aisha* (a), (b)***Philopotamidae****Dolophilodes novusamericanus* (b)*Wormaldia* sp. (1 female) (a)***Apataniidae***

(1 female) (a)

Brachycentridae*Micrasema bacro* (a)***Goeridae****Goeracea oregona* (a), (d)***Lepidostomatidae****Lepidostoma cascadenense* (a)***Limnephilidae***

(1 female) (a)

Odontoceridae (1 female) (b)*Parthina linea* (d)***Uenoidae****Neophylax occidentis* (a)

(a) - Sagehen Creek and springs

(b) - Big Springs @ Hwy 49

(c) - creek south of Sierraville, Hwy 89

(d) - Boca Spring

FIELD & LAB***By Jon Lee**

(* New features in each Newsletter issue exploring an aspect of aquatic macroinvertebrates beyond sample processing would be beneficial to members. Please feel free to contact the editor if you would like to contribute or have thoughts on a salient topic. This first feature will discuss a couple of techniques for rearing immature aquatic insects to adults).

The impetus for this topic was the successful rearing of immature *Salmoperla sylvanica* (Plecoptera: Perlodidae) in spring 2009 using two different methods. These critters live in cold (8°C when collected in April) mountain streams and are considered difficult to artificially rear to adult.

Creating an artificial stream using an aquarium:

It is relatively simple to create an artificial stream using a glass aquarium. Materials needed include the aquarium (I use an old 50 gallon tank), an under-gravel filter, gravel, a power head, and some Plexiglas. The under-gravel filter is a hard plastic platform fitting the bottom of the aquarium. It is about 1.5 cm tall and has many perforations allowing water to circulate through it. In a corner is an opening to fit the power head. The power head is placed in the opening with

its footing several cm high. A few cm of aquarium gravel covers the filter and gives a home to aerobic bacteria acting as a living water cleansing system. The Plexiglas sheet (or any suitable material) should be taller than the water level and a few cm shorter than the aquarium length to act as a baffle. The baffle is placed lengthwise in the center of the tank allowing for a gap at either end. The jet of water from the power head is directed down the length of one side of the aquarium creating circulation around the baffle.

Various rocks, pieces of wood, etc. can be placed on the gravel for insect habitat. Creek stones can be used to introduce diatoms and alder or other leaves can be used as a nutrient source. Aquatic moss can also do well in this setup. Twigs and rocks (or equivalent) with surface exposed above water level, should be placed in the gravel to allow a haul out for adult insects.

Immatures should be kept cool and moist during transport from creek to rearing tank. They can be kept in Styrofoam cups (Styrofoam allows them to sink there claws in and cling to the sides) partially filled with creek water and placed in a cooler with ice. A piece of foam rubber fitted to the bottom of a jar, kept wet, and placed in a cooler also works well.

Water temperature is an issue. Placing the artificial stream in a cold part of the house should be adequate for those critters that emerge in the spring. On the cool coast, cutthroat trout did well through the summer without a cooling device (which can be expensive). While rearing *Salmonella*, the water reached 16°C on a warm spring day. Fearing the worst, a search was made for the nymphs. A nymph was found alive and well under a stone directly in front of the jet from the power head which apparently supplied enough oxygen to maintain the nymph, at least temporarily, at an elevated temperature. Water filled, frozen, ½ gallon juice containers were placed in the tank used to decrease the water temperature.

This method has worked well for rearing many different species of stoneflies and various mayflies and caddisflies introduced as food items. It is also a good way to observe underwater behavior. It is easy to go overboard though, so be prepared to have critters flying around your lab or home!

EMPLOYMENT OPPORTUNITIES

Taxonomist Positions

EcoAnalysts, Inc. has **job openings for a macroinvertebrate taxonomist, consulting scientist, and a periphyton taxonomist, as well as lab tech positions.** The lab tech positions and the macroinvertebrate taxonomist positions are in the Moscow, Idaho office and the periphyton taxonomist position would be in either Moscow, Idaho or Joplin, MO. The consulting scientist position does not have a locality yet. The full details are available at <http://ecoanalysts.com/>.

LATEST LITERATURE

If you know of any literature or if you yourself have published any papers of interest to the SAFIT membership, please send copies or the citations to Brady Richards (arichards@csuchico.edu) for inclusion in the next issue of the SAFIT Newsletter. Thanks!!

Crustacea

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- Cantu, V., J.N. Fries, and T.A. Ryan. 2009. An apparatus for separating live amphipods from debris. *North American Journal of Aquaculture* 71 (1):6-9.
- Fišer, C., B. Sket, M. Turjak, and P. Trontelj. 2009. Public online databases as a tool of collaborative taxonomy: a case study on subterranean amphipods. *Zootaxa* (2095):47-56.
- Guiasu, R.C. 2009. Conservation, status, and diversity of the crayfishes of the genus *Cambarus* Erichson, 1846 (Decapoda, Cambaridae). *Crustaceana* 82 (6):721-742.
- He, Shun-Lian, Jie Gao, and Zhao-Liang Guo. 2009. *Macrobrachium pentazona*, a new freshwater palaemonid prawn (Decapoda: Caridea: Palaemonidae) from Guangdong Province, China. *Zootaxa* (2140):38-44.
- Larsen, Kim, Catarina de L. Araújo-Silva, and Petrônio Alves Coelho. 2009. Tanaidacea from Brazil. I. The family Tanaellidae Larsen & Wilson, 2002. *Zootaxa* (2141):1-19.
- Zimmer, A., P.B. Araujo, and G. Bond-Buckup. 2009. Diversity and arrangement of the cuticular structures of *Hyaella* (Crustacea: Amphipoda: Dogielinotidae) and their use in taxonomy. *Zoologia* 26 (1):127-142.

Mollusca

- Chong, J.P., J.B. Box, D.A. Nez, and K.E. Mock. 2009. Isolation and characterization of microsatellite loci in the western pearlshell mussel, *Margaritifera falcata* (Gould). *Molecular Ecology Resources* 9 (3):995-999.
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Turner, A.M., and S.L. Montgomery. 2009. Hydroperiod, predators and the distribution of physid snails across the freshwater habitat gradient. *Freshwater Biology* 54 (6):1189-1201.

Annelida

Christoffersen, M.L. 2009. Species diversity and distributions of microdrile earthworms (Annelida, Clitellata, Enchytraeidae) from South America. *Zootaxa* (2065):51-68.

Edwards, F.K., R.B. Lauridsen, L. Armand, H.M. Vincent, and J.I. Jones. 2009. The relationship between length, mass and preservation time for three species of freshwater leeches (Hirudinea). *Fundamental and Applied Limnology* 173 (4):321-327.

Coleoptera

Bernhard, D., I. Ribera, A. Komarek, and R.G. Beutel. 2009. Phylogenetic analysis of Hydrophiloidea (Coleoptera: Polyphaga) based on molecular data and morphological characters of adults and immature stages. *Insect Systematics & Evolution* 40 (1):3-41.

Braga, R.B., and N. Ferreira. 2009. Three new species of *Bidessodes* Regimbart (Insecta, Coleoptera, Dytiscidae) from the Amazon river floodplain. *Zootaxa* (2034):43-48.

Byttebier, Barbara, and Patricia L.M. Torres. 2009. Description of the preimaginal stages of *Enochrus* (*Hugoscottia*) *variegatus* (Steinheil, 1869) and *E. (Methydrus) vulgaris* (Steinheil, 1869) (Coleoptera: Hydrophilidae), with emphasis on larval morphometry and chaetotaxy. *Zootaxa* (2139):1-22

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Fikacek, M., F. Hebauer, and M. Hansen. 2009. Taxonomic revision of New World species of the genus *Oosternum* Sharp (Coleoptera: Hydrophilidae: Sphaeridiinae) I. Definition of species groups and revision of the *Oosternum aequinoctiale* group. *Zootaxa* (2054):1-37.

Hendrich, L., and C.H.S. Watts. 2009. Taxonomic revision of the Australian predaceous water beetle genus *Carabhydrus* Watts, 1978 (Col. Dytiscidae, Hydroporinae, Hydroporini). *Zootaxa* (2048):1-30.

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Toledo, M. 2009. Revision in part of the genus *Nebrioporus* Regimbart, 1906, with emphasis on the *N-laeviventris*-group (Coleoptera: Dytiscidae). *Zootaxa* (2040):3-111.

Diptera

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- Matsumoto, Y., T. Yanase, T. Tsuda, and H. Noda. 2009. Species-specific mitochondrial gene rearrangements in biting midges and vector species identification. *Medical and Veterinary Entomology* 23 (1):47-55.
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- Tothova, A., G.R. Spinelli, and P.I. Marino. 2009. A new Nearctic species of *Atrichopogon* (*Meleohelea*) and a redescription of *Atrichopogon* (*M.*) *chilensis* Ingram & Macfie (Diptera: Ceratopogonidae). *Zootaxa* (2023):47-54.
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Ephemeroptera

Dominguez, Eduardo, Carlos Molineri, and Rodolfo Mariano. 2009. Revision of the South American species of *Hagenulopsis* Ulmer and *Askola* Peters (Ephemeroptera: Leptophlebiidae) with description of six new species. *Zootaxa* (2142):29-44.

Ogden, T.H., J.T. Osborne, L.M. Jacobus, and M.F. Whiting. 2009. Combined molecular and morphological phylogeny of Ephemerellinae (Ephemerellidae: Ephemeroptera), with remarks about classification. *Zootaxa* (1991):28-42.

Odonata

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- Kondratieff, Boris C., and Richard W. Baumann. 2009. A contribution to the knowledge of *Sweltsa exquisita* (Frison) and *S. occidentis* (Frison) and description of a new species of *Sweltsa* from the northern Rocky Mountains, U.S.A. (Plecoptera: Chloroperlidae). *Illiesia* 5 (3):20-29.
- Sheldon, A.L., and M.L. Warren. 2009. Filters and templates: stonefly (Plecoptera) richness in Ouachita Mountains streams, USA. *Freshwater Biology* 54 (943-956).
- Stark, Bill P., and Andrew L. Sheldon. 2009. Records of Neoperlini (Plecoptera: Perlidae) from Brunei Darussalam and Sarawak, with descriptions of new *Phanoperla* Banks and *Neoperla* Needham species. *Illiesia* 5 (2):11-19.
- Stewart, K.W. and N.H. Anderson. 2009. The life history and nymphal generic character development of *Sweltsa adamantea* Surdick (Plecoptera; Chloroperlidae) in an Oregon summer-dry headwater stream. *Transactions of the American Entomological Society* 135 (1+2): 161-173.

Trichoptera

- Cartwright, David I. 2009. *Austrotinodes* Schmid, a South and Central American caddisfly genus, newly recorded in Australia, with the description of new species (Trichoptera: Ecnomidae). *Zootaxa* (2142):1-19.
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General

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- Melo, A.S. 2009. Explaining dissimilarities in macroinvertebrate assemblages among stream sites using environmental variables. *Zoologia* 26 (1):79-84.

- Nemésio, André. 2009. Nomenclatural availability of nomina of new species should always require the deposition of preserved specimens in collections: a rebuttal to Donegan (2008). *Zootaxa* (2045):1-14.
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- Pearson, R.G., and L. Boyero. 2009. Gradients in regional diversity of freshwater taxa. *Journal of the North American Benthological Society* 28 (2):504-514.
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- Purcell, A.H., D.W. Bressler, M.J. Paul, M.T. Barbour, E.T. Rankin, J.L. Carter, and V.H. Resh. 2009. Assessment tools for urban catchments: developing biological indicators based on benthic macroinvertebrates. *Journal of the American Water Resources Association* 45 (2):306-319.
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THANK YOU FOR YOUR MEMBERSHIP!

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