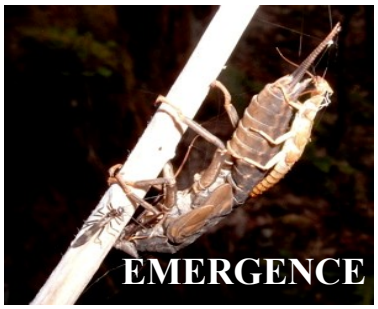


Newsletter of the SOUTHWEST ASSOCIATION OF FRESHWATER INVERTEBRATE TAXONOMISTS

Greetings SAFIT members,

We had some hold-ups getting this issue of the newsletter out but hopefully better late than never! Member input to the STE is always welcome and encouraged. We also continue to solicit material that may be useful to membership to include in the newsletter, including photos. If anyone has photos of interesting collecting sites, bugs, or anything else related – please send them in.

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!

Jon Lee, Editor

ANNOUNCEMENTS

BIOLIEF 2011 - 2nd World Conference on Biological Invasions and Ecosystem Functioning. Mar del Plata, Argentina, November 21-24, 2011.

BIOLIEF 2011 will be a forum for the presentation, discussion, and synthesis of research on biological invasions in its broadest sense. The conference will place a particular emphasis on studies concerning the impact of invasive species on ecosystem functioning and/or services,

irrespective of taxonomic groups or ecosystem types. However, studies on any other ecological aspect of biological invasions will also be welcome. Topics such as the spread of invasive species into ecosystems, the biogeography and history of species introductions, and the community- or species-level impact of biological invasions will also have an important coverage in the final conference program.
Contact: Jorge L. Gutiérrez
E-mail: <mailto:biolief@grieta.org.ar>biolief@grieta.org.ar
For more information about this meeting, visit our website (<http://www.grieta.org.ar/biolief/>http://www.grieta.org.ar/biolief/). You can also follow us in Facebook for news and updates (<http://www.facebook.com/?ref=home#%21/pages/BIOLIEF-2011/126444150720221?ref=sgm>http://www.facebook.com/?ref=home#!/pages/BIOLIEF-2011/126444150720221?ref=sgm).

California Aquatic Bioassessment Workgroup

17th Annual Meeting
16 – 17 November 2010
8 am – 4 pm
The Ballroom
Activities and Recreation Center Conference Facility
University of California
Davis, CA
For information contact Jim Harrington: (916) 358-2862, **jharring@ospr.dfg.ca.gov**

SAFIT MEETINGS

The board of directors now meet via conference call on the 3rd Friday of the month. Please contact one of the officers if you have anything you want on the Board of Director's Meeting agenda. The contact information for the officers is at the end of the Newsletter.

2010 SAFIT Annual Meeting. 18 November 2010; 9 am - 5 pm.
California Department of Fish and Game Yolo Bypass Wildlife Area Headquarters
Elections for the SAFIT positions of Vice President and Treasurer will be part of the agenda.

EMPLOYMENT OPPORTUNITIES

Please contact the editor if you would like to post on an employment opportunity.

FIELD & LAB

A feature in each Newsletter issue exploring an aspect of aquatic macroinvertebrates beyond sample processing that may be beneficial to members. Contact the editor to contribute or comment.

Adult identification in benthic samples.

by Jon Lee

While recycling old vials recently (nice to see 10 + year old specimens in good shape in ½ dram snap cap vials) I started pulling what looked like interesting specimens. Mostly Baetidae I don't see too often but also *Rhyacophila* pupae and pre-emergent Plecoptera. When processing these samples over ten years ago Trichoptera pupae were a headache and pre-emergent stoneflies were nice to see just because they keyed easily. Now, after dabbling in adult identification, I look forward to caddis pupae and certain late instar stoneflies that can often be determined to species level.

Many insect species diagnostic characteristics are based on male genitalia, which is often elaborate and distinct even when it is difficult to determine the larvae and females. Pharate adult stoneflies (adult characters visible through the larval cuticle) and pharate caddisflies (adult characters visible through the pupal cuticle) can be used to determine species and associate larvae with adults.

Plecoptera that possess distinct sclerotized external genitalia (at least some Capniidae, Leuctridae, Nemouridae, and Chloroperlidae) will have the male genitalic characters visible through the last larval cuticle if collected at the right stage. This can be particularly valuable for Capniidae (possessing a distinct epiproct) and some Chloroperlidae whose nymphs can be difficult to determine to genus. The epiproct structure morphology can be used to separate *Capnia* and *Mesocapnia* (Capniidae) in pharate male specimens. *Alloperla fraterna* Frison is a common chloroperlid species in northern California that lacks the characteristic *Alloperla* feathery cercal setal fringe in Oregon specimens (Stewart and Stark 2002). I've seen pharate males in springtime benthic samples from several sites and would have left them at Chloroperlidae if not for the visible epiproct. It is also nice to be able to put a species name on pre-emergent male *Sweltsa* nymphs.

Milne (1938) introduced the "Metamorphotype Method" of associating Trichoptera larvae with adults using the pre-emergent pupae. This method uses the pharate adult, larval sclerites, and pupal armature to associate the three stages. Having some knowledge of adult morphology can be very helpful when a male pupa is free of its case and associated larval sclerites are missing. This has proven particularly useful for keying *Rhyacophila* to species group and Philopotamidae to genus. I'm not aware of Trichoptera pupal keys to genus but for Philopotamidae having some knowledge of adult morphology sure beats having to use Ross (1944)!

Milne, M.J. 1938. The "Metamorphotype Method" in Trichoptera. Journal of the New York Entomological Society 46:435-437.
Ross, H.H. 1944. The caddis flies, or Trichoptera, of Illinois. Bulletin of the Illinois Natural History Survey 23:1-326.
Stewart, K.W. and B.P. Stark. 2002. Nymphs of North American Stonefly Genera (Plecoptera). Second Edition. The Caddis Press. Columbus, Ohio. xii + 510 pp.

Miscellaneous bug notes (anecdotal notes, including distributional records in the southwest, which may be helpful to SAFIT members). To make contributions or comments contact the editor: jlee@jonleeconsulting.com.

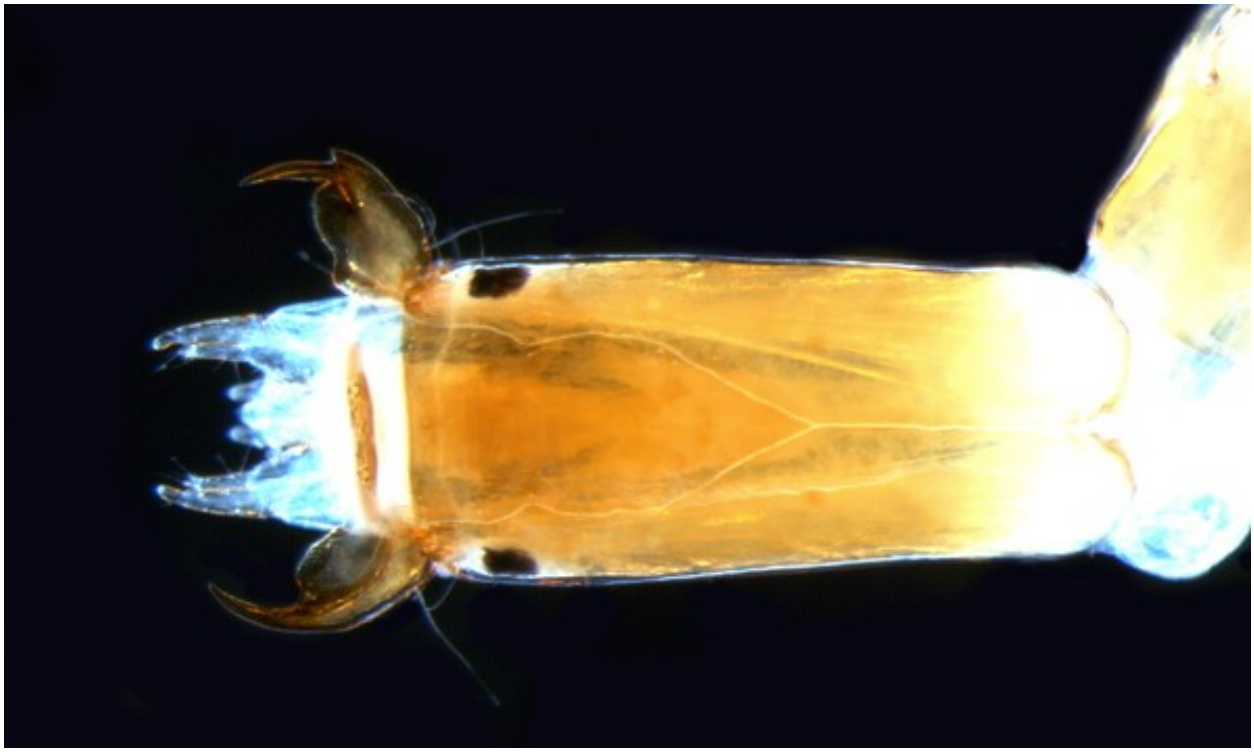
***Zaitzevia posthonia* Brown**

Have you ever been scratching your head keying an elmid larva to *Zaitzevia* but thinking this just doesn't look right? I was discussing this with Brady Richards when he suggested *Zaitzevia posthonia*. Additional samples from small, cascading streams in northern California contained the same perplexing larvae but also several adults. The adults fit *Z. posthonia*. Just a heads up to be aware that *Z. posthonia* is out there.

***Rhyacophila* sp. larvae**

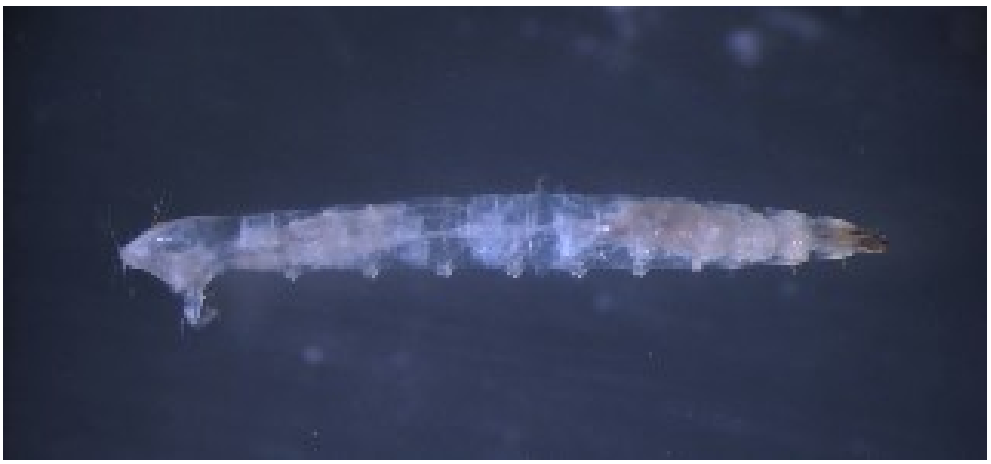
Dave Ruiter took the following headshots of a "posing" *Rhyacophila* larva. Bob Wisseman thinks the specimen is in the *R. viquaea* species group, but adds that metamorphotypes or DNA matching will be needed to confirm this placement. Please note that the *Rhyacophila viquaea* species group name is not used for larvae in the current STE.

This apparently rarely collected larva was found in a small, cold, rubble bottomed creek in the Redwood Creek watershed, Humboldt Co., CA. Please contact the editor with collection data if you run across this interesting *Rhyacophila*.



Empididae unknown genus

The larvae have 8 pairs of prolegs, though the first seven pair are more like creeping welts. The last pair of prolegs on the anal segment are very long and retractable, with very long hooks. The anal segment is truncated in dorsal view. There are setal tufts on the posterior edge and a pair of tufts on either side of the mid-dorsal region of the anal segment.



This larva has been turning up in the last couple of years from the Pacific Northwest. I can only assume at this point that it is possibly the genus *Proclinopyga* (Clinocerinae), the larva of which

has not been identified. I hope to look into some molecular identification to verify this assumption but have not gotten very far. My colleagues are attempting to collect additional material and rear out the adults.

I encourage you to try to rear the larvae and then I can easily determine the genus. The genus is in need of revision, but there are some 10 western species of this genus from California to Alaska.

Cheers,
Brad

Dr. Bradley J. Sinclair
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(Contributed by Bob Wisseman).

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!!

Ephemeroptera

Arimoro, F. O. and W. J. Muller. 2010. Mayfly (Insecta: Ephemeroptera) community structure as an indicator of the ecological status of a stream in the Niger Delta area of Nigeria. Environmental Monitoring and Assessment 166:581-594.

Newell, R. L. and D. Schenck. 2010. Note on the redescription of the nymph of the mayfly *Rhithrogena virilis* Mcdunnough 1934 (Ephemeroptera: Heptageniidae). Western North American Naturalist 70:245-248.

Odonata

Goforth, C. L. 2010. Behavioural responses of *Enallagma* to changes in weather (Zygoptera: Coenagrionidae). Odonatologica 39:225-234.

Plecoptera

Nye, K. C. and B. P. Stark. 2010. A scanning electron microscopy study of the epiprocts of western North America *Sweltsa* (Plecoptera: Choroperlidae). Illiesia 6:248-255.

Stark, B. P. and B. C. Kondratieff. 2010. Larvae of eight eastern Nearctic *Alloperla* species (Plecoptera: Chloroperlidae). Illiesia 6:267-276.

Trichoptera

Chamorro, M. L. and R. W. Holzenthal. 2010. Taxonomy and phylogeny of New World *Polyplectropus* Ulmer, 1905 (Trichoptera: Psychomyioidea: Polycentropodidae) with the description of 39 new species. Zootaxa 2582:1-252.

Geraci, C. J., X. Zhou, J. C. Morse, and K. M. Kjer. 2010. Defining the genus *Hydropsyche* (Trichoptera: Hydropsychidae) based on DNA and morphological evidence. Journal of the North American Benthological Society 29:918-933.

Harris, S. C. and A. K. Rasmussen. 2010. The *Neotrichia caxima* Group (Trichoptera: Hydroptilidae) in the southeastern United States. Zootaxa 2608:25-44.

Houghton, D. C. and R. W. Holzenthal. 2010. Historical and contemporary biological diversity of Minnesota caddisflies: a case study of landscape-level species loss and trophic composition shift. Journal of the North American Benthological Society 29:480-495.

Coleoptera

Angus, R. B. 2010. A third karyosystematic investigation of the *Stictotarsus griseostriatus* (De Geer) group of sibling species (Coleoptera: Dytiscidae). Comparative Cytogenetics 4:13-20.

Dressler, C. and R. G. Beutel. 2010. The morphology and evolution of the adult head of Adephaga (Insecta: Coleoptera). Arthropod Systematics & Phylogeny 68:239-287.

Miller, K. B. 2010. On the systematics of Noteridae (Coleoptra: Adephaga: Hydradephaga): Phylogeny, description of a new tribe, genus and species, and survey of female genital morphology. Systematics and Biodiversity 7:191-214.

Post, D. L. 2010. Habitat identification for three California species of *Sanfilippodytes* Franciscolo (Coleoptera: Dytiscidae). The Coleopterists Bulletin 64:258-264.

Shepard, W. D. 2009. Harley P. Brown (13 January 1921 -- 6 June 2008). Koleopterologische Rundshau 79:327-334.

Diptera

Conflitti, I. M., M. J. Kratochvil, M. Spironello, G. F. Shields, and D. C. Currie. 2010. Good species behaving badly: Non-monophyly of black fly sibling species in the *Simulium arcticum* complex (Diptera: Simuliidae). Molecular Phylogenetics and Evolution 57:245-257.

Curler, G. R. and J. K. Moulton. 2010. Descriptions of three new species of Psychodidae (Diptera) from the southeastern United States. Zootaxa 2524:51-62.

Miscellaneous

Angelibert, S., V. Rosset, N. Indermuehle, and B. Oertli. 2010. The pond biodiversity index "IBEM": a new tool for the rapid assessment of biodiversity in ponds from Switzerland. Part 1. Index development. Limnetica 29:93-104.

Bo, T. Z., S. Fenoglio, M. J. Lopez-Rodriguez, J. M. T. de Figueroa, M. Grenna, and M. Cucco. 2010. Do predators condition the distribution of prey within micro habitats? An experiment with stoneflies (Plecoptera). International Review of Hydrobiology 95:285-295.

Buric, M., L. Koci, A. Petrusek, A. Kouba, and P. Kozak. 2009. Invaders eating invaders: potential trophic interactions between the amphipod *Dikerogammarus villosus* and juvenile crayfish *Orconectes limosus*. Knowledge and Management of Aquatic Ecosystems.

Girgin, S., N. Kazanci, and M. Dugel. 2010. Relationship between aquatic insects and heavy metals in an urban stream using multivariate techniques. International Journal of Environmental Science and Technology 7:653-664.

Gomi, T., S. Kobayashi, J. N. Negishi, and F. Imaizumi. 2010. Short-term responses of macroinvertebrate drift following experimental sediment flushing in a Japanese headwater channel. Landscape and Ecological Engineering 6:257-270.

Gunn, J., C. Sarrazin-Delay, B. Wesolek, A. Stasko, and E. Szkokan-Emilson. 2010. Delayed recovery of benthic macroinvertebrate communities in Junction Creek, Sudbury, Ontario, after the diversion of acid mine drainage. Human and Ecological Risk Assessment 16:901-912.

Indermuehle, N., S. Angelibert, V. Rosset, and B. Oertli. 2010. The pond biodiversity index "IBEM": a new tool for the rapid assessment of biodiversity in ponds from Switzerland. Part 2. Method description and examples of application. Limnetica 29:105-119.

Ligeiro, R., M. S. Moretti, J. F. Goncalves, and M. Callisto. 2010. What is more important for invertebrate colonization in a stream with low-quality litter inputs: exposure time or leaf species? Hydrobiologia 654:125-136.

Murria, C., N. Bonada, C. Ribera, and N. Prat. 2010. Homage to the Virgin of Ecology, or why an aquatic insect unadapted to desiccation may maintain populations in very small, temporary Mediterranean streams. Hydrobiologia 653:179-190.

Osterling, M. E., B. L. Arvidsson, and L. A. Greenberg. 2010. Habitat degradation and the decline of the threatened mussel *Margaritifera margaritifera*: influence of turbidity and sedimentation on the mussel and its host. Journal of Applied Ecology 47:759-768.

THANK YOU FOR YOUR MEMBERSHIP!

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