



**Newsletter of the
SOUTHWEST ASSOCIATION OF FRESHWATER
INVERTEBRATE TAXONOMISTS**

Greetings SAFIT members,

It's nice to see some refreshing early rains in northern California. Hope they don't mess up anyone's sampling plans. SAFIT Board of Director elections are here again and the CABW and SAFIT Annual Meetings – a little early this year – are right around the corner.

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

SAFIT Elections:

From Bill Isham, SAFIT treasurer:

This is a reminder that we will be voting on three SAFIT Board of Directors positions (President, Secretary, Member at Large). A summary of the election season schedule:

October 10: nominated candidates submit a bio/statement of intent for serving on the Board, candidates announced

October 15-31: votes accepted

October 31: votes tallied at annual SAFIT meeting in Davis, CA

The **SAFIT Annual Meeting** will be held Thursday, 31 October 2013 from 9AM to 4PM. The day **AFTER** the CABW meeting at the California Department of Fish and Game Yolo Bypass Wildlife Area Headquarters
(Costumes Optional)

California Aquatic Bioassessment Workgroup

20th Annual Meeting
October 29 and 30, 2013
9 am – 4 pm
The Ballroom
Activities and Recreation Center Conference Facility
University of California
Davis, CA

Registration:

There is no fee to attend, but registration is required.

Pre-registration:

Register online at: <http://www.trainingforce.com/5/lp/gowater.aspx?ot=8&otid=48>

In-person registration:

8 am-9 am on October 29 and 30, 2013

Location Information:

Directions: Interstate 80 to Hwy 113 north toward Woodland. Take Russell Boulevard exit and turn right on Russell Boulevard. Turn right on La Rue Road. Turn left on Orchard Road and drive directly into Visitor Parking Lot 25.

Parking: Permits are required and cost \$8.00 per day. Parking permit dispensers accept quarters, one-dollar bills, five-dollar bills, or VISA and MasterCard.

Online campus map: <http://facts.ucdavis.edu/map.lasso>



**A Workshop on the
Taxonomy of Western North American Dytiscidae and Other
Aquatic Beetle Families
And
Standard Taxonomic Effort in the Pacific Northwest
March 27-29, 2014
Hosted by Oregon State University, Department of Fisheries & Wildlife
Corvallis, OR**

The Southwestern Association of Freshwater Invertebrate Taxonomists (SAFIT) is sponsoring a two-day workshop (March 27-28, 2014) providing comprehensive instruction on the taxonomy, identification, and natural history of western North American aquatic Coleoptera (beetles), with an emphasis on Dytiscidae. The course instructor is:

Dr. Kelly Miller, Associate Professor of Biology, University of New Mexico, Albuquerque. Kelly's entomological interests and research are varied, and include the systematics of Embioptera, Coleoptera and Orthoptera; phylogenetic analysis; DNA sequence data; parsimony analysis; Bayesian analysis; sexual selection and more (http://www.kellymillerlab.com/default.asp?action=show_home)

Pacific Northwest Standard Taxonomic Effort (March 29): Robert Wisseman, Sean Sullivan and John Pfeiffer will present a one-day workshop on our efforts to establish a standard taxonomic effort for benthic biomonitoring samples in the Pacific Northwest. We will include updated digital and/or print keys, figures and references for many taxa. Bring any problematic specimens you may have for the lab portion.

An additional day for a field trip in the local area is tentatively planned.

This is a preliminary announcement to gauge interest. If you are interested in attending, please contact Wendy Willis wendy@aquabio.org.

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.

***Thermonectus marmoratus* (Coleoptera: Dytiscidae) in San Diego County**

By Bill Isham

What follows are some photos and notes regarding the epic dytiscid, *Thermonectus marmoratus*. In San Diego County, these guys are encountered rather infrequently, so we get all excited when we do encounter them. Maybe they are more common where you're from, so if you're sick of them, just bear with me. The San Mateo Watershed is an important one in southern California by virtue of its lack of urban influence and having some low elevation streams in pristine condition; as far as BMI are concerned, the place is seriously holding. This is the lowest elevation in San Diego County where you can find ephemereids and heptageniids - down to 500 ft. or so (correct me if you've beaten this). In June of 2008, at Tenaja Falls and right in the main tenaja (Spanish for water basin), a cluster of at least five mature larvae were observed. Only two were sacrificed for the sake of bug nerdiness, but even then we feel a bit guilty about the take. The Tenaja Falls site is regularly ~~tagged~~ visited by the public, so I don't feel it needs to be kept secret.





Here they are *in situ*, prior to their demise, about 26 mm in length. I really like how this photo shows their stemmata glowing in the daylight, like the zombie larvae of the damned. I'd hate to be a midge in that pool.

Back in the lab, some of the morphological characters of these monsters are really interesting. They look pretty well fed, voracious predators that they are, with big fat abdomen and an elongate prothorax. Those eerie stemmata - there are two dorsal, two medial, and two ventral - really pop out on the flattened head. So, with nearly 360 degree vision and their world-famous razor sharp mandibles, you definitely do not want to be a soft-bodied, free-living resident in their territory. I read somewhere on teh internets that they can give a person a very nasty bite, but I have not personally confirmed that capability.



Running this species through the key is relatively straightforward. With all the unique characters of the Dytiscinae it's pretty straightforward to get down to the final few genera. Then it all comes down to the structure of the ligulae, which are each pretty

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unique for our limited number of Cali types. I still managed to mangle a couplet or two first time through, par for the course when you're rushing on adrenalin with a new and charismatic specimen.



As rad as the larvae are, the adults are also pretty impressive with some spectacular markings on the dorsum. Maybe a bit over the top, but hey, who are we to judge? And while I hate to be critical, the markings lack perfect bilateral symmetry, expressed in the photo by the large medial blotches...not even close. However, they make up for a garish backside with a classy and understated venter. The long, narrow metasternal wings, in particular, are not only elegant but a perfect complement to the lavishly broad metacoxal plates. I've never thought the "what's your favorite bug?" question was worth asking or trying to answer, but I wouldn't fault anyone if they designated *Thermonectus* as the winner. Just sayin'.

Miscellaneous bug notes (anecdotal notes, including distributional records in the SAFIT region, which may be interesting or helpful to SAFIT members). To make contributions or comments contact the editor: jlee@humboldt1.com.

A *Dicosmoecus* larva with style! Interesting case building material as a *Dicosmoecus* (Trichoptera: Limnephilidae) larva uses *Juga* (Sorbeoconcha: Pleuroceridae) to armor its case. Collected by the Yurok Tribal Environmental Program from a Klamath River tributary, Humboldt County, California. Photo credit: J. Lee



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!!

Asterisk (*) indicates author is a SAFIT member.

Mollusca

Liu, H. P., R. Hershler, B. Lang, and J. Davies. 2013. Molecular evidence for cryptic species in a narrowly endemic western North American springsnail (*Pyrgulopsis gilae*). *Conservation Genetics* 14:917-923.

Crustacea

Ashelby, C. W., S. De Grave, and M. L. Johnson. 2013. The global invader *Palaemon macrodactylus* (Decapoda, Palaemonidae): an interrogation of records and a synthesis of data. *Crustaceana* 86:594-624.

Bacela-Spychalska, K., M. Grabowski, T. Rewicz, A. Konopacka, and R. Wattier. 2013. The "killer shrimp" *Dikerogammarus villosus* (Crustacea, Amphipoda) invading Alpine lakes: overland transport by recreational boats and scuba-diving gear as potential entry vectors? *Aquatic Conservation-Marine and Freshwater Ecosystems* 23:606-618.

Olesen, J. and S. Richter. 2013. Onychocaudata (Branchiopoda: Diplostraca), a new high-level taxon in branchiopod systematics. *Journal of Crustacean Biology* 33:62-65.

*Rogers, D. C. 2013. Anostraca Catalogus (Crustacea: Branchiopoda). *Raffles Bulletin of Zoology* 61:525-546.

*Rogers, D. C. and M. A. Hill. 2013. Annotated checklist of the large branchiopod crustaceans of Idaho, Oregon and Washington, USA, with the "rediscovery" of a new species of *Branchinecta* (Anostraca: Branchinectidae). *Zootaxa* 3694:249-261.

*Rogers, D. C., S. S. Shu, and J. X. Yang. 2013. The identity of *Branchinella yunnanensis* Shen, 1949, with a brief review of the subgenus *Branchinellites* (Branchiopoda: Anostraca: Thamnocephalidae). *Journal of Crustacean Biology* 33:576-581.

Sada, D. W., C. Rosamond, and K. D. Adams. 2013. Effects of recreational use on branchiopod egg and ephippia density, Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area, Nevada, USA. *Journal of Crustacean Biology* 33:286-292.

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Simovich, M. A., K. B. Davis, and A. J. Bohonak. 2013. Landscape homogenization threatens the genetic integrity of the endangered San Diego Fairy Shrimp *Branchinecta sandiegonensis* (Branchiopoda: Anostraca). *Journal of Crustacean Biology* 33:730-740.

Stoeckle, B. C., D. E. Cowley, Y. Schaack, K. S. Macdonald, R. Sallenave, and R. Kuehn. 2013. Microsatellites for North American species of *Triops* (Branchiopoda: Notostraca). *Journal of Crustacean Biology* 33:48-55.

Plecoptera

Baumann, R. W. and B. P. Stark. 2013. The genus *Megaleuctra* Neave (Plecoptera: Leuctridae) in North America. *Illiesia* 9:65-93.

*Sandberg, J. B. and B. C. Kondratieff. 2013. The *Isoperla* of California (Plecoptera: Perlodidae); updated male descriptions and adult keys for 18 Western Nearctic species. *Illiesia* 9:34-64.

Szczytko, S. W. and K. W. Stewart. 2013. *Isoperla umpqua*, a new species of western Nearctic stonefly (Plecoptera: Isoperlinae). *Illiesia* 9:28-33.

Treanor, H. B., J. J. Giersch, K. M. Kappenman, C. C. Muhlfeld, and M. A. H. Webb. 2013. Thermal tolerance of meltwater stonefly *Lednia tumana* nymphs from an alpine stream in Waterton-Glacier International Peace Park, Montana, USA. *Freshwater Science* 32:597-605.

Diptera

Anderson, A. M., E. Stur, and T. Ekrem. 2013. Molecular and morphological methods reveal cryptic diversity and three new species of Nearctic *Micropsectra* (Diptera: Chironomidae). *Freshwater Science* 32:892-921.

Andersen, T., Cranston, P. S., and J. H. Epler. 2013. The larvae of Chironomidae (Diptera) of the Holarctic region - keys and diagnoses. *Insect Systematics and Evolution Supplement* 66:1-571.

Other insects

Benner, J. S., R. J. Knecht, and M. S. Engel. 2013. Comment on Marden (2013): "Reanalysis and experimental evidence indicate that the earliest trace fossil of a winged insect was a surface skimming neopteran". *Evolution* 67:2142-2149.

Blanke, A., C. Greve, R. Mokso, F. Beckmann, and B. Misof. 2013. An updated phylogeny of Anisoptera including formal convergence analysis of morphological characters. *Systematic Entomology* 38:474-490.

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Malm, T., K. A. Johanson, and N. Wahlberg. 2013. The evolutionary history of Trichoptera (Insecta): a case of successful adaptation to life in freshwater. *Systematic Entomology* 38:459-473.

Michat, M. C. and Y. Alarie. 2013. Phylogenetic relationships, larval morphology, and chaetotaxy of the subfamily Coptotominae (Coleoptera: Dytiscidae). *Canadian Entomologist* 145:247-264.

Miscellaneous

*De Jong, G. D. and S. P. Canton. 2013. Presence of long-lived invertebrate taxa and hydrologic permanence. *Journal of Freshwater Ecology* 28:277-282.

Hellmann, C., B. Wissel, and C. Winkelmann. 2013. Omnivores as seasonally important predators in a stream food web. *Freshwater Science* 32:548-562.

Lunde, K. B., M. R. Cover, *R. D. Mazor, C. A. Sommers, and V. H. Resh. 2013. Identifying reference conditions and quantifying biological variability within benthic macroinvertebrate communities in perennial and non-perennial Northern California streams. *Environmental Management* 51:1262-1273.

Pope, K. L. and E. C. Hannelly. 2013. Response of benthic macroinvertebrates to whole-lake, non-native fish treatments in mid-elevation lakes of the Trinity Alps, California. *Hydrobiologia* 714:201-215.

THANK YOU FOR YOUR MEMBERSHIP!

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