

Newsletter of the SOUTHWEST ASSOCIATION OF FRESHWATER INVERTEBRATE TAXONOMISTS

Spring greetings SAFIT members,

We hope everyone is ready for good collecting this season. A few important announcements in this issue but we continue to solicit membership contributions to the newsletter - photos, interesting bugs, tricks of the trade, a good burger joint in an interesting collecting area, any relevant contributions – 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

SAFIT MEETINGS

The board of directors meets 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.

ANNOUNCEMENTS

California Water Quality Monitoring Collaboration Network Webinar Series: Identification to subfamily and tribe of Chironomidae larvae in California. 25 April 2013, led by A. B. Richards and J. Slusark, ABL, Chico.

For more information:

http://www.waterboards.ca.gov/mywaterquality/monitoring_council/collaboration_network/index.shtml - webinar

Cleaning and Treating Water Quality Monitoring Gear for Freshwater Aquatic Invasive Species. By Erick Burres, Citizen Monitoring Coordinator, SWCRB- Clean Water Team.

View video at:

www.youtube.com/watch?v=YMI4hgeMMAw&list=UUlrumrB_lrzOL8S-xv9FaPQ&index=13

MOLLUSCA 2014 The Meeting of the Americas Mexico City, 23-27 June 2014

Mollusca 2014 will be held at the Library Complex Amoxcalli in the Facultad de Ciencias, the Universidad National Autónoma de Mexico. We are expecting a wide global participation in the Congress, and anticipate highlighting the tremendous progress in molluscan research of the Americas. Oral talks and posters will be considered on any topic related to mollusks including, but not limited to, taxonomy, ecology, biology, evolution, fisheries, and the distribution and conservation of marine, terrestrial, and freshwater mollusks. For further information contact Paul Valentich-Scott at pvscott@sbnature2.org.

SCAMS FOCUSED ON SCIENTISTS

Below is a link to the 8 April NY Times article by Gina Kolata entitled "Scientific Articles Accepted (Personal Checks Too)." It concerns the rise of bogus on-line journals and fake conferences. These are serious scams focused on scientists, where scientists are tricked into submitting articles supposedly without page charges, then hit with large bills, or coerced into submitting credit card information to register for conferences that do not exist, often when they have been told they are an "invited speaker".

http://www.staradvertiser.com/news/nyt/19040101_Scientific_articles_accepted_personal_checks_too.html?id=201904361

Beetles of San Diego County

The San Dieguito River and Valley Conservancy is sponsoring a talk by Robyn Waayars on the beetles of San Diego County. Although her talk will mostly focus on terrestrial species, she will discuss some dytiscids of the Cuyamacas.

The talk will take place on Thursday, May 16, from 1 to 2:30 pm at the Santa Ysabel Store and Backcountry Visitor Center in Santa Ysabel.

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.

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.

Notes on Goeracea (Trichoptera: Goeridae). Wiggins (1973) reviewed the genus Goeracea placing it in the family Limnephilidae. This small, case building caddisfly is rarely collected in bioassessment samples primarily due to its preference for small, cool springs and spring creeks. In the past couple of years, I have found lone specimens of the distinctive larvae in bioassessment samples from Mendocino and San Mateo counties (California). The two described species - Goeracea genota (Ross, 1941) and G. oregona Denning, 1968 - are fairly common in Humboldt County, California, and seem to show specific habitat preferences. I have found G. genota in cool, perennial spring creeks at elevations above 500 meters; and G. oregona in small, cool springs and seepages (at least some of which have been observed to lose surface flow) from near sea level to around 800 meters. Wiggins (1973) indicates that G. genota tends to emerge earlier than G. oregona. However, adults of both species are present at the same time in the Willow Creek drainage (Humboldt County) during March, with G. oregona occurring at lower elevations. Please note that these are local observations and that Wiggins (1973) lists G. oregona from several permanent springs in the Sagehen Creek area (Nevada Co., California).

Wiggins (1973) includes adult and larval keys to the two species. Dave Ruiter (personal communication, 5 February 2010) noticed a distinction in the pronotum that further separates the larvae of the two species. The pronotum of *G. genota* bears short, spine-like setae; these setae are lacking on the pronotum of *G. oregona* as illustrated in the photos below.

Please send in records/observations to help further establish the range and habitat preferences for the species in this interesting genus.

Thanks, J. Lee

Wiggins, G.B. 1973. New systematic data for the North American caddisfly genera *Lepania, Goeracea and Goerita* (Trichoptera: Limnephilidae). Life Sciences Contribution of the Royal Ontario Museum 91:1-32.

Photo credit: Dave Ruiter/Joe Giersch



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 (<u>arichards@csuchico.edu</u>) for inclusion in the next issue of the SAFIT Newsletter. Thanks!!

Asterisk (*) indicates author is a SAFIT member.

Mollusca

- Gates, K. K., B. L. Kerans, J. L. Keebaugh, S. Kalinowski, and N. Vu. 2012. Taxonomic identity of the endangered Snake River physa, *Physa natricina* (Pulmonata: Physidae) combining traditional and molecular techniques. Conservation Genetics 14:159-169.
- O'Brien, C., D. Nez, D. Wolf, and J. B. Box. 2013. Reproductive biology of *Anodonta californiensis*, *Gonidea angulata*, and *Margaritifera falcata* (Bivalvia: Unionoida) in the Middle Fork John Day River, Oregon. Northwest Science 87:59-72.

Crustacea

- Chucholl, C. 2013. Invaders for sale: trade and determinants of introduction of ornamental freshwater crayfish. Biological Invasions 15:125-141.
- *Graening, G. O., D. Fong, *L. Serpa, N. S. Sharma, and G. J. Graening. 2012. Conservation status of the Tomales Bay Isopod *Caecidotea tomalensis* (Malacostraca: Isopoda). California Fish and Game 98:202-213.
- *Rogers, D. C. and M. Soufi. 2013. A new species of *Chirocephalus* (Crustacea: Anostraca) from Iran. Zootaxa 3609:319-326.

Ephemeroptera/Odonata

- Blanke, A., B. Wipfler, H. Letsch, M. Koch, F. Beckmann, R. Beutel, and B. Misof. 2012. Revival of Palaeoptera-head characters support a monophyletic origin of Odonata and Ephemeroptera (Insecta). Cladistics 28:560-581.
- Bush, A., G. Theischinger, D. Nipperess, E. Turak, and L. Hughes. 2013. Dragonflies: climate canaries for river management. Diversity and Distributions 19:86-97.
- May, M. L. 2013. A critical overview of progress in studies of migration of dragonflies (Odonata: Anisoptera), with emphasis on North America. Journal of Insect Conservation 17:1-15.

Plecoptera

- Heinold, B. D., B. A. Gill, and B. C. Kondratieff. 2013. Recent collection and DNA barcode of the rare Coffee Pot Snowfly *Capnia nelsoni* (Plecoptera: Capniidae). Illiesia 9:14-17.
- Novaes, M. C., P. D. Bispo, and J. Higuti. 2012. A description of the nymph of *Anacroneuria ofaye* Froehlich (Plecoptera: Perlidae) and a (*sic*) apparatus for rearing Neotropical stonefly species. Zootaxa 3547:71-77.
- Rinella, D. J., D. L. Bogan, R. S. Shaftel, and D. Merrigan. 2012. New aquatic insect (Ephemeroptera, Trichoptera, and Plecoptera) records for Alaska, USA: range extensions and a comment on under-sampled habitats. Pan-Pacific Entomologist 88:407-412.
- Stewart, K. W., B. P. Stark, and *L. L. Serpa. 2013. Larvae of the two North American species of *Calileuctra* (Plecoptera: Leuctridae). Illiesia 9:1-13.

Miscellaneous

- Dumnicka, E., J. Galas, I. Jatulewicz, J. Karlikowska, and B. Rzonca. 2013. From spring sources to springbrook: changes in environmental characteristics and benthic fauna. Biologia 68:142-149.
- Ferry, E. E., G. R. Hopkins, A. N. Stokes, S. Mohammadi, E. D. Brodie, and B. G. Gall. 2013. Do all portable cases constructed by caddisfly larvae function in defense? Journal of Insect Science 13:1-9.
- Leite, L. A. R. 2012. Mitochondrial pseudogenes in insect DNA barcoding: differing points of view on the same issue. Biota Neotropica 12:301-308.
- Sari, A., M. Duran, and F. Bardakci. 2012. Discrimination of Orthocladiinae Species (Diptera: Chironomidae) by using cytochrome c oxidase subunit I. Acta Zoologica Bulgarica Supplementum 4:73-80.
- Stein, E. D., B. P. White, *R. D. Mazor, P. E. Miller, and E. M. Pilgrim. 2013. Evaluating Ethanol-based Sample Preservation to Facilitate Use of DNA Barcoding in Routine Freshwater Biomonitoring Programs Using Benthic Macroinvertebrates. Plos One 8:e51273.
- Store, R. G. and J. M. Quinn. 2013. Survival of aquatic invertebrates in dry bed sediments of intermittent streams: temperature tolerances and implications for riparian management. Freshwater Science 32:250-266.

THANK YOU FOR YOUR MEMBERSHIP!

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Brady Richards, 530.898.4792 (<u>arichards@csuchico.edu</u>)
D. Christopher Rogers, 785.864.1714 (<u>branchiopod@gmail.com</u>)



Newsletter of the SOUTHWEST ASSOCIATION OF FRESHWATER INVERTEBRATE TAXONOMISTS

Season's warmings SAFIT members,

Hope everyone has their marshmallows on hand as it looks like there will be ample chances to toast them this summer. Will be interesting to see how/if the 2013 bioassessment samples pick up the drought and heat in a large chunk of the west. Everyone up to snuff on terrestrial IDs?!

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

For those concerned with collecting specimens to be used in DNA analysis, a great post can be found here:

http://subulatepalpomere.wordpress.com/2013/04/12/how-to-collect-beetles-for-dna-studies/

EMPLOYMENT OPPORTUNITIES

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

Algal Taxonomists (2) EcoAnalysts, Inc., Moscow, Idaho

www.ecoanalysts.com

EcoAnalysts is currently searching for an individual who enjoys algae taxonomy and who wants to be part of a successful team of Aquatic Scientists. If you wish to use your knowledge and experience to help people make highly informed decisions regarding the condition and stewardship of our natural resources, then we encourage you to explore the information below and throughout our entire web site at www.ecoanalysts.com.

Positions

We are currently seeking qualified applicants for two algae taxonomist positions. One position will focus primarily on diatom taxonomy with some responsibility for soft algae taxonomy. The second position will focus primarily on soft algae taxonomy with some responsibility for diatom taxonomy possible (primarily in undigested material). Primary duties include identification of samples in a production environment and data summarization for reporting to clients

Location

Moscow, ID

Qualifications

- The major responsibility of the Algal Taxonomist is the identification of algae samples; therefore, demonstrated experience with algae taxonomy is required.
- Knowledge of appropriate sample handling and preparation techniques is required.
- Experience with North American algae taxa from a variety of habitats
- Accuracy and speed is imperative due to fixed project budgets
- Excellent work ethic, ability to meet deadlines, willingness to go the "extra mile", and ability to work well in small groups and independently.
- Minimum qualifications are a Bachelor's degree in the biological sciences. Preference will be given to applicants with at least two years of identification experience in a production taxonomy setting.

Compensation

Salary range and benefits are dependent upon experience, qualifications, and job performance. Benefits include flex time, vacation/sick time, a health insurance plan (medical, vision, and dental), and an employer-matched investment fund.

Please send or email 1) letter of application, 2) complete resume, and 3) three professional references. No phone calls please.

Positions available immediately

Gary Lester, CEO EcoAnalysts, Inc.

email: glester@ecoanalysts.com

GOOD EATS!

I am still, fortunately, in search of the perfect burger. I will go into most any dive looking for one and I have found that, most often, the fewer the windows, the better the burger. I am not talking your half pound, glorified, spiced, avocado burger. I am talking vinyl seat diner burger, before McDonalds - cuz I am old. A 1/4 or 1/3 pound, hand mushed, real meat burger. An American cheese (or whatever it is) slice, and, for me, ketchup and sweet relish on a butter grilled white bread bun. I have now found an 8 (on a 10 scale) in Grants Pass. And just a couple blocks walk away! The Bridge Street Market (732 SW Bridge St, Grants Pass, OR 97526). This place is your standard local 7-11 style quick stop. But they have a little grill in back with a couple cooks at breakfast/lunch, a bunch of local specials (and special locals:-)) and a couple tables and chairs in the corner. While you can buy a single or 12 pack, there is no beer on the menu. They are working on building an attached neighborhood pub with local taps so maybe in a year. Really looking forward to that. Attached is a pic - cheeseburger & fries - \$6.50. It would have been a 9 if the butter side of the bun was a little crisper but after 2 different visits they were both the same. None the less - great!

Dave Ruiter
235 SW Central Avenue
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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.

Home Made Lab Tools by Jon Lee

Often, when trying to manipulate a bug under the scope, commercially available lab tools don't quite work. A good pair of forceps, probably the most important lab tool, may be difficult to make at home. However, various pins, probes, specimen holders, etc. can be easily created.

Even a simple pin, with the head flattened, can be inserted into a caddisfly abdomen to hold it in the desired position (Betten 1934). Cook (1974) describes making a fine tipped probe and shaping various tools from the probe for water mite specimen preparation. Materials for the probe are: minutin pins (#1 insect pins or any size to meet the required role); a three-inch section of applicator stick (a four foot by ¼ inch wooden dowel can be purchased at a hardware store for about a buck); and contact cement (the super glues work well). An appropriate length of dowel is cut, a pin is used to make a hole (at least 1/8 inch deep) in the center of one end of the dowel, a drop of contact cement is placed on that end, and the butt end of the pin (head removed) is stuck into the hole and propped up vertically until the glue dries. This probe is great for manipulating small parts of a specimen. Cook (1974) goes on to describe fashioning a micro scalpel, a specimen holder, and a hook from the probe.

I am fairly new to the game, fashioning fine tipped probes/teasing needles out of necessity. Colleagues have mentioned many homemade lab tools - including various minutin pins, using split shot sinkers and pins to fashion tools to hold specimens in place, and various creations to enhance microphotography – to name a few. Perhaps these folks or others can chime in for a continuation of this article.

Betten, C. 1934. The caddis flies or Trichoptera of New York State. Bulletin of the New York State Museum 292:1-576.

Cook, D.R. 1974. Water mite genera and subgenera. Memoirs of the American Entomological Institute 21:1-860.

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: ilee@humboldt1.com.

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Mollusca

- Criscione, F. and W. F. Ponder. 2013. A phylogenetic analysis of rissooidean and cingulopsoidean families (Gastropoda: Caenogastropoda). Molecular Phylogenetics and Evolution 66:1075-1082.
- Wilke, T., M. Haase, R. Hershler, H.-P. Liu, B. Misof, and W. Ponder. 2013. Pushing short DNA fragments to the limit: phylogenetic relationships of 'hydrobioid' gastropods (Caenogastropoda: Rissooidea). Molecular Phylogenetics and Evolution 66:715-736.

Crustacea

- Endebu, M., F. Miah, N. Boon, F. Catania, P. Bossier, and G. Van Stappen. 2013. Historic occurrence of parthenogenetic *Artemia* in Great Salt Lake, USA, as demonstrated by molecular analysis of field samples. Journal of Great Lakes Research 39:47-55.
- *Rogers, D. C., S. Shu, and J. 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.

Plecoptera

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

Trichoptera

Parys, K. A. and S. C. Harris. 2013. Larva of *Nothotrichia shasta* Harris & Armitage (Trichoptera: Hydroptilidae) from California, USA, with its phylogenetic and taxonomic implications. Zootaxa 3620:589-595.

Coleoptera

Mađarić, B. B., V. M. Stanković, L. Čorak, Đ. Ugarković, and A. Komarek. 2013. Contributions to molecular systematics of water scavenger beetles (Hydrophilidae, Coleoptera). Journal of Zoological Systematics and Evolutionary Research 51:165-171.

Miller, K. B. and P. D. Perkins. 2012. The diving beetle species *Hydrotrupes Palpalis* Sharp, 1882 (Coleoptera: Dytiscidae). Coleopterists Bulletin 66:371-377.

Diptera

- Evenhuis, N. L. and A. C. Pont. 2013. Nomenclatural studies toward a world catalog of Diptera genus-group names. III. Christian Rudolph Wilhelm Wiedemann. Zootaxa 3638:1-75.
- Fusari, L. M., F. d. O. Roque, and N. Hamada. 2013. Review of *Xenochironomus* Kieffer, 1921 (Diptera: Chironomidae) with description of six new species. Zootaxa 3646:101-126.
- Milosevic, D., V. Simic, M. Stojkovic, D. Cerba, D. Mancev, A. Petrovic, and M. Paunovic. 2012. Spatio-temporal pattern of the Chironomidae community: toward the use of non-biting midges in bioassessment programs. Aquatic Ecology 47:37-55.

Miscellaneous

- Bogan, M. T., K. S. Boersma, and D. A. Lytle. 2013. Flow intermittency alters longitudinal patterns of invertebrate diversity and assemblage composition in an arid-land stream network. Freshwater Biology 58:1016-1028.
- Engel, M. S. and N. P. Kristensen. 2013. A history of entomological classification. Annual Review of Entomology 58:585-607.
- Harrison, A. B. and J. C. Morse. 2013. The macroinvertebrate fauna of the Mississippi River. Transactions of the American Entomological Society 138:55-72.

THANK YOU FOR YOUR MEMBERSHIP!

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Dessie Underwood, Vice President 562.985.7475

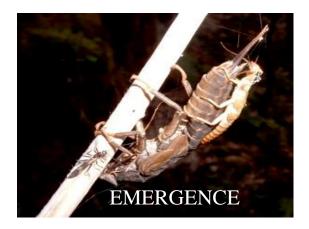
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Greetings SAFIT members,

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

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FIELD & LAB

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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 ephemerellids 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

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.



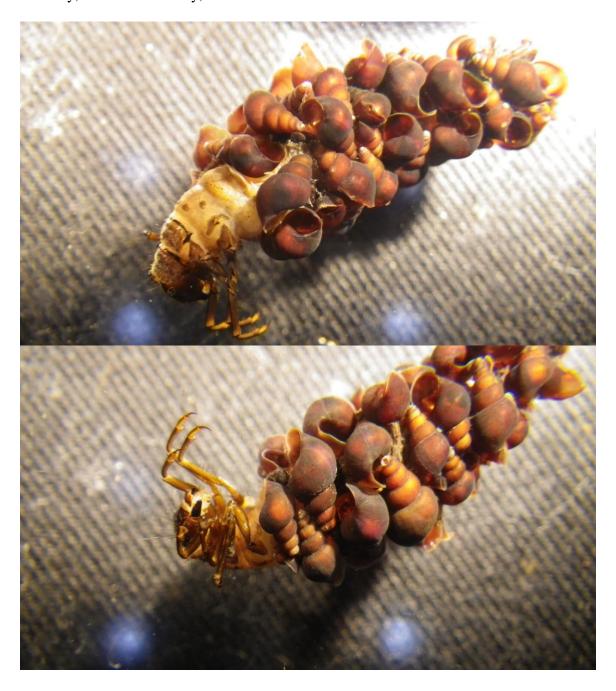




As rad as the larvae are, the adults are also pretty impressive with some spectacular markings on the dorsum. Maybe a bit over the top, but hey, who are we to judge? And while I hate to be critical, the markings lack perfect bilateral symmetry, expressed in the photo by the large medial blotches...not 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 (<u>arichards@csuchico.edu</u>) 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.

- 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.

- 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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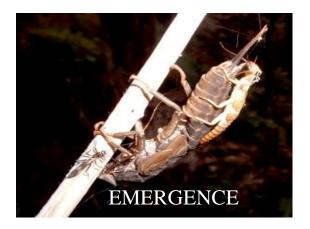
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Newsletter of the SOUTHWEST ASSOCIATION OF FRESHWATER INVERTEBRATE TAXONOMISTS

Season's greetings SAFIT members,

We hope 2014 is starting well for everyone. With this newsletter issue we begin including items such as the annual SAFIT Meeting Minutes and guidelines for submissions to the newsletter, as decided upon at the 2013 SAFIT annual meeting. Of course, member submissions are always encouraged to improve the content of the newsletter.

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 AND NOTICES

The notices, announcements and advertisements in this section do not reflect SAFIT or SAFIT's views, opinions or policy, and do not constitute an endorsement of an advertiser's abilities, skills, or products.

SAFIT Meeting Minutes 31 October 2013

California Department of Fish and Game Yolo Bypass Wildlife Area Headquarters 9 am to 3 pm

1) Welcome & Introductions

2) Presidents update

- a) CAMLnet/SAFIT 2005 to 2013
- b) Core mission western workshops and Cali. STE
- c) Newsletter
 - Decided to add sections to the newsletter including names and contact information for those looking for jobs, notes from the president/other BOD members, and annual meeting minutes
 - Disclaimers/guidelines will also be added for those wishing to post in the newsletter
 - Newsletter editorial board will come up with disclaimers/guidelines and send to BOD for approval
 - Will also add membership renewal reminders and renewal PayPal link in the last and first quarter newsletter
- d) Financial stability
 - SAFIT is currently self-sustaining due to workshop funds and is beginning to look at offering student support for those doing taxonomy work and/or offering support for key development
 - SAFIT can no longer rely on SWAMP support for workshops but might for STE maintenance and development
- e) Introduce new president
 - Dan Pickard elected as new SAFIT president

3) Treasurers update

- a) Revenues and expenditures and balance for 2013
 - SAFIT made ~\$4,000 in revenue from membership dues and workshop fees
 - Total balance in SAFIT accounts ~\$36,000 (Chase/PayPal)
- b) Other items

4) Secretaries update

- a) Current membership demographics
 - SAFIT has 32 active members for 2013
 - o Gained 7 members
 - Lost 36 members
 - Likely due to timing of the workshop in January last year and not enough renewal reminders
 - o Reminders will now be sent out in newsletter as well as via list serve
- b) SAFIT membership marketing

 John Sandburg will contact Jim Harrington and Erick Burres for email lists for the purposes of advertising for SAFIT membership

5) Discussion topics

- a) SAFIT and California Chapter Society of Freshwater Science (SFS)
 - Vote: SAFIT Wishes to Remain Independent of SFS
 - Joe would like to get involved with keeping the CA chapter
 - Might add SFS CA chapter meeting to the end of the CABW meetings
 - Can potentially add additional days to CABW for the purposes of presenting aquatic ecology research/papers, not just bioassessment, as a part of the CA SFS
- b) Members posting rights in newsletter (see above)
- c) Open to any topic that any member wants discussed
 - Joseph Furnish announced a Nature Conservancy publication "Below the Surface" (Jeanette Howard), which is about CA's freshwater biodiversity, but is relatively incomplete. Please contact Jeanette Howard at the nature Conservancy for any additions
 - The Nature Conservancy also has downloadable GIS layers with watershed and species information on their website
 - The Forest Service is looking for information on aquatic insect species that taxonomists have noticed to be in decline/endangered in their sampling areas. Please contact Joseph with information (jfurnish01@fs.fed.us) if you have any such information

Working Lunch

- Announcement of BOD election results
 - o Dan Pickard elected as President
 - Wendy Willis re-elected as Secretary
 - o Joe Slusark elected as Member at Large
- Guests address to the group

6) Workshop Committee Report

- a) Workshops this past year
 - Mayflies on the Beach CSU Long Beach, Long Beach CA, January 3-4, 2013
 - Webinar Identifying Chironomidae to subfamily and tribe, April 25, 2013
 - Can still be viewed on the CA Water Quality Collaboration Network website
 - (http://www.mywaterquality.ca.gov/monitoring_council/collaboration_net work/index.shtml)
- b) Upcoming workshops
 - Beetle Workshop in Oregon (Beetles in Beavertown or Beetles with the Beavers?) – Oregon State University, Corvallis OR, March 27-28, 2014

 Dr. Kelly Miller (University of New Mexico) will be the instructor for the upcoming beetle workshop at Oregon State University on March 27-28, 2014

- Beetle taxa will include (but not limited to): Dytiscidae, Haliplidae, and Hydrophilidae larvae (Bob will get a final list of taxa before official announcement)
- Workshop material will be distributed on flash drives as in last year's workshop (Wendy Willis will provide)
- Workshop fees for members will be \$300 (\$400 for non-members)
- o Dr. Kelly will be offered a \$6,000 honorarium, which includes travel expenses
- The Pacific Northwest group will have a "Bugfest" on March 29th to go over/exchange problematic taxa and optional field trip potentially on the 30th
- Discussion of future workshop topics and locations
 - Future workshop topics will be discussed at Beetle workshop in March 2014

7) STE Committee Report

- a) SAFIT STE next iteration & database development
 - Joe, Christopher and Brady are still working on database formatting options
- b) PNAMP STE report on development Bob Wisseman
 - PNW group will remain a separate entity from SAFIT
 - They are currently working on producing their own STE

8) QA/QC Committee Report

- a) SWAMP SOP for QC of BMI Taxonomy Data currently under development
 - Currently working on developing "data loaders" to streamline external QAQC process

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.**

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 (<u>arichards@csuchico.edu</u>) for inclusion in the next issue of the SAFIT Newsletter. Thanks!!

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Mollusca

- Hershler, R., H.-P. Liu, and C. Bradford. 2013. Systematics of a widely distributed western North American springsnail, *Pyrgulopsis micrococcus* (Caenogastropoda, Hydrobiidae), with descriptions of three new congeners. Zookeys 330:27-52.
- Prie, V., N. Puillandre, and P. Bouchet. 2013. Bad taxonomy can kill: molecular reevaluation of *Unio mancus* Lamarck, 1819 (Bivalvia: Unionidae) and its accepted subspecies. Knowledge and Management of Aquatic Ecosystems 490:11. Erratum to: Knowledge and Management of Aquatic Ecosystems (2012) 405:08.

Crustacea

- De Grave, S. and C. W. Ashelby. 2013. A re-appraisal of the systematic status of selected genera in Palaemoninae (Crustacea: Decapoda: Palaemonidae). Zootaxa 3734:331-344.
- Korn, M., N. Rabet, H. V. Ghate, F. Marrone, and A. K. Hundsdoerfer. 2013. Molecular phylogeny of the Notostraca. Molecular Phylogenetics and Evolution 69:1159-1171.
- Kou, Q., X. Li, T.-Y. Chan, K. H. Chu, and Z. Gan. 2013. Molecular phylogeny of the superfamily Palaemonoidea (Crustacea: Decapoda: Caridea) based on mitochondrial and nuclear DNA reveals discrepancies with the current classification. Invertebrate Systematics 27:502-514.
- Pilgrim, E. M., M. J. Blum, D. A. Reusser, H. Lee, and J. A. Darling. 2013. Geographic range and structure of cryptic genetic diversity among Pacific North American populations of the non-native amphipod *Grandidierella japonica*. Biological Invasions 15:2415-2428.
- Rogers, D. C.*, W. Thaimuangphol, N. Saengphan, and L. Sanoamuang. 2013. Current knowledge of the South East Asian large branchiopod Crustacea (Anostraca, Notostraca, Laevicaudata, Spinicaudata, Cyclestherida). Journal of Limnology 72:69-80.

Ephemeroptera

Webb, J. M.* 2013. A new species of *Labiobaetis* Novikova & Kluge, 1987 (Ephemeroptera: Baetidae) from Washington, USA. Zootaxa 3750:95-99.

Odonata

Dijkstra, K. D. B., G. Bechly, S. M. Bybee, R. A. Dow, H. J. Dumont, G. Fleck, R. W. Garrison, M. Hamalainen, V. J. Kalkman, H. Karube, M. L. May, A. G. Orr, D. R. Paulson, A. C. Rehn, G. Theischinger, J. W. H. Trueman, J. Van Tol, N. Von Ellenrieder, and J. Ware. 2013. The classification and diversity of dragonflies and damselflies (Odonata). Zootaxa 3703:36-45.

Plecoptera

- Grubbs, S. A., B. C. Kondratieff, B. P. Stark, and R. E. DeWalt. 2013. A review of the Nearctic genus *Zealeuctra* Ricker (Plecoptera, Leuctridae), with the description of a new species from the Cumberland Plateau region of eastern North America. Zookeys 344:17-47.
- Nelson, C. R., R. W. Baumann, and J. J. Lee*. 2013. New morphological observations and phylogenetic placement of *Capnia shasta* (Plecoptera: Capniidae). Illiesia 9:122-125.
- Stark, B. P., R. W. Baumann, B. C. Kondratieff, and K. W. Stewart. 2013. Larval and egg morphology of *Paraperla frontalis* (Banks 1902) and *P. wilsoni* Ricker 1965 (Plecoptera: Chloroperlidae). Illiesia 9:101-108.

Trichoptera

- Givens, D. R. 2013. A portable, vehicle use rearing chamber for caddisfly larvae and pupae (Trichoptera). Pan-Pacific Entomologist 89:153-158.
- Robertson, D. R. and R. W. Holzenthal. 2013. Revision and phylogeny of the caddisfly subfamily Protoptilinae (Trichoptera: Glossosomatidae) inferred from adult morphology and mitochondrial DNA. Zootaxa 3723:1-99.

Coleoptera

De Jong, G. D.*, E. R. Smith, and D. J. Conklin. 2013. Riffle beetle communities of perennial and intermittent streams in northern Nevada, USA, with a new state

record for *Optioservus castaneipennis* (Fall) (Coleoptera: Elmidae). Coleopterists Bulletin 67:293-301.

- Gustafson, G. T. and K. B. Miller. 2013. On the family- and genus-series nomina in Gyrinidae Latreille, 1810 (Coleoptera, Adephaga). Zootaxa 3731:77-105.
- Segura, M. O., M. I. D. Dos Passos, A. A. Fonseca-Gessner, and C. G. Froehlich. 2013. Elmidae Curtis, 1830 (Coleoptera, Polyphaga, Byrrhoidea) of the Neotropical region. Zootaxa 3731:1-57.

Miscellaneous

- Ball, J. E., L. A. Bêche, P. K. Mendez, and V. H. Resh. 2013. Biodiversity in Mediterranean-climate streams of California. Hydrobiologia 719:187-213.
- Bouvier, M. E., A. Perez, and P. Muniz. 2013. A simple home-made turbidimeter (HMT) for turbidity measurements using *Hyalella curvispina* Shoemaker, 1942 (Crustacea: Amphipoda) for the assessment of environmental quality of coastal waters. Brazilian Journal of Oceanography 61:201-206.
- Resh, V. H., L. A. Beche, J. E. Lawrence, R. D. Mazor*, E. P. McElravy, A. P. O'Dowd, D. Rudnick, and S. M. Carlson. 2013. Long-term population and community patterns of benthic macroinvertebrates and fishes in Northern California Mediterranean-climate streams. Hydrobiologia 719:93-118.

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SAFIT Newsletter Publication Guidelines

Submissions and questions about submissions should be directed to the SAFIT Newsletter Editor, at: jlee@humboldt1.com, 707.441.9347. Submissions should be Word files, 12 pt. Times New Roman font, and left justified. Please submit an announcement, as you would like it to appear in the newsletter, preferably in Word format. Images should be high quality.

Deadline for SAFIT newsletter announcements: Send to editor one week before publication date.

Issue	Submission Deadline	Publication Date
I	24 March	31 March
II	23 June	30 June
III	23 September	30 September
IV	24 December	31 December

Advertisements:

- Employment Opportunity ads should be one page maximum (8.5 x 11), should list the position(s) available, basic qualifications required, and provide contact information.
- Employment Wanted ads may include a brief statement describing the position sought, basic experience, and contact information. For example: "Looking for work as phytoplankton taxonomist. Experience includes M.S. thesis from the University of Malpractice, and working on several long-term bioassessment projects for the state of East Carolina. Resume and references upon request. Please contact Martin E. Serumgaard, mserumgaard@fakeaddress.net, (555) 555-5555." Do not include curriculum vitae or resume, photos, or political statements.
- General Advertisements should be limited to one page (8.5 x 11) and may include a high quality logo image, and must not include political statements or other potentially offensive material.

The editor, editorial board and the SAFIT Board of Directors reserve the right to reject any or all submissions to the SAFIT Newsletter for any reason. The notices, announcements and advertisements, other than those submitted by the SAFIT Board of Directors, do not reflect SAFIT or SAFIT's views, opinions or policy, and do not constitute an endorsement of an advertiser's abilities, skills or products."