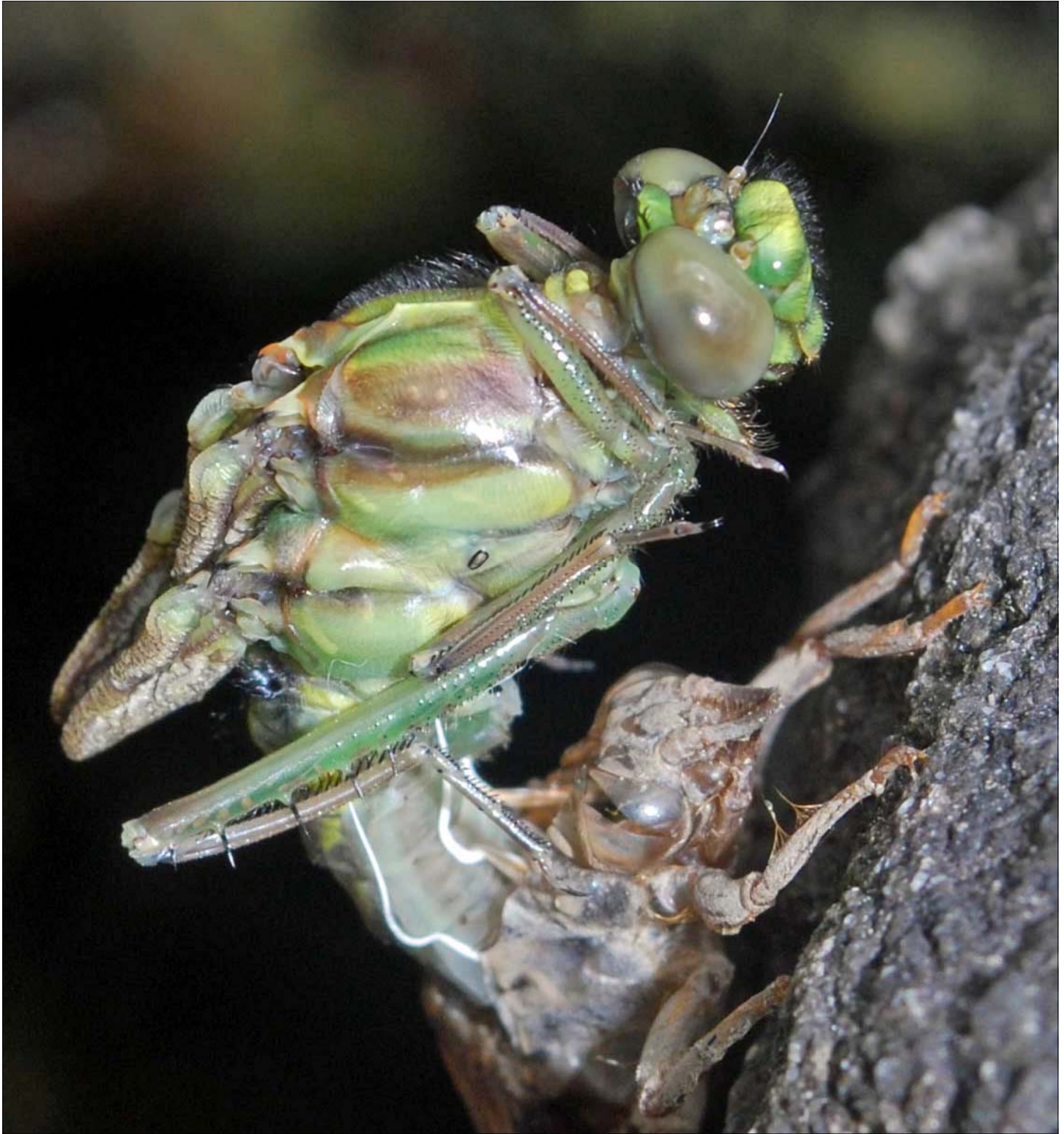




VES NEWS

The Newsletter of the Vermont Entomological Society

Number 72
Summer 2011



On the web at www.VermontInsects.org



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The Newsletter of the
Vermont Entomological Society

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The **Vermont Entomological Society** is devoted to the study, conservation, and appreciation of invertebrates. Founded in 1993, VES sponsors selected research, workshops and field trips for the public, including children. Our quarterly newsletter features developments in entomology, accounts of insect events and field trips, as well as general contributions from members or other entomologists.

VES is open to anyone interested in arthropods. Our members range from casual insect watchers to amateur and professional entomologists. We welcome members of all ages, abilities and interests.

You can join VES by sending dues of \$15 per year to:

Steve Trombulak, VES Treasurer
 Department of Biology
 Middlebury College
 Middlebury, VT 05753

Cover Image: Doug Burnham photographed this emerging dragonfly (*Dromogomphus spinosus*) during a VES field day at Kettle Pond in Marshfield on June 18, 2011.

Back Page Photo: A sample from the collection of Jim Hedbor, photographed by Michael Sabourin, July 24, 2011.

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Newsletter Schedule

Spring:	Deadline April 7 - Publication May 1
Summer:	Deadline July 7 - Publication August 1
Fall:	Deadline October 7 - Publication November 1
Winter:	Deadline January 7 - Publication February 1

Check Your Mailing Label

The upper right corner of your mailing label will inform you of the month and year your VES membership expires. Dues are \$15 and can be sent to:

Steve Trombulak, VES Treasurer
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Thanks!



ENTOMOLOGICAL THRILL-SEEKER?

By Mark Ferguson

My first interactions with the bug world were peaceful, as recounted by my mother, who watched my three-year-old self talking to bees in the garden. But I have just two memories of insects from those early years in Pasadena, Texas. The first was being stung by a wasp for no other reason than someone else was bothering it. The second, getting ants in my pants at the “tender” age of five. Amazing how they can synchronize their revealing stings to one precise moment. Despite the harsh introduction, bugs and other creatures became a fascination and drew me into their world. Could this have been the beginning of some sort of entomological thrill seeking?

Moving to northeastern Oklahoma at the age of six brought new subjects. I remember watching the sap-loving Emperors and Wood-nymphs in our aging elm trees, discerning the different serenades of cicadas on summer afternoons, and being fascinated by the huge helicopter-like wasps that hunted those same cicadas and raised dust clouds when low to the ground. Nights would attract neighborhood kids to the Fergusons’ backyard to run crazy in the dark, catch lightening bugs, and watch hawk moths hover over moon vine flowers. We were convinced these moths were some sort of bird until I managed to catch one. Preadolescence added some bravado. I could always convince a friend or two to join me in searching out tarantulas and scorpions under rocks on hot summer days. Finding the entrance to an underground bumblebee nest one day gave us the brainy idea of seeing who could stand on it the longest. Three of us

participated, three of us got stung. Go figure. That was the first and last summer of the bumblebee dare, though I have to admit to being stung, bitten, and pinched by many creatures throughout my childhood.



Mark Ferguson seeking out the things-less-seen

I attended college at Oklahoma State University. After trying to fit into several academic slots, I received a B.S. in wildlife ecology. The following three years employed as a field technician in fisheries research were rewarding. My last summer before graduating, however, had been spent at a biological station on Lake Texoma, where my eyes were opened to the world of non-game fishes (darters, chubs, shiners, redhorses and the like). This epiphany, spawned of ichthyological diversity, led me to enroll at the University of Alabama in 1987, where I received my M.S. in aquatic biology. During that period I studied the life history of a Gulf Coast minnow and was fortunate enough to tag along on sampling trips from Wisconsin to Mississippi, and east to North Carolina. The variety of color and form in North American fishes is amazing.

After graduation, I moved to Blacksburg, VA, and began working for the Virginia Non-game Program doing stream surveys of threatened and endangered fishes and mussels. Other than taking an aquatic invertebrate course in college, this was my first career opportunity to get into invertebrates. Blacksburg is also where I met my wife, Carmel, who finds nature as fascinating as I do. We both enjoy seeking out the things-less-seen while on hikes, a time-consuming behavior that has long annoyed our daughters. In 1995 we moved to Vermont, where I took the position of Natural Heritage Zoologist with the Fish & Wildlife Department. It is here

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Member Profile (cont')



(Continued from page 3)

that I've finally attempted to expand my taxonomic range to include all things invertebrate. It's been a challenge trying to get up to speed, but Vermont is fortunate to be home to excellent entomologists who are always ready to identify specimens or give tips on techniques.

Funny how I've kind of gotten back to where I started, exploring the landscape for crawly things. Even after being stung by a saddleback caterpillar, which I don't recommend, I would love to see another one...at a distance.



Mark with his young naturalists

Over the years I've nudged our kids towards activities that would foster an appreciation of the unappreciated natural world. Sometimes it works, sometimes not. My girls once spent an Oklahoma summer evening rescuing a tarantula from a tarantula wasp (I would have preferred to see the interaction, but what can you do). It's these unplanned moments that strike a chord - an unexpected encounter with stream salamanders or pond leeches, or an evening sky filled with dragonflies. Random moments seem to be the most memorable. When I look back, though, I guess they always have been.

Field Notes from Recent VES Events



(Editor's note: The short summaries on this page and the next cover recent VES events and were compiled thanks to input from several members.)

Field Trip to Colchester Pond

With Laurie DiCesare in the lead, VES members walked the very wet and mushy shoreline of Colchester Pond on Sunday, May 29 and compiled a basic species list of observations, ranging from insects, like the swamp milkweed leaf beetle shown here, to birds, including the bobolink.

When Laurie told Doug Burnham that she had been looking for dragonfly exuviae, he jumped in the water and quickly retrieved about 10 gomphid exuviae for her. (Laurie returned to Colchester Pond the next day with a garden kneeler - to get down at eye level with her "prey" - and found another 10 more to give away to young enthusiasts.)

For a copy of the list of selected species seen during this field trip, contact Laurie at NatureHaven8@hughes.net.



Michael Sabourin

Swamp milkweed leaf beetle, *Labidomera clivicollis*, observed at Colchester Pond



Kettle Pond Excursion

On Saturday June 18 seven VES members gathered in Groton State Forest at the Kettle Pond parking lot and prepared to carpool to a small trailhead leading to Peacham Bog. As it turned out, nobody other than trip leader Michael Sabourin was willing to hike the two miles into the bog so we walked the Kettle Pond trail. It was a day for Lepidoptera and Odonata. White admirals were puddling in the parking lot and in several wet spots along the trail. Other sightings included a silver-spotted fern



Doug Burnham

The Dragonhunter, *Hagenius brevistylus* the dragonhunter

moth, an actively pupating red admiral and a parasitized forest tent caterpillar. Doug Burnham collected many dragonfly exuvia, most of which were *Dromogomphus spinosus* - the black-shouldered spinyleg. Also seen were a newly emerged

Hagenius brevistylus - the dragonhunter and Chromgrion conditum - the variegated bluet. We ended the walk not too long before yet another severe thunderstorm hit central Vermont so the decision to skip Peacham Bog was a wise one.

Moth Night

Ten VES members gathered for Moth Night on July 2 at Rachael and Scott Griggs' house in Grand Isle. We ate a delicious pot luck and barbeque and told stories of past insect adventures. The night was hot, humid and perfect for mercury vapor lights and sheets. Scott had set up one sheet near the woods in their backyard and another in a forest opening away from the house. Many, many insects showed up at both sites, and Doug Burnham again had fun with his digital camera, trying to photograph as many insects as possible. Besides moths, we saw fishflies, beetles, caddisflies and true flies. A partial list of moth species: luna moth, banded tussock moth, waved sphinx, sawfly sp., spiny oak slug moth and zanclognatha sp. The highlight of the night was almost missed. Just before Scott turned off the lights, Doug went out to take another

luna photo and spotted a large yellow and pink moth. It turned out to be an imperial moth. They are not unknown in Vermont but unusual and a welcome sight. We thank the Griggs for hosting this fun outing.

BOV Museum Butterfly Walk

Though not many butterflies were out and about that day, VES members had a good time and enjoyed getting together for some camaraderie. Thanks to Ann Day for photographing the event!



Ann Day

Jim Hedbor holds forth at the Birds of Vermont Museum Butterfly Walk

Picnic at Hedbor's

Highlights of the VES picnic held at Jim and Eloise Hedbor's charming home on South Hero on July 24, included the opportunity to see Jim's 70-drawer collection of Lepidoptera. Conversations were nicely seasoned by participation of guests from far-flung places.



Bryan Pfeiffer

VES President Michael Sabourin enjoys viewing Jim Hedbor's collection

TO KEY OR NOT TO KEY?

by Andrew Bennett

I have to admit that there is something deeply satisfying about looking at an animal or plant and knowing precisely what it is and (in many cases), something about what it does. There's nothing strange about this. I see it in my young children as they gleefully distinguish lions and tigers and bears (oh my). It's part of our human condition - a remnant of our evolution that allowed our ancestors to survive by distinguishing the nutritious from the poisonous; the harmless from the dangerous. With the advent of modern taxonomy, distinguishing new taxa from all previously described related taxa became a requirement of all valid descriptions. And while in isolated taxa, this may be accomplished with a simple diagnostic sentence or paragraph, in more speciose taxa, the best way to demonstrate that a species is new is to provide an identification key that clearly illustrates the unique set of characters of the new species in relation to its congeners.

I spend a lot of my time reading, writing and reviewing identification keys. Perhaps because I work on a very speciose, taxonomically difficult group, I am more exposed and therefore more sensitive than most to "challenging" keys. It's not always the fault of the taxonomist that a key is not effective at distinguishing the constituent taxa. For some taxa, there simply aren't morphological characters to distinguish species. In truth, for some taxa, there aren't even molecular characters! But not all bad keys have to be bad. Some keys are simply poorly conceived, with bad character choices, ambiguous character descriptions and poor or non-existent accompanying illustrations.

So now I come to the purpose of this column, which is to try to expose some of the shortcomings, I have experienced in my taxonomic travels through the Land of Bad Keys. Some of these examples may be exaggerated or (dare I say) even imaginary, but others I have to deal with on a daily basis. For instance:

The Overlap

Key to one (or two) species that should (or should not) be recognized as distinct

1. Head 1.3 to 1.5 times as wide as long	Species A
- Head 1.5 to 1.7 times as wide as long	Near Sp. A

I find this kind of couplet all the time in the literature of my group. Almost always, the specimen in my hand ends up measuring 1.5 times as wide as long. Notice that curiously, there are no other supporting characters. Kind of makes you wonder if the taxonomy behind the couplet is sound, doesn't it? Inevitably, this kind of beauty begins to

appear in the middle to end of a 150-couplet key, never near the beginning where you can just give up quickly and write "sp." behind the genus name on your label.

Baby Steps?

Here's a test for non- (or bad) taxonomists. When devising a dichotomous key, which is preferable? To have couplets that divide the remaining taxa to be keyed exactly in half, or to split off one taxon at a time in every couplet? Assuming that all characters are equal in terms of diagnostics, the answer is certainly for each couplet to divide the remaining taxa in half. To verify this numerically, if you have six species to key and use the two methods, the equal division method keys out all six species in an average of 2.7 steps, whereas the latter method requires an average of 3.3 steps. This disparity begins to make a huge difference to the amount of time required to key taxa when one has many specimens to identify and also when the number of taxa in a key is large. Baby steps are good in many pursuits, but keying bugs is *not* one of them!

Unsavory Character Choice

Sometimes taxonomists make poor choices regarding characters to include in their keys. For instance, some characters are often hidden (e.g., on the back of the head) or require difficult, time-consuming specimen preparation (e.g., internal musculature), while some demand techniques of observation better left to the birds.

Key to the garden strawberry & its pests

1. Strawberry to sub-strawberry flavour . . . *Fragaria X ananassa* Duchesne (common garden strawberry)

-- Not even slightly reminiscent of strawberry flavour. 2

2(1). Elytra present *Anthonomus signatus* Say (strawberry clipper weevil)
-- Elytra absent (hemi-elytra present) . *Lygus lineolaris* (Beauvois) (tarnished plant bug)

Of course, in the preceding key, the evaluation of Couplet 1 may have dire consequences for the ensuing evaluation of Couplet 2, at least if the specimen is consumed in its entirety. This leads to the next category of bad characters:

Completely Unobservable Characters

At least in the previous example, the reader had a chance to identify their tarnished plant bug (assuming they only nibbled a leg or two). Some characters are only theoretically of use but, in practice, simply cannot be evaluated. For example:

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TO KEY OR NOT TO KEY

(Continued from page 6)

Key to 3 well-known dinosaur species

1. Hind leg predominantly puce ... *Tyrannosaurus rex* Osborn

– Hind leg predominantly amaranthine 2

2(1). Multisyllabic alarm call *Triceratops horridus* Marsh

– Monosyllabic alarm call *Styracosaurus albertensis* Lambe

In the key above, there are at least two problems with Couplet 1. First, nobody has any valid idea what colour the hind leg of *T. rex* might have been (despite many artists' renditions). Second, what the hell is puce? This question (which will be answered later) segues nicely to the next annoying habit that many taxonomists introduce into both keys and species descriptions:

Use of Obscure Terms when Clearly Understood Terms are Available

Key to bugs drawn by my 6-year-old son

1. Fore coxa spadiceous. Mesonotum slightly pavonated medially. Apex of abdomen porraceous with a hint of gridelin (at least laterally in males) . . . **Awesomely-jawed cockroach crusher**

– Fore coxa cinerious. Mesonotum completely icteritious. Apex of abdomen ianthine to solferino 2

2(1). Dorsal aspect of pronotum incarnadine. Fore wing puccoon except for smaragdine spots ventrolaterally. Hind coxa fulvo-ferruginous **Breakfast for awesomely-jawed cockroach crusher**

– Dorsal aspect of pronotum aeneous. Fore wing strongly miniaceous dorsally with bands of mazarine ventrally. Hind coxa stramineous **Afternoon snack for awesomely-jawed cockroach crusher**

Apart from taxonomists, only Latin/Greek scholars and lipstick designers might know that the above key deals entire with colours! What's wrong with good old orange and red, I ask? (By the way: in the previous key, puce is brownish purple).

Of course, all of the previous bad keys were based on bad character decisions by taxonomists. There is another entire class of futility caused not by errors of judgment, but by errors of bone-headedness. For instance:

Key to a chain of events in the life of a mathematically-challenged taxonomist

1. Realization: "I know this. Let's key it out in the first couplet *Aha Menke*

– Not as above 3

2(1). What has unfortunately occurred in Couplet 1 *Lapsus (Pacheco)*

– Not as above 5

4(3). What has unfortunately occurred again in Couplet 2 *Oops Agassiz*

– What would occur if this individual began publishing on your taxon *Disaster Agassiz*

But then again, it could be worse...

A key to taxonomist's Hell

1. Small. Black. Non-descript 2

– Very small. Very black. Very non-descript 3

2(1). Wings reduced. Sparsely punctate. Sparsely setose 1

– Wings absent. Impunctate. Lacking setae 1

3(1). Wings reduced. Sparsely punctate. Sparsely setose 1

– Wings absent. Impunctate. Lacking setae 1

At this point I could (or perhaps should) discuss all the new advances that are making construction of identification keys easier and more effective than in the past (e.g., digital image stacking software; multi-entry, interactive computer-based identification keys; and verification of morphology with DNA). But that's not my style. I prefer to leave you in taxonomist's Hell, so you get a glimpse of what my life is like when somebody asks me to identify a *Glypta* or *Mesochorus* ichneumonid specimen (among others).

Editor's note: We gratefully acknowledge the permission granted by the author and the Entomological Society of Canada for reproduction of this article, which appeared in the Bulletin of the Entomological Society of Canada, March 2010. Visit the ESC at www.esc-sec.ca/. Andrew Bennett is a research taxonomist, specializing in Ichneumonidae, at the Canadian National Collection of Insects in Ottawa, Ontario.

VES Calendar



Aug 13: Maquam Bay in Swanton. Meet at 10:30 at Missisquoi National Wildlife Refuge Visitors' Center. Recommend that you bring footwear that you don't mind getting wet and insect precautions. No rain date. Call (802) 426-2133 if you have questions.

No updated plans are available for **Sept. 11: Buckner Preserve in West Haven** or **Sept. 17: Shelburne Farms Harvest Festival, 10-4 pm.** Members will receive an e-mail with details if these events continue as scheduled.

A VERMONT YANKEE IN VAN DIEMEN'S LAND

By Mike Bouffard

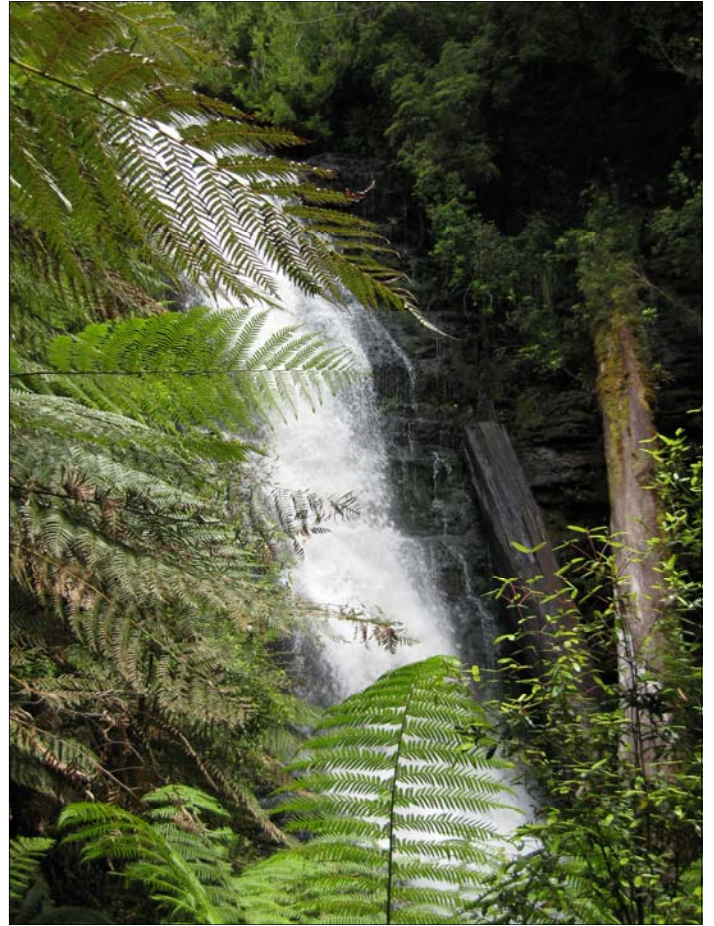
In 1970, whilst a Junior at UVM working towards a B. Sc. in Education, I took Dr. Ross Bell's famous "Bag 'em and Tag 'em" invertebrate course. Ross taught the course in such a way that you were given a solid grounding in all the major Insecta groups, but you were still expected to specialize in one particular Order. For my specialist group I chose Coleoptera. I was enthralled, like so many before me, with the incredible diversity and beauty of this group. After I finished the course I became a keen amateur collector of beetles in the central Vermont area.

In 1971, Dr. Jim Corologas, who lectured in the Ed. Dept, told me that Tasmania was looking for Science teachers and suggested that I might want to use my degree as a ticket to see a foreign country. I applied for, and was given, a teaching position in Tasmania. Soon after graduation my wife, Lorene, and I left Barre for a two year teaching stint in Tasmania. We have been so content in our life-style here that the two years has now expanded to forty and I have just recently retired from the teaching profession.

Tasmania is a shield-shaped island under the southeast side of Australia. It was discovered in 1642 by the Dutch explorer Abel Tasman who named it Van Diemen's Land after one of his sponsors. In the mid 1800's its name was changed to Tasmania. The next stop south of Tassie, if you disregard Macquarie Island, is Antarctica. Located in the roaring 40's, Tassie is subject to strong winds on a regular basis. As far as scenery goes, anyone coming from the New England area would feel quite at home with the vista of rolling hills and wooded landscape. However, the green is much darker than New England's due to the olive colour of the Eucalyptus trees.



West Coast Mountains in Tasmania



Reuben Falls in Southeast Tassie

Tasmania is about 2 1/2 times bigger than Vermont. It was last connected to the Australian mainland about 20,000 years ago and to Gondwanaland a bit more than that. Due to its isolation as an island, a number of species of both flora and fauna have become endemic to it. Thanks to the cushioning effect of the Southern Ocean, temperatures are generally much more pleasant than Vermont. In the summer, most days are in the 22–27 C. range while the winter range near the coast is usually 8–14 C. This varies a bit due to topography, as the Central Highlands are always cooler and will see snow on the mountain tops in the winter. There is even a snow-skiing industry which operates for about 6 weeks a year on the second-highest mountain located in the Northeast of the State.

Once located in Tassie and having just finished a degree in Zoology, I became most impressed and interested in the local flora and fauna. I developed a particular interest in the insects of the Tasmanian temperate rainforests. 20 % of the forest here (and 9 % of all the land cover) is temperate rainforest. It would appear that some of the en-

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VERMONT YANKEE

(Continued from page 8)

demical trees are more closely related to those of New Zealand and Chile than to mainland Australia. The Huon Pine (*Lagarostrobos franklinii*) is found only in the wet climates of the West and Southwest rivers. It grows at 1 mm/year in a good season and is incredibly long-lived. Many have been dated at 2000 years and one over 3000



Typical Tassie Rainforest

years old has been found. It's only known relative resides in New Zealand. The Deciduous Beech (*Nothofagus gunnii*) has a cousin-of-sorts in Chile, lending evidence for a Gondwanaland connection. Many of the Eucalypts in the rainforests are 600 – 700 years old and can reach a height of up to 90 metres – only California's Redwoods are taller.

The beauty of the rainforests led me to focus my collecting of Coleoptera there. At first I acquired anything that was new to me and this led to a "shot-gun" approach. However, in 1994 I met Dr. George Bornemissza. George is the scientist who introduced the dung beetles to Australia in the 50's and 60's. Upon his retirement from the CSIRO, he

decided that after working in Africa and mainland Australia that he had had enough of hot places and looked for a cooler climate to live in. Consequently, he and his family settled in Hobart, the capitol city of Tasmania, some 35 km from my residence at Huonville. George was attracted to the rainforests as well and, sharing this in common, he and I went on numerous collecting trips over the next 12 years. His main focus was on the stag-beetles of the Island, mainly of the genera *Hoplogonus* and *Lissotes*. Eventually these trips encouraged me to specialize in those groups as well.

The genus, *Hoplogonus* consists of three species, one of which George and I co-founded. All three species are restricted to the northeast of the State and two have ranges of less than five square kilometres. George and I were the first scientists to figure out that the larvae of the *Hoplogonus* were edaphic. The genus *Lissotes* consists of 25 species at the moment, although another two are in the pipeline for description. Both the larvae and the adults of this genus tend to be found either in logs that have been down on the ground for some time or at the interface of the log and uncluttered soil. All the beetles of these two genera are flightless. This probably has something to do with strong winds that occur in Tasmania regularly. I was once told that someone had done a study on species vs area and, if that study was correct, Tassie should have



Mike and George Bornemissza

about seven Lucanids. However, due to their flightlessness, the *Lissotes* seem to have migrated into new areas separated by mountain ranges and evolved into separate species in small pockets of suitable conditions. This leads for great adventure, as roughly 1/2 of the State has limited access to it or is available only by forestry roads.

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MORE VERMONT YANKEE

(Continued from page 9)

Ross and Joyce Bell visited Tassie in the early 1990's while on their Pacific/ Australia tour. As my wife and I had kept infrequent contact with them (in the days before common use of the internet), we were delighted to catch up with them and spent some very relaxed days with them on Bruny Island, which is located southeast of Hobart. Ross collected some interesting Carabids there and thought Tasmania was well worth exploring, biologically speaking.

Now that I am retired I like to spend some time each summer collecting Lucanids in the more out-of-the-way places in Tassie. Since I tend to go out on my own and camp in these places certain safety precautions have to be considered. A

good map of the area is essential and so is some experience in the bush. Tasmania has some extremely wild areas and about 1/4 of the State can only be accessed by foot paths or less. An epiRB or Personal Location Device is advisable. People new to the Tasmanian bush often get into trouble and this past year two have disappeared, presumed deceased after extensive searches failed to show up any remains (although personal items were found) and another was found dead. When walking in the forest, I wear long socks which I pull up over my trousers. This is to deter the nasty little ants called Jack Jumpers (*Myrmeciapilosula*) from getting to me. These ants are ubiquitous in any cleared area and are extremely aggressive. They pack a powerful sting which certainly gives you something to think about. Even though I am not allergic to them, many people are and they can cause (and often do) anaphylaxis shock. The pulled up socks also give leeches an extra impediment to get over, although they do tend to see reason and depart after a short discussion (sprinkled with plenty of salt). I also constantly scan the track some 2-3 metres in front of me, looking out for any snakes. Tassie has three different snake species – all of them poisonous. The Tiger Snake (*Notechisater*) is the fourth most venomous snake in the world (trivial pursuit

information – of the top 10 most venomous land snakes in the world, Australia has all 10) and it's generally best to shy away from them. The Copperhead (*Austrelaps superbus*) isn't much better, although the Whip Snake (*Drysdalis coronoides*) is too small to do you any damage.

Once I find a promising-looking log, wearing gloves, I roll the logs towards me. This gives any nasties underneath a chance to run away from me. Scorpions abound, but they



Huon and Arve Rivers convergence

are not the real worry. There are at least three species of Funnel-webs in Tassie (*Atrax* sp.) *Atrax* spiders are generally regarded as the deadliest in the world. One of three in Tasmania I discovered (or re-discovered – the jury is still out on that) in the Eastern Forests while chopping up logs looking for Lucanids. It's about 50 % bigger than the Sydney Funnel-web and certainly commanded my attention. There are also White-tailed Spiders (*Lampona cylindrata*) to look out

for since their bite can inject a cocktail of bacteria into you and this can cause severe reactions, some of which may lead to amputations. Apart from that, it's all good.

Along with my past association with Ross and Joyce, we have another friend in common – Bob Davidson at the Carnegie Museum in Pittsburgh. Over the past few years, I have done some minor collecting of Tassie insects for him and hopefully will continue to do so in the future. For me the joy in collecting is just as much in being in the rainforests as in the collecting of new, unusual or rare species. And Ross Bell started me down that path 40 years ago!

(If anyone wishes to contact me they can do so at michaelbouff@gmail.com However, be aware that I am a very slow responder, due to all the other activities that keep me involved – especially Basketball which I coach and umpire four days a week.)



FULL CIRCLE CATERPILLAR

by H. Peter Wimmer
with photos by Deb Catherman

How many of us have spotted an intriguing caterpillar, watched it pupate and then waited eagerly for the miraculous appearance of a beautiful butterfly, only to be disappointed when parasitic flies or wasps emerged? Deb Catherman was one of the lucky ones!



In the 2010 fall issue of *VES News*, we reported on a black swallowtail caterpillar that Deb found and photographed on September 23 at her horse training operation in Proctor. The caterpillar pupated on a cedar fence post about 4 -5 inches above the ground.

garage over winter. The butterfly emerged the week of May 15th week. She then released it after photographing it. Hopefully, the butterfly found a partner and Deb will see more of these lovely creatures through the coming years.



Deb peeled the bark off the cedar post where the chrysalis was attached and put it in a Mason jar with a screen lid and placed it in her unheated



VES Flea Market



Hornets and Yellowjackets: I'm a Biology student at the University of Vermont and one of my main research interests is the taxonomy of Vespinae wasps (hornets and yellowjackets). The nests of these wasps are typically protected by envelopes and found in hollow logs, trees, attics, between walls or underground. I would be very thankful if you could please suggest some locations where I could look for hornets and yellowjackets. Any help will be very much appreciated. Federico Lopez (flopezo84@gmail.com)

Butterfly Book: An excellent, but old, book on butterflies is now available online for no charge. You can read the book online or you can download a pdf copy of Ehrlich, Paul Ralph and Anne Fitzhugh Howland Ehrlich. 1961. *How To Know the Butterflies*. Dubuque, Iowa; William C. Brown Company: [vii] + 262 pp., 525 figs. {1961} at <http://www.archive.org/details/howtoknowbutterf00ehrl>

Vermont Butterfly Survey Report Available: McFarland, K.P. and S. Zahendra. 2010. *The Vermont Butterfly Survey, 2002 - 2007: A Final Report to the Natural Heritage Information Project of the Vermont Department of Fish and Wildlife*. 298 pp is available at <http://www.vtecostudies.org/VBS/news.html>

Pollination Poetry: Thanks go to bee specialist Sam Droege at the USGS Patuxent Wildlife Research Center, Beltsville, MD, for this poem.

Work Dream

If my job were pollination
I'd punch in early.
If my job were to walk
on soft petals and bump
the stamen of its fine gold
flour, if my job were to fly
in midday on my own wings
and leave a trail of sundust,
if this were my job,
I'd take no money, I'd give my time.
If this were my job, I'd come home
to the honeycomb singing.

- Carl Adamshick (1999)

BugTracks: For fascinating invertebrate stories and photos, visit Charley Eiseman's blog at <http://bugtracks.wordpress.com/>



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From the collection of Jim Hedbor.



Michael Sabourin