



## Why is this male carrion beetle “biting” the female’s antennae?<sup>1</sup>

Ted C. MacRae



American carrion beetles (*Necrophila americana*) aggregation at sap flow on trunk of oak (*Quercus* sp.) tree.

Earlier this spring I came upon an interesting aggregation of insects at a sap flow at the base of the trunk of a large oak (*Quercus* sp.) tree. Sap flows are famous for the diversity of insects that are attracted to them (e.g., see my previous post, [Party on a pin oak](#)), although the mix of species present can vary from sap flow to sap flow. In this case, the majority of insects present were American carrion beetles (*Necrophila americana*)<sup>2</sup> (order Coleoptera, family Silphidae), a species encountered much more often on animal carcasses (in fact, the genus name literally translates to “attracted to corpses”) but also occasionally attracted to sap flows (Evans 2014). This is not surprising to me, as I have seen adults regularly in the fermenting bait traps (Champlain & Knull 1932) that I have set out over the years (although I have been unable to find any reference to such attraction in the literature). I had never seen such an aggregation of these beetles before or even yet had the chance to photograph them (although I have photographed its [Ceti Eel-like larva](#)), so I paused to setup the camera and take a few photographs.

<sup>1</sup> Originally posted July 4, 2015 at *Beetles in the Bush* (<http://beetlesinthebush.wordpress.com>).

<sup>2</sup> Not to be confused with the federally endangered American burying beetle (*Nicrophorus americanus*).



*Necrophila americana* mating pair.



The male has a firm grasp of the female's antenna.

Among the many single adults present was a mating pair, which I selected as my subjects. As I was photographing the pair, I noticed the male had a firm grasp of one of the female's antennae within his mandibles. As I watched them through the lens, I saw the male suddenly release his hold of the female's antenna, move backward on top of her, and begin using his own antennae to stroke her pronotum (sadly I was unable to snap a photograph at that time). As suddenly as he had released it, the male moved forward and grabbed hold of the female's antenna once again. It seemed unlikely to me that this represented an act of aggression, but instead must be an important part of their courtship behavior. The female, for her part, did not seem to be bothered too much by the grasping and continued to slowly lumber about around the sap flow as the male went through his routine under my voyeuristic watch.

Intrigued by this behavior, I searched for other photos of mating/coupled carrion beetles—easy to do considering the [many pages of photographs of this species](#) at BugGuide. While the great majority

of those photos are of individual beetles, I found [this photo](#) and [this one](#) of coupled pairs, each also clearly showing the male firmly grasping one of the female's antennae with his mandibles. Neither photo makes mention of the antennal grasping, but a little further searching did turn up [this YouTube video](#) of coupled American carrion beetles, again clearly showing the male grasping of the female's antenna and even leading the videographer to comment, "Disturbingly, it even appears that this male is threatening to lop off the female's left antenna if she refuses to mate!" Of course, retribution seems not to be a common behavior among insects, and in looking into this further I found a short note by Anderson (1989) in which the behavior is recorded not only for *N. americana* but also another silphid, *Oiceoptoma noveboracense*. Apparently mating actually occurred during the time the male had released his hold of the female's antenna and was stroking her pronotum with his antennae. He further noted that the antennal grasping behavior continues until eggs and larvae are present at a carcass, at which time it is no longer observed. This suggests that the behavior represents an especially proactive form of "mate guarding" by which males actively ensure their paternity of the offspring of the particular female with which they were mating.

#### REFERENCES:

Anderson, R. S. 1989. Potential phylogenetic utility of mating behavior in some carrion beetles (Coleoptera: Silphidae: Silphinae). *The Coleopterists Bulletin* 43(1):18 [pdf].

Champlain, A. B. & J. N. Knull. 1932. Fermenting bait traps for trapping Elateridae and Cerambycidae (Coleop.). *Entomological News* 43(10):253–257.

Evans, A. V. 2014. *Beetles of Eastern North America*. Princeton University Press, Princeton, New Jersey, 560 pp. [Google Books].



## WGNSS Group Activity Schedules

### BOTANY GROUP

Chair—George Van Brunt

**Monday Botany Walks**, Leader—Fr. James Sullivan; now in his **49<sup>th</sup> year!** The WGNSS Botany Group visits many of the same locations as the Bird group. Sign up for WGNSS Botany Group e-mails from Wayne Clark by contacting

him at [wclark3@cs.com](mailto:wclark3@cs.com) or (314) 962-5443 and receive an e-mail no later than Sunday about the following Monday's trip.

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### ENTOMOLOGY GROUP

Chair—Stephen Penn

The Entomology Group meets September through May on the 3<sup>rd</sup> Monday of each month at 7:00 p.m. at the Butterfly House in Faust Park, 15193 Olive Blvd., Chesterfield. For more information contact Stephen Penn at [stephenpenn@charter.net](mailto:stephenpenn@charter.net).

➤ **May/June Field Trip.** Date/location TBA.

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### NATURE BOOK CLUB

Chair—Lisa Nansteel

The Nature Book Club is a group of naturalists who meet once a month to discuss a book chosen for its general interest from botany to zoology. The group meets at the Peace United Church of Christ in Webster Groves on the second Tuesday of the month from 1:30–3:00 p.m. For more information/directions contact Lisa Nansteel at (636) 391-4898.!

➤ **June 13.** *The Thing with Feathers*, Noah Stryker.

➤ **July 11.** *House Guest, House Pest*, Richard Jones.

➤ **August 8.** *Sun, Moon, Earth*, Tyler Nordgren.

➤ **September 12.** *The Secret Lives of Bats*, Merlin Tuttle.

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### NATURE PHOTOGRAPHY GROUP

Chair—Bill Duncan

During autumn 2017 the Nature Photography Group will meet for classroom activities on the first Tuesday of Sep., Oct., Nov. at 6:00 p.m. at the Powder Valley Conservation Nature Center, 11715 Cragwold Rd., Kirkwood, MO.

The Nature Photography Group will meet one Saturday a month for field trip activities in various locations in the surrounding St. Louis area.

➤ **June 24.** Location and subject TBD.

Interested in participating in Nature Photography Group activities? Send your contact information to Bill Duncan [handsomeozarkbillyboy@gmail.com](mailto:handsomeozarkbillyboy@gmail.com).