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NOTES ON THE BIOLOGY OF *MELANOCANTHON NIGRICORNIS*
(COLEOPTERA: SCARABAEIDAE)Andrew H. Williams¹ and Nadine L. Kriska¹

ABSTRACT

Melanocanthon nigricornis was observed to break up, bundle up, roll away, and bury pieces of the cap of a gill mushroom growing in sandy prairie in Wisconsin. These beetles were also found on a dead lizard and one was observed to roll and bury mammalian carrion. This is the first report of any species in *Melanocanthon* rolling and burying pieces of fungus and carrion.

First observation. About 12 beetles of *Melanocanthon nigricornis* (Say) were observed over two hours in the middle of the sunny afternoon of 9 June 1999, as they dismembered the cap of a gill mushroom, bundled pieces of fungus and rolled them away. One beetle was followed and was seen to bury its ball of fungus.

This occurred in Iowa Co., Wisconsin, in the sandy valley of the Wisconsin River in a landscape of black oak (*Quercus velutina*) savanna mixed with prairie. These beetles were in sandy prairie. Grasses present were *Digitaria cognata*, *Koeleria macrantha*, and *Schizachyrium scoparium*; forbs present were *Asclepias amplexicaulis*, *Helianthemum bicknellii*, *Helianthus occidentalis*, *Hieracium longipilum*, *Liatris aspera*, *Solidago nemoralis*, and *Talinum rugospermum*.

The mushroom grew from the ground, with its stalk sloped sharply up to hold the horizontal cap 10 cm above the ground. *Melanocanthon nigricornis* beetles climbed the stalk and moved around among the gills in such a way that pieces of gill and cap fell to the ground below, where several beetles were bundling up the generally flat pieces of fungus into loose balls and rolling them away in various directions into the sparse grassy litter. Beetles did not gather several pieces together to accumulate a larger bundle, but balled up a single piece of fungus into a manageable shape. Beetles that dismembered part of the cap of the fungus descended the stem and participated in processing and transportation of pieces of fungus.

Second observation. Three *M. nigricornis* were observed for about 30 minutes around 1500 h on 5 July 2000, a cloudy afternoon. They moved on, under, and inside the torso of a dead lizard, *Cnemidophorus sexlineatus* (Linn.), on the surface of loose, unvegetated sand. Each departed independently without visible reward. This occurred in Grant Co., Wisconsin, in the sandy valley of the Wisconsin River.

Third observation. One *M. nigricornis* was observed crossing bare sand rolling a tabular disk of carrion, 12 mm in diameter, bearing short fur on one side. The beetle stopped and buried the carrion in loose sand in 15 minutes.

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This occurred in the same place at the same time as the preceding observation involving lizard carrion—we sat on the sand between these two events to watch them.

Voucher specimens of the beetle have been put into the Insect Research Collection of University of Wisconsin-Madison. The fungus has been vouchered at The Field Museum of Natural History. Plant nomenclature is taken from Kartesz (1994).

DISCUSSION

The genus *Melanocanthon* is comprised of four species found only in North America east of the Rocky Mountains (Woodruff 1973, Kohlmann and Halffter 1990). Beetles in this genus have been associated with dung, fungus, dead insects, and carrion, as summarized below.

Melanocanthon nigricornis is known from Wisconsin, Michigan, and Illinois south and west to Nebraska, Kansas, Missouri, Arkansas, and Texas (Robinson 1941, 1948). Hart (1907) found this species under the remnants of a dead animal in a sand blowout in Illinois. Jameson and Ratcliffe have taken *M. nigricornis* in Nebraska in traps baited with human feces (Ratcliffe 1991). Two specimens in the University of Nebraska collection are pinned with entire rabbit pellets that they were presumably rolling (Ratcliffe 1991).

Melanocanthon bispinatus (Robinson) has been observed burying dead carabid beetles in a sandy road (Harpoottlian 1995), and two specimens were taken on a dead roach on a mammal snap trap (Woodruff 1973). Woodruff (1973) collected this species in malt bait traps and in unbaited pitfalls. Robinson (1941, 1948) reported that several specimens were taken on old, partly dried toadstools in autumn and that 14 individuals were once collected rolling balls of deer dung along a sandy road.

Melanocanthon puncticollis (Schaeffer) was found under cow dung by Blatchley (1928) and has been taken in malt bait traps by Woodruff (1973).

Melanocanthon granulifer (Schmidt) has been observed rolling balls of cow dung (Robinson 1948) and was collected during both day and night in traps baited with human feces (Miller 1954). Woodruff (1973) has taken specimens in malt bait traps, in fungi, cow dung, on a dead bird, on a dead cottonmouth, under rotting citron, and in a Japanese beetle trap.

This is the first report of any species in *Melanocanthon* rolling and burying pieces of fungus and carrion.

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