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**MISCELLANEOUS PREY RECORDS OF SOLITARY  
WASPS. V. (HYMENOPTERA: ACULEATA)<sup>1</sup>**

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In the present contribution I am reporting some miscellaneous prey records and other biological observations made during 1960-1962 on solitary predaceous wasps of the families Pompilidae and Sphecidae at Plummers Island, Maryland, and in Arlington, Virginia. I am indebted to the following specialists for identifications of the prey or parasites of the wasps: My colleagues R. H. Foote, J. P. Kramer, C. W. Sabrosky and D. M. Weisman for Diptera, Hemiptera and Coleoptera; W. J. Gertsch and W. Ivie, American Museum of Natural History, for Araneae; and W. L. Downes, Jr., University of Illinois, for Diptera.

Family Pompilidae

*Episyron q. quinquenotatus* (Say)

Two females of this wasp were taken with their prey on sandy beaches on Plummers Island. One of the wasps (73061 A), 8 mm. long, was captured at 1530 on July 30, 1961. She was taken on a low bush with a paralyzed, immature araneid spider, *Araneus* sp., 4.5 mm. long. The second wasp (72162 A), 9 mm. long, was captured at 1645 on July 21, 1962, just after she had left her paralyzed araneid prey on a small cottonwood leaf 23 cm. above the ground. This spider was an immature male of *Neoscona arabesca* (Walck.), 6 mm. long. I watched a third female (72162 D) excavate a shallow burrow in the same locality at 1715 on July 21, 1962. She abandoned this project, and presumably dug another burrow elsewhere.

Family Sphecidae

*Podium luctuosum* Smith

I watched a female of this species sealing her nest entrance with mud at Plummers Island on July 17, 1961. The nest was in a boring in a large, dead, standing, barked tree with sound wood, in dense shade just a few meters above the Potomac River. Several weeks later I chiseled out this nest and obtained a mature larva which was preserved for taxonomic study. On July 21, 1962, I watched another female (72162 E) near the cabin from 2000 to 2020. She

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was gathering mud near the outdoor fireplace and then flying off high into the air. Presumably her nest was in a dead, standing linden nearby, because the wasp returned at frequent intervals for more mud. That the wasp was working into the late dusk is remarkable.

*Gorytes (G.) canaliculatus* Packard

A small population of this species nests in coarse sand at the upper end of Plummers Island. On July 17, 1961, at 1400 I captured a female, 8.5 mm. long, hovering low over the sand with her paralyzed leafhopper prey. The latter was a pale-green, adult female cicadellid, *Macropsis viridis* (Fitch), 5.3 mm. long. On June 9, 1962, I dug up a nest of this wasp (6962 A) in the same area. The burrow was on a slight slope and nearly 5 mm. in diameter. It went in at an angle of 10° to the horizontal for nearly 4 cm., then turned at right angles and went downward at an angle of 45° for another 10 cm. The cell was in moist sand nearly 13 cm. below the surface. It held a dozen, mostly fifth-instar, cicadellid nymphs, 4.5–6.0 mm. long, of a species of *Idiocerus*. There was no wasp egg, so presumably the cell was not completely stored. I did not capture the wasp. I dug up a second incomplete burrow (6962 B) on the same date. It also had a diameter of nearly 5 mm., went in at a 20° angle, and ended about 3 cm. from the entrance.

*Cerceris insolita* Cresson

This species also nests in the coarse sand on the beach at the upper end of Plummers Island. I captured a female (72261 A), 9 mm. long, at 1430 on July 22, 1961. She was hovering in the air just above her burrow entrance near a small plant, and was carrying her paralyzed beetle prey. The latter was a dark-green chrysomelid, *Rhabdopterus praetextus* (Say), 5 mm. long. I did not excavate the burrow.

*Crossocerus (C.) planipes* (Fox)

I found two nests of this species at Plummers Island, both in partially shaded, bare soil. The first female (6461 A), 5.8 mm. long, was caught as she left her burrow near the picnic table at 1500 on June 4, 1961. The burrow went downward at a shallow angle of 20°–30°, had two angulations, and ended in a cell about 3 cm. below the surface. This cell was only partially stored; it contained five empidid flies, *Drapetis* sp., 2–2.5 mm. long. A second cell, to one side and about a centimeter nearer the surface, contained 16 flies of the same species and a wasp egg. Both cells were ovoid and about 6 mm. long. I captured the second female (52662 A), 5.2

mm. long, on May 26, 1962, as she left her burrow in a sloping woodland path. The entrance had a diameter of about 3 mm., and was surrounded by a low tumulus of fine grains of excavated soil about 25 mm. long and 15 mm. wide. Most of this spoil heap was on the downhill side of the entrance; it was about 8 mm. high to the left of the entrance, but most of it was only 1-3 mm. high. The burrow went downward at a shallow angle for about 3 cm. to a depth of 0.8 cm., then turned downward at an angle of about 60° to a point 2 cm. below the surface. I found a cell about 2 cm. from the lower end of this burrow at a depth of about 2.5 cm. Although there was no visible connection between the cell and the end of the burrow, the cell in all probability had been completely stored by this wasp and the part of the burrow leading to it solidly filled in. There were no other burrows in this section of the path. The cell contained 13 paralyzed empidid flies, *Chersodromia* sp., 2.5 mm. long. I did not recover a wasp egg, but it may have been knocked off unnoticed when I removed the flies from the cell.

*Ectemnius (Hypocrabro) continuus* (Fabricius)

I found a nest (11760 A) of this crabronine wasp in a rotten pear limb near my home in Arlington on November 7, 1960. It consisted of several burrows with cells separated from each other by 10-20 mm. of tightly packed bits of rotten wood. Altogether there were seven or eight cells in the section of limb which I recovered. Four of the cells contained crabronine cocoons, 11-13 mm. long, and a fifth cell contained the large puparium of a dipterous parasite. In the other two or three cells the wasps failed to develop, and only the dipterous prey remained. The dipterous prey from these cells was identified as follows: Calliphoridae, 5 *Pollenia rudis* (F.) and 2 *Phaenicia* (?) sp.; Tachinidae, 1 *Winthemia* sp.; Sarcophagidae, 1 *Sarcophaga* sens. lat.; and Muscidae, 1 specimen, genus and species unidentifiable. The live material, except for one wasp larva preserved for taxonomic study, was kept outside from November 14, 1960, to March 24, 1961. A female of *continuus* emerged from one of the cocoons on April 5. On April 7 a male of *Macronychia aurata* (Coq.) emerged from the dipterous puparium. This is the first host record for an American *Macronychia*; some of the European species have also been reared from crabronine wasps.

*Oxybelus emarginatus* Say

I captured a female (6962 C), 4.7 mm. long, with her prey on coarse sand at Plummers Island at 1235 on June 9, 1962. The prey was a male dolichopodid fly, *Gymnopternus* sp., 3.5 mm. long.