

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

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The present contribution records some miscellaneous prey records and other biological observations made on solitary predeaceous wasps of the families Pompilidae and Sphecidae at Plummer's Island, Md., and Lost River State Park, W. Va., during 1959 and 1960. The wasps and their prey have been placed in the U. S. National Museum. I am indebted to H. E. Evans for identification of *Aporinellus completus* Bks. and to the following specialists for identification of the prey: A. B. Gurney (Tettigoniidae), B. J. Kaston (Araneae), J. P. Kramer (Cicadellidae), L. M. Russell (Aphididae), and C. W. Sabrosky (Diptera).

FAMILY POMPILIDAE

*Priocnemis (P.) scitula relicta* Banks

A female (8860A) 4.5 mm. long was discovered transporting her paralyzed spider prey at 1130 on August 8, 1960, in Lost River State Park. The wasp was walking backward over a shaded section of one of the trails. She held the spider upright off the ground by its hind coxae. Her prey was a half-grown jumping spider (Salticidae), *Habrocestum pulex* (Hentz), 3.5 mm. long. This spider lives on stones and in leaf litter on the ground.

*Calicurgus hyalinatus alienatus* (Smith)

A female (6459 B) 6.7 mm. long was found carrying her paralyzed spider prey near the cabin on Plummer's Island at 1720 on June 4, 1959. The spider was a male orb weaver (Araneidae), *Wixia ectypa* (Walck.), 5.1 mm. long.

*Auplopus a. architectus* (Say)

A female (82959 A) 8 mm. long was captured on Plummer's Island at 1400 on August 29, 1959. She was carrying her paralyzed spider prey, a juvenile clubionid, *Clubiona* sp., 6 mm. long.

<sup>1</sup> Preceding numbers in this series were published as follows: I. Bul. Brooklyn Ent. Soc. 50: 13-17, 1955; II. Bul. Brooklyn Ent. Soc. 51: 42-44, 1956; III. Proc. Biol. Soc. Washington 71: 21-26, 1958.

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The hind pair of legs of the spider had been amputated by the wasp.

*Episyron q. quinquenotatus* (Say)

I found a female (9160 A) 9 mm. long filling in her burrow on Plummer's Island at 1430 on September 1, 1960. The burrow was in damp sand with a slope of 30° toward the Potomac River. The burrow went in at an angle of 45° and ended in cell 50 mm. below the surface. The cell contained a paralyzed male orb weaver (Araneidae), *Araneus cornutus* Clerck, 10 mm. long. When I removed the spider from the cell, the wasp egg was brushed off and damaged.

*Anoplius (Lophopompilus) carolina* (Banks)

I discovered a female (8260 A) 11 mm. long dragging her paralyzed spider prey along a trail through open woods in Lost River State Park at 1015 on August 2, 1960. The spider was a female agelenid, *Wadotes* sp., in the penultimate instar, 13 mm. long. During transport the wasp grasped the spider with her mandibles by the hind coxae and walked backward holding her prey in an upright position. I watched this wasp for nearly half an hour as she carried the spider to her burrow. Twice she left the spider on the bare ground while she reconnoitered the trail to her burrow. On one of these occasions she apparently forgot where she had left the spider and searched 10 minutes before finding it. Eventually she dragged the spider to the burrow entrance, which was several meters from where I first found her with her prey. I captured her and the spider at this time and then dug up her nest. The burrow began on a bare spot of earth beneath an overhanging piece of moss. The burrow was about 12 mm. in diameter and 40 mm. in length, and went downward at an angle of 45°.

*Aporinellus completus* Banks

A female (8860 B) 5.5 mm. long was found just as she was completing her nest in open sun along one of the trails in Lost River State Park at 1345 on August 8, 1960. The wasp was compacting the soil at the burrow entrance by patting it with the venter of her abdomen. The paralyzed spider was in a small cell barely 3 mm. below the ground level. It was a young jumping spider (Salticidae), *Phidippus clarus* Keys., 5 mm. long. The wasp egg, 1.1 mm. long and 0.5 mm. wide, was attached to the spider's abdomen. It was crushed during transport back to the cabin and dislodged from the spider.

## FAMILY SPHECIDAE

*Tachytes (Tachyplena) crassus* Patton

A small population of this species nests in sand at the edge of the Potomac River on Plummer's Island. Apparently only a single generation occurs annually and adults are on the wing during the latter half of August. Both sexes visit flowers of swamp milkweed for nectar. On August 21, 1960, at 1500 I caught a female (82160 A) 16 mm. long on a leaf of milkweed with her paralyzed katydid nymph (Tettigoniidae), a species of *Orchelimum*, 17 mm. long. On August 27 at 1600 I saw another female (82760 A) fly to a branch of willow with a katydid. She stung her prey, adjusted it beneath her, flew to another willow branch, and was then captured. This katydid also was a species of *Orchelimum*.

*Trypoxylon (T.) pennsylvanicum* Saussure

I netted a female (92360 A) 8 mm. long on Plummer's Island at 1400 on September 23, 1960. She was flying with a young paralyzed orb weaver spider (Araneidae) 2.3 mm. long.

*Mimesa (M.) basirufa* Packard

A small population of this species nests in the flat ground adjacent to the cabin on Plummer's Island. Only a single generation occurs per year and adults are active during June. I netted one female (6459 A) 7.4 mm. long as she hovered low over the ground at 1400 on June 4, 1959. She was carrying a paralyzed leafhopper nymph (Cicadellidae) 2.6 mm. long belonging to a species of *Idiocerus*. The nymph had been paralyzed earlier by a dryinid wasp and bore a small larva of that wasp protruding between two of the abdominal terga. I caught another female (62160 A) at 1200 on June 21, 1960. She was crawling on the ground and carried a paralyzed adult leafhopper, *Macropsis viridis* (Fitch), 5.2 mm. long. On that same date I dug up a burrow of another female *basirufa*, which I did not capture. The burrow went downward at a rather steep angle to a depth of 7.5 cm. and contained several angulations. Probably the burrow was not complete, for there was neither a terminal cell nor stored prey.

*Stigmus (S.) americanus* Packard

I found a nest (7359 A) of this small sphecid in the pith of a dead twig of *Chionanthus virginica* L., the fringe tree, on July 3, 1959, on Plummer's Island. Apparently this was an old beetle boring that had been used earlier by the same or another species

of pemphredonine wasp, for there were some dried aphid remains and six cocoon caps at the inner end of the boring. The boring varied from 1.5 to 1.8 mm. in diameter. Beyond the old cells and toward the entrance I found a number of paralyzed, tightly packed, yellowish-green nymphal and adult aphids. Those preserved for identification were a species of *Therioaphis*; they ranged from 0.8 to 1.5 mm. in length. In a space of 10 mm. there were 30 aphids and two wasp eggs. No partitions divided the prey into separate cells. The egg was sausage-shaped, 0.9 mm. long and 0.3 mm. wide, and attached lengthwise on the venter of thorax and abdomen of the aphid. Two females of *Stigmus americanus* emerged from the nest prior to August 11, 1959.

*Passaloecus annulatus* (Say)

A female (92459 A) 5.5 mm. long was captured at 1215 on September 24, 1959, as she hovered in front of her nest entrance in a red cedar stump on Plummer's Island. She was carrying a winged adult aphid 2.2 mm. long, *Neothomasia populicola* (Thos.).

*Ectemnius (Hypocrabro) continuus* (Fabricius)

I caught a female (81160 A) 12.5 mm. long at 1415 on August 11, 1960, along one of the trails in Lost River State Park. She was resting on a leaf and held a bulky, paralyzed tachinid fly, *Archytas aterrimus* (R. D.), 9 mm. long.