NESTING BIOLOGY OF *ECTEMNIUS BASIFLAVUS* IN TRINIDAD (HYMENOPTERA: SPHECIDAE)[1]

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ABSTRACT: The nest and prey of *Ectemnius basiflavus* are reported from Trinidad, West Indies. The nest, from which 6 males and 3 females were reared, was in the living stem of *Hyptis* sp. (Cruciferae) and was provisioned with Otitidae (Diptera).

Crabronine wasps of the genus *Ectemnius* nest in diverse situations and commonly prey on adult Diptera. *Ectemnius basiflavus* (Brèthes) ranges from Mexico to Argentina. Bohart and Menke (1976) gave synonymy. Schrottky (1914) described both sexes (as *Xylocrabro umbrosus*) from Paraguay, with brief comments by A.W. Bertoni on its biology. The following account augments Bertoni's notes.

METHODS

In Trinidad, West Indies I took a male of *Ectemnius basiflavus* on 24 January 1945 at Preysal, 6 km east of Couva, on the flowers of *Borreria verticillata* (L.) Meyer (Rubiaceae), a small unobtrusive plant with compact white nectar-producing flowers, much frequented by bees and wasps. My observations were made on a nest found on 1 February 1949 in the living pithy stem of a common weed *Hyptis* sp. (Cruciferae) in my garden at St. Augustine, a residential area 13 km east of Port of Spain.

RESULTS AND DISCUSSION

The nest comprised a linear series of 9 cells within the stem of the plant separated by transverse partitions made of fine particles of pith. The partitions were about 1 mm wide and the cells 9 to 12 mm long. Each cell contained an elongated, cylindrical cocoon, rounded at both ends, and yellowish brown in color. The cocoon was made of fine silken threads, and was suspended by a few projecting filaments within the cell. The walls of the cocoon were thin, soft and delicate with almost the texture of tissue. At the lower end of each cocoon was the meconium, a dark mass of larval excrement, visible through the walls of the cocoon. Disposed around the

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cocoons were the remains of the prey, which comprised wings, fragments of the hollowed out head capsule, thorax and abdomen, and parts of the legs of Diptera. Many of the body remains were metallic, bluish green to black in color. The prey was identified as Otitidae, including *Physiphora aenea* (Fabricius) and *Euxesta* sp., the former being a cosmopolitan species, the larvae of which live in decaying vegetable material.

The lowest or innermost cell in the linear series was clearly the first to be constructed and the last formed was nearest to the entrance hole in the plant stem. When the nest was found the entrance was open and it was apparently unfinished. A final closure would no doubt have been made with particles of pith. The cocoons were removed from the cells, measured individually and kept separately in glass vials. The 3 lower cocoons were distinctly larger than the others, being 10 to 11 mm long and 3 to 3.5 mm wide, and the 6 higher ones were 7 to 8 mm long and 2.5 to 3 mm wide. Adults started to emerge 3 weeks after the nest was found. Males emerged first from the 6 smaller cocoons and females later from the 3 larger ones. Clearly the developmental period of the males was less than that of the females. The female wasps were markedly larger, 8 to 9 mm long, than the males, 3.5 to 6 mm long. In the 9 wasps reared, the females were more than twice as large as the smallest male.

As in some other stem-nesting wasps, *Ectemnius basiflavus* built a linear series of cells, in which upper cells produced smaller males emerging earlier than larger females from lower cells. Species of the subgenus *Hypocrabro*, to which Leclercq (1972) assigned *E. basiflavus*, nest commonly in pithy plant stems or sometimes in decaying wood. In the closely related subgenus *Apoctemnius*, nests are only known in rotten wood (Jörgensen 1912; Hook 1982).

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