

NOTES ON THE BIOLOGY OF *DASYMUTILLA PYRRHUS* (FOX) (HYMENOPTERA: MUTILLIDAE)¹

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ABSTRACT

Dasymutilla pyrrhus (Fox) is a common species of Mutillidae at the Archbold Biological Station (Highlands Co., Florida). It is most active in the late morning (1100 - 1200) and late afternoon (1700 - 1900), especially the latter. Male activity occurs from May through July; female activity from late April through early October. Its probable hosts at this location are bembicine wasps, especially *Bembix sayi* Cresson and *B. texana* Cresson. An apparent mating was observed and is described; the entire sequence lasted about two minutes.

Key Words: *Dasymutilla pyrrhus*, Mutillidae, Velvet Ants.

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INTRODUCTION

According to the catalog of North American Hymenoptera (Krombein et al. 1979), *Dasymutilla pyrrhus* (Fox) is found in Florida and Georgia and is parasitic on bembicine wasps. Krombein (1964) uncovered a bembicine cocoon at the Archbold Biological Station (ABS), Highlands Co., Florida, which had been parasitized by *D. pyrrhus*. He believed the host to be *Bicyrtes quadrifasciata* (Say), which was active at the Station. Howard Evans, who also examined the cocoon, believed the host to be *Bembix sayi* Cresson, which was also active on the Station (Krombein 1964).

Evans (1957) determined that *D. pyrrhus* (which he identified as *D. lepeletierii* (Fox)) was common around *B. sayi* colonies at the ABS, though none were seen entering nests. Evans (1966) later found *D. pyrrhus* entering burrows and false burrows of both *Bembix belfragei* Cresson and *B. texana* Cresson.

The following notes are from observations of *D. pyrrhus* at the ABS from 1983 through 1986.

GENERAL ACTIVITY

Dasymutilla pyrrhus is one of the most common *Dasymutilla* species at the Station. It is active from late April through early October. However, it is not as prevalent early in the season as it is later. An April visit in 1983 produced but one

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female specimen, though other mutillids were already quite active at that time. Both females and males were extremely abundant during a June 1984 visit.

Two continuously operating Malaise traps collected males at two sites from 1983 through 1986. These traps showed an abundance of males in May, with decreasing numbers in June and July (Fig. 1). Males have a much shorter period of activity and, presumably, much shorter life span than the females.

Manley and Spangler (1983) have shown that time of day influences mutillid activity. Both males and females of *D. pyrrhus* were observed from about 0900 until dusk (about 1900). Of more than 200 observations in June 1984, 40% were in the morning and 60% were in the afternoon. Activity was greatest, however, during two peak activity periods, one in late morning (1100 - 1200), during which 15% of all activity was observed, and one in late afternoon (1700 - 1900), during which 42% of all activity was observed. The remaining observations were spread throughout the day.

PROBABLE HOSTS

As previously noted, *D. pyrrhus* is known to be parasitic upon bembicine wasps, though specific hosts have not been determined. Both *B. sayi* and *B. texana* are found on the ABS. Of these, *B. texana* seems to be most common. Both *B. texana* and *D. pyrrhus* are found throughout the Station, frequently in close proximity to one another.

A large nesting aggregation of *B. texana* was found (southwest tract, firelane 3) where *D. pyrrhus* was most commonly observed. *Dasymutilla pyrrhus* females were frequently observed entering and exiting the burrows of *B. texana*. Though several of the burrows were excavated, no positive evidence of parasitism was observed, though it seems probable that *B. texana* is at least one host of *D. pyrrhus* on the Station.

A population of unusually small *D. pyrrhus* was found along a beach on Sanibel Island (Lee Co., FL), occurring together with large numbers of small bembicine, *Microbembix monodonta* (Say). We strongly suspect that *M. monodonta* is a host at that location. This speculation is based upon the size and number of *D. pyrrhus* and the size and number of *M. monodonta*.

MATING OBSERVATION

On June 6, at approximately 1030, an apparent mating of *D. pyrrhus* was observed near the nesting site on firelane 3. A male landed about 30 cm from a female that was being observed. He circled about the female, moving more rapidly as he approached. He mounted the female, taking a copulatory position, then flew to the side a few centimeters. Copulation (if, in fact, it took place) lasted less than five seconds. Thinking that mating, perhaps, had not yet occurred, no attempt was made to collect the pair. The male subsequently flew off and was not captured. The fact that the male was no longer active and was exhibiting grooming behavior, and that both male and female then went their separate ways, led us to believe that mating probably did occur. It was, however, much more rapid than other observed matings of mutillid species. The entire sequence lasted about two minutes.

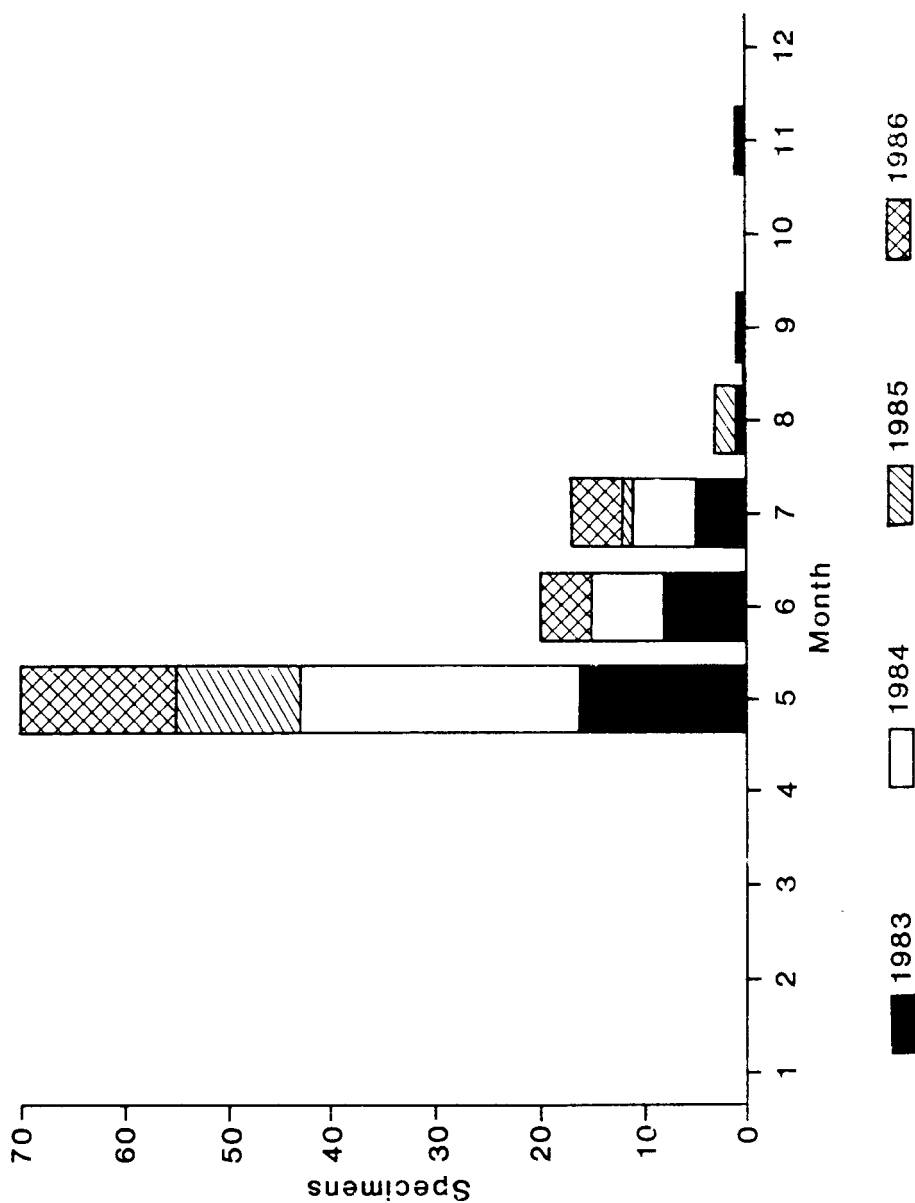


Fig. 1. Malaise trap catches of males of *Dasymutilla pyrrhus*, Archbold Biological Station, Florida, 1983-86. (N=112).

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