

NOTES ON THE DISTRIBUTION AND LIFE HISTORY  
OF *ARCHIPSOCUS FRATER* MOCKFORD  
(PSOCOPTERA: ARCHIPSOCIDAE)<sup>1</sup>

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I. DISTRIBUTIONAL NOTES

*Archipsocus frater* Mockford was previously known only from the type locality at Gainesville, Florida. The following records are all from South Florida: Dade Co., Everglades National Park, Anhinga Trail, Nov. 26, 1961, on *Phragmites* stems, 11 ♀, A. M. Nadler; Dade Co., Miami, Aug. 12, 1961, on dead *Myrica* leaves, 2 ♀, E. L. Mockford; Hillsborough Co., Sulphur Springs, Sept. 6, 1957, on *Citrus limon*, 4 ♀, 1 nymph, D. E. Stokes; Lee Co., 3 miles south of Fort Myers on U. S. Highway 41, Nov. 30, 1961, on leaves of *Thalia* sp., 1 ♂, 3 ♀, 3 nymphs, E. L. Mockford and R. O. Rilett; Monroe Co., Key Largo (hammock near northern end), Nov. 26, 1961, beating vegetation, 2 ♀, E. L. Mockford; Pasco Co., 7 miles south of Port Ritchey on U. S. Highway 19, beating laurel oak and turkey oak, 1 ♀, E. L. Mockford and R. O. Rilett.

II. NOTES ON POLYMORPHISM

In the original description (Mockford, 1957b) only a single, macropterous female form was mentioned. Subsequently it has been found that two female forms exist. The new form, which might be called brachypterous (Fig. 2), has wings not quite as long, ocelli somewhat less conspicuous, (anterior ocellus apparently absent) and thoracic notal sutures somewhat less well developed than in the macropterous form (Fig. 1).

III. NOTES ON FLIGHT

In December, 1961, living specimens from the Lee County locality cited above were brought to Illinois, and cultures were started from these in my laboratory at Normal. The cultures were kept in moist chambers with loosely fitting lids, which allowed individuals to wander out. Usually the insects remained in the culture jars, but when the population density in a jar was high, and there were many macropterous females, these sometimes left. In early March, 1962, when population densities were high in the culture jars, these females were seen flying in the laboratory on several occasions. Flight is generally rather indirect, with a laterally weaving path. The flight speed appears roughly similar to that of *Drosophila melanogaster*. A few times, the psocids were observed flying rapidly in circles around the light of a desk lamp in the laboratory. Each time, the insect was batted down or watched until it landed in order that its identity could be confirmed.

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Several previous attempts on my part to force macropterous females of various species of *Archipsocus* to fly resulted in failure. To my knowledge, these are the first observations of flight in any *Archipsocus* species.

There can be no doubt that macropterous females of *A. frater* are able to function as efficient distributors of their species. Furthermore, since all macropterous females of *Archipsocus* have essentially the same structure, it seems highly likely that they are all able to fly. This means that, although they are not dependent on passive transport by moving air over short distances, by taking to the air of their own accord they may subject themselves to such transport, perhaps over long distances. It is possible that such an agency may account for the presence of *A. panama* Gurney in Panama and Florida (Mockford, 1953).

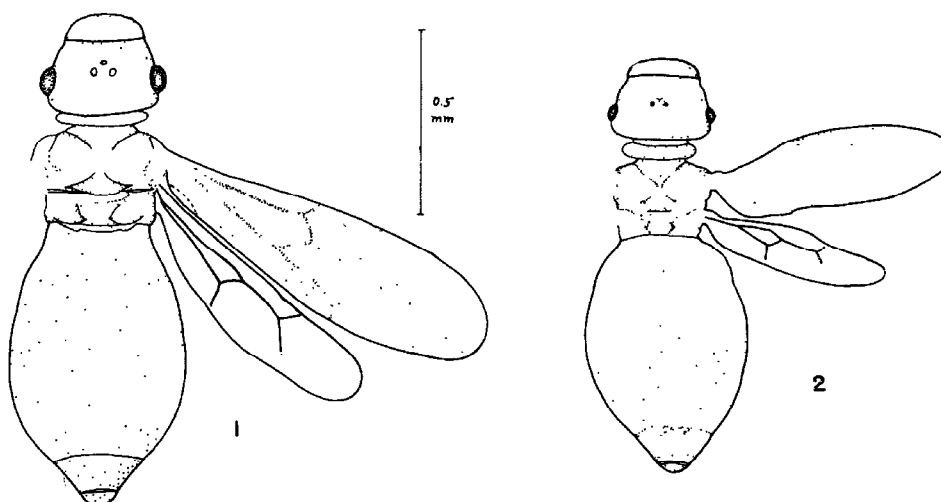


Figure 1. *Archipsocus frater* Mockford, macropterous female, dorsal view, ciliation omitted.

Figure 2. *Archipsocus frater* Mockford, brachypterous female, dorsal view, ciliation omitted.

The question remains as to whether macropterous females dispersing from a colony have mated before leaving. It appears that mating is generally essential in *Archipsocus* (Mockford, 1957a). If they have not mated before leaving, then mating must be a highly vicarious event for them. If they have mated before leaving, then nearly all mating in *Archipsocus* must result in close inbreeding.

A preliminary investigation of this question was made by isolating three macropterous females of *A. frater* found wandering outside of a colony container on March 10, 1962. Between 10 P.M. on March 16 and 10 P.M. on March 17, each of the three females had given birth to several nymphs. Although this would suggest that they had mated before leaving the colony, it must be pointed out that no tests for parthenogenesis have been made for this species.

#### LITERATURE CITED

- Mockford, E. L. 1953. Three new species of *Archipsocus* from Florida (Psocoptera: Archipsocidae). Fla. Ent. 36(3):113-124, 30 figs.

*Mockford, E. L.* 1957a. Life history studies on some Florida insects of the genus *Archipsocus* (Psocoptera). Bull. Fla. St. Mus. 1(5): 253-274.

*Mockford, E. L.* 1957b. A new species of *Archipsocus* from Florida (Psocoptera: Archipsocidae). Fla. Ent. 40(1): 33-34, 6 figs.