A Simple Method for Separating Alate Imported Fire Ants[1] from Workers and Soil[2]

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It our studies of the black imported fire ant, *Solenopsis richteri* Forel, and the red imported fire ant, *Solenopsis invicta* Buren, at Gulfport, Miss., we often need large numbers of alate forms, but manual separation of large numbers from soil and worker ants is tedious, time consuming, and sometimes hazardous because of stings by worker ants. This paper describes a simple system that can be used to separate ca. 90% of the alates in a colony from the worker ants and soil.

Swarming or nuptial flights of imported fire ants can be initiated in a laboratory colony by increasing the soil moisture and slightly elevating the temperature above the prevailing laboratory conditions. We used this reaction to devise a trap to capture the alates from field colonies that were brought into the laboratory. A 50-lb lard can is used as the collection container for the colony (Fig. 1). It is covered with a solid lid and held at reduced temperatures to prevent premature flights.

When separation is desired, the colony is processed as follows: The inside wall of the can above soil level is dusted with talc to prevent the ants from climbing the walls, and the soil is sprinkled liberally with water. A wooden stake, ca. 16×2×1 in., is driven into the soil in the center of the can, a hole ca. 5 in. diam is cut in the lid of the can, and a 6-in. plastic planter with the bottom removed is glued over the hole. A 3-gal battery jar or similar clear-walled container is inverted over the can cover and sealed to the cover with tape, and a 40-w incandescent lamp is suspended over the battery jar. As the alates climb the stake, they attempt to fly to the light. The glass jar halts their flight and causes them to fall into the space between the planter and battery jar. (The outside of the planter is coated with talc to prevent the alates from crawling back into the can.)

After the alates have flown into the trap, the jar can be unsealed and tilted to one side. A long-stemmed aspirator is inserted into the opening to collect the males and females.

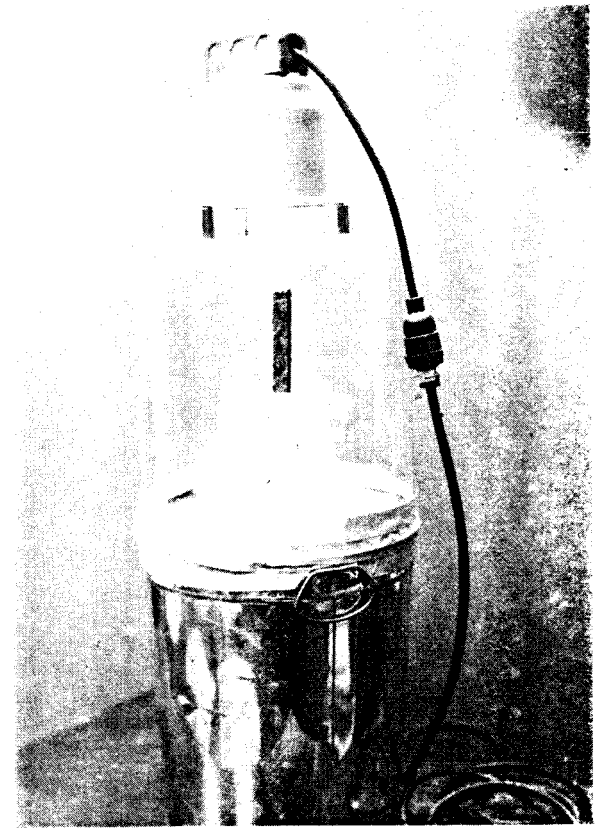

FIG. 1.—A sample trap to separate alate ants from soil and workers by attraction to a light source.

[1] Hymenoptera: Formicidae.
[2] Received for publication July 26, 1972.

Reprinted from the
JOURNAL OF ECONOMIC ENTOMOLOGY
Volume 66, Number 1, p. 295, February 1973