The Time of Natural Swarming in Honey Bees¹,²

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Colony division (swarming) is a natural method of reproduction in honey bees, *Apis mellifera* L. It also represents a potential economic loss for beekeepers, and management practices have been devised to reduce its incidence. Simpson (1957) estimated that in an average year 10-40% of the colonies in a commercial apiary will swarm if left unattended.

All swarms reported to us in phone calls, and from our own intentionally crowded colonies, were collected in 5-frame nucleus boxes over a 3-yr period and returned to the laboratory for weighing. The weight of each swarm was determined to the nearest ½ oz (7.1 g). The number of bees in each swarm was calculated using Mitchell’s (1970) figure of 3500 bees/lb. All swarms were taken from within 10 miles of Ithaca, NY, 42°27’ north latitude.

In those instances where the exact time of swarm emergence was known, the queens were weighed during the first 2 days following emergence of the swarm. There is a rapid increase in queen weight which starts about 2 days after a swarm emerges (R. D. Fell, unpublished data). Multiple queens, taken from secondary swarms, were dissected to determine if they were mated.

Of the 95 swarms collected during the study, 77 (81.0%) emerged between May 16 and July 11, the traditional swarming season in the Ithaca area. Seventeen of the swarms (17.9%) emerged during the period Aug. 14 to Sept. 12. A well-defined, non-swarming period existed between mid-July and mid-August (Fig. 1a); a swarm which emerged on July 21 was the only exception.

It is significant that those swarms issuing in the late summer have little chance of survival in northern latitudes.

Swarms varied in size. The smallest swarm contained just over 3000 bees while the largest had slightly under 33,000 bees (Fig. 1b). The mean swarm population was 14,000 individuals. The mean weight was 4.0 lb (1.8 Kg). The mean weight of 29 swarm queens was 191.2 mg (Fig. 1c). Mated queens averaged 195.9 mg and virgin queens averaged 176.4 mg.

REFERENCES CITED

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