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A Modified Pollen Trap for Honey Bee Hives

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A Modified Pollen Trap for Honey Bee Hives[1]

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In pollen-identification studies conducted at Logan, Utah, samples in the pollen trap often got wet during storms and had to be discarded. Traps similar to the one described by Todd & Bishop (1940) and Scullen (1943) were used until 1949, when a modified trap was tested and found to be superior. Other traps described by Schaefer & Farrar (1941) and Killion (1945) were less adaptable to our needs. In the modified trap the vertical screen grid made of 5-mesh hardware cloth was located underneath the hive near the entrance. As the bees worked their way through the screen barrier, the pollen pellets were knocked off their legs and fell into a tray below. The pollen samples were collected by removing the tray from either the front or the side near the entrance.

The location of the tray near the front of the hive exposed the pollen to frequent dampening by rain or dew. A wooden shade board was improvised to protect the pollen pellets in the tray, but it was not satisfactory. A prototype of the trap herein described was tested during the 1949 and 1950 seasons, and none of the many samples of pollen collected by it were affected by excess moisture. Many of the pollen samples collected at the same time with the older traps were lost. Several of the improved traps, with further modifications, were constructed as illustrated in figure 1.

The double screen grid, mounted in a metal channel to permit its removal, was located beneath the middle of the hive instead of the front. The floor in the entrance to the trap was sloped toward the front of the hive so that water would not run into the tray.

The tray was made slightly smaller than the slot in the side of the trap assembly to allow for expansion during stormy weather. A piece of spring metal 1 inch wide and 3 inches long was fastened to the bottom of the tray to hold it firmly in place. A piece of quarter round was fastened to the side of the trap just above the tray to direct water from it. In addition, a saw cut was made just back of the front panel of the tray and parallel to it to prevent any water getting past the quarter round from running into the tray. Large holes for ventilation were cut in the sides of the trap just back of the tray and covered with hardware cloth. A screened false floor was placed back of the tray for

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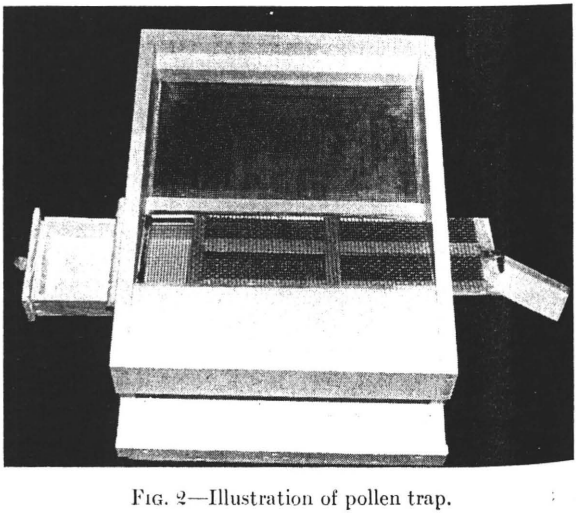

FIG. 2—Illustration of pollen trap.

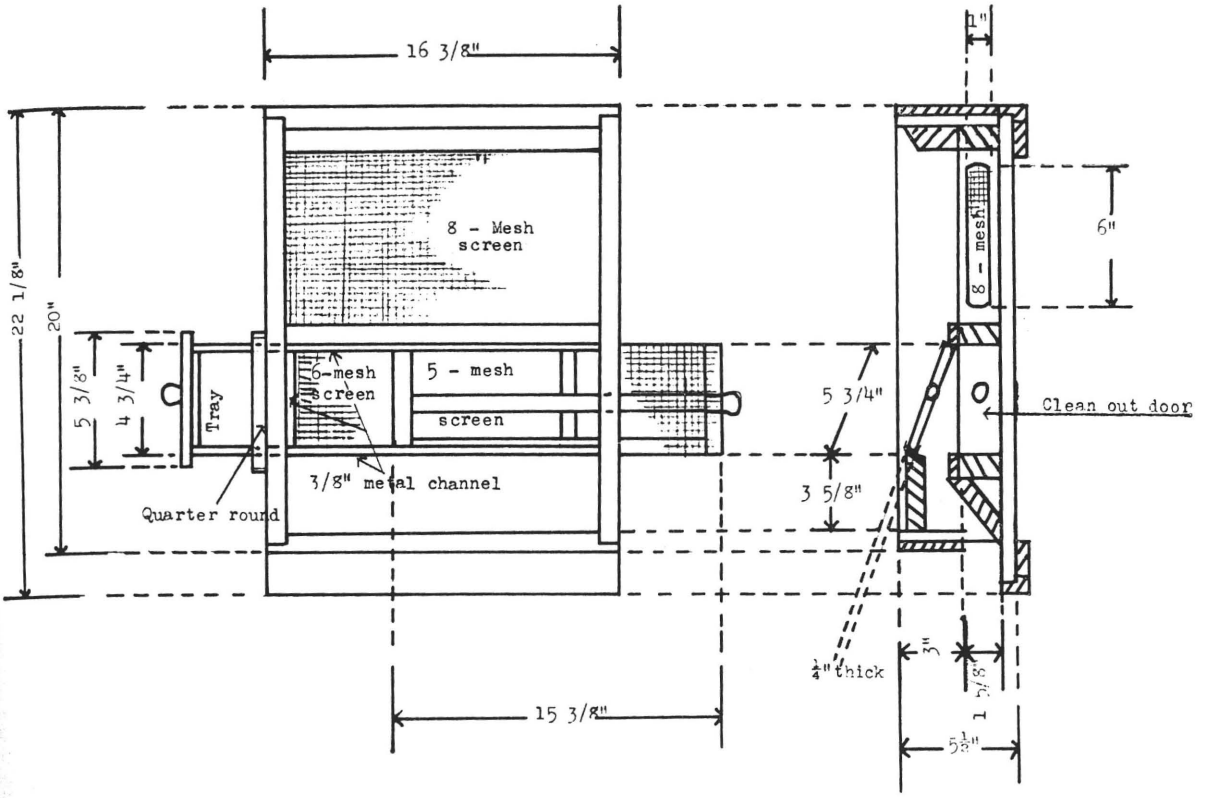

FIG. 1.—Drawing of new pollen trap showing quarter round above tray to keep out rain, and clean out door opposite tray, and removable grid screen.

better ventilation. This false floor also tends to prevent the bees from building comb in the deep space beneath the combs.

The most important feature of the new trap is the protection of the pollen from moisture. It also permits removal of the pollen tray from the side of the hive without disturbing the bees that cluster at the entrance in warm weather (fig. 2). The screen grid, which slopes toward the rear of the hive, is 4 inches wide instead of the usual 2 inches. This extra grid surface provides more rapid passage of the bees and minimizes their clustering at the entrance thus permitting better ventilation of the hive.

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Purple Scale Parasite Found in Florida[1]

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Purple scale, *Lepidosaphes beckii* (Newm.), is the most important scale insect on citrus in Florida, being found in nearly every grove throughout the State. Although the scale is attacked by several species of parasites, predators, and entomogenous fungi, natural control is generally inadequate (Muma 1955).

In June 1958 emergence holes of an unidentified parasitic wasp were observed in mature female purple scales on leaves from an unsprayed citrus grove near Fort Pierce, Fla. (Muma & Clancy 1959). Microscopic examination of living and recently killed scales revealed the presence of eggs, larvae, and pupae of a small golden chalcid. Reared adults from this and subsequent collections in other groves were identified as *Aphytis lepidosaphes* Compere.[2] This parasite was introduced into California from China in 1948–49 (Flanders 1950), and was later sent to Texas and Mexico, but there is no record of its introduction into Florida.

A. lepidosaphes has been found to occur practically throughout peninsular Florida from Monticello in the extreme north to the Homestead area south of Miami, even in isolated plantings far removed from the main citrus areas. It was reared from samples from 37 of 50 properties during July and August, and from 50 of 51 scale samples collected between September 4 and November 10, 1958. These were mostly unsprayed groves, but the parasite also occurs commonly in sprayed groves. Parasitization of adult females, the preferred host stage, has ranged from 0 to 56.3% with an average of 24.6%. The abundance and widespread distribution of this parasite indicate that it has probably been present in Florida for some time, but how and when it was introduced is not known. Its apparent rapid increase following a very severe winter is also an enigma.

A. lepidosaphes is an external parasite which lays its eggs on

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