

armored species. Although many have a tough upper covering, this is actually a part of the insect and not a non-living armor as in the case of the armored scales. This skin or dermal covering many become quite tough and rigid in some species. Soft scales retain their legs throughout their entire life and will move from a location, if it becomes undesirable. All species in Florida are heavily parasitized. As a result, they are rarely of major economic importance.

The unarmored scales secrete honeydew abundantly. Sooty mold, *Meliola camelliae* (Catt.) Sacc., is a fungus which grows on the honeydew, causing leaves and fruit to be covered with a film of black, sooty material. Ants which feed on the honeydew are commonly associated with soft scale infestations.

SOFT BROWN SCALE

Soft brown or turtle back scale, *Coccus hesperidum* L., is the most common of the several species of unarmored scales found on citrus. The upper skin of the scale takes on a waxy, almost parchment-like appearance as the scale matures. The females are ovoid and markedly flattened. They are brownish in color and may have a mottled appearance. Larger than any of the armored scales, they may measure almost as much as 1/6 inch in length.

They commonly infest the young twigs of a tree and often gather along the midrib of the leaf. The females do not lay eggs and the crawlers are born alive. There are several generations a year. Because of the high rate of parasitism, they rarely become abundant except on young trees, either in a newly planted grove or in a nursery. The following parasites have been found in them in Florida: *Microterys flavus* (How.), *Lecanobius cockerelli* Ashm., *Coccophagus lycimnia* (Walk.), *C. scutellaris* (Dalm.), and *Aphytus flavus* How. (Muma, unpublished data).



Fig. 18.—A soft brown scale much enlarged, showing emergence hole of a parasite. The two light areas mark the space occupied by the two parasites that killed the scale.