



Fig. 2.—The Olive Scale on twigs and foliage.

[H. Drake, photo.]

Control.

For this scale use summer grade oil at a strength of 1 part of oil to 60 parts of water. Apply in the early summer as soon as the spring growth has hardened somewhat. The period about early December is suitable.

The Hemispherical Scale.

The Hemispherical Scale (*Saissetia coffeæ* Wlk. *hemisphaerica* Targ.) when full grown (Fig. 3) is easily distinguished from others infesting citrus. The adult is brown to reddish-brown and, as its name implies, highly convex and of a shining smoothness. The surface is densely covered with lighter spots, which

can be seen plainly, however, only under the microscope. When full grown the scale is about 4 mm. to 5 mm. long.

The young "crawlers" are very light in colour with well-developed legs and antennæ. After settling, the scale becomes light brown and is ornamented with three ridges forming a raised H pattern after the style of the Olive Scale, but unlike this latter the H disappears at maturity and the adult scale is quite smooth.

Life-history and Habits.

In the summer a generation probably takes about three months to reach maturity, so that it is likely that in New

Zealand there is more than one generation annually. The scale over-winters in the immature forms, and by the spring the over-wintering females are mature and begin producing eggs. Each female is said to be capable of producing well over five hundred eggs.

The young, on settling down, choose the very young twigs, the insects rarely being found on hardened growth. As the time of reproduction approaches the females migrate to more exposed positions, mostly to leaves and, more rarely, fruits.

Sooty mould may be associated with this scale, but it is not a characteristic of it and large colonies may be free from any such fungous growth. In the open the scale is found mostly on trees showing abundant foliage and much tender growth. It occurs also under glass.

Hosts and Distribution.

The scale has a wide range of food plants, among which are citrus, oleander, palms, japonica, camellia, asparagus, orchids, cucumber, currant, and egg-plant.



Fig. 3.—The Hemispherical Scale.

[After Summerville.]

Distribution is world-wide, the pest having been recorded from America, Australia, Netherlands, Indies, Britain, Madagascar, Philippines, Porto Rico, Africa, Ceylon, Bermuda, Hawaii, Samoa, West Indies, Jamaica, Malaya, tropical Asia, Mauritius, &c.

The control of this insect is the same as that for the Olive Scale.

Modern Cool Storage Practice.

THE term "long holding" necessarily speaks for itself when dealing with fruit cool storage, and many are the pitfalls in this class of storage. These pitfalls are well known to most fruit-growers.

A closer study of our problems reveals causes and their effects which may be remedied (1) by a determination to eliminate certain unprofitable varieties, (2) by making a study of conditions which are affecting the normal growth and maturity of other varieties, and (3) by varying cool-storage-temperature conditions to a degree that is found beneficial for the safe-keeping of these varieties.

These factors are much more efficiently dealt with when there is a closer association and co-operation of the orchardists and their cool-storage management.

The use of overhead cooling coil and trays, which are designed for the purpose of evenly distributing the cool air over the whole surface of the ceiling of each cool chamber in order to drain away the condensed moisture and to cool the fruit effectively by convection without the aid of forced circulation, is designed to increase the humidity of the chambers, which remains constant at about 92 per cent., thereby removing the main cause of wilt and shrivel in cool storage.

The excess moisture over the percentage mentioned is removed by condensation of the moisture from the atmosphere on the coil, from which it drips into the trays and runs to waste. This coil is rendered more effective for readily condensing the excess moisture because of its construction in a position near the ceiling of the chamber, where the heat rises naturally and is constantly coming in contact with the coil. As the temperature is reduced it readily gives up its excess moisture to the cold surface of the evenly distributed cooling pipes.

—A. Powell, Cool Storage Officer,
Wellington.