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Brief Information on
SCALE INSECTS ON SHADE TREES and HARDY ORNAMENTALS
and REMEDIES EMPLOYED AGAINST THEM.

Appearance and habits. - Scale insects are so-called because of the scale that
covers or constitutes the back of most of them. This scale may be horny,
leathery, waxy, cottony or mealy and just as various in size, shape and color.
There are many species of scale insects and, according to the consistency of
the scale, they are roughly divided into armored (horny), soft (leathery),
cottony scales, mealy bugs, etc. Except for a few days after hatching, when
they are naked, these insects are always covered by the scale characteristic
of the species to which they belong. The number of generations annually, date of
hatching and other life habits vary with the species, season and location. They
are all plant feeders, some confining themselves to a single species of plant
while others occur on a great variety of plants. They occur on the main stem,
branches and twigs; some of them also on the leaves and fruit in summer. They
feed on sap which, by means of the needle-like beaks, they suck up from within
the plant tissues and are, therefore, classified as sucking insects. Some
of them produce more or less honey dew which attracts ants, bees, wasps etc.,
which eat it but do not harm the plants. This honey dew frequently results in
a sooty appearance of the affected plants.

Natural control. - With very few exceptions, scale insects are usually kept in
check by a variety of natural agencies, especially parasitic and predaceous
insects. As a rule, therefore, they do no permanent, serious harm and require
no remedial treatment. Occasionally, however, some species are apt to become
so numerous as to be very injurious. Treatment then is warranted, if otherwise
practicable.

Remedies. - (See accompanying brief on Scale Insect Remedies.)

Being sucking insects, scale insects cannot be killed by means of stomach poisons.
They are controlled mostly by being covered at the proper season with a liquid
substance which, without injuring the plant, kills the insect by either clogging
its breathing pores or penetrating to its vitals, or both. The aim must, there-
fore, be to cover every individual insect. The covering is affected by
means of a spraying device which may be a tin atomizer, a bucket, knapsack or
barrel sprayer or a power spraying machine, depending on the extent of spraying
contemplated.

Winter Spraying, done when the buds are dormant, is preferable because (1) there
is then no delicate foliage to injure and none to conceal insects or to use up
spray; (2) dead and superfluous portions of the plant may and should then be
removed, still further reducing the area to be sprayed and exposing the in-
serts; (3) plants are then dormant and can withstand stronger sprays without
injury.

Summer Spraying, when imperative, is most effectively done when the young are at
the height of hatching (crawling about in numbers).

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