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A SHORT DISCUSSION OF SOME SCALES AFFECTING SHADE TREES AND HARDY SHRUBS

Euonymus scale.-- The euonymus scale (Unaspis euonymi (Comst.)) is a persistent and serious pest of euonymus. It also attacks celastrus and probably pachistima and pachysandra. It is difficult to control, sometimes requiring several years' work to secure the results desired. The euonymus scale is a problem sufficient to make it questionable whether the planting of euonymus as an ornamental, especially in neighborhoods where the plant is already fairly abundant, is desirable.

The methods suggested for its control are cutting and burning the dead and heavily infested portions of plants that can be spared without seriously injuring the appearance of the plant, and then spraying the remainder of the plant in the early spring just before new growth commences, using a dormant strength oil emulsion or miscible oil. It would also be a very good plan to watch the plant during the growing period for the appearance of the crawlers, or young scales. There are likely to be several generations of these. One may occur around the middle of May, another from the middle to the latter part of June, and possibly another group of crawlers late in the summer. When the crawlers are present and abundant, the infested portions of the plants should be given a thorough application of the following spray:

- Nicotine sulfate (40 percent) . . . . . 1-1/4 teaspoonfuls
- Soap flakes . . . . . 2 rounded tablespoonfuls
- Water . . . . . 1 gallon

Dissolve the soap flakes in warm water before adding the nicotine sulfate. Where there is a heavy infestation of the scale, better control can be had by adding 4 level tablespoonfuls of a white-oil emulsion (83% of oil) (as Volck or Verdol) to the formulation. The white-oil emulsion has the consistency of mayonnaise and must be gradually thinned with water before it is added to the other ingredients in the formula.

Pine needle scale.-- The pine needle or pine leaf scale (Phenacaspis pinifoliae (Fitch)) is frequently found on ornamental pines and on spruce. It is a white scale, shaped like an oyster shell, that adheres very closely to the needles. Control consists of spraying the infested plants and parts of plants early in the spring just before new growth starts, using one of the winter oil emulsions or miscible oils. As in the case of the euonymus scale, this scale insect can be combatted very well by spraying for the "crawlers"

with the summer spray materials suggested above, if a careful watch is kept for the appearance of the young scales. These are usually found during the middle of May, the middle of June, mid-August and Mid-September.

Juniper scale.-- Juniper, or cedar, and arborvitae are very frequently attacked by a small scale insect technically known as Diaspis carueli Targ. and commonly called the juniper scale. The control of this insect will require the same spray materials and methods suggested for combating the pine leaf scale and euonymus scale. It is not certain that this species has as many generations as those treated above, but one group of crawlers will usually be found during the first half of June.