VIRGINIA COOPERATIVE EXTENSION SERVICE

VIRGINIA TECH

VIRGINIA STATE

No. 152

June 20, 1986

INSECT NOTES

SOFT SCALES ON TREES AND SHRUBS

June is a peak month for calls on soft scales, especially lecanium and pulvinaria species. Lecanium scales include the European fruit lecanium, the oak lecanium and the calico scale. Pulvanaria scales, also called cottony scales, include the cottony maple scale, the cottony maple leaf scale, and the cottony camellia scale or false cottony maple scale. They are most conspicuous in June because they have reached maximum size and the pulvinaria scales produce large, white, cottony egg sacs. The females now have completed egg-laying and crawlers become active. Most of the eggs hatch within two weeks and crawlers settle on the leaves for the rest of the summer. In the fall, third instar nymphs move back to the twigs and small branches to spend the winter. Damage to the bark is severe during the spring when the scales are maturing and sucking large quantities of cell sap from the bark tissue. Young nymphs in the summer do little damage to the foliage.

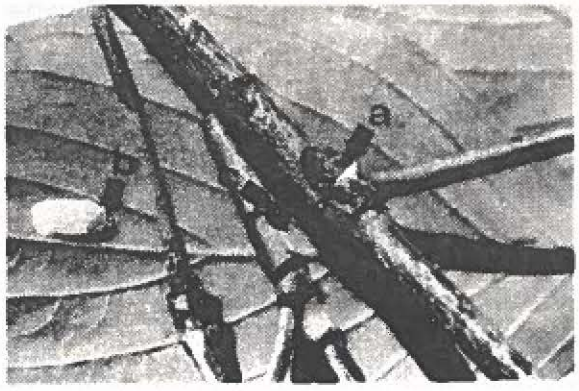
Oak Lecanium Scale

Both lecanium and pulvinaria scales are notorious for their sudden appearance in tremendous numbers, and equally rapid decline the next year or two to three years later, were where control measures are not applied. It is likely that environmental conditions play a role as well as parasite and predator buildup. Some dieback of encrusted branches is common, but seldom are trees killed. Large amounts of honeydew and subsequent sooty mold occur with severe infestations.

Lecanium scales are not readily identifiable to species without microscope slide preparation and study by a scale insect specialist. The European fruit lecanium, Lecanium corni, has a very broad host range in addition to fruits, small fruits, and nuts. Its hosts are also attacked by other lecanium species. Thus the host plant is not a

key to specific identification. The oak lecanium, L. quercifex, not only is common on oak, but attacks chestnut, hickory, persimmon, and sycamore (London plane-tree). Fletcher scale, L. fletcheri, usually can be identified by its host preference for taxus, arborvitae, and occasionally juniper. The hickory lecanium, L. caryae is the largest, a giant two to three times as large as other species. It has been reported from a large number of the most common shade trees. It has not been a frequent pest in Virginia. The calico scale, L. cerasorum, is uniquely distinct and is well-named. Its mottled coloration is most apparent in young females before they lay eggs and die. In recent years it has become more widespread and abundant in Virginia on maples, elm, sweetgum, and several other trees and flowering fruits. The terrapin scale and European peach scale also have been reported in this state.

Pulvinaria scales are usually quite inconspicuous until they start laying eggs in late May. Eggs are laid in large (1/4"), white cottony masses behind the female. As the female completes egg-laying, she dies, dries up and appears as a flat, brown "shield" attached to the front of the cottony mass. The cottony maple scale, Pulvanaria innumerabilis is most common and abundant on soft maples and dogwood, but a wide variety of trees, shrubs, and even Virginia creeper have been reported as hosts. Females of this species remain on the twigs primarily when laying eggs which is one clue to identification. Females of the cottony maple leaf scale, P. acericola, crawl onto the leaves to lay eggs; differentiating it from the other. It is not uncommon to have both species on the same tree. Egg masses on the leaves (acericola) are more elongated and narrower than cottony maple scale, and remnants of the cottony wax often remain on the leaves during the season as a clue to the presence of the scale earlier.



Soft Scales on Dogwood:

A Cottony maple scale starting its egg sac

B Cottony maple leaf scale egg sac and dead female

C European fruit lecanium female

The cottony camellia scale, P. flocciferia, is most common of taxus, camellia, and hollies (especially Chinese varieties). Egg sacs are elongated and somewhat rectangular, occurring on the undersides of the foliage. Eggs hatch in late May and early June in eastern Virginia.

Regarding control, fortunately most of the eggs hatch within 10-14 days. By applying contact sprays in mid to late June after most or all eggs have hatched, populations can be reduced effectively. Carbaryl (Sevin), malathion, diazinon, and acephate (Orthene) are registered for scale insects. Orthene should not be used on red or

sugar maples according to Ohio State recommendations. Dimethoate (Cygon) gives excellent control of cottony camellia scale, but may defoliate Chinese holly. Dormant oils, applied before new leaves appear is an effective way to prevent serious bark damage in the spring. The key is to determine if scales are present long before they become conspicuous.

--J. A. Weidhaas

LEAF MINERS ON EVERGREENS

Three important insects that mine the foliage of evergreens are the boxwood leafminer, the holly leaf miner, and the arborvitae leaf miner. The adult boxwood leaf miner is a midge-like fly, laying eggs in late April and early May. The holly leaf miner adult resembles a miniature housefly and lays its eggs in May. The arborvitae leaf miner adult is a very small white moth laying eggs in late May. The larvae of all three begin mines in June and are readily controlled with a foliage spray of dimethoate (Cygon). Because it is systemic and translocated in the plant sap, dimethoate as a full-coverage foliar spray is highly effective in protecting plants. It can be effective if applied later than June, but some mining may result. Acephate (Orthene, Isotox Insect Killer) and diazinon are also recommended for these pests.

--J. A. Weidhaas

GYPSY MOTH BROCHURE

The folder "Gypsy Moth-a Major Pest of Trees" which was previously published and distributed by USDA-APHIS has been revised and reprinted by the VDACS, Bureau of Plant Protection and Pesticide Regulation in Richmond. The leaflet unfolds to 14" x 17" showing colored illustrations of the stages of the moth. The test explains the basic factual information. For those who have seen it, the cover is black with a picture of a moth on an orange background.

Copies have been provided by VDACS in limited numbers for distribution by the Extension Warehouse at Virginia Tech. For inventory and distribution, it is numbered, Publication 444-024. Copies are also available from VDACS.

--J. A. Weidhaas

INSECTS OF EASTERN FORESTS: Arnold T. Drooz

This is one of the best comprehensive references on insects associated with trees, with primary emphasis on forest pests. It is a long-awaited revision of Baker's "Eastern Forest Insects", published in 1972. That volume was a revision of "Insects of Eastern Forests" by Craighead, 1950. Both Craighead's and Baker's editions were soon out of print after becoming available. Because it is a standard reference for a very large audience, supplies of this edition may be exhausted soon as with the preceding volumes.

The book is USDA Forest Service Miscellaneous Publication 1426 and is available from the U.S. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The order number is 001-000-04357-9, and the price, $18.00. It contains 608 pages and 288 illustrations and is somewhat technical, but provides useful information on many hundreds of insects associated with trees.

--J. A. Weidhaas