

WHITE PEACH SCALE ATTACK ON TOON IN PUERTO RICO¹

The white peach scale, *Pseudaulacaspis pentagona* (Targioni-Tozzeti), Homoptera-Diaspididae, was reported by Martorell² to attack several tree species in Puerto Rico. These include *Erythrina glauca* Willd., *E. poeppigiana* (Walp.) O. F. Cook, *Hibiscus tiliaceus* L., *Mammea americana* L., *Mangifera indica* L., *Montezuma speciosissima* Sessé & Moc., *Trema lamarkiana* (Roem. & Schult.) Blume, *T. micrantha* (L.) Blume, and others. When abundant it can defoliate and cause dieback, deformation and eventually death of the tree (Martorell,³ Anon.⁴).

Toona ciliata M. Roem. var. *australis* (F.v.M.) C.DC. (toon) is promising as a tree to replace *Cedrela odorata* L. (cedar), possibly the most commercially important timber tree native to the Neotropics. It is an Australian member of the mahogany family (Meliaceae), to which cedar also belongs. Plantations of cedar are hindered in the Western Hemisphere by two factors: 1, Specific site requirements (which are as yet poorly understood), and 2, susceptibility to attack by the mahogany shoot borer (*Hypsipyla grandella* Zeller). Toon has shown itself unhindered by both these factors in Puerto Rico and in Costa Rica (Grijpma,⁵ Grijpma and Ramalho⁶). The woods of the two species are said to be nearly identical (Grijpma and Ramalho⁷), although further tests are needed, especially on plantation-grown material.

Seeds of toon were received early in 1971 from the Interamerican Institute of Agricultural Sciences at Turrialba, Costa Rica and sown in the Institute of Tropical Forestry nursery at Río Piedras, Puerto Rico. In December of 1971, 50 of the resulting seedlings were planted at the Puerto Rico Commonwealth Forest at Vega Alta (50 m altitude), and another 50 at the Corozal Substation of the Agricultural Experiment Station, University of Puerto Rico (200 m altitude). Other sites around the island were also sown with 50 trees. Those at Corozal were planted among 1-year old

¹ Manuscript submitted to the Editorial Board August 8, 1973.

² Martorell, L. F., A survey of the forest insects of Puerto Rico, Part II. J. Agr. Univ. P.R. 29(4): 404-5, 1945.

³ —, Some notes on forest entomology, Carib. For. 1(2): 31-2, 1940.

⁴ Anonymous, Annual report of the Tropical Forest Experiment Station, Carib. For. 15(1,2): 10, 1954.

⁵ Grijpma, P., Immunity of *Toona ciliata* M. Roem. var. *australis* (F. v. M.) C. DC. and *Khaya ivorensis* A. Chev. to attacks of *Hypsipyla grandella* Zeller in Turrialba, Costa Rica, Turrialba 20(1): 85-93, 1970.

⁶ Grijpma, P., and Ramalho, R., *Toona* spp., posibles alternativas para el problema del barrenador *Hypsipyla grandella* de las Meliaceae en América Latina, Turrialba 19(4): 531-47, 1969.

⁷ Ibid.

seedlings of cedar under the shade of *Inga laurina* (Sw.) Willd. Those at Vega Alta were planted in the open sun of a grassy meadow between limestone hills. Both sites have red clay soils.

After 1 year in the field the toon at Corozal was outgrowing the 2-year

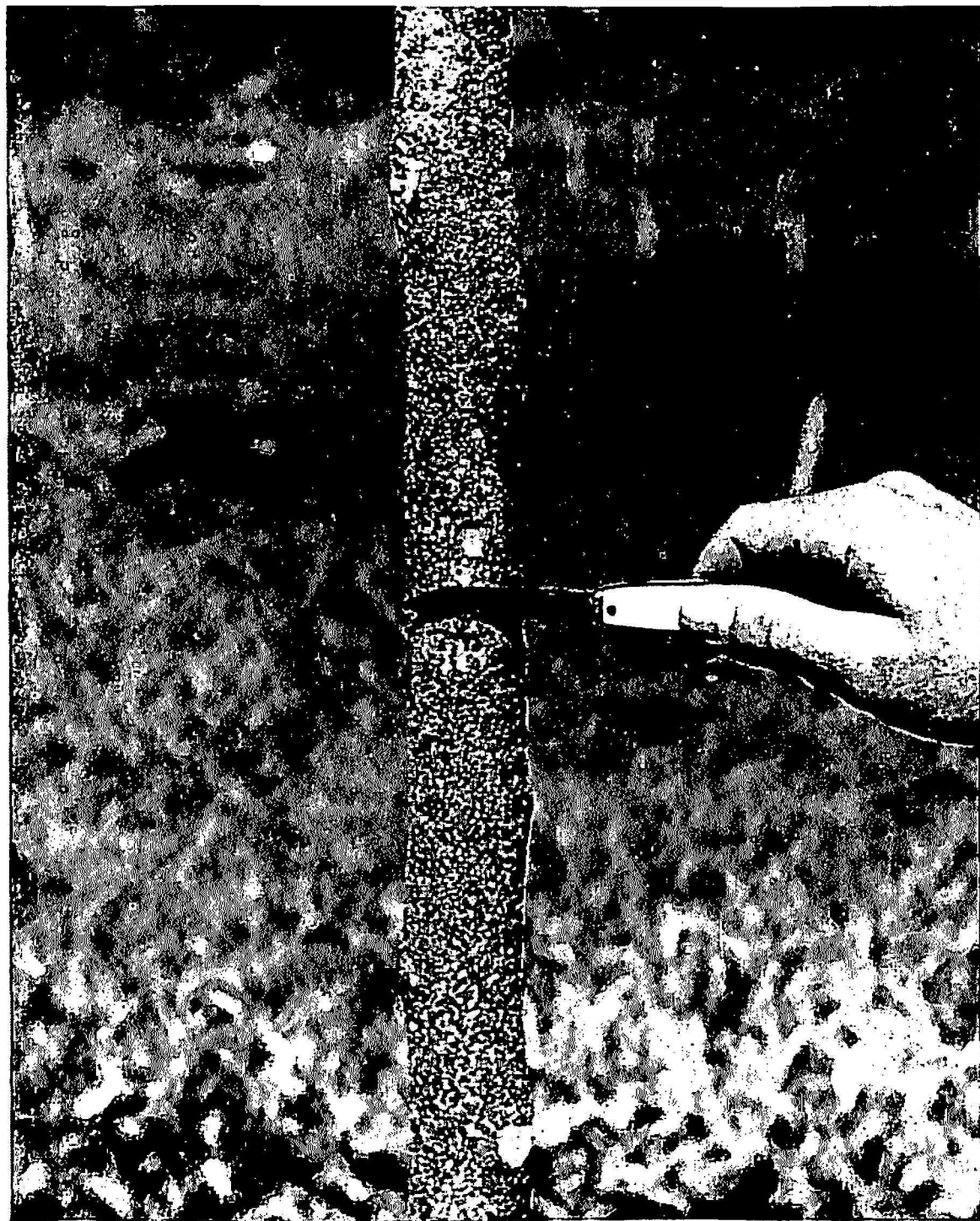


FIG. 1.—Heavy incrustation of the white peach scale on a vigorous 1-year-old seedling of toon at Vega Alta. The white aspect of a few months earlier is now dark, as shown above.

old cedars. At Vega Alta it grew even more rapidly than at Corozal, the best individuals being 3.5 m in height. It was not attacked by *Hypsipyla grandella* and its form was excellent with the following exceptions: (a) branches, while not frequent, were present occasionally and threatened to ruin its form if not pruned, and (b) at Corozal, some trees were hampered by overhead *Inga* shade and grew in non-vertical directions toward the light. *Hypsipyla grandella* was present at Corozal, at least, as the adjacent cedar seedlings were attacked.

The white peach scale was noted in great numbers on several of the toon seedlings at both sites during the first year measurement (December 1972).⁸ In some instances, a 1.5-m section of the stem was covered with the scale giving it a white aspect, much as if painted white. At Corozal none were found on adjacent cedars. In most cases, toon appeared quite vigorous. Indeed, the insect attacked trees of all sizes, regardless of vigor or growth rate (fig. 1). At Corozal, one seedling was seen to be both lacking in vigor and covered with the white peach scale. Three months later (March 1973), the main stem of this seedling was dead and the only leaves present were from basal sprouts. In May 1973, toon plantations at Yabucoa and at Río Abajo, of the same age as those at Corozal and Vega Alta, were also being attacked by the white peach scale. In May 1973 toon trees attacked earlier at Vega Alta also were sprouting adventitious buds and resinous bleeding along the stem was common.

Toon has many features to recommend it for large-scale planting in Puerto Rico and elsewhere. Such a planting program, however, would need to provide for control of the white peach scale, because loss of vigor and form of trees may prove of economic consequence.

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⁸ The insect species was identified by D. R. Miller, Systematic Entomology Laboratory Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Maryland and by G. W. Dekle, Bureau of Entomology, Department of Agriculture, Florida Department of Agriculture and Consumer Services, Gainesville, Fla.