

BI-MONTHLY

RESEARCH NOTES

A selection of notes on current research conducted by the Forestry Branch, Department of Forestry and Rural Development

ENTOMOLOGY

The Balsam Woolly Aphid on Christmas Trees.—

During 1966 a number of preventative measures, such as a curtailment of moving *Abies* nursery stock, were initiated to reduce the possible spread of the balsam woolly aphid to uninfested areas of British Columbia. In some parts of the province young *Abies* are grown, cut and transported for sale as Christmas trees. The movement of potted Christmas trees was prevented by the ban on nursery stock, but transport of cut trees was still allowed. The following observations were made to determine whether this was a hazardous practice.

Three Christmas tree-sized (7 ft) *Abies amabilis* (Dougl.) Forbes, and some branches, moderately infested by overwintering balsam woolly aphid, were cut from an area west of Duncan, Vancouver Island, on 2 Dec., 1966. On 14 Dec., two trees and a branch were brought into a room with a mean temperature of 72°F and a relative humidity of 30%. One tree had the basal 6 inches of its stem immersed in water; the other tree and branch were left dry. The third tree and remaining branches were left outdoors to simulate unsold stock.

Eight fixed examination points were established on the trees and branches, and observations of the aphids were made weekly from 14 Dec. to 17 Jan. The aphids on the branch indoors were the first to deteriorate; they started to dry out by 20 Dec., and were all dead by 28 Dec. Aphids on the trees indoors resumed development, moulted, and produced new wax by 28 Dec. but all were dead on both watered and dry trees by 3 Jan. The aphids on the tree and branches left outdoors remained dormant, neither moulting nor producing new wax. Their condition was unchanged on final examination 17 Jan. When brought indoors, they resumed development, but soon died from desiccation.

Dormant aphids on *Abies* trees and branches taken indoors over the festive season pose no threat of spreading the infestation. During the winter months the aphids are in the non-motile dormant stage, so spread would not occur during transport. There is a remote possibility that the aphids could survive on unsold trees left piled outdoors resuming development in the spring, although the production of viable eggs seems unlikely. Unsold *Abies* Christmas trees should, therefore, be burned.—T. A. D. Woods, Forest Research Laboratory, Victoria, B.C.

An Aspirator for Mass-collecting Ants.—During the course of recent investigations on ants as potential control agents of insect pests in nurseries and plantations in Quebec, a portable aspirator that efficiently trapped practically all of the ants of a nest was developed. The equipment devised is simple, compact, and driven by a battery. The apparatus consists of three parts: an aspirator unit, a collection chamber, and a power supply.

The aspirator is an adaptation of a portable plastic automobile vacuum cleaner (Fig. 1). The air intake consists of a 2-foot length of flexible hose 1.25 inches in diameter. The dust bag is removed to minimize air resistance.

The collection chamber is made from a 1-gallon cardboard icecream container with a special cover and air filter. The cover is made of 0.125-inch acrylic plastic, and will accept 0.625-inch clear, flexible plastic collecting tubes. The

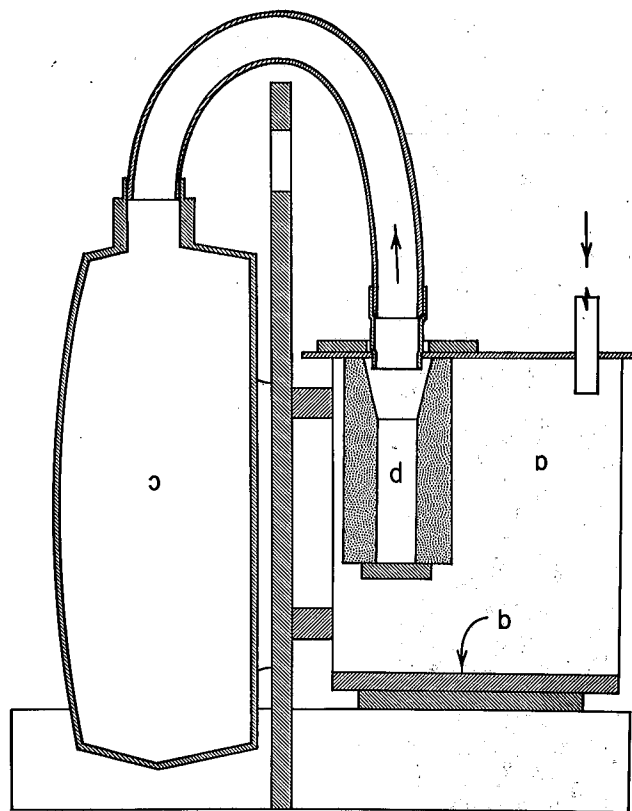


FIGURE 1. Diagram of aspirator showing (a) collection chamber; (b) air filter; (c) aspirating unit; (d) reinforced bottom of collection chamber.

cover also holds the air filter, which is a 5-inch section of cylindrical, water-filter cartridge with a 1-inch hole in the center (type "Auno Water-Pure"). The upper end of this filter is tapered to receive the aspirator tube as shown in Fig. 1. The bottom of the container is reinforced with a 0.375-inch disc of plywood. The base is sealed with masking tape.

Power is supplied by a small rechargeable, 12-volt, wet battery weighing about 24 pounds, similar to that used in small suburban tractors. The battery is recharged by using a special adaptor fitted into the cigarette lighter of a vehicle with a 12-volt electrical system.

The aspirator and collection chamber are mounted side by side on a wooden frame in such a way that the collection chamber can be easily replaced. The battery is encased in a handy carrying box. It was found that a fully charged battery could drive the aspirator at high speed for approximately 1 hour, which is sufficient time to collect nests containing 10,000 ants or more. On extended field trips, during which daily collections are made, a constant supply of power is assured by using two batteries alternately, and recharging them whenever the vehicle is in motion.

Details of construction will be supplied by the author.—R. J. Finnegan, Forest Research Laboratory, Quebec, P.Q.