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Re: Huron Mountain Club
Ives Lake Experiment

Doctor B. J. Szappanyos and I arrived at the Huron Mountain Club on Tuesday, July 19, 1977 at approximately 5 PM. Shortly thereafter we were joined by Dr. Edward Kondo, research scientist, forest pathologist and project leader for Dutch Elm Disease for the Great Lakes Forest Research Centre located in Sault Ste. Marie, Ontario, and Mr. Robert Leis, pesticide program specialist with the United States Environmental Protection Agency.

Wednesday morning, July 20, we conducted a field trip in order to ascertain the extent of Dutch Elm Disease in the elm population at Ives Lake and the Salmon Trout River area of the Huron Mountain Club. We had learned that the Huron Mountain Club obtained expert consultation from the Forestry Department of Michigan Technological University. The Club's plan was to cut as much of the diseased and dead elms and remove them from the premises. This was presumably to be done by chipping all of the dead branches and logs and making them available to the local power generating station to be burned with coal. It appears that the program resulted in a high grading operation which was aborted before completion, leaving a large chip pile, large logs, and high stumps in the Ives Lake area. The odor from this chip pile could be detected by our group a substantial distance downwind. The elms within 100 yards of the chip and log piles were 100 percent diseased.

Apart from the size variation of the elm trees, it was noted that the majority of elm logs found on the ground were red elm and the balance were white elm. On investigating the bark and trunks of the logs in the log piles, only the burroughs and galleries of the native elm bark beetle could be seen. With the aid of a rupor 10x glass, one could magnify these galleries and determine the beetle to indeed by the native elm bark beetle. Subsequent search for the galleries of european elm bark beetles failed to disclose any evidence of this vector in this area. Of interest was the suspicion that there was the presence of the native wasp (SPATHIUS CANADENSIS), which is parasitic on elm bark beetle larvae. In addition, the galleries demonstrated a considerable proportion of larval deaths with large patches of fungus growth suspected to be of the TRICHODERMA species possibly being responsible. This remains to be proven culturely.

The native elm bark beetle appears to occur in two fairly distinct groups: one that overwinters as adults in the outer bark near the bases of living elms and one that overwinters as larvae in the inner bark of dead elms. The adults emerge in mid-May and may feed on the inner bark of living branches before laying eggs in dead or dying trees. Most of their offspring, which appear in August and September, again overwinter as adults. From late June through July, the overwintering larvae emerge as adults which start a new generation in dead trees. We noted a very low overwintering adult beetle population. This was concluded because of the relative absence of frass.

The european elm bark beetle overwinters in the larval stage, the adults emerging in late June or early July to start feeding in the bark of small branches and twigs of elms. Most of their offspring emerge in August and September, although some do not complete development and remain as larvae to form part of the overwintering population. Only a few of the adults that emerge in the late summer are able to breed, lay eggs and give rise to overwintering larvae. The remainder die with the approach of cold weather without establishing a brood.

Because of the native elm bark beetle's desire for reproduction in large wood rather than the smaller limbs preferred by the european elm bark beetle, it is concluded that the logs left in piles and large stumps served as the preferred breeding grounds for the vector present at Ives Lake, further amplified by the maximum expression of an attractent, namely the chip pile.

The program of sanitation that was undertaken by the Huron Mountain Club was not appropriate due to the nature of the vector involved. It is recommended that these logs, stumps and chip pile be appropriately disposed of through burning or burying as soon as possible.

We were able to find 66 trees acceptable for treatment in the Ives Lake area. These trees were appropriately identified by number and month and year of treatment through the use of a red tag nailed to the tree. The majority of the trees that we treated were numerically classified as "5" on a scale of 1 to 10. Many of them appeared as stressed trees, however, we could not observe any signs of disease at the time of treatment.

It will not be necessary to treat the trees for two or three more years. We will work closely with your club on an annual basis keeping appropriate records and progress charts which will be supplied to you as we develop them. It is important that your club keep accurate records of any tagged trees that are cut down due to disease. We will forward to you other data as

we receive it from Dr. Kondo's laboratories.

Very truly yours,

ALDINE PRODUCTS COMPANY

Raymond A. Pastula
President

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