

STATE FOREST NURSERIES.

By C. L. HARRINGTON.

The state forest nurseries were established for two reasons:

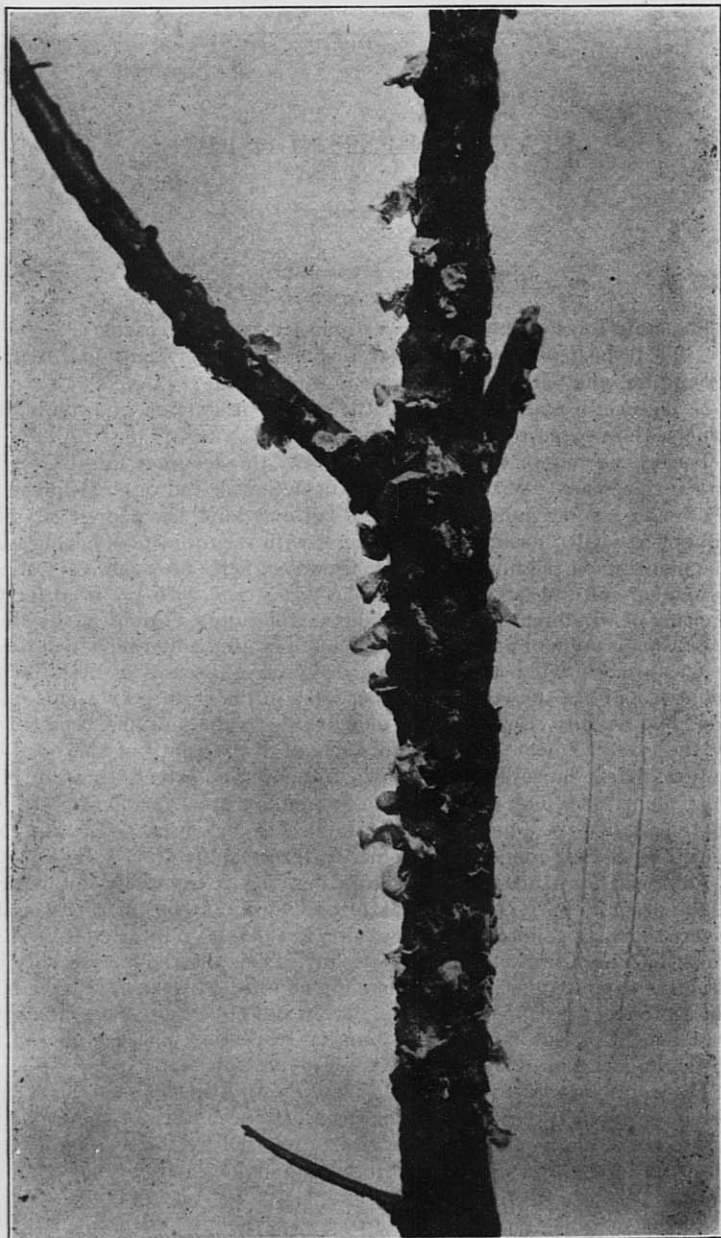
1. To furnish plant material for the restocking of lands unsuited for agriculture, and park properties owned by the state.
2. To furnish planting stock, at the cost of production, to private land owners who desired to reforest their holdings.

The second reason was adopted primarily to encourage forest tree culture in the state. With the gradual depletion of the original forests in Wisconsin, leaving millions of acres of cut-over land, the poorest of which will not be settled for a century or more; with the problem of encouraging tree planting on the hundreds of thousands of acres of rough, very stony, or non-agricultural lands on Wisconsin farms, and with the need for the planting of windbreaks or shelter belts in the prairie regions of the state, arose the question of providing a source of planting material, which would be cheap, acclimated and free from destructive diseases or pests, which might jeopardize the growth of other trees in the state. The same questions had already risen in states along the Atlantic and had been solved by the establishment of forest nurseries in over twenty of the northern states. These nurseries have grown to enormous extent, those of New York alone furnishing from three to five million trees for planting to private land owners annually. In establishing nurseries, Wisconsin was guided by the experience of the older eastern states.

The need for state-grown planting material is especially emphasized at the present time. An outbreak of the white pine blister rust was discovered early this summer in Polk county in a plantation started from stock which had been imported from Germany. This disease is especially destructive to white pine, young or old, for no infected trees have ever been known to recover from its ravages. As a result of this discovery, the State Department of Entomology and Nursery Inspection placed a quarantine on the importation of all five needle pines into this state.

The sentiment regarding forest tree planting in the state is yearly becoming more favorable. As the need of tree culture in the economic development of the state is more clearly realized by the average citizen, the work of the reproduction of timber stands on lands primarily suited for this purpose will increase.

At the present time two forest tree nurseries are maintained by the State Conservation Commission, one located at Trout lake, which embraces about seven acres, and the other at Tomahawk lake, includes about four acres. The Trout lake nursery is primarily suited for the development of



YOUNG WHITE PINE TREE ATTACKED BY BLISTER RUST.
NOTE THE FRUITING BODIES

coniferous species, being located on a sandy loam soil. The Tomahawk lake site is composed of heavier soil and is intended more for the raising of the broad leaved trees. Each nursery is equipped with the necessary fences, roads, shade frames, tools and watering facilities to properly care for and protect the growing seedlings and transplants to all times of the year.

The nursery work under the administration of the Conservation Commission has experienced a healthy growth. During the spring of 1916, 1,501,000 two-year seedlings were transplanted at an average cost of 85 cts. per thousand. These transplants were composed of the following species:

NUMBER OF TRANSPLANTS

| | Trout Lake Nursery. | Tomahawk Lake Nurs. |
|--------------------|---------------------|---------------------|
| White pine..... | 220,000 | 222,600 |
| Red pine..... | 648,000 | 220,400 |
| Scotch pine..... | 88,000 | |
| Norway spruce..... | 102,000 | |
| | <hr/> 1,058,000 | <hr/> 443,000 |

SEED BEDS WERE SOWN AS FOLLOWS:

| | Trout Lake Nursery. | Tomahawk Lake Nurs. |
|--------------------|---------------------|---------------------|
| White pine..... | 50 | 20 |
| Red pine..... | 20 | |
| Scotch pine..... | 66 | 10 |
| White spruce..... | 6 | 8 |
| Norway spruce..... | 15 | 10 |
| White ash..... | | 3 |
| Basswood..... | | 2 |
| | <hr/> 157 | <hr/> 53 |

The results of this work were fairly satisfactory. The extreme dry spell in July caused the loss of some of the transplants, but the heaviest damage was done by the June beetle grubs. These occurred in unusual numbers. They work underground, chewing off the roots of the trees, thus causing them to wither and die. They are especially destructive to transplants. At present no effective way has been discovered to combat them. In ordinary years the damage from this cause is light, but during years when the grubs are unusually numerous, their work is very destructive and this is especially true on new land.

Except for the practical failure of the Scotch pine seed beds, due to the long storage to which the seed had been subjected on account of the war, the sowing of 1916 was of average success. Very good stands of white and red pine and Norway spruce were obtained.

STOCK DISTRIBUTION.

The distribution of nursery stock throughout the state was especially noteworthy during 1916. The following tables give complete data relative to these shipments. Especial attention is called to the steady increase in the shipments to private parties.