The de la Howe Old-Growth Forest in Piedmont Shortleaf Pine

Because the growth rate in old trees slows down so markedly, we cannot under our present economy afford to let forests grow to old age until we utilize them. In fact, as the intensity of forest management increases, rotations continue to shorten. Consequently, there is great value in preserving some areas of old-growth or virgin forest to serve as bench marks—areas which show the natural potential of the site, the relation of soil and vegetation, and the impact of disease.

The “museum” tract on the lands of the John de la Howe School at McCormick, S. C., is a fine example of old-growth shortleaf pine type. Here, Dr. de la Howe, who originally endowed the school, specified in his will that "one thousand acres shall forever remain in wood or forest." Within this area, some 100 acres have been preserved with almost no cutting and few if any forest fires since 1797.

In this respect the tract is indeed unique. Nowhere else in the South Carolina Piedmont can such a forest be found, for since early settler days the great belt of rolling clay hills has undergone drastic change. The original forests were cut by the pioneers and the land farmed under poor practices for many years. Serious erosion took place and as the land became too poor for farm crops it was abandoned and reverted to forests. Now there are vast areas of depleted soils which support stands of relatively poor forest growth.

Slow growth of the forest is not the only problem faced by the land manager of this region. Here in the South Carolina Piedmont the littleleaf disease, so common on shortleaf pine (Pinus echinata L.), is widespread. This disease, caused by the fungus Phytophthora cambiaomi Rands brings about a slow starvation of a tree. In the tight, poorly drained, eroded, and abused soils of the Piedmont this water-loving fungus runs rampant. Working on the fine roots, it kills them and as the roots absorb less and less nitrogen, calcium, and other elements, the tree weakens and dies.

In sharp contrast to surrounding littleleaf areas is the "museum" tract at the de la Howe School. Here the old-growth pines, exceeding 160 years in age, show no evidence of the littleleaf disease, so common among second-growth stands that have reclothed the wornout fields. Why is this so?

The explanation seems to lie in the fact that, although the fungus is present, the soil is drastically different. The topsoil has not been lost through erosion. The soil is porous, mellow, and deep—and the proper habitat is provided for organisms that act against P. cinnamomi to hold it in check. With fertility at a high level, the trees have developed to the full capacity of the site. Thus, this natural area helps admirably in demonstrating the conditions under which the littleleaf disease does and does not develop, and in providing a superb example of the natural capacity of the land to grow trees where the fertility has been preserved.

The "museum" tract also has great utility in helping foresters to understand the role of forests in watershed management. Over the Piedmont as a whole, the red creeks, the sand bars, and wide flood plains of the rivers which are so frequently flooded offer evidence that the land is not functioning properly as a water storage reservoir. Sites with shallow soil, or those unprotected by some sort of vegetation, will not hold enough water to slow down storm runoff. However, soil long protected from raindrop impact and erosion, such as that in the de la Howe natural area, will hold rainwater and release it slowly to the streams. This prevents excessively high water immediately after rains, and prevents also the dried-up stream beds during periods of drought. Studies of areas which protect the water resource are invaluable in giving leads as to how to treat or manage areas that contribute to erosion and runoff problems.

It is very fortunate that the trustees of the de la Howe School had the foresight to preserve a tract of old-growth shortleaf pine in the Carolina Piedmont. This reference point will be increasingly important ways we cannot now delineate.

Editor's note.—This area is currently being considered as a possible SAF Natural Area.

LOUIS J. METZ
Southeastern Forest Experiment Station, Forest Service, U. S. Department of Agriculture, Asheville, N. C.