Research on the Improvement of Turpentine Practices

The age-old turpentine industry is being modernized by a three-fold research attack involving advances in extraction techniques through chemical stimulation procedures; the selection, breeding and propagation of high-yielding turpentine pines; and engineering research on equipment used in woods operations.

ALBERT G. SNOW, JR.

One of the most colorful segments of American forest enterprise is the gum naval stores industry of the deep South. The industry centers around the solitary "chipper" who winds his way through swamps and saw-palmettoes, wounding thousands of trees once each week. He repeats what his father and grandfather probably did before him. However, the naval stores industry must compete with newer industries for manpower, and its products must be marketed in competition with those of modern chemical industries. It was inevitable, therefore, that technological progress should come to the turpentine woods, even though somewhat tardily, and attention focus on the woods worker who taps the trees.

History

For a proper understanding of the technological problems of the naval stores industry, it is well to examine the industry's deep roots in history and tradition.

Pine pitch has long been a trade article in commerce, and its early use in ship construction and rigging preservation led to the present name of "Naval Stores". The colorful early history of the development of the naval stores in-

1 Silviculturist, Lake City, Florida Branch, Southeastern Forest Experiment Station, Forest Service, U. S. Department of Agriculture.
great advances in gum-collecting techniques was made. In 1904, following sporadic attempts in the use of cups and gutters, the Herty system of using metal gutters, and cups of various types, was extensively introduced. This basic system is still in use today.

Throughout the gum belt. Shortly after organized research on better stilling methods was begun in 1926 by the Bureau of Chemistry and Soils (now Bureau of Agricultural and Industrial Chemistry), “steam-still” processing came into use. A much better product

FIG. 1. Old style of separating turpentine and rosin by “sounding” the worm outlet of a fire still to determine relative temperature.

About 1834 the first copper kettles were brought to North Carolina, and this marked the beginning of the separation of turpentine and rosin in this country on any large scale. Formerly either the crude gum, or tar and pitch, was put in barrels and shipped abroad for processing. At first the raw gum was transported to the coastal towns by river, but later hundreds of small direct-fire turpentine stills became widely scattered throughout the gum belt. Now about 90 percent of the crude gum produced is processed in modern steam stills.

Uses of Naval Stores Products

The materials derived from the oleoresin flowing from wounded pines find their way into a multitude of prod-