(This art. in 1949 Christmas Issue of South Lumberman.)

CYPRESS PLANTING In Southern Louisiana

By Henry Bull

Southern Forest Experiment Station, Forest Service, U. S. Department of Agriculture

During the winter of 1948 and again in 1949, some 3,200 bald-cypress seedlings were planted in a cut-over cypress and tupelo gum swamp near Choctaw, Lafourche Parish, Louisiana. In a state where some companies planted more than a million pines apiece in the last planting season alone, this is not a large number of trees for one landowner to set out in two years. The cypress planting is noteworthy, however, because so far as known it is the first to be made in a Louisiana swamp where cypress has been and still is being logged. This unique planting was done by the Joseph Rathborne Land Company of Harvey, Louisiana. J. C. Rathborne, president of the company and grandson of Joseph Rathborne, one of the pioneer cypress lumbermen in Louisiana, began to think about cypress planting in 1947. Most of his company's cypress-tupelo swamp lands—already logged one or more times since operations began in about 1880—have very little or no cypress reproduction, although small pole-size cypress trees are generally present, except where steam skidders were used.

Take the tract near Choctaw, for example. It was first logged with a pull-boat about 40 years ago, and only cypress was cut. The stand just before the current logging averaged about 4,000 board feet, Doyle rule, per acre. About 55 per cent of the merchantable volume was tupelo gum (to a fourteen inch top), the rest cypress (to an eight inch top). After the present logging is completed, one or possibly two more light cuttings can be made when the scattered pole-size trees being left reach saw-log size.

The pole-size cypress and tupelo gum are predominantly more than six inches in diameter at breast height. When they have reached saw-log size and are cut, there is nothing in sight to replace them. There are numerous smaller trees present, but they are water ash, pumpkin ash and red maple—mostly use except possibly as pulpwood, which would be very costly to get out.

Since Mr. Rathborne plans to hold this land, he was naturally concerned with the lack of cypress or even tupelo gum reproduction. Why didn't cypress reproduce itself? If natural reproduction couldn't be obtained, why not plant cypress? Mr. Rathborne discussed his problem with the Southern Forest Experiment Station, which has since planned and supervised the experimental plantings and kept records on them.

Examination of typical cut-over swamp lands owned by the company indicated that neither cypress nor tupelo gum reproduction could be counted on unless water levels could be manipulated so as to create favorable conditions following a good seedfall. Most of the area probably has enough seed—not every year but at irregular intervals of several years. But even a cypress can be drowned, and apparently that is just what has been happening.

Requirements for Cypress Reproduction

Experiments that showed the requirements for cypress reproduction were reported many years ago, by W. R. Mattoon in 1915 and 1916, and by Delzie Demaree in 1932. Demaree found that for cypress to establish itself in swamps "the seeds must sprout when not submerged, and the seedlings must grow to sufficient height during the first year to stay above the floods except for a very few days during the second year. . . . Should the flood waters be low for two or three years, the plants may grow enough to keep above the water and become established." Submergence of seedlings during the growing season, even for only a few days, often is fatal less than six inches or more than thirty inches, depending on local conditions. The lower growth rates, which undoubtedly are most common, are not enough to keep the tops of the seedlings above normal flood water during the first (and sometimes the second and third) growing season. Water in the swamp at Choctaw, for example, usually is about two feet deep for several days or weeks early in the growing season. Evidently at least two or three abnormally dry years in a row are needed for cypress reproduction to become established here, and such conditions occur only at long irregular, and unpredictable intervals.

Tupelo gum seedlings seem to have about the same requirements as cypress, but apparently can withstand flooding somewhat better, probably because they are in leaf for a shorter time. Both cypress and tupelo gum can, of course, endure almost any depth or duration of standing water when only the butts are covered.

Control of Water Levels vs. Planting

Control of water levels is a possibility, since logging is being done in areas which are enclosed by temporary low levees and kept flooded to a depth of 32 inches by water pumped in from a canal. After logging it may prove feasible to pump out the water and maintain the levees long enough for seedlings to reach a safe height. Seed would come from the cypress left after logging, or in a poor seed year could be collected elsewhere and broadcast by hand or from an airplane. However, the costs of levee maintenance and pumping would be high. In addition much of the young cypress stand would be too dense in some spots, too open in others. Patchy distribution is characteristic of natural seeding, and is hard to avoid in artificial seeding.

Without control of water levels, natural reproduction of either cypress or tupelo gum simply cannot be relied upon within even reasonable periods to