FORESTRY IN THE UNITED STATES.

THE United States Geological Survey has already issued in the form of reports various papers dealing with the conditions of the localities in the more important forest reserves. Professional Paper No. 29 of the forestry series of the department deals with the forest conditions in the Absaroka division of the Yellowstone Forest Reserve, Montana, and the Livingstone and Big Timber Quadrangles. This report first treats of the location, extent, and topography of the Yellowstone Reserve. The forest itself is almost wholly coniferous, consisting of pines, spruce, silver and Douglas firs. A most interesting account is given concerning the distribution of these species, especially in regard to altitude and aspect. As regards the ages of the trees the greatest diversity prevails. Age classes occur, varying from 15 to 20 years, 75 to 100 years; also stands from 200 to 300 years old are represented, this condition of things having been brought about by fire, the different age-classes corresponding to burns of different periods. The character and volume of merchantable timber are next carefully gone into. These naturally vary according to the species of tree, as well as the altitude and aspect in which it is growing, and the report brings out very interesting facts in this connection.

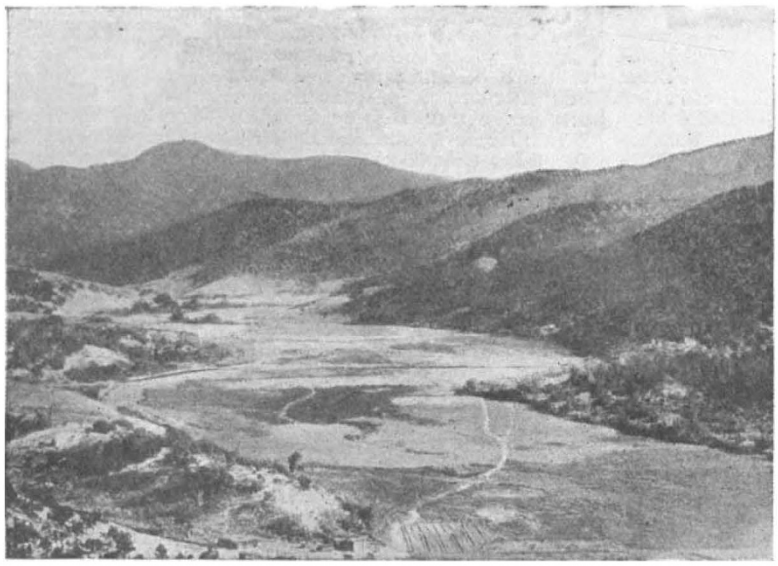

FIG. 1.—Cultivated Valley in the Woodland Area of the Lincoln Forest Reserve, New Mexico.

Like other forest reserves, the present one is divided into a number of smaller divisions called townships, which are carefully described in detail. Two useful land classification maps are appended.

A report of the forest conditions in the Little Belt Mountains Forest Reserve, Montana, and the Little Belt Mountains Quadrangle, forms Paper No. 30 of the same series. Here again the principal species are conifers; but the chief value of the forest lies in its effect on the conservation and regulation of the rainfall, hence it is more in the nature of a protection forest than one preserved for its timber production.

The forest conditions of the Lincoln Forest Reserve, New Mexico, are described in Paper No. 33. This reserve was created by proclamation of the President in 1902. The description of the included area is again given by townships. The area is more or less mountainous, and, as a natural consequence, the woodland growths are found to be divided into zones determined by altitude. A very interesting graphical representation of the various zones and species occurring in them is included. Short descriptions of the different species of trees are given, among which the yellow pine (*Pinus ponderosa*) is the chief timber tree. The conservation of trees in the reserve is of enormous importance in connection with the irrigation of cultivated lands in its neighbourhood, or vast areas that could be used for agricultural purposes if a regular supply of water were secured. Artificial tanks are at present employed for the storage of intermittent surface flows of water to be used for domestic purposes and irrigation.

Paper No. 39 consists of a report of the forest conditions of the Gila River Forest Reserve, New Mexico. This reserve was established by President McKinley in 1889. The reserve includes several prominent mountain ranges, and on the whole the area is well watered, the streams from the mountains carrying a considerable flow to a long distance beyond the forest regions. The reserve is traversed by fairly good roads and trails which follow the valleys. Agriculture is extensively carried on along San Francisco River, but not to such an extent along Gila River. The settlers formerly found a very ready market for their produce in the mining camps at Cooney and Mogollon, but several of these camps have been deserted within the last year or two, and the market has become considerably restricted. Grazing is an important industry in this region, but will require careful attention and supervision to prevent the inevitable result of overstocking, as this not only leads to a total destruction of the grass roots, but also gives rise to drought at one period and disastrous flooding at another. The yellow pine is found to grow very well in this region, and will probably form the principal species in re-stocking the land when the older timber is removed.

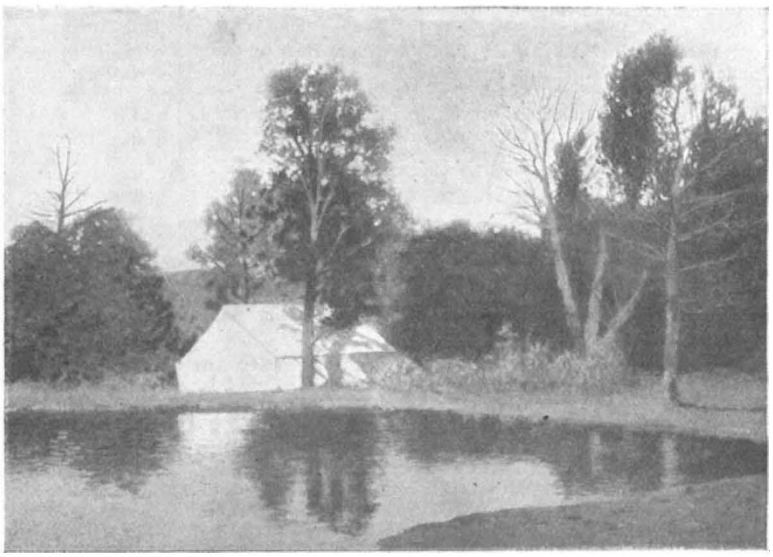

FIG. 2.—Artificial "Tank" for Water Supply. Lincoln Forest Reserve, New Mexico.