

At Fort Caswell, situated on Oak Island near the mouth of Cape Fear River, several unsuccessful attempts have been made, under Government auspices, to obtain potable water by deep boring. The first well was drilled between the years 1900 and 1902. The depth was 800 feet and the smallest casing used was 6 inches in diameter. No potable water was obtained. A brackish water horizon was encountered in Cretaceous beds at a depth of 365 feet, and in the lower 80 feet of the well water of similar quality was struck which flowed at the surface at the rate of about 2 gallons per minute. Assay 23, Table 2, is a test of the water of this well. In 1903 a 6-inch well was sunk to a depth of 171 feet without obtaining satisfactory water. The last and most determined attempt was made between the years 1905 and 1907. A well was sunk to a depth of 1,543 feet, the smallest casing being 7 inches in diameter. (See section, p. 169.) The deposits of the Coastal Plain were completely penetrated, basement rock being entered at about 1,540 feet below the surface. No potable water was encountered, the content of sodium chloride (common salt) being excessively high in all the horizons penetrated. A strong flow of salty water was encountered in Cretaceous beds at a depth of 1,442 feet.

The water now used at Fort Caswell is obtained from shallow wells 15 to 30 feet in depth, and from cisterns. The well water is brackish, due to the infiltration of sea water through the porous beach sands which make up the underground materials for some distance below the surface at this place.

At the Quarantine Station which is located in the middle of Cape Fear River on piles about one mile east of Southport, a well was drilled to a depth of 400 feet below sea level. The diameter of the smallest casing used was 4½ inches. At the bottom of the well a horizon of potable water was encountered in the Peedee formation, which yields by pumping at the rate of 75 gallons per minute. A peculiarity of this well is that when first pumped after standing idle for several hours the water is brackish, but after about 20 minutes pumping the taste of salt entirely disappears, and as long as the well is pumped continuously the quality of the water is satisfactory. (See Water Supply and Irrigation Paper, U. S. Geol. Surv., No. 160, 1906, p. 97.) Analyses 10 to 23, Table 2, are tests of this well. (See section, p. 168.)

Three wells have been drilled at the plant of the American Fisheries Company on Cape Fear River, near Old Brunswick. The depth of each is 140 feet and the diameter is 3 inches. One yields by pumping at the rate of 50 gallons per minute and the other two at the rate of 100 gallons each per minute. This water horizon is probably in the Eocene.