become saturated with brine. This is the case with the Michigan Salt Group and the Onondaga salines of New York, as also those on the Kanawha and Ohio rivers. In some cases the home rocks possess sufficient porosity to retain the brine. In other localities the solid salt exists, but it is so mixed with clay as to require redissolving and purification. This as I said, is the case in Cheshire. In some countries, as in Poland and Austria, great mines are excavated in immense salt formations. In Michigan the rock salt possesses great purity, but it lies so deep that the expense of sinking and maintaining shafts has so far, led to the expedient of dissolving the salt in its place, and then pumping out the saturated brine. At Marine City, water pumped from the St. Clair river is forced down the bore-hole, where it dissolves the salt, and is then forced out by the same process into great tanks, where the brine settles, and then in other tanks undergoes evaporation by means of heat from steam pipes immersed in the brine. The precipitated salt is raked out by automatic rakes, allowed to drain, then dried and barreled. At Syracuse and in the Saginaw valley, the brine is pumped from the wells and settled and evaporated. Formerly much evaporation was done in kettles over a fire. More recently, pans and steam have been employed. A large amount of salt is produced, especially at Syracuse, by spontaneous evaporation in shallow vats exposed to the sun and air, and covered in rainy weather, by light roofs moved on rollers.

The natural brines of Saginaw and other regions contain impurities. In the process of evaporation those least soluble are first precipitated out, and then the other substances in the inverse order of their solubility. Thus the brine, which is limpid and sparkling on its escape from the earth, after exposure to the air forms, by peroxidation of the iron (see Talk XXII) a red deposit which is insoluble, and falls to the bottom of the settling vat—generally hastened by some coagulable substance. When transferred to the kettles and heated, gypsum is the first deposit, and this adheres firmly to the surface. Next, common salt crystallizes out, which forms on the