valued when sodium chloride is mostly absent, and when carbonic acid gas is present to give briskness to the waters.

The ocean is the great mineral spring of the world; and Artesian borings over the land very often show, by bringing salt water to the surface, that more or less sea water has generally been left along with the beds. About $3\frac{1}{2}$ per cent of sea water consists of soluble salts, and of these over $\frac{3}{4}$ is common salt. When sea water along a flat shore becomes temporarily confined so that it can evaporate, the salts are deposited; first gypsum or anhydrite, which goes down, according to Ursiglio, when the Beaumé areometer stands at 16.75°; and then the common salt when it is at 26.25°. While this is depositing, the remaining solution, which is above, holds the magnesium sulphate and chloride, with the calcium chloride, and the iodide and borate, and is called the "mother liquor" or "bittern"; and it is all nearly ready for deposition, the borate being among the latest although not the least soluble. Magnesium sulphate and magnesium-potassium chloride (carnallite) make much the larger part of the final depositions. But a new supply of salt water at this stage may prevent deposition from the bitter magnesium solution; or the latter may be gradually drawn off to mix again with the sea water, or for deposition elsewhere. Common salt dissolves in about three parts of either hot or cold water; magnesium sulphate, in about four parts at 32° F., but in one third as much water at 212° F. Sodium sulphate is most soluble in warm water; hence the waters of the Great Salt Lake deposit it if cooled down to 20° F. (Russell).

The *making of salt* in large shallow lagoons or "salt-pans" along seacoasts, out of water let in at high tide and then confined for a time, is a common thing under the hot sun of tropical countries. The same process — solar evaporation — is used in many regions of brine springs. On some of the smaller coral islands of the equatorial Pacific, whose lagoons had become very shallow, there are now beds of gypsum — sometimes two feet thick — along with salt in places, that were made from the evaporating waters (Hague), showing that the lagoon basins had passed through a salt-pan condition.

The average composition of ocean water salts, in a hundred parts, has been determined by W. Dittmar to be as follows: chlorine 55·292, bromine 0·188, sulphuric acid (SO_3) 6·410, carbonic acid 0·152, lime 1·676, magnesia 6·209, potash 1·332, soda 41·234, *less* the oxygen in soda and magnesia equivalent to the chlorine and bromine present combined with the sodium and part of the magnesium 12·493 = 100·00 ; or combining the acids and bases, the salts are: sodium chloride (common salt) 77·758, magnesium chloride 10·878, magnesium sulphate 4·737, calcium sulphate 3·600, potassium sulphate 2·465, magnesium bromide 0·217, calcium carbonate 0·345 = 100·00.

From these results Professor Dittmar calculates for the whole amount of salts in the ocean, as follows, the unit being 1,000,000,000,000 tons: sodium chloride 35,990, magnesium chloride 5034, magnesium sulphate 2192, calcium sulphate 1666, potassium sulphate 1141, magnesium bromide 100, calcium carbonate 160 = 46,283 ; also total bromine 87·2 (Dittmar), total iodine 0·03 (Köttstorfer), total rubidium chloride 25·0 (C. Schmidt).

The lime alone varies appreciably with the depth. As compared with the amount of chlorine and bromine (the latter calculable as chlorine), taking the amount at 100, the lime at surface (s), at medium depth (m), and in the deep sea (d) was found by Dittmar to be s, 3·0175; m, 3·0300; d, 3·0308. The amount of carbonic acid in the waters above what is required for calcium carbonate is large, especially that at great depths; but it is