Persian Gulf, almost entirely consists of fossil salt. The new world is likewise stored with treasures of this useful mine­ral, as well as with all other kinds of subterranean produc­tions. Moreover, the sea affords such abundance of com­mon salt, that all mankind might thence be supplied with quantities sufficient for their occasions. There are also innumerable springs, ponds, lakes, and rivers, impregnated with common salt, from which the inhabitants of many coun­tries are plentifully supplied. In some countries which are remote from the sea, and have little commerce, and which are not blessed with mines of salt or salt-waters, the ne­cessities of the inhabitants have forced them to invent a method of extracting common salt from the ashes of vege­tables. The muriatic salt of vegetables was described by Dr Grew under the title of lixiviated marine salt. Leeu- wenhoeck obtained cubical crystals of this salt from a lixi­vium of soda or kelp, and also from a solution of the lixivial salt of *carduus benedictus ;* of which he gave an account in a letter to the Royal Society, published in their Transactions.

The muriatic salt which Mr Boyle extracted from san- diver, and supposed to be produced from the materials used in making glass, was doubtless separated from the kelp made use of in that process. Kunckel also informs us, that he took an alkaline salt, and after calcining it with a moderate fire, dissolved it in pure water, and placing the solution in a cool cellar, obtained from it many crystals of a neutral salt. He supposes that the alkaline salt was by the process converted into this neutral salt. But it is more reasonable to believe that the alkaline salt which he applied was not pure, but mixed with the muriatic salt of vegetables, which by this process was only separated from it.

Naturalists, observing the great variety of forms under which this salt appears, have thought fit to rank the several kinds of it under certain general classes; distinguishing it most usually into rock or fossil salt, sea-salt, and brine or fountain salt. To these classes others might be added, parti­cularly those muriatic salts which are found in vegetable and animal substances. These several kinds of common salt often differ from each other in their outward form and appearance, or in such accidental properties as they derive from the heterogeneous substances with which they are mixed. But when perfectly pure, they have all the same qualities ; so that chemists have not been able to discover any essential difference between them. For this reason we shall distin­guish common salt after a different manner, into the three following kinds, viz. into rock or native salt, bay-salt, and white salt. By *rock* or *native salt* is understood all salt dug out of the earth, which has not undergone any artificial pre­paration. Under the title of *bay-salt* may be ranked all kinds of common salt extracted from the water in which it is dis­solved, by means of the sun’s heat, and the operation of the air, whether the water from which it is extracted be sea-water or natural brine drawn from wells and springs, or salt water stagnating in ponds and lakes. Under the title of *white* or *boiled salt* may be included all kinds of common salt ex­tracted by coction from the water in which it is dissolved.

The first of these kinds of salt is, in several countries, found so pure that it serves for most domestic uses, with­out any previous preparation, triture excepted ; for, of all natural salts, rock-salt is the most abundantly furnished by nature in various parts of the world, being found in large masses occupying vast tracts of land.

The English fossil salt is unfit for the uses of the kitchen, until by solution and coction it is freed from several impu­rities, and reduced into white salt. The British white salt also is not so proper as several kinds of bay-salt for curing fish and such meats as are intended for nautical provisions, or for exportation into hot countries. For these purposes, therefore, we are obliged, either wholly or in part, to use bay-salt, which is purchased in France, Spain, and other foreign countries.

However, it does not appear that there is any other thing requisite in the formation of bay-salt than to evaporate the sea-water with an exceedingly gentle heat ; and it is even very probable, that our common sea-salt, by a second solu­tion and crystallization, might attain the requisite degree of purity. Without entering into any particular detail of the processes used for the preparation of bay-salt in different parts of the world, we shall content ourselves with giving a brief account of the best methods of preparing common salt.

At some convcnient place near the sea-shore is erected the saltern. This is a long, low building, consisting of two parts; one of which is called the fore-house, and the other the pan-house or boiling-house. The fore-house serves to receive the fuel and cover the workmen, and in the boil­ing-house are placed the furnace, and pan in which the salt is made. Sometimes they have two pans, one at each end of the saltern ; and the part appropriated for the fuel and workmen is in the middle.

The furnace opens into the fore-house by two mouths, beneath each of which is a mouth to the ash-pits. To the mouths of the furnace, doors are fitted ; and over them a wall is carried up to the roof, which divides the fore-house from the boiling-house, and prevents the dust of the coal and the ashes and smoke of the furnace from falling into the salt-pan. The fore-house communicates with the boil­ing-house by a door placed in the wall which divides them.

The body of the furnace consists of two chambers, divid­ed from each other by a brick partition called the mid­feather, which from a broad base terminates in a narrow edge near the top of the furnace, and, by means of short pillars of cast iron erected upon it, supports the bottom of the salt-pan. It also fills up a considerable part of the fur­nace, which otherwise would be too large, and would con­sume more coals than, by the help of this contrivance, are required. To each chamber of the furnace is fitted a grate, through which the ashes fall into the ash-pits. The grates arc made of long bars of iron, supported underneath by strong cross bars of the same metal. They are not con­tinued to the farthest part of the furnace, it being unneces­sary to throw in the fuel so far. For the flame is driven from the fire on the grate to the farthest part of the furnace, and thence passes, together with the smoke, through two flues into the chimney ; and thus the bottom of the salt­pan is everywhere equally heated.

The salt-pans are made of an oblong form, flat at the bottom, with the sides erected at right angles. The length of some of these pans is fifteen feet, the breadth twelve feet, and the depth sixteen inches ; but at different works they are of different dimensions. They are commonly made of plates of iron, joined together with nails, and the joints are tilled with a strong cement. Within the pan five or six strong beams of iron are fixed to its opposite sides, at equal distances, parallel to each other and to the bottom of the pan, from which they are distant about eight inches. From the beams hang down strong iron hooks, which are linked to other hooks or clasps of iron firmly nailed to the bottom of the pan ; and thus the bottom of the pan is supported, and pre­vented from bending down or changing its figure. The plates most commonly used are of malleable iron, about four feet and a half long, a foot broad, and the third of an inch in thickness. The Scotch commonly prefer smaller plates four­teen or fifteen inches square. Several make the sides of the pan, where they are not exposed to the fire, of lead ; those parts, when made of iron, being found to consume fast in rust from the steam of the pan. Some have used plates of cast iron five or six feet square, and an inch in thickness ; but they are very subject to break when unequally heated, and shaken, as they frequently are, by the violent boiling of the liquor. The cement most commonly used to fill the joints is plaster made of lime.