

## ALL ABOUT SALT.



We never appreciate the advantages we possess. This may not strike you as an original remark, and indeed I do not reserve the right of translating it. Perhaps it might even be termed, with justice, a platitude, but it is remarkably true. I doubt whether it ever occurred to any one that it was nice to be able to breathe, unless asthma, or fog, or a fishbone, or a rope, or some other impediment to free respiration drew his attention to the fact. Living people can remember the time when no one placed any particular value upon water, which ranked with air as a thing too common, too necessary to be grateful for. The nearest pump or well supplied it in profusion, clear, sparkling, wholesome, free from "organic matter." In like manner we of the present generation think lightly enough of salt, and can hardly appreciate the distress which would ensue if it became scarce or dear, or if the progress of civilisation poisoned it, as it has our springs. It might be difficult for our poorer classes to realise the fact, that the artificial restriction on obtaining salt was one of the principal causes of the (Great) French Revolution. The system of taxation before that social convulsion was very simple; find out what people were least able to give trouble and to resist, and tax them; find out what articles were absolutely necessary to human life, and must be obtained, and tax those. By fixing upon bread and salt as the principal sources from which to draw the revenues of the country, both these desirable conditions were fulfilled. The duty on salt was called the *grande gabelle*, and was excessively oppressive to the very poor, as may be seen by the following statistics. Certain provinces, termed the *pays redimés*, had compounded, and were therefore exempt from the tax, and in those districts the consumption of salt was at the rate of eighteen pounds a head, while in the rest of France, which was subject to it, little more than half that quantity represented the average. It is irritating, after the event, to think how easily a Minister of Finance might have relieved the people without losing a sou; for any relaxation of the tax must, from these figures, have been accompanied by an increased consumption sufficient to make up the difference. In addition to which, there would have been a considerable saving in the cost of repression of smuggling; for cordons of troops had to be kept drawn round certain provinces, and about 4,000 salt smugglers were imprisoned or sent to the galleys every year. It seems, looking calmly back, as if the crisis of despair to which the poor were driven might so easily have been avoided! But probably injudicious taxation was rather an effect than a cause—a natural fruit of that overweening and selfish pride which seems to have betrayed the old French *noblesse* into looking upon the poorer classes of their own countrymen with a scorn generally reserved for a different and a conquered

race. Perhaps this is the true explanation, and the theory of the Gauls and Franks having remained distinct has reality as well as romance in it; but that speculation would lead us far away from salt. We English have had our tax on the article, and a stiff one too; it was imposed as a war-tax in the reign of William III., and taken off again in 1823. Its effect was to raise the price of salt from sixpence to twenty shillings the bushel, or fortyfold! If an article were not an absolute necessary, such a duty would surely be prohibitive.

Salt is an essential constituent of the blood, from which it is constantly drawn by the secretions—you know how briny tears are—and therefore it must be supplied. It is the only mineral food of man. To understand the necessity for it, we must turn to the experience of travellers who have taken long journeys through regions where it cannot be procured, and who are restricted all the while to a vegetable diet. For there is salt in all animal food, so that after a certain period of privation the freshest meat tastes strongly of it, and is exceedingly grateful in consequence. Explorers who have neglected to supply themselves with a sufficient stock of the mineral, speak of their yearning after it in terms which we should have fancied applicable to the want of water alone; and this is not merely due to the force of habit, for the natives show an equal appreciation of it, and the little children, in places where salt is rare, will eat it with the avidity which the boys and girls of other countries show with regard to sugar. All animals are likewise fond of it, and will lick a lump whenever they get the chance.

When we consider, in addition to this natural need of salt, how useful it is for the preservation of food which must be wasted without it; when we remember how dependent the poor especially are upon bacon and salted fish, we can form some estimate of the hardness, nay, of the positive cruelty of the laws which should tax it so highly as to create an artificial scarcity.

Salt is found in vast masses more or less pure amongst rocks of all geological ages, but principally in the New Red Sandstone. The subterraneous streams percolating through the strata where it lies become impregnated with it, and form the brine-springs from which the supply of salt has from earliest times been drawn; Droitwich in Worcestershire being noted for the supply of it so far back as the occupation of Britain by the Romans, though Cheshire is the county in which it is found in the greatest profusion, the make of salt in that county being eight times as large as that from Worcestershire.

The word *wich*, by-the-by, signified the house or place where the salt was made, hence the frequent recurrence of it in the termination of the names of places from which salt comes, as Nantwich, Northwich, Middlewich, &c.

In 1670, some persons trying for coal at Marbury, near Northwich, came upon the beds of rock-salt

from whence the brine-springs issued, and ever since it has been excavated in blocks, by mining and blasting, like any other mineral. In some places the rock-salt is found at great depths, in others near the surface—nay, it crops above it, for there is a hill of rock-salt some hundreds of feet high in Spain; and the island of Ormuz, in the Persian Gulf, is composed of it. The finest salt, however, is obtained from the brine-springs. The impregnated water is pumped up into a reservoir, and thence conveyed by pipes into the salt-pans—large, shallow, iron receptacles, arranged with flues underneath them, so that sufficient heat may be applied to cause the water to pass off in steam, leaving the salt deposited. The more rapid the evaporation, the finer the quality: so to produce table-salt the brine is caused actually to boil; while a temperature of a little over 100° is sufficient for the coarser kinds, which are used for the preservation of fish, and so forth, and are deposited in large crystals. When the water has evaporated, the salt is gathered out of the pans into vessels, where it is left awhile to drain, and then stored in apartments which are kept carefully dry. It is estimated that every pint of brine yields about six ounces of salt. Rock-salt cannot be sold in blocks as it is quarried; even the best is mixed with too much foreign substance for that. So it is first dissolved in water, when whatever matter is insoluble sinks to the bottom. The liquid is then strained off, and treated like the other brine.

For a long time English salt was considered inferior to foreign, but that is no longer the case, as any one who has helped himself—with the point of his knife—to the moist, coarse-grained, saltpetry stuff which is served at a Continental table-d'hôte, can well believe. A native of Cheshire, Mr. Lowndes, discovered how to improve the manufacture about 150 years ago, and was rewarded by Parliament for his pains. At the present time Cheshire and Worcestershire, besides supplying Great Britain, export largely, principally to the American continent and Russia.

The famous Salzburg district includes the Hallein, Hallstadt, Berchtesgaden, and other mines. The salt is a monopoly of the Austrian Government, and it brings in upwards of two million pounds sterling a year. A visitor to the Berchtesgaden mine, who wrote a paper on it in 1870, describes the manner in which the salt is obtained so clearly and concisely that I am tempted to quote his very words:—

“If pure rock-salt, or nearly so, it is merely quarried into blocks, and then conveyed to the entrance of the mine. If, however, it is imbedded in earth, clay, marl, or gypsum, the process is more curious and complicated. Galleries are first cut through the limestone rock to the soft beds of salt, where a small chamber is excavated. One set of pipes is then conveyed into this chamber from above, and another set from the chamber to the foot of the mountain. These are closed at the bottom by a valve, which can be opened at pleasure, and are in communication with other pipes or tanks.

When these preparations are complete, the water is turned on, and the chamber completely filled. The roof and sides gradually crumble and fall away, the salt dissolves in the water, and the earth and rubbish sink to the bottom. The chamber is kept constantly full; and when the water becomes sufficiently impregnated with salt, which usually happens after a lapse of from three to six weeks, the valves are opened, and the lower set of pipes brought into use. The floor is then levelled and hardened, and other preparations being complete, another inundation follows. Every chamber is again and again used, until from some cause, as the partition between two chambers becoming weak, the room is rendered unsafe or valueless.”

The brine, when drawn off, is treated as before described. Where briny springs or strata of rock-salt are not available, the substance is obtained from the sea. This process is very simple, consisting merely in collecting the water in shallow pits dug on shore, and leaving it to evaporate. When this has taken place, the salt deposited is carried away to sheds, and there piled in heaps, to get rid of the chloride of magnesium, which melts and runs off. The salt is then redissolved and crystallised. Salterns, as these sea-side manufactories were called, were common in England at one time; but when the duty on salt was repealed, the Cheshire folk were able to undersell them, and so they fell into disuse.

There is another way of obtaining salt from the sea, namely, by a freezing process, when, on the ice being removed, a very strong brine is left, from which the salt is obtained by boiling. But such salt is impure, containing chlorides of aluminum, of calcium, and of magnesium, and the use of it is therefore apt to give scorbutic diseases.

Besides its value as an article of food, and for the preservation of meat and fish, salt is an excellent manure, which is rather a curious fact, considering that it was a custom with particularly spiteful conquerors to raze cities, which they took at very great cost, to the ground, and then sow the earth with salt, to insure perpetual desolation. I do not know that the mineral is applied to many other purposes; there are people indeed who build their houses of rock-salt, but that is in very dry countries, like Arabia, where there is little fear of a sudden shower dissolving their homes.

Salt-mines are always objects of curiosity to strangers visiting their neighbourhood, since the glittering nature of the walls and roofing causes them to be capable of brilliant effects. The mines of Wieliczka, in Poland, must be well worth seeing, some of the chambers being 300 feet high. The salt-mine held in most estimation as a spectacle in England is the Old Marston, but the stranger may be disappointed unless he can manage so to time his visit as to hit off some public holiday, when the mine is properly illuminated, as it requires a considerable amount of lighting up to bring out the effects.

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