

The changing technology of post medieval sea salt production in England

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Sea water contains some 90 elements albeit mostly in minute proportions. Of the evaporite minerals derived from sea water, salt (sodium chloride) is by prevalent although some of the others achieved an increasing importance during the 18th century.

In Continental Europe, sea salt can be produced by the evaporation of sea water using solely the climatic sources of energy of wind and sun. In England this was not possible so other techniques were developed which are rarely found outside that country.

The earliest known method of coastal salting in England has been found from the late Bronze Age onwards and involved boiling seawater in crude clay dishes, supported by clay firebars. This technique continued through the Iron Age and into the Roman period. Brine began to be heated in wood-fired lead pans instead of primitive ceramic containers. How and when the new technology was introduced remains unknown although the technique possibly spread from southwest France. Almost universally around the English coast (except those northeastern areas near coalfields which only ever used seawater), brine was made by 'sleeching'; surface dry salt impregnated sand was scraped off the beach (or other littoral site), washed with fresh water to produce brine.

English commercial salt production had declined rapidly during the 14th century, for a number of different reasons; two of the major ones being the Black Death and the Hundred Years war. England became dependent on Continental salt suppliers until the French religious wars of the 1570s disrupted trade. (Hughes 1934 45) This stimulated the setting up of many new coastal saltworks in England, particularly on the East Coast, from the 1560s onwards *Post medieval technique*.

An almost totally new process developed on the South coast using coal-fired iron evaporation pans with brine obtained from the partial evaporation of seawater by wind and sun in large, shallow ponds. These changes were not coordinated or even concurrent; taking place gradually during the 17th century but were the result of conscious attempts to find an effective, efficient and economic method of salt making.

The Newcastle industry continued unchanged; boiling salt water with cheap small coal. The discovery of rock salt in Cheshire in 1670 led to the rapid extinction of sea salt production except in Hampshire and north east England. Other evaporites, such as the sulphates of sodium and magnesium, were recovered from the residual liquor (bittern) from the early 17th century making sea salt more profitable in the face of competition from the rock salt industry.

The coastal salt industry had died out commercially by around 1870 as Transport improvements and preferential coal prices enabled white salt made from rock salt to be supplied more cheaply.