

"Please do not touch." This earnest appeal saved me from future annoyances, and my observations were continued unbroken forthwith.

I was now compelled to take a journey, and, unwilling to leave the spider behind, packed her away, shut up in her crystal prison, and after five days' close confinement she seemed to suffer nothing for want of fresh air.

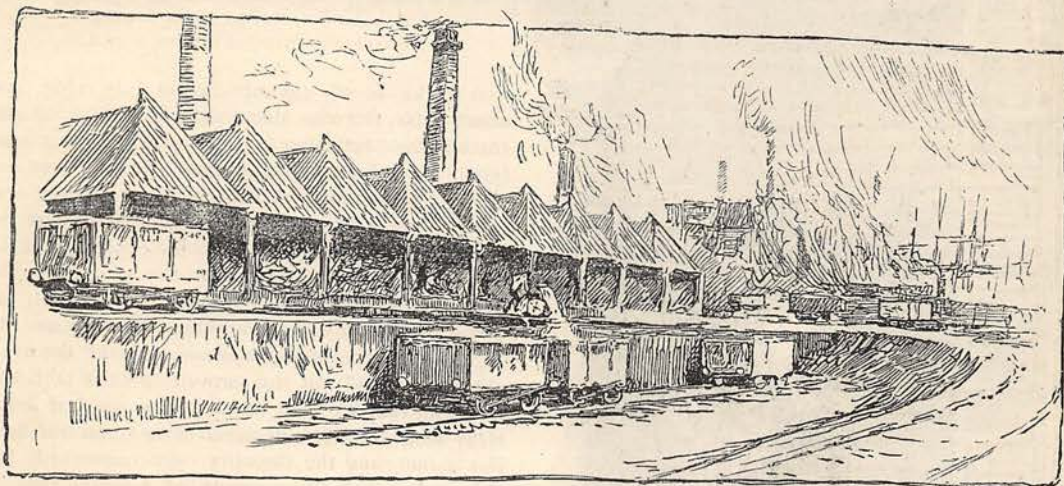
I had now more leisure and better opportunities for feeding the captive; the sun being warmer brought forth an abundance of flies. I have seen her kill as many as eight large flies in an afternoon, and have come to the conclusion that, like many beasts and birds of prey, even when satisfied with food the spider is not satiated with slaughter. Dead flies were as welcome to her as live ones, though she did not (so far as my observations went) care to feed a second time on long-dead flies so long as live ones were supplied to her. She would invariably kill, but not eat, other spiders; and owing to their agility it was often a long task to catch them.

One day she remained suspended half-way up the web at a part which was very thick, and no inducements I could offer, not even the introduction of fat, tempting flies, could remove her from that spot. For hours she remained motionless, and I feared she must

be dying. Presently, however, she appeared very energetic, and tapping with the hinder part of her body the surface of the web, was evidently engaged in a work of importance. She moved about, working as in a circle; and looking closely I saw the part of the web on which she was working with her spinnerets gradually assume a flocky appearance. She worked unceasingly for about an hour, and when a sufficient quantity of fresh web had been spread on this patch, rested for a few minutes. I afterwards found on this patch a cluster of eggs, which adhered firmly to the fresh web, and which the spider at once proceeded to cover up with more web, crossing and recrossing the threads in a most scientific manner. This heavy task over, the spider killed her prey and lived as before. At intervals, a second and third bag of eggs were deposited on other parts of the web in exactly the same manner.

The spider now undertook the return journey with me, being, as before, for five days without air or food. The first batch of young spiders appeared after an incubation period of about seven weeks. Returned to London, my supply of flies considerably diminished, and, soon after the young spiders began to crawl about, the mother died, having lived with me for upwards of three months.

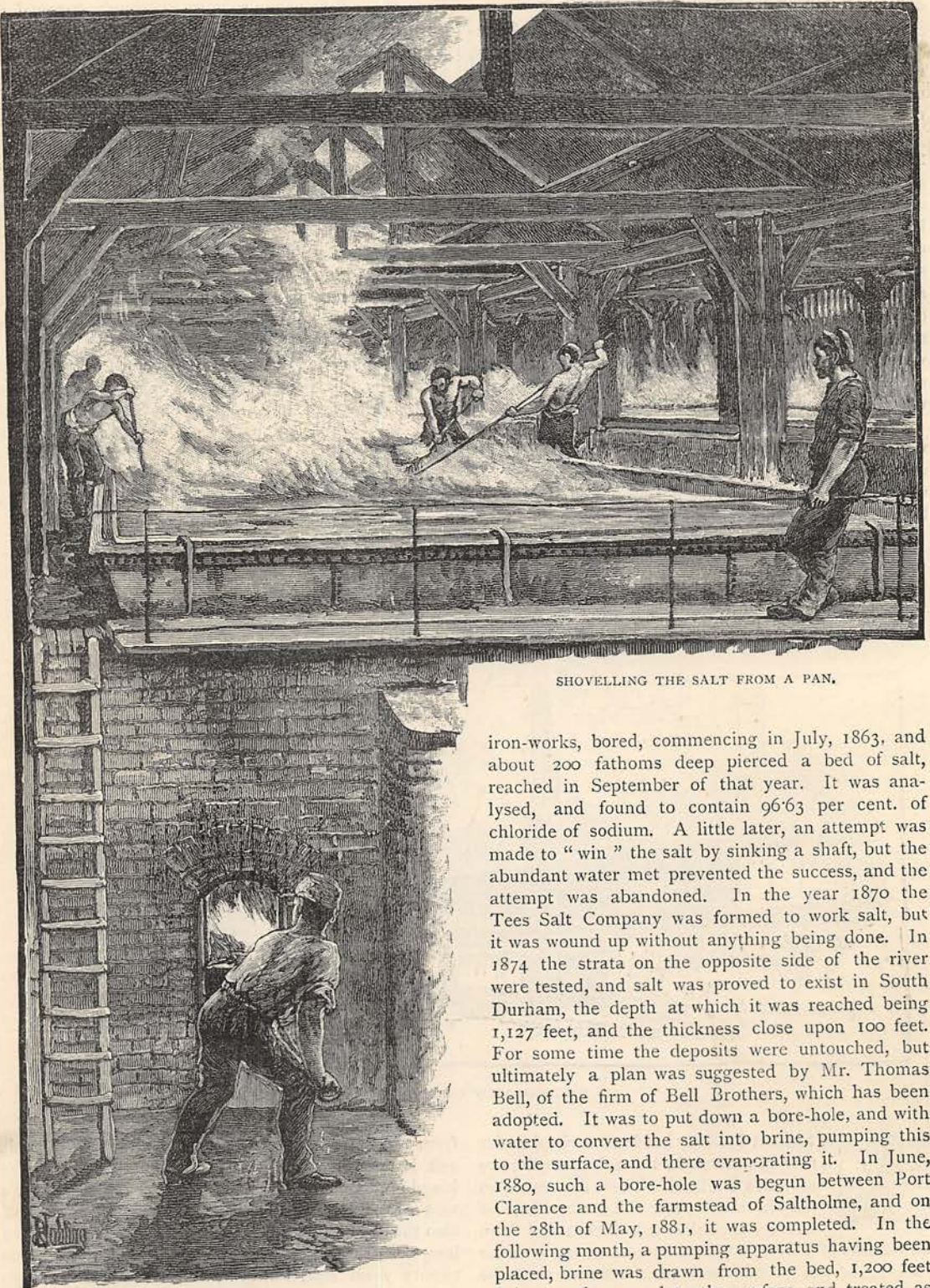
SALT-MAKING IN SOUTH DURHAM.



GENERAL VIEW OF THE WORKS.

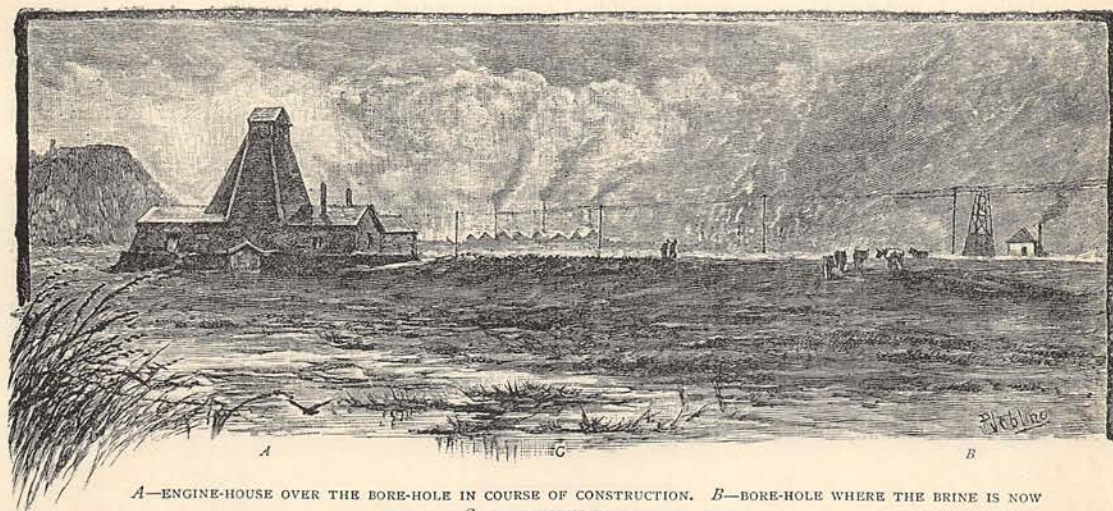
AN ancient industry has been revived under new conditions in the salt manufacture of South Durham. There are traces on the shore and near the little village of Greatham of older salt works; and there are records of olden payments in connection with the working of salt at that and other villages near the present town of West Hartlepool. Indeed, seaward along the coast of Durham salt was largely extracted

from sea-water and brine-springs, and South Shields salt is described as "the most celebrated salt in the kingdom." But the production of salt ceased, Cheshire's vast supplies not only meeting household needs, but also those of the great chemical industries that have long been carried on in the county of Durham. Some twenty years ago, however, salt was discovered on the south bank of the river Tees. Messrs. Bolckow and Vaughan, in search of pure water for their great



SHOVELLING THE SALT FROM A PAN.

iron-works, bored, commencing in July, 1863, and about 200 fathoms deep pierced a bed of salt, reached in September of that year. It was analysed, and found to contain 96.63 per cent. of chloride of sodium. A little later, an attempt was made to "win" the salt by sinking a shaft, but the abundant water met prevented the success, and the attempt was abandoned. In the year 1870 the Tees Salt Company was formed to work salt, but it was wound up without anything being done. In 1874 the strata on the opposite side of the river were tested, and salt was proved to exist in South Durham, the depth at which it was reached being 1,127 feet, and the thickness close upon 100 feet. For some time the deposits were untouched, but ultimately a plan was suggested by Mr. Thomas Bell, of the firm of Bell Brothers, which has been adopted. It was to put down a bore-hole, and with water to convert the salt into brine, pumping this to the surface, and there evaporating it. In June, 1880, such a bore-hole was begun between Port Clarence and the farmstead of Saltholme, and on the 28th of May, 1881, it was completed. In the following month, a pumping apparatus having been placed, brine was drawn from the bed, 1,200 feet below, and pumped to the surface, and treated as



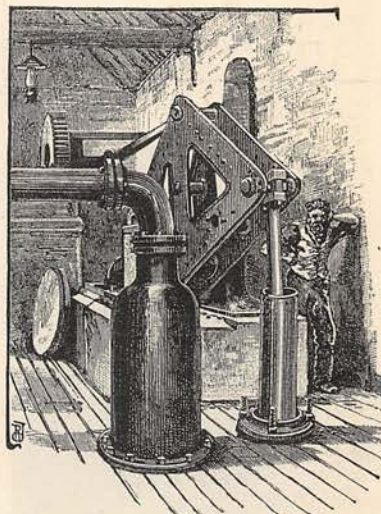
A—ENGINE-HOUSE OVER THE BORE-HOLE IN COURSE OF CONSTRUCTION. B—BORE-HOLE WHERE THE BRINE IS NOW PUMPED. C—SALT-WORKS IN THE DISTANCE.

we shall shortly describe. The diameter of the bore-hole is sixteen inches. There is a second tube within the outer one, and whilst the outer one is at the bottom pierced with holes, the inner is open at the lower part. Down the annulus formed by the two tubes water is poured, which becomes saturated with the salt pierced by the two tubes, and it rises in the internal tube, whilst when the force of the difference in gravity between brine and water has expended itself, the pump comes into play, and raises it the rest of the great distance.

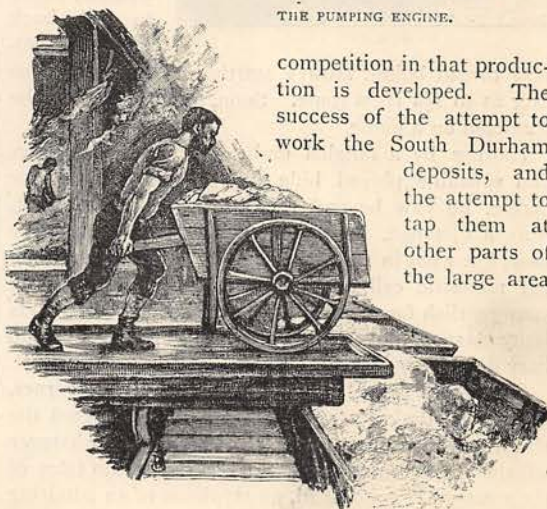
Thus brought as brine to the surface, it runs in a conduit to a reservoir large enough to hold half a million gallons, and from this it is pumped to the evaporating pans as needed. These pans are similar in form to those in Cheshire, some 65 feet long, by 25 feet wide, and 18 inches deep, and each will produce nearly 40 tons of salt weekly. Part of these are heated by coal fires in the usual way, and the remainder are heated by waste gases from blast furnaces near to the salt-pans. The evaporation of the salt in these pans by heat is in the method that is well known; crystals of salt are formed, and after a few hours the greater part of the water is evaporated; after the slackening of the fires, the salt is drawn to the sides with rakes, and filled into wicker baskets to drain the brine moisture from it, whilst the process is completed by drying in stoves. The degree of heat applied to the salt-pans determines the quality of the product, according to its intended use, and the coarseness or fineness of its grains.

Up to the time of writing, the production of brine for salt in South Durham has been from one bore-hole only, but two others are being put down. The brine so raised has been sufficient for the production of from 300 to 400 tons of salt per week, and it has been sent entirely to the chemical factories on the Durham side of the Tyne. These decompose very large quantities of salt in the manufacture of soda crystals, and that has up to a few months ago been almost

exclusively brought from the Cheshire salt-works at a considerable cost for carriage. By the use of the salt produced in the same county there is a slight saving now, which is expected to be very much increased as the production is enlarged, and



THE PUMPING ENGINE.



LOADING THE TRUCKS WITH THE SALT.

competition is developed. The success of the attempt to work the South Durham deposits, and the attempt to tap them at other parts of the large area

they are believed to underlie, has given rise to great interest. It is estimated that 200,000 tons of this salt are in each acre over which the deposits extend, and hence the effect of the utilisation on the salt trade will be great. It is possible also that there may be other results; in the chemical trade the production of soda was effected, down to a recent period, by the Leblanc process, in which salt was used; now it is also produced by the Solway, or "ammonia," process, which demands the use of brine, but which is a very economical mode of manufacture.

The absence of brine in the Tyne chemical trade prevented the adoption of the newer process, but the discovery of the South Durham salt, and its utilisation in the form of brine, may lead to the erection of chemical works of magnitude in the early future in South Durham, and an export trade of

some magnitude is also possible. There is abundance of facility for the cheap export of the salt from South Durham, and, as a large portion of our salt is sent eastwards, it is probable that there may be a growth in the export trade, with the utilisation of cheaper supplies.

But, mainly, that utilisation will tend to the development of chemical works in the south-east of Durham. That district is treeless, and eminently fitted for such a purpose—its vegetation being scanty and its value for agricultural purposes limited. With cheap fuel near, and with abundant facilities for use, the brine that will be made from the salt may build up new and great industries in the county of coal. That county has known a wonderful development from its coal, and other mineral treasures may add thereto.

IWA'S FIRST DAY-DREAM.

BY THE AUTHOR OF "WHO IS SYLVIA?" "WHY THOSE SKETCHES WERE UNFINISHED," ETC.



ALONG the steep tree-clad bank of a winding West-country stream a young man climbed, one bright blazing June afternoon.

Entirely bewildered as to his whereabouts, now he stopped to peer up the unexplored heights, now to look back upon the sil-

very thread below, always starting afresh, puzzled as ever as to his right route. Soon, by good fortune, he stumbled on a guide.

Halting by a tangled underwood, where shadows and sunshine played hide and seek in the summer breeze, he saw beyond the moving branches what, from a distance, he had mistaken for a bit of grey crag, but what in truth was the decaying wall of some old monastic cell, and, leaning lightly against it, a young girlish form, a book neglected at her feet, hands lazily clasped, and dark eyes dreamily gazing into the hazy distance.

The south wind, stealing round an ivied corner, ruffled the dark feathers of her hat, and stirred the short, curling, chestnut hair below; but whatever whispers it bore upon its wings, it carried no tales of the stranger close at hand, no suspicion of an admiring watcher intruding on that happy solitude. The "I beg your pardon, but may I ask if I'm on the right

way to Mr. Hurst's of Perristone?" that presently broke the stillness, was as startling as a thunderclap from an unclouded sky, and a vivid blush rose on the young face that turned towards the inquirer with the answer—

"You are right, if you wish to walk round by the bridge."

"But I think I was told to take a nearer way," said the new-comer, pushing forward through a miniature forest of bracken and oak saplings, and disclosing, under the broad-brimmed hat he raised, sun-burnt features, young and good-looking. "I was to find Mr. Hurst's boat, ferry myself over if it was on this side, or shout for it if it was opposite. I've kept watch for the boat all along, but failed to find it. Can you kindly direct me to it?"

A glance, half shy, half amused, came with the response to this.

"I am afraid the boat is nowhere near. Some of them from the house are fishing from it, I believe."

"Unlucky! And the bridge——?"

"Will take you four miles round: the river winds so."

Now the day was delicious for doing nothing, and doing that at one's leisure, but the very idea of a four-mile trudge under a three o'clock sun was exhausting. The young man hesitated, casting longing eyes at a mossy seat near by in a cool, shady angle. His young guide had much ado to keep from laughing, and a pair of fascinating dimples began to hover about her cheeks.

"Is there no other way to get over?" said he, distinctly disinclined to go.

"None at all," said she, with a shake of the head.

"Then I have no choice. Thank you very much for directing me;" and adding something to his farewell of being forced to get on to Perristone, the stranger turned to begin his long walk.