

EFFECT OF SALT IN WATER.

It is well known that a salt dissolved in water raises its boiling point. A saturated solution of common salt boils under atmospheric pressure at between 227° and 228° Fahrenheit, instead of 212° as fresh water would have done. It was now an open question what the temperature of the steam or vapor which comes off from this brine will be. Some authorities claim that being in all respects like the steam from fresh water it will have the temperature of common steam at the atmospheric pressure, i. e., 212°, while others claim that the steam will be at the temperature of the boiling brine, and hence superheated or above the temperature due to its pressure.

It is obvious that at the instant of formation the steam must be at the temperature at which the solution boils. The increased cohesion of the molecules of water due to the solution of salt, requires more heating to separate them and the temperature, at which their cohesion is overcome, and they take the form of steam, is raised. Starting with the temperature of the solution, 228°, the bubbles of steam pass up through the hot brine, certainly losing none of their heat, for the brine is at their own temperature, and are freed at its surface. Now when these bubbles of steam appear at the surface of the solution from which they are generated, and fill the steam space of the vessel in which it is contained as fresh steam of atmospheric pressure, what becomes of the extra heat which it contains? A portion of it will be rendered latent in the evaporation of entrained water in the steam, a portion will be radiated from the walls of the vessel, but the steam will show a temperature considerably above 212 degrees, i. e., it will be a considerable degree superheated.

A Florence flask holding a litre was filled with a saturated solution of common salt. By the application of heat the temperature was raised to nearly 258°, when violent solution took place, and a thermometer whose bulb was immersed in the brine became stationary. The long neck of the flask was by a cork having two holes, one for the thermometer and the other of a size sufficient to allow the steam to escape freely. This neck and that portion of the flask above the water line were therefore full of steam at the pressure of the atmosphere, and by drawing the thermometer out of the brine and allowing it to remain in the steam the diminution or increase of temperature could be noted. In every instance in which this was done the temperature fell from nearly 223° in the brine to 221° in the steam, no noticeable variation in the figure occurring with the change of position of the bulb in the neck between the lowest point which the water could not boil upon it, and the highest position to which it could be raised in the neck.—*Boston Journal of Commerce.*

SOME REMARKABLE TREES.

In Madagascar is to be found a tree called the traveller's tree, yielding a copious supply of fresh water from its leaves. As it will thrive in any arid country where planted, its benefits to the traveller are great.

In Venezuela there is the cow tree, which grows on otherwise barren rocks. Its leaves are feathery and crisp, but by making incisions in the trunk a peculiar greyish milk comes out, which is tolerably thick and of an agreeable balmy smell. The natives gather around these trees at sunrise and bring large bowls with them to receive the milk, for towards mid-day the heat of the sun turns the milk sour. The sight of cow trees puzzles the innocent traveller, who cannot account for the trunk being plugged up all over with bungs and short sticks. The natives also use the milk as a gum.

The butter tree was first discovered by European travellers in the centre of Africa; from the kernel of the fruit is produced a nice butter, "which," says Livingstone, "will keep a year." On a par with this is the Manna tree, found in Calabria and Sicily. In August, when it is the custom to tap the tree, a sap flows out. It is then left to harden by evaporation, after which the manna, of a sweet but somewhat sickly taste to any but those accustomed to it, may be gathered. In Malabar there is the tallow tree. From the seeds of

this, when boiled, is produced a firm tallow, which makes excellent candles. The guava tree of the Indies bears a fruit giving large quantities of a rich and delicious jelly.

But the most remarkable tree yet discovered flourishes on the island of Fierro, one of the largest of the Canary group. The island is so dry that not even a rivulet is to be found, yet there is a species of tree the leaves of which are narrow and long and continue green throughout the year. There is also a constant cloud surrounding the tree, which is condensed and falling in drops keeps the cutters placed under them constantly full. In this manner the natives of Fierro obtain water, and as the supply is limited the population must of necessity be limited too.

In Japan and some islands in the Pacific there is the camphor tree. The camphor forms in the trunk of the tree in concrete lumps, and some pieces have been found as thick as a man's arm.

The sorrowful tree is found only in the island of Goa, near Bombay, and is so called because from morning until the time of sunset no flowers are to be seen, but soon after it is covered with them. As the sun rises the petals close or fall off. Stranger still, the flowers blossom at night all the year round and give out a most fragrant odor.

There is another curious tree in Jamaica known as the life tree, on account of its leaves growing even after severed from the plant. Only by fire can you entirely destroy it.—*Lumber World.*

LINDSAY.

A LONG RUN.—About the 15th of April Mr. J. Coburn, well known as the oldest foreman in timber circles in this district, expects to leave with a force of seventy men, to bring down logs and timber for Rathbun & Co., Deseronto. The logs come from Deer Lake into Crow river, thence to Crow Bay, on the Trent river near Campbellford; and thence to Bay of Quinte at Trenton. The timber passes through Haliburton, Peterborough, Hastings, Northumberland and again Hastings, to Bay Quinte—a long run.

FACTORIES AND WORKSHOPS.—We have been "looking around" to see what factories in addition to those already here would pay in Lindsay. Our people should not look forward to gigantic industries in many departments similar to Sylvester Bros' works; but there seems ample room in the fertile belt that lies between Lakes Simcoe on the west and Pigeon on the east and the "Pine Ridge" on the south and Nipissing district on the north to guarantee the support of other moderately large factories. Tin lined butter tubs, cheese boxes, woodenware, sewing machines, felt and leather boots and shoes, buttons, besides a dozen and one other industries might readily command an unlimited market at home. Let some of Lindsay's citizens with latent wealth invest their surplus capital and thus improve their own and their town's future. Efforts should also be made to induce the Grand Trunk to increase their workshops here. As a rule railway men are good citizens and add wealth to a town.—*Warder.*

MR. RALPH MAXWELL has completed his winter's bush work, broken camp and is now at the Cataract House. He has got out upwards of 75,000 feet of fine board timber for his father, Mr. F. P. Maxwell, of Toronto. It has been hauled onto the ice on Pickerel Lake and boomed, ready for the break-up. This fine lot of timber will be floated to Burk's Falls and shipped to Collin's Bay, near Kingston, via the Northern and Pacific Junction to Toronto, and by rafting to Collins Bay. If the railway is not ready to receive and carry freight in time, the timber will go the old route via the Maganettawan river to Byng Inlet, where it will be barged and taken through the Georgian Bay, Lake Huron, the St. Clair river, Lake St. Clair, Detroit river, Lake Erie, thence through the Welland canal, Lake Ontario to Collins Bay. Mr. John Wagner, Mr. Maxwell's clerk, says the winter has been a favorable one for the bush and that the timber they have taken out is of a very fine quality.—*Burk's Falls Arrow.*

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