

## ICE MOUNTAINS AND CAVERNS.

The ice mountains in Virginia, described by Mr. Hayden in vol. 45 of the American Journal of Science, is an instance of the fact of ice being preserved under the surface. An immense mass of debris, the stones varying in size from a few inches to many feet, rises several hundred feet against a rocky wall. The interstices are filled with ice, which is preserved there in the summer as in a vast refrigerator.

An ice mountain also exists at Wal-linford, Vt., where a wall of quartz rock has a space of more than thirty acres at its base covered with loose fragments, and ice occurs in a ravine in which these fragments have been cast. Ice also is constantly found in the elevated ravines of the Catskill and White Mountains.

The ice caverns of Europe and Asia also present phenomena allied to these frozen strata discovered in wells. Prof. Pictet, of Geneva, describes in the Edinburgh Philosophical Journal in 1823, four of the grottoes examined in the Alps and the Jura. Each of these had upon the bottom a surface of about 3,000 feet of ice, of the thickness of a foot.

When this was quarried during the summer, it constantly renewed itself by freezing. Strong currents of cold air constantly issued from these caverns, and the strength of the current seemed to increase with the heat of summer. Water was found in them all, and the air was loaded with vapor. The freezing in these caverns is explained by the descent of currents of air into the caverns in summer, and their escaping at the bottom. These currents in their descent part with their heat, and acquire the temperature of the surrounding rocks, and if these be covered with moisture, the evaporation diminishes the temperature. In winter the currents ascend, and the evaporation being less, the cold is not so intense. Sir J. Murchison, in his Geology of Russia, has described some frozen caverns existing at Orenburg and Indurak, on the Siberian side of the Ural Mountains.

These are also the ice caverns described by Professor Pictet, excepting that the freezing, for the most part, takes place in summer, while in winter the ice thaws.

There is an old mine at Port Henry, on the west side of Lake Champlain, in which ice is found at a depth of from 30 to 100 feet during the summer, and a current of cold air issues from the opening. Ice is also found in a cavern in a hill about two miles north of Brandon village. — Aaron Lloyd, in *Hours at Home* for February.

## BEEF PACKING IN TEXAS.

Curiosity and a desire to pick up an item induced me to visit the new beef preserving establishment being constructed under the supervision of Mr. J. H. Richardson. The machinery was all new, and it was not expected that it would perform in all respects perfectly at first starting off; but there was nothing, save a deficiency in the pump, to retard operations, and that was speedily removed. The beef, after being killed, skinned, and the entrails taken out, is taken from the slaughter-house to the dissecting room (as I shall call it), where the flesh is taken from the bones. It is then placed in a retort or refrigerator; by the use of an air pump and some other process, the impure gases are removed from the meat, which is then strung upon wires, similar to the Western plan of "jerking" beef, and placed in a large oven and roasted by heated air. This is done by admirably contrived machinery. It is then taken down to the bottom of the oven and taken out, while the fresh meat is placed in at the top, the killing still going on. When the meat is taken from the oven it is placed in a hopper and ground up like sausage meat; it is then canned and placed for several hours in a tank filled with hot water; then it is hermetically sealed, and is ready for shipment. The whole system seems to be a decided success, and is destined to effect an entire revolution in the cattle trade of Texas. The meat, though cooked and ready for table use, can be kept for any length of time, and in any climate, and retains all the rich juices and fresh flavor of the newly-killed meat. — *Galveston Citizen*.

CULTIVATING FOREST TREES.—The editor of the *Colusa Sun* tells the following:

"In 1853 we dug a well on the 'Reserve' just above town, in which there was so much quicksand that it soon caved in, and in 1855 it had nearly filled up. Protected by its banks a cottonwood tree sprang up in it in 1855, and has continued to flourish until about a fortnight ago, when it fell a victim to the ruthless axe. It was nicely cut up into cord-wood, and yesterday we went up to look at the pile of wood, which we measured as well as we could, and found that the tree had made about seven cords of wood this is about half a cord of wood a year from the seed. If the farmers out on the plains would make it a rule to plant, say ten trees each Spring around in the sloughs and on other waste land, it would be only a few years until they would have plenty of wood for home consumption. The cost of this would be absolutely nothing."

## A NEW METHOD OF PRESERVING MEAT.—An English gentleman, Dr. Richard Jones, has invented a new method of preserving meat, which appears likely to prove very successful. The process is conducted as follows:

A powerful air-pump, capable of producing the Torricellian vacuum is used. The raw meat, without any preparation, is placed in air-tight tin vessels, which are connected with the vacuum chamber by means of small tubes. The tins are heated to a temperature of 212° Fahrenheit, by being immersed in pans of boiling water. The pump being set to work, the air is withdrawn from the tin, the process being aided by the heat from the boiling water. In a short time the atmospheric air is perfectly removed from the vessels, and the tins are sealed up. The latter operation is readily accomplished by compressing the tube leading from the tin to the vacuum chamber by means of a long handled pair of pliers, which are grasped with one hand, while the other hand of the operator is employed in soldering the broken part of the tube, thereby separating its connection with the air-pump. Specimens of meat preserved by the process have recently been examined by a committee of gentlemen in London, and have been pronounced by them to be excellent in every respect. — *Sacramento Union*, Feb. 29.

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