Mechanics and General Science.

ICE-HOUSE.

A respectable correspondent having requested information through our journal, as to the best mode of constructing an "Ice-House," we select the following from a standard American authority. We give the article entire, as the information it contains will prove useful to our readers generally. It will be seen that the *Winter* is not the time to make an Ice-House; like many other undertakings, it should be thought of beforehand.

A house or vault for the preservation of ice in summer, should not be regarded as merely administering to purposes of luxury, since ice contributes so much to the convenience, comfort, and even health, as to make it almost an indispensable article of domestic economy. The effects of the excessive heat which commonly prevails in the summers of the United States, are greatly obviated by the use of ice, which not only serves for the preservation of fresh meats, butter, &c.; but, in addition to these advantages, and its grateful employment for assuaging common thirst, it is a powerful agent in tranquillizing the irritability of the stomach in bilious fevers and dysenteries, and relieving the pain and burning heat often attendant upon inflammations and fevers. Thus, by soothing the stomach, and removing excessive heat, iced drinks and applications restore the deranged functions of the nervous and muscular systems of the sick, whilst they refresh and invigorate persons in health, so as to render them capable of enduring exercise and exertion even under circumstances calculated to produce great oppression and inconvenience.

An interesting writer has left the following testimony in favour of ice, as a restorative and remedy in fevers, which has been abundantly corroborated by subsequent experience. "I never," says he, "was in better spirits than here in this hot country (Sicily). I believe the quantities of ice we eat, in ices, contribute to it; for I find, in a very violent heat there is no such cordial to the spirits as ice, or a draught of iced water. Its cold braces the stomach, and gives a new tone to the fibres. I knew an English lady, at Nice, soon cured of a threatening consumption, by a free indulgence in the use of ices. It is the common practice here, Sicily, to give quantities of iced-water to drink in inflammatory fevers." (*Brydone.*)

"The custom in Sicily and Italy," says another author, "of taking ice, is considered as a powerful remedy in many diseases. The physicians of these countries do not give many medicines; but frequently prescribe a severe regimen; and prevent the baneful effects of various diseases, by suffering the sick, for several days, to take nothing but water cooled by ice, sweet oranges, and iced fruits." (*Stolberg.*

One of the greatest advantages afforded by ice houses, is that of enabling families to preserve their butter, meat, fish, poultry, game, &c., in states of the weather which would otherwise induce them to spoil. In no part of the world are ice-houses more essential to comfort, convenience, and health, than in the United States, and in all the northern and Middle States the winters are sufficiently cold to furnish ice of sufficient thickness to lay by for preservation. The cities of the Southern States are now regularly supplied with thick blocks of ice from New England, which not only afford a regular article of export to the West Indies, but also to Calcutta!

Considering the small expense and trouble at which ice-houses or vaults may be constructed, and the many advantages to be derived from them, it is surprising that any respectable country establishment should be without one.

It is considered, that the simplest, and most scientific form for an ice-house, is a double cone, that is to say, two cones joined base to base, the one sunk into the earth with its point downwards, into which the ice is rammed, the other being a conical roof, generally of wood-work, covered with thatch, and pointed at top. The entrance should be placed always on the north side, and provided with two doors some distance apart, and the spot screened from the sun by trees, shrubbery, a hill, cliff, or other barrier. The lower part may be dug about 16 feet in diameter, terminating below like the point of a sugar-loaf. Its ordinary depth, for a moderate family, may be about 24 feet. The larger the dimensions, the longer will it preserve the ice, provided it be filled. In digging, the workmen should slope the ground progressively towards the axis of the cone, to prevent the earth falling in. This conical slope should be faced with brick or stone work about one foot thick, and jointed with Roman cement, so as to be air and water tight. A well is to be excavated at the bottom, two feet wide and four deep, covered at top with an iron grating for supporting the ice, and letting the water drain away.

The upper cone may likewise be built of brick work, and covered with thatch; such a roof would prove the most durable. Whatever kind of roof be preferred, there must be left in it an oblong passage into the interior. This porch should face the north, and be at least 8 feet long by 2½ feet wide; and perfectly closed by a well-fitted door at each end. All round the bottom of this conical cover, a gutter should be placed to carry off the rain to a distance from the ice-house, and prevent the circumjacent ground from getting soaked with moisture,

The ice-house should have no window to admit light; but be, so to speak, hermetically sealed in every point, except at its cess-pool, which may terminate in a water-trap to prevent circulation of air,

A clear day should be selected for charging the ice-house; but before beginning to fill, a quantity of long dry straw should be laid on the bottom crosswise; and as the ice is progressively introduced, straw is to be spread against the conical sides, to prevent the ice from coming in contact with the brick or stone work. The more firmly compacted the ice is, the better does it keep. No layers of straw should be stratified among the ice, for they would make its body porous. Some persons recommend to pour in a little water with the successive layers of ice, in order to fill up its small crevices and convert the whole into one solid mass.

Over the top-layer a thick bed of straw should be spread, which is to be covered with boards surmounted with heavy stones, to close up the interstices in the straw. The inner and outer doors should never