

Building and Filling Ice Houses.

We are frequently asked how to build and fill an ice house. In referring to works on the subject we find nearly all of the instructions and recommendations therein too cumbersome, often requiring much expense to carry out. An ice house to be serviceable to farmers must be cheaply constructed, and at the same time serviceable. Many farmers consider an ice house a luxury only attainable by the wealthy, when in reality it is a requisite on every farm—a building which will be found profitable. The best returns cannot be obtained from the milk without the aid of ice. A refrigerator when once used in the family will be found valuable in many ways—a real economy as well as a luxury.

Messrs. Moseley & Pritchard, Clinton, Iowa, U. S., manufacturers of creamers and butter-making specialties, have for some time been collecting data concerning the building of ice houses and the keeping of ice. They have kindly forwarded us the following articles, which are valuable because they are the experience of practical persons, and cannot fail to be of service to our readers:—

PUTTING UP ICE.

The editor of the New England Farmer writes as follows:

"Ice is almost indispensable to the dairyman for bringing his milk and cream to and keeping them at the proper temperature. Aside from its use in the dairy ice is a luxury which well repays all the cost of putting it up, and the wonder is that so few farmers lay in a liberal stock. Ice can be kept by the simplest kind of a structure. The essential conditions are that it shall be closely packed in a mass, that there shall be no air spaces at the bottom, that it shall be surrounded, (packed in) by a good non-conducting material in sufficient quantity, that it shall have a tight roof to exclude rain, and ventilation is provided. A cheap board building with the cracks battened answers about as well as a costly structure with double walls filled in. The keeping of the ice does not depend so much upon the walls of the building as upon the kind and amount of material with which it is packed. Saw dust or dry tan bark furnish the best packing materials. But these in many localities are difficult to obtain. Next to these dry cut straw or chaff is probably the best, and almost any farm can furnish the straw. Cut straw is better than whole, because it packs closer and makes a better non-conductor, though whole straw is often successfully used. In the latter case the space for filling between the pile of ice and the walls of the building needs to be wider than if cut straw were used. In case cut straw is used we would leave a space of sixteen inches for filling, but with whole straw, of two feet. The sills of the building should rest on the ground, or on a wall built for them, allowing no air to enter underneath. We would lay tile a foot below the surface inside, with its outlet some distance away, to keep the bottom dry, but the tile should not open into the building to admit air. A foundation of at least a foot deep of the packing material, saw dust, tan bark or straw, should be laid over the bottom, on which to build the pile of ice, and the blocks should be cut as nearly as possible of uniform size so as to pack closely, and it is well to go over each layer as it is put in and fill all cracks with pounded ice so as to make the pile as nearly solid as possible. When the pile is finished, or as it progresses, the filling between it and the sides of the building should be made and tramped down as solidly as possible, and a covering of at least two feet in depth be made over all. Ventilation should be provided for by openings in the gables or a ventilating shaft going up through the roof to permit the escape of the moist air which gathers above the ice. The door should be for convenience made in two sections, an upper and lower, with boards laid across on the inside of the frame holding the packing material in place.

The proper size depends upon the amount of ice that will be required. Ice will measure about forty cubic feet to the ton, and ten tons would be a liberal supply for family use. This would be equivalent to a pile 8 feet long, 8 feet wide and 6½ feet high. If we allow two feet on all sides for packing space, the building to hold this amount in the form above given would need to be 12x12 feet with nine foot posts. A door in the gable would be needed for putting in the top layers and taking out ice early in the season. As cheap and good a way for a cheap building would be to set posts in the ground three on a side (except the end where the doors are) with 2x4 for plate and middle and bottom girds, and board up and down and batten, banking up at the bottom to exclude air. The roof should project considerably on all sides so as to shade the sides, and if it could be built under shade of trees it would be all the better. When expense is no object, and a permanent structure is desired, a brick or stone foundation should be put in on which to lay the sills, which should be bedded in mortar, and double walls can be made by using 2x8 or 2x12 for studding, and filling the space between the outside and inside boarding. Ice should be cut and put up only in freezing weather. If cut and handled when the temperature is above freezing, the blocks splinter and crack, and its keeping qualities are considerably injured."

A CHEAP, EASILY CONSTRUCTED ICE HOUSE.

Chas. P. Jackson writes:—

"Ice in summer is both a luxury and a necessity, and the ice crop is one that many farmers allow to go to waste.

Use 2x6 sills and plates, with 12 foot posts, with three courses 2x4 ribbing all around three feet apart, put in edgewise. Ceil with culls put on vertically, and make it a point to always get out of lumber when you get to the eaves, so the gable end will be sure to be left open. Fill up the ground inside a little higher than the outside, then put down any old chunks of rails or joist, a little distance apart, and cover between and over with a foot of saw dust, or its equivalent in straw or fine hay. Put your ice sixteen inches away from the wall, and fill between the ice and wall with saw dust or its equivalent in straw or fine hay, as you fill with ice. Break joints over each course of ice when filling. When filled, cover with six to seven inches of saw dust or its equivalent and then get out of saw dust. You don't want ten or twelve inches of saw dust on top of the ice. There is a latent heat in ice, and if too much covering on top the heat will not be able to pass up through it and will turn back and honeycomb the ice. With a covering of twelve inches of saw dust, in every case an examination will show heat during the hot months by digging down a few inches.

Never put water on your ice as you fill your ice house if you expect to remove the cakes of ice as put in. In cold storage houses it is often the case that water is used to solidify the mass. In such cases use hot water with a sprinkler, as the moment hot water comes in contact with the ice it congeals. Use cold water and it will run and spread, and if the ice is put in contact with the walls the chances are that in freezing it will spread the building. A ventilator in the roof is not necessary with both gables open."

STORING ICE OUTDOORS.

A writer in the Connecticut Farmer says:—"Some years ago it occurred to me to stack a little ice outdoors to save the trouble of taking it from the ice house. The stack was made on the north side of a building. In the expectation that warm weather would quickly melt it, but little was put up. It kept surprisingly, and thereafter large quantities were stacked yearly, until for several years past the out-of-doors stack has furnished ice for creamery and household until about September 1. There being a scarcity of ice this year, I had to use an inferior quality four to five inches thick. The stack was about thirty feet square and four feet high. It has furnished ice to cool about 300 quarts of milk per day, in creamery, besides refrigerator in house. My method is to spread a few inches of shavings on the ground for the ice to rest on, stack the ice and cover with shavings to a depth of about a foot. I have found a low

stack best, as there seems to be comparatively little melted from top or bottom; but if an opening through the side covering lets the air in it will cut away very fast, and the higher the stack the more difficulty in keeping the sides covered. I have used the same shavings year after year. I doubt whether it is important to have the stack in the shade; the shavings getting moisture from rain and from the ice, the evaporation keeps down the temperature."

STORING SNOW.

Mrs. M. H. Lewis, Waseca Co., Minn., writes:—"Last winter we had a new experience in putting up ice which, perhaps, will be of interest. The ice crop was short, and when our supply was about half stored, the gripe came among us, and by the time it went away the weather was not suitable for making ice. This gave Mr. L. a chance to work out a theory which he had in mind for years, namely: he took drifted snow and put in the ice house, packing each load and wetting it with water from the well, finishing up each night with all the water the snow would take. When full and frozen it was covered with sawdust, the same as ice. The house is not a perfect one by any means, still the snow lasted until used up, which was on the 20th day of September. The verdict is, that snow is preferred to hauling ice far."

NOT EXPENSIVE.

No expensive structure is needed for an ice house, though where it is an object to have no wasting away, it should be made tighter than where this does not matter so much. Slabs from the saw-mill do very nicely for the roof, and the sides may also be of rough boards. Where desired, the ice house may be one corner of the wood-shed partitioned off, in which ice will keep quite as well as in a more costly structure. Even stacking is often resorted to, by laying down rails for a floor, on which to stack the blocks compactly. Cover heavily with some material which is non-conducting, such as straw, hay, etc., finishing the top so as to shed rain, bracing the sides with boards and rails to keep covering in position. Care must be taken in getting at the ice, always to open at same place and cover up thoroughly, or some hot day will turn it to water. In putting in the ice, no matter where it may be, always surround it with non-conducting material like sawdust.

The ice house question can be summed up as follows:—Any cheap structure with good drainage and no circulation below; good ventilation above; proper space between ice and sides, filled with non-conducting material. The bugbear of expense need deter no one from storing ice.

By providing a proper bottom ice can be piled on it and a building put over it later.

Humane Castration.

Many of the serious difficulties, all the suffering, and at least half the dangers of castration—especially of fully grown and vicious animals—are avoided by a very simple and easily applied process, described in the Melbourne "Leader." Mr. Moses Ward, a resident of Holebrook Place, Hobart, recently put a large boar under the influence of chloroform, for the purpose of operating upon him. The pig was a very large one, and, moreover, rather savage, but less than two ounces of chloroform prostrated him. It was applied on a piece of lint, which, when held near his nose, he bit at savagely and retained between his teeth, unconscious of the fact that it was rendering him helpless. When the anæsthetic had taken effect, a man jumped into the sty and performed the operation, and about twenty minutes afterwards Mr. Ward aroused him. He moved about freely and never appeared to suffer any thing from what had taken place. Mr. Ward tells us, the report says, that the pig did not lose more than a quarter of a pint of blood, and the strings were not scarred or tied. This is doubtless due to the absence of the struggling that would have taken place if the operation had been performed in the usual way. Mr. Ward says there is no difficulty nor any skill needed in applying the process.