

which should be scraped off before commencing to cut, as it does not keep well even though it may appear quite solid. If the ice is cleaned several days in advance of cutting, the thickness will be increased if the weather is below freezing. Where a farmer is working alone the shovel can be used to clean it, but, if two or three co-operate, it would pay to make a cheap scraper and utilize horse-power for removing the snow. Where large quantities are stored, the ice-plow is used for cutting the blocks, but it is doubtful whether it would pay the one man to purchase this implement when only a small quantity of ice is required each year. The ordinary cross-cut saw, with one handle removed, can be used for cutting the blocks, and a long plank will serve as a straight edge and as a guide to the saw. Aim at cutting the blocks as nearly square as possible, as it makes it much easier to pack. A couple of ice tongs, and an ice hook would complete the equipment. Ice is an awkward and heavy material to handle, and the use of a simple derrick, as illustrated, for loading, will make the work a lot easier. This may be made by fastening a stout upright to a solid base and then attaching a long pole at the top in such a way that it will act as a lever. A pair of tongs can be attached to a chain on the one end, and a rope on the other end can be used for raising the ice and swinging it on to the sleigh or wagon. For unloading, a block and tackle comes in very handy for raising the blocks and swinging them into position. While it is not a difficult task, cutting the ice and removing it from the water, it will very often be as cheap to buy it from some of the ice companies, who have every means of cutting and loading the ice at their disposal. In most towns there is an ice company who sell ice at a very reasonable price.

#### Packing the Ice.

In the permanent ice-house, built with insulated walls, no packing material is necessary. The blocks of ice are merely placed firmly together and the outside air not being able to penetrate the thick, insulated walls, the ice lasts through the season. In the cheaper houses packing material is necessary. As previously mentioned, sawdust and planer shavings are most commonly used, but if these are not available straw or hay are serviceable, although they are not so effective. It is advisable to use old sawdust rather than fresh, green material, as the fresh has a tendency to heat and thus melt the ice around the edges, but if no other material can be secured it is better to put up with this little waste than to have no ice at all. First place a layer of the packing material on the floor or ground and then proceed to lay the blocks of ice close together, leaving space around outside for the packing. Care should be taken to have as few openings as possible, and this is where care in cutting the ice is noticed. Chips of ice or snow should be packed into any cracks or openings, and if the weather is frosty a little water might be poured over it. While this improves the keeping qualities it makes it much more difficult getting the ice out. The surface of each layer should be level, and the best instrument for doing this is the common adz, and the ice shaved off may be utilized in filling any cracks. Continue putting in the ice layer upon layer until the required amount is stored and there will be one solid block when completed. The space left around the outside for packing can now be filled, and it is advisable to pack it thoroughly as it is being put in. The main point is to keep the air from striking the ice. The top must also be covered with a good thickness. About two feet of sawdust or planer shavings proves very satisfactory. When the supply is all harvested and carefully packed it requires no more attention until it is needed for use when the summer heat makes some cooling substance necessary.

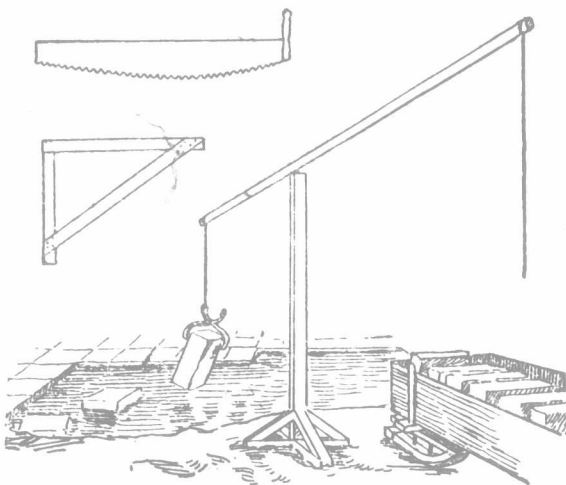
If the ice-house is already built you cannot afford not to fill it, and if no provision has been made for the storing of ice it will pay to purchase some rough lumber and build a cheap structure before the ice season is over.

#### The Small Breeder's Chance.

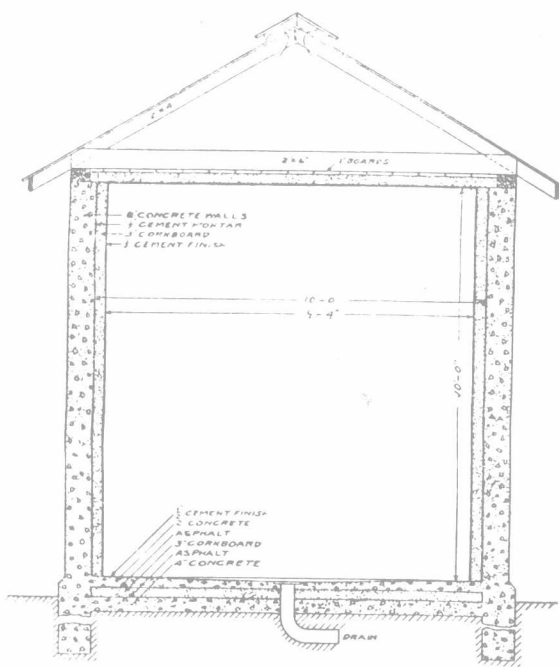
There seems to be an idea abroad that it is only breeders with large, well-developed herds that can command top prices for their stock. The small breeder with apparently as high-class individuals, although not in large numbers, fails to attract the attention of breeders who will pay a high price in order to secure the desired quality of animals. Naturally buyers of most classes of stock will go where they have a choice of individuals, but the cow which proves herself valuable always attracts attention whether she is located in a large or small herd. The small breeder is inclined to be too conservative regarding pushing his herd to the front. If a man has good stock it is to his interests to know it by testing, and to bring the fact to the attention of the public. With the official and semi-official systems of testing, dairymen, whether working on a large or small scale have a splendid opportunity of finding out the real producing value of individuals of the herd. If it is known that an animal is capable of producing a large flow of rich milk her value is enhanced above what it would be had no testing been done. The owner of a small herd that has made creditable records has no difficulty in finding a market for animals he wishes to sell. This is being proven more forcibly each year. Dairy stock without records, whether raised by the large or small breeder finds

slow sale. There is no reason why testing cannot be done in every herd.

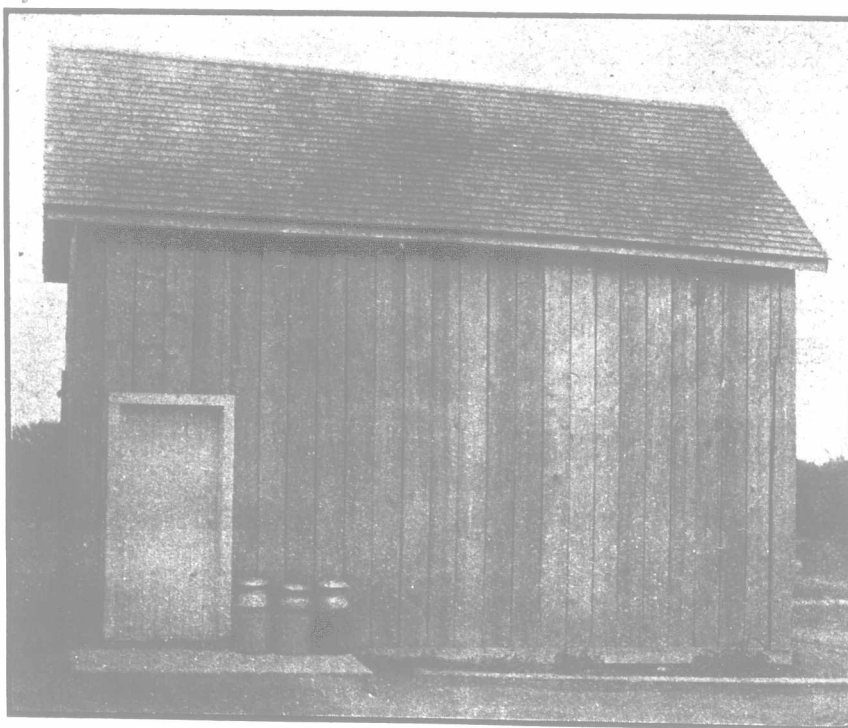
By the use of a good sire the small breeder can soon improve the quality of his herd. Records will show some of the heaviest producers and most valuable cows to have been bred by the amateur or small breeder. When records show a cow to be unprofitable she can be weeded out and attention directed to the best. There is no class of breeders that have an equal opportunity with dairymen to prove the true value of their herds. New records are frequently being made by individuals



A Simple Derrick for Loading Ice.



Ice House Built with Concrete.



A Cheap but Serviceable Ice House with Milk House at One End.

in inconspicuous herds. It will pay the young man starting for himself, on a dairy farm, to keep records of his herd and to always use a sire from high-testing stock. By careful selection, right breeding, and good feeding, it is possible to build up a profitable herd. There is a demand for both bulls and heifers backed by the right kind of ancestry. Records aid in selling dairy stock, whether by public or private sales. There is no cause for discouragement if the herd is small. A high average production and possibly outstanding records may be made by paying attention to breeding and feeding.

## POULTRY.

### How Remodeling Improved Several Hen-Houses.

Poultry are housed in many styles of houses. Some buildings are constructed according to the latest ideas of what poultry accommodation should be, but there are many in which conditions are such that hens or pullets cannot be induced to lay until the warm rays of the spring sun take the cold, clammy dampness out of the atmosphere. The pen may be well constructed from a contractor's viewpoint. A good foundation, double-boarded and papered walls, with windows and doors well fitted may keep out the wind. A ventilator in the roof may be installed with good intentions, but yet the pen is damp and birds may refuse to lay. They mope around during the day, and colds, roup and other diseases are common.

It is not necessary that the pen be particularly warm if it is dry and free from drafts. However, unless there is sufficient ventilation the moisture from the breath of the birds condenses on the walls and gives a clammy feeling in the hen-house. It may be possible to slightly change the construction of the present house so that conditions will more nearly conform with what is essential in a winter laying pen.

A poultry house which gives good results is built of one thickness of boards with cracks battened, except on the north side where it is advisable to use two thicknesses of lumber and one of paper. The front can be low and open, with a window facing south-west or west. If the walls are six or seven feet high, one-third of the side facing south should contain glass, and one-third cotton. This gives light and ventilation without a draft. Even when a gale is blowing no wind is felt inside the cotton. The air diffuses through and keeps the pen fresh. In a pen of this nature very little moisture will be seen on the walls or roof during the coldest weather. The air is dry and the birds do not suffer as much as those in a warmer but damp pen.

It will only take a few hours' work to remodel some of the present hen-houses to make them more nearly meet the requirements of the hen. Concrete examples will illustrate how few changes are sometimes necessary to make the pen healthier for the bird to live in. One pen that was built in three compartments, each large enough to accommodate about forty hens, had considerable moisture on both the walls and roof during the first winter. When building, the owner thought he was constructing a model hen-house. It was double boarded on the north, and had a shanty roof which gave plenty of space for the windows in the south side. All through the winter the rays of the sun streamed into the pen, but it failed to rouse the birds into activity. They appeared mopey. The straw on the floor could not be kept dry, and the walls were dripping with moisture at every mild spell. The birds were bred right, and were particularly well fed on a wide variety of feeds, but they failed to lay when eggs were high in price. The following winter there was the same trouble, until the beginning of January, when it was suggested that there was not sufficient ventilation in the pen. True, there were ventilators in the roof, but they did not seem to meet the requirements. It was advised that several of the large windows be removed and the openings covered with cotton. The objection was raised that the pen would then be too cold for the birds, as it was necessary that they be kept warm if they were expected to lay. However, he finally yielded to make the suggested alterations, and to close the openings in the roof which were allowing what warm air there was to escape. The weather set in particularly cold after the cotton front was put in, but the birds did not seem to mind it nearly so much as the previous cold spell when their house was tightly closed. No dampness appeared on the walls; the straw on the floor began to dry and the birds appeared to take a new lease of life. In fact, in less than two weeks after the change was made several had commenced laying. That was two years ago, and that poultryman has secured a fair percentage of eggs, when prices were high, since he remodeled his pen. Another instance comes to mind of a well-built, little poultry pen of sufficient size to accommodate from sixty to seventy birds.

It was about half as wide as it was long, with the long side facing the south. This was filled with windows, and really the pen looked ideal the fall it was built. However, no eggs were gathered that winter, nor the next, until warm weather. The owner was lamenting the fact that he had put so much money into his poultry house, when the suggestion was made that he substitute cotton for part of the glass and fill the gable of the pen with straw. This was done, and returns have been satisfactory ever since. On one farm the poultry was kept in a pen at one end of the stable. It was so constructed that very little light was available, but it had the advantage of always being

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