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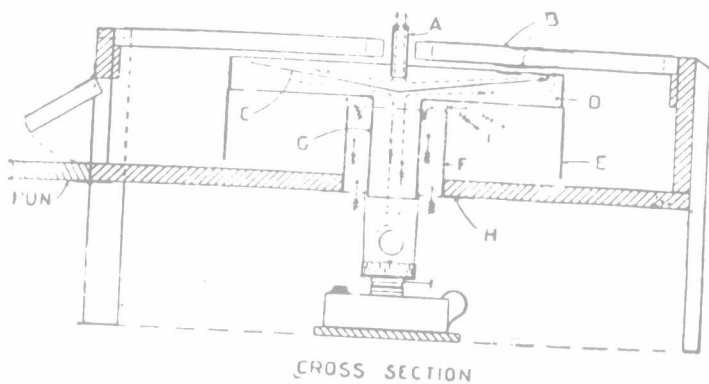
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used, or a special water-cooled burner. The burner screws into an ordinary lamp collar, soldered to the oil fount. The iron chimney is about 5 inches high; the diameter of the top chimney is 2½ inches; the bottom diameter is 3 inches. A 1½-inch hole should be punched in the chimney, and covered inside with mica, in order to see the flame. The top of the chimney is placed over the lower smoke pipe.

Heater.—The heater is complete in itself, and can be successfully operated in a box of any size. No separate hover is required, and the chicks are continually supplied with warmed fresh air. In cleaning the brooder, if the heater and lamp are



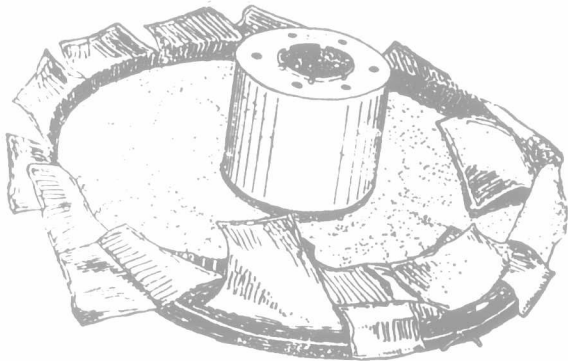
A. Upper smoke pipe to carry off the fumes of the lamp. B. Cotton-covered frame, or roof of brooder. C. Heat-reflector. D. Heating chamber. E. Two-ply flannel to form the warm hover for the chicks. F. Fresh-air chamber. G. Lower smoke-pipe. H. Galvanized-iron rim on which the heater rests. I. Warm fresh air entering the hover.

removed, and a pan is placed beneath the hole in the floor of brooder, the litter can be caught and removed in the pan.

The heater is made of galvanized iron, with the exception of the heat-reflector. This should be cut from bright tin. The dimensions of the different parts of the heater are as follows: Lower smoke pipe, diameter 3 inches, length 5½ inches; fresh-air chamber, diameter 6 inches, length 5 inches. The fresh-air chamber is attached to the smoke pipe at the bottom. In the floor of the fresh-air chamber ½-inch holes should be punched for the ingress of fresh air. The fresh-air chamber is open at the top. Heating chamber, diameter 20 inches, depth 2 inches. A heat-reflector (inverted cone) is placed in the heating chamber. The diameter of the cone is 18 inches, depth 1½ inches. The upper edge of the cone is ¼ inch below the top of the heating chamber. The apex of the cone is ½ inch above the bottom of the heating chamber. The cone is riveted to the heating chamber by three clips at the top. The upper and lower surfaces of the heating chamber should be rigid; they can be stayed to the cone, or held by two wire nails driven through the chamber and soldered.

Upper smoke pipe: Diameter 1 inch, length 4 inches. The upper smoke pipe should be soldered ½ inch inside the heating chamber.

To complete the heater, two strips of flannel may be placed around the outside of the heating chamber, and tied with a cord to it. The flannel strips should extend four inches below the heater. They reach to within one inch of the floor of the brooder, and form a warm hover for the chicks. The strips should be cut every four inches, and alternately, so as to prevent the escape of heat.



HEATER - VIEW FROM BELOW

The foregoing illustrations show how the colony houses are constructed. The floor is 6 feet by 8 feet, and the sides are 8 feet high. The material used depends on what the builder may have convenient. The ordinary pine siding, dressed, gives good results. If four pairs of small rafters, 2 in. by 2 in. by 8 feet, are erected, half-inch lapping may be put on horizontally.

In each house one brooder is placed. The house is bright and cheerful during the day, and when the chicks cannot be allowed outside they scratch for grain among the litter on the floor. The house will last for years. One house and

brooder will rear 75 chicks to marketable age. The brooder can be removed from the house when the chicks are six or eight weeks old, and used for a later hatch.

F. C. ELFORD.
Chief Poultry Div.

Poultry Feeding.

The system of feeding our hens for egg production during the winter, says J. P. Landry, Poultryman at the Nova Scotia Agricultural College, Truro, in his 1905 annual report, which has given us very good results, is as follows:

Morning.—Scald mash, composed of two parts of wheat middlings, one of ground oats, and one of corn meal. We feed about as much of this as the hens will eat up clean in three minutes.

Noon.—Whole oats or barley is scattered in the litter, about one pint to twelve hens. A quart of raw, pulped turnips is also fed to each pen.

Night.—Whole wheat and corn is fed in litter, about one quart to each pen of twelve hens. Fresh water is supplied to them at all times. They always have access to a box of oyster shells, and, in addition, ground bone is fed twice each week. While the above amounts of feed are approximately correct, yet we vary the quantity somewhat, being guided by the appearance of the birds at meal times.

A Cheap Meat Food for Poultry.

An economical and valuable food for poultry in winter, that is in much demand in the neighborhood of cities, is the residue left after lard has been pressed out, known as cracknees. This consists largely of pork skin, and there is also a good deal of other animal tissue in it. It is pressed into the form of thin cheese, and is so hard that one of the best ways of preparing it is to chip or shave it fine with a sharp axe. It costs 1½ cents per pound. It should, of course, like other animal food, be fed in limited quantities.

Canvas Instead of Glass.

J. P. Landry, Manager of the Poultry Department of the Nova Scotia Agricultural College, Truro, N. S., in his 1905 annual report, says:

"By way of improving the ventilation of our poultry building, and keeping it drier than heretofore, we have adopted a suggestion received from some of the best poultry-breeders in the New England States and Ontario. We have opened back every window about 18 inches, and have covered over this space with canvas. While it is yet too soon to give a complete report, we already find that the building is much drier, and we anticipate, from the experience of others, that the poultry will be more vigorous and healthy in the spring."

J. J. McClenaghan, Bruce: "The Farmer's Advocate" is a cracking good paper."

GARDEN & ORCHARD.

Apple-growing in the West.

"What do I think of the possibilities of apple-growing in the West, and especially in Alberta?"

The question has been asked by several correspondents who are evidently anxious to bring with them the orchards of the old farm at home. It can be done. During the past few years the orange-growing area of the South has been extending northward. In Ontario, peaches are now produced much farther north, and in the West, apple trees that at first proved a failure are being successfully grown in many parts of the country.

One of the most successful fruit men of the plains is Mr. A. P. Stevenson, of Nelson, Manitoba. Mr. Stevenson's place is not better adapted for tree-growing than thousands of other farms in the West, and what he has done may possibly be done, and done better, in several other sections of the country. Last year he had seventy barrels of apples, and the year before his orchard produced forty barrels. He has now 100 crab trees and over 200 standard apples. His best headed trees this year have over four barrels. When this orchard comes into full bearing, Manitoba will figure as a fruit-producing Province.

What about it farther West? In Alberta the orchards are not yet so large, but something has been done. In the north, Tom Dale is the leader. He has only a few trees as yet, but they are doing well, and give promise of being good producers. In the south there are quite a number of earnest experimenters. Lethbridge and Magrath have their little orchards, and in the accompanying illustration will be seen the fruit farm of Mr. Thos. Duce, a Cardston farmer. These are all bearing; not much, of course, but they are doing something.

The difficulties? Yes, there are a few. The strong winds make it hard to establish trees in some sections, but shelter-belts are increasing, and, judging from the number of trees sent out by the Forestry Dept., planting is becoming pretty general. Then there is a tendency to plant a tree carefully. Would you think that a mistake? Well, it is sometimes. A man buys a few apple trees, and they look precious to him. He selects the richest piece of land he has, and the result is there is too great a stimulation of growth, and a consequent killing back of the tender shoots, and serious if not fatal injury to the young tree. Apple trees do best in this country where they are planted in soil containing some clay, and a little gravel would not hurt. Then, cultivation should cease in August, to give the wood a chance to harden for the winter.

Yes, you can bring the orchard with you, or, better still, you can grow it after you come. But perhaps I have too much faith, for I love the West, and some say "love is blind." I don't agree. I think the eye of love sees with a clearer light the true worth of the thing admired, and, anyway, I am only telling of the things I have seen. Who can tell what we may yet produce on the fruit farms of the Last West?

R. J. DEACHMAN.



Home of Thos. Duce, near Cardston, Alta.

Two-year-old apple trees in the foreground; already bearing.