

1930

Poultry House Construction

with

General and Detailed Plans

BY

F. C. ELFORD

DOMINION POULTRY HUSBANDMAN

and

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DOMINION EXPERIMENTAL FARMS

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DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
BULLETIN No. 132—NEW SERIES

POULTRY HOUSE CONSTRUCTION

INTRODUCTION

The information contained in this bulletin has been gathered together as a result of experience secured upon the Experimental Farms throughout the Dominion of Canada. From the standpoint of the poultry house, Canada is naturally divided into two sections: one of small area and the other comprising the bulk of the Dominion. Climatic conditions are the basis for the above classification, the one district being the Coast section of British Columbia with moderate summers and mild winters and the other the interior of British Columbia, the Prairie Provinces, Ontario and Quebec and the Maritime Provinces, all with greater extremes of heat and cold and very low temperatures in winter. The first section, a region of great concentration of poultry enterprises, requires a lightly constructed form of poultry building only; the second, from which the bulk of Canada's poultry products are derived, requires a heavier and warmer type of house.

For laying hens there is no one best house, but from a number that have been tested the plans contained herein have been selected as being those of



The poultry plant, Central Experimental Farm, Ottawa. In the immediate foreground is a group of poultry houses of the Farmer's House type (16 by 32 feet) of both shed and gable roof designs; also a long breeding house of the same type divided into twenty-four breeding pens. To the right of the central road are a commercial heated house, colony brooder houses, a continuous brooder house, and the offices of the Poultry Division.

houses that have given the best average results over a period of years under the varied conditions that prevail from the Atlantic to the Pacific.

In the adoption of these plans of laying houses, slight alterations might be made in order to make the building conform to local conditions. In making changes, however, the main principles of poultry house construction should be adhered to, viz. plenty of sunlight and fresh air without draughts, combined with convenience and ease in keeping sanitary both inside and out.

The plans of houses given, other than laying, have proven satisfactory for the purpose. More drastic changes may be made in these without seriously interfering with their usefulness.

The matter of incubator rooms, brooder houses, moveable colony houses, open-air rearing houses, and housing equipment of all kinds comes within the scope of this bulletin, and the plans, detailed instructions and photographs presented represent types of houses and equipment which have proven satisfactory in actual practice over the Experimental Farm system from coast to coast.

LAYING HOUSES

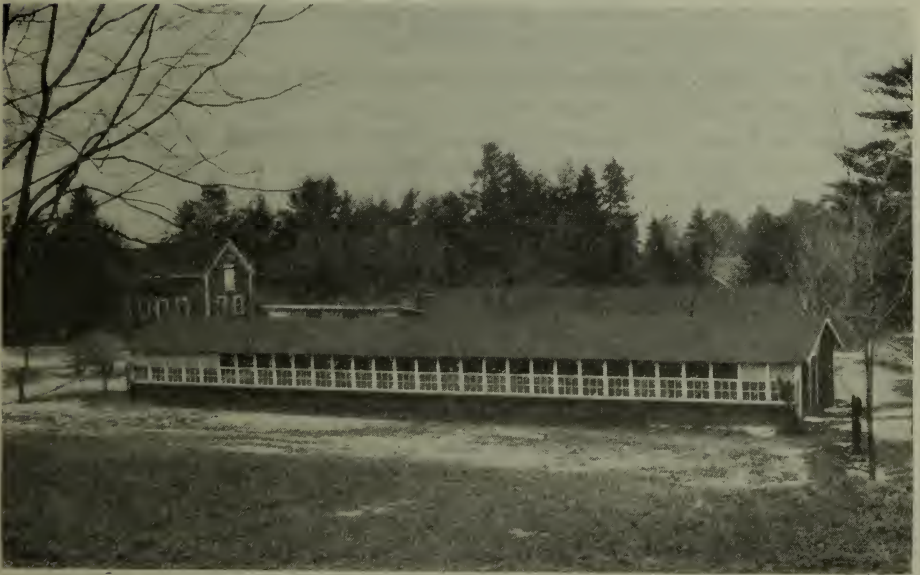
Houses for laying birds take the form of one or other of two types, viz. colony or continuous. In most parts of Canada those of the latter type are found almost to the exclusion of the former. Practical experience has taught that the continuous house is superior both from the standpoint of cost of construction and of results obtained. There is also a growing tendency towards



A very desirable type of laying house, 16 by 32 feet, for 100 hens of the general purpose breeds or 120 Leghorns. Note the ventilation door at the end in the peak of the roof.



Poultry house under construction. A well framed house with plenty of window space.



Large laying house, Experimental Farm, Kentville, N.S., representing the one-third wood, one-third cotton and one-third glass front. Houses of this type are equipped with a straw loft.

deeper houses, the reasons for which may be briefly summarized as a distinct saving in labour and greater warmth and freedom from draughts about the roosts. The prevailing depths are sixteen feet and twenty feet respectively, with a tendency towards even wider houses on the Pacific Coast. Where a long house is divided into small breeding compartments a depth of sixteen feet is sufficient. The more nearly a laying house conforms to the open-front principle, the comfort of the birds being the first consideration, the better are the results obtained as a general rule. Sunshine and fresh air are the important factors and too much cannot be let into the house, always providing that warmth and freedom from draughts are considered. In the Prairie Provinces and Eastern Canada straw lofts are considered essential in order to absorb excess moisture and to shut off the large cold air space above the birds, found particularly in the gable roofed, twenty-foot deep, house. Over the same regions the one-third wood, one-third glass and one-third cotton front is used very considerably, the complete open front the year round being confined mostly to the temperate areas of the Pacific Coast. With regard to the correct height, it is mainly a matter of convenience, from six to seven feet being the common measurements. Cement floors are recommended in preference to any other type for reasons of sanitation and durability.

The matter of cleanliness and sanitation is of great importance in the laying house. Wherever possible all fixtures such as roosts, nests, dropping boards, hoppers, etc., should be made moveable for ease of cleaning. No permanent laying house should be built without consideration as to best type of soil, drainage, and sufficient land back and front so that rotation of yards may be practised.

GENERAL SPECIFICATIONS

FLOORS

Concrete floors are preferable for all permanent houses, while the movable colony houses require the lesser weight of the wood floor.

Concrete floors are sanitary and rat-proof, but should be kept well-bedded with straw or other litter. Good concrete floors require a firmly tamped foundation of cinders, broken stone or gravel at least 6 inches thick, followed by a layer of concrete from 3 to 4 inches thick. A damp-proof course is advisable, consisting of a layer of tarred building paper (lapped and tarred at the seams), laid between the foundation bed and the concrete. With the concrete floor, a concrete foundation wall should be used; this wall should extend below the usual frost line. Where this wall is carried above the ground level, forms must be used.

Bolts should be let into the concrete wall about six feet apart in order to hold the wood sill.

The permanent house may be built, if desired, without footings or foundation walls, the floor merely consisting of a slab three inches thick on a bed of broken stone or gravel, as previously mentioned. Such a floor is only successful where drainage is good; too much dampness and heavy frosts cause heaving and cracking. The stone should be kept back about two inches from the face of the form so that, when the floor slab is laid, concrete may be poured in this space to secure a vertical face of concrete to the floor. Bolts should be let into this slab as mentioned above.

The concrete should be mixed in the proportion of one part of cement, two and one-half parts of sand and five parts of stone or gravel; in measuring this, it should be remembered that a bag of cement contains approximately one cubic foot. A one-half inch coating of one part cement and two parts of sand should be used to give a finishing coat to the floor; this should be laid before the concrete base has been set. If finished with a wood float, the surface will be smooth but not slippery. Any forms used may be removed after a week; if the inner surface of the boards used for forms is greased with oil, it will prevent the concrete adhering and spoiling the forms for future use.

FRAMING AND FINISHING

The superstructure is practically the same for all types of houses—sills, studding, plates, and rafters all being 2-inch by 4-inch. The studding is covered (outside) with building paper and either drop siding or vertical boarding with battens. On the inside, behind and around the roosts, the studding is covered with building paper and T. & G. sheathing; in the remainder of the interior, the studding is exposed. Interior partitions consist of solid boarding for a height of 2 feet 6 inches, with wire mesh from this point to the ceiling. Roofing usually consists of sheathing and ready-roofing in the movable houses, and in the permanent houses the ready-roofing is replaced by building paper and shingles.

The exterior studding, at the front of the house, is usually spaced 2 feet 4 inches apart (or 2 feet 6 inches on centres) to allow the use of six light 8-inch by 10-inch sash. This sash is set about 18 inches above the floor and cotton front sash (of similar size) set above it. The whole opening is then covered outside with wire mesh.

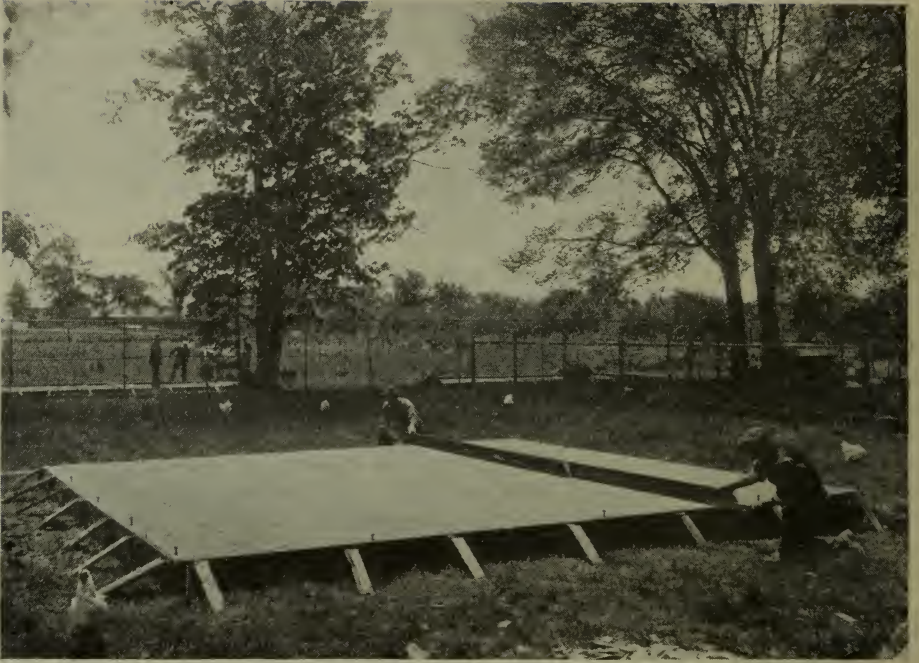
Ordinary batten doors are used, those in the interior being double acting. Small doors 8 inches by 10 inches or 10 inches by 12 inches are placed in the front, under the windows, for the birds; these may be hung at the top and allowed to swing, or may be made to slide in a groove.

All interior furnishings such as partitions, feed bins, roosts, dropping boards, nests, and nest boards are removable to facilitate cleaning and disinfection.

If desired, any of the permanent houses herein shown may be built 20 feet deep instead of 16 feet. This applies particularly to the 16 by 32 feet farmers' house. When this is done it will be found necessary to place small windows in the back wall under the dropping boards. This allows sufficient light under the boards to permit the birds to scratch in the litter without facing the front of the house as they would do ordinarily and thus piling the litter to the rear of the house. In addition it permits the use of the entire floor space, which is not possible in a deep house without rear windows.

In building a house of greater depth than 16 feet the same plans may be used, making allowance for the increased amount of lumber when calculating the bill of material.

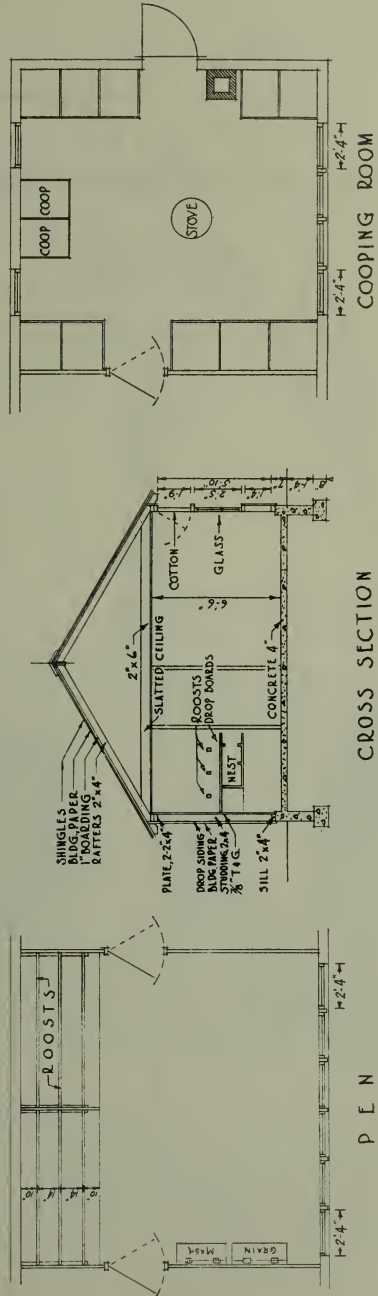
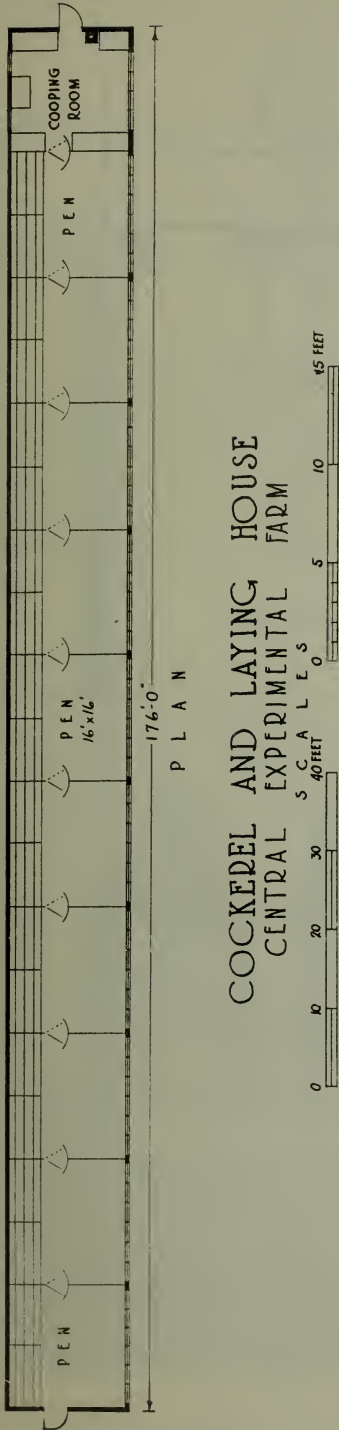
Where the recommended double yarding is practised exits in the rear wall under the dropping boards will have to be provided. Usually the ends of the house as well as the back are double boarded, at least as far forward as the doors. In more severe climates the double wall is often packed with shavings. One serious disadvantage with this system is that rats will soon perforate the walls, permitting a large amount of shavings to run out. It also provides a convenient place for the rodents to make their homes where they cannot be gotten at readily.

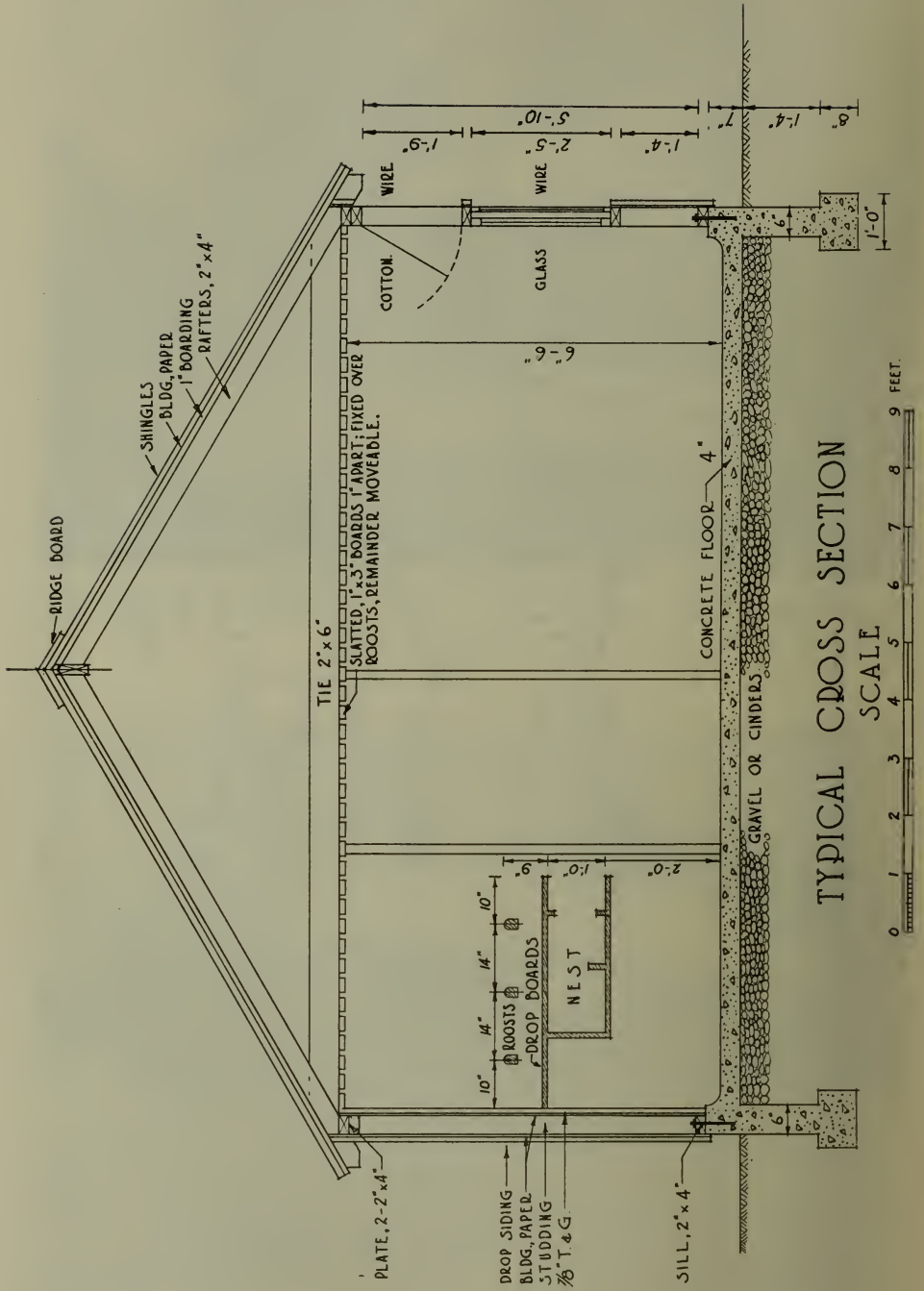


The straight edge at work. The fine concrete is filled up to the height of the frame and levelled off with the straight edge. The surface can be trowelled off to make a smooth finish. When the cement is set, the retaining boards are removed and the edges of the floor well plastered up.



The farmer's poultry house in winter. Note that even in winter the cotton screens are opened up during the day.





FARMER'S POULTRY HOUSE—(STRAW LOFT)—BILL OF MATERIAL

Sills	100 lin ft., 2 x 4
Studding	34—2 x 4 x 6'—0"
	4—2 x 4 x 8'—0", ends
	4—2 x 4 x 10'—0", ends
	60 lin ft., 2 x 4, braces
Plates	130 lin ft., 2 x 4
Ties	26—2 x 4 x 16'—0", joists at ceiling
Rafters	26—2 x 4 x 9'—6"
Barge boards	4—2 x 6 x 10'—0"
Roosts	6—2 x 3 x 15'—3"
Roost supports.....	4—2 x 4 x 3'—6"
Drop boards.....	150 ft., 1" boarding
Walls	950 ft., T. & G. exterior walls and around roosts
Ceiling	384 ft., 1 x 3
Roof	740 ft., sheathing
	32 lin ft., 2 x 6, ridge piece
	34 lin. ft. 1 x 5, ridge cover board
	34 lin. ft., 1 x 6, ridge cover board
	5,500 shingles
Trim	70 lin. ft., 1 x 6, eaves
	60 lin. ft., 1 x 5, corner trim
Windows	12—6 lt. 8" x 10"
Doors	2—2'—8" x 6'—2", exterior
	1—2' x 6" x 5'—0" interior
Building paper.....	3 rolls
Wire	150 sq. ft., wire mesh
Concrete	12½ bbls. cement
	4½ cu. yds., sand
	9 cu. yds., stone or gravel

BREEDING HOUSES

Breeding houses are commonly found in two styles, viz., the permanent divided house and the small one or two-pen colony house. Opinions differ as



Breeding house, Central Experimental Farm. This house is similar in every detail to the house for one hundred hens, a plan and photo of which is shown under the heading of "Laying Houses," except that temporary partitions every six feet divide the house into suitable breeding pens. Back and front yards are used, being ploughed and used for range alternately each year.

to the advantage in using one or the other type. The continuous permanent house with movable partitions has the advantage of more economical construction, combined with greater warmth and a considerable labour saving in tending the birds. Equipment and construction is similar to that of the laying houses. A house 16 feet in depth and with movable partitions 6 feet apart makes a suitable breeding house.



Breeding house, Dominion Experimental Station, Kentville, N.S.



Breeding house, 300 bird capacity, Dominion Experimental Farm, Nappan, N.S.

INTERIOR ARRANGEMENT

FLOOR SPACE.—The amount of floor space to be allowed each bird depends upon the size and breed of the flock, the ventilation, nature of feeding, etc.

As a rule from 3 to 6 square feet of floor is allowed to each bird, the lighter the breed the less the space required, and the smaller the pen the larger should be the room for each bird. Also the house that has good ventilation will accommodate more birds per area of floor, and where feed is fed in such a manner as to induce exercise more birds can be placed in a house than when the feeding methods do not tend to provide exercise.

ROOSTS AND DROPPING BOARDS.—The roosts should be placed on a level at the side farthest from the windows, and so placed that no draughts strike the birds while roosting. Seven to ten inches per bird will be required and roosts should be 15 inches to 18 inches apart.



Well arranged interior of a 16 by 32-foot straw loft house, divided into two 16 by 16-foot pens. Note that the entire floor space is available to the birds.

If a dropping board is used, roosts should be placed about 10 inches above. The practice of screening the droppings so the birds cannot get to them is a good one. Nests may be placed under the dropping board as shown in the diagrams. All such furnishings should be made movable so they can be taken out frequently for cleaning and disinfecting.

HOPPERS, ETC.—Drinking fountains and hoppers may be placed at one's convenience. Suggestions are given in the interior plan illustrated as to the placing of these. The water should be where it can be kept clean and arranged so that there will be no slopping upon the floor. The mash hopper should be large enough to accommodate a sufficient number of birds, so that there will be no crowding. A supply bin for the scratch and mash feed is an advantage in

that it can be filled in quantity and have feed always at hand. It should be hung on nails rather than nailed to the wall. All equipment should be kept off the floor so as to increase floor space for the birds.

WINDOWS.—Suggestions as to arrangement of windows are given. If the house is a deep one, a window at the back, under the dropping board, is an advantage. It must be made tight, however, so that no draught may come through in the cold weather.

NESTS.—Nests are placed as a rule under the dropping boards where they are out of the way, yet easy to tend. If all parts of the nest and the table which supports it are movable no trouble from vermin or sanitation should be experienced. Wall batteries are also sometimes used on permanent partitions with good results.



Mash hopper and water stand.

The above water stand and mash hopper are convenient and suitable for the laying house. All danger of loss through spilled mash is removed with this hopper. The buckets rest upon a cross board attached to the ends of the water stand. Both stand and hopper may be made more convenient without diminishing their usefulness by narrowing the stand by some four inches on each side and doing away with the outside slat. (See fig. "Well arranged interior".) A turning reel keeps the birds from roosting on the hopper. The water stand can conveniently be made 22 by 36 inches and the mash hopper 24 by 60 inches over all. The former may be still further reduced where but one pail of water is sufficient. The actual hopper without stand is 12 by 60 inches.

CONTEST HOUSES

Both permanent and colony houses have been used in contest work. The colony house has the advantage of isolation and ease of removing to fresh ground, factors which tend to appreciably diminish the difficulty in keeping disease from the flock and in controlling it if it should gain entrance. The chief drawbacks of the moveable house are the increased labour in feeding and trapnesting and in keeping paths open in winter, the extreme variation in temperature, too hot in summer and too cold in winter, and the greater construction cost.



The two-pen contest house. These, on account of their cost and inconvenience are being replaced by continuous houses with double yards.



Continuous permanent contest house, Dominion Experimental Farm, Agassiz, B.C.
Note the open front and shed roof.

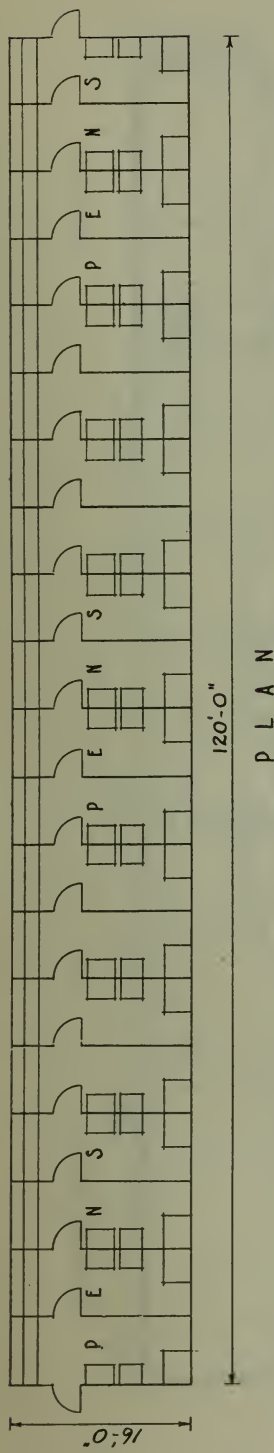
The permanent house has proven quite satisfactory and it is intended to make the change from the small to the large house wherever possible upon the Farm System. Illustrations of both types of house are given and plans for three different types of continuous house. The colony house of which plans are shown under that heading is similar to the general type of small contest house in use. It is built in both shed and double pitch roof styles. It is worthy of note that all partitions, nests, dropping boards, roosts, etc., in these houses are removeable so as to reduce the load in moving and to facilitate cleaning.



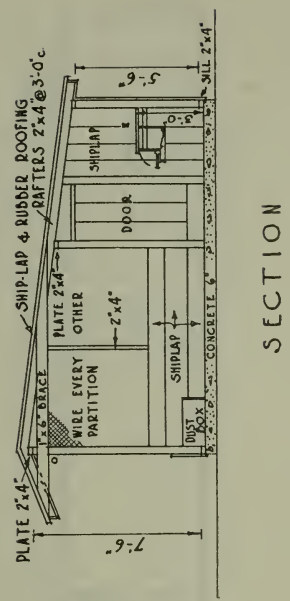
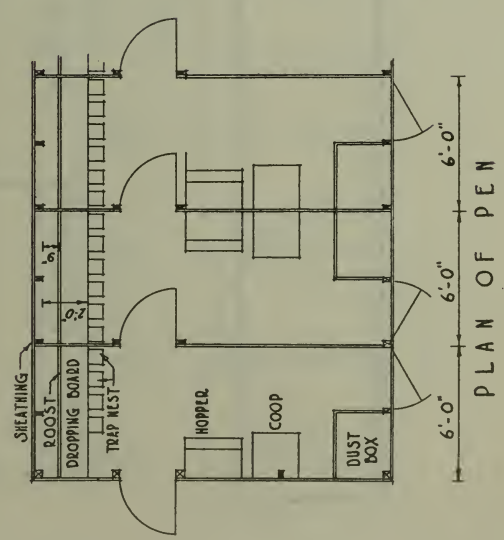
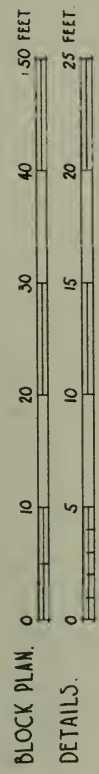
Continuous permanent contest house, Dominion Experimental Station, Ste. Anne de la Pocatiere, P.Q. Gable roof.



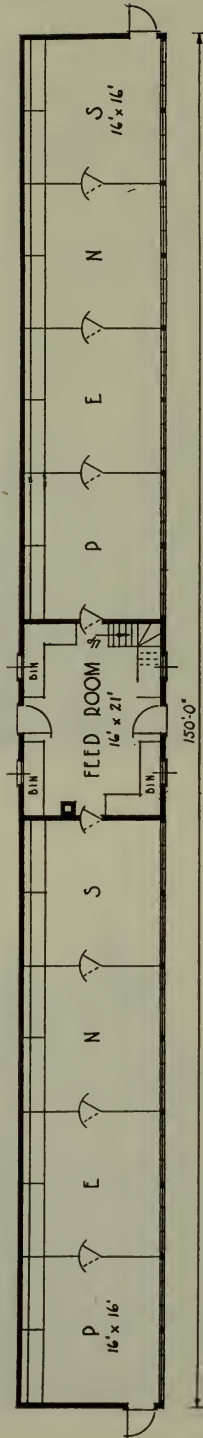
Continuous permanent contest house, six sections, four pens to the section, Dominion Experimental Station, Lethbridge, Alberta.



BRITISH COLUMBIA TYPE HOUSE FOR EGG-LAYING CONTESTS



SECTION

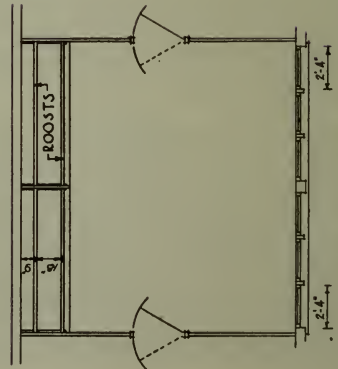


P L A N

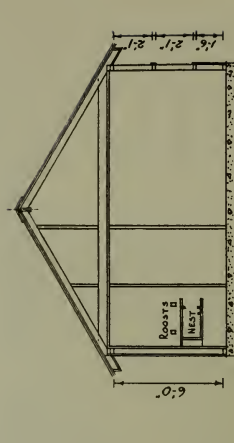
PODAIE PROVINCES TYPE HOUSE FOR EGG-LAYING CONTESTS

Scale of Plan
0 5 10 15 20 25 30 35 40 FEET.

Scale of Details
0 5 10 15 20 FEET.



P L A N O F P E N



S E C T I O N

ESSENTIALS OF A GOOD HOUSE

From the standpoint of the hen the house should be comfortable and sanitary; and from the manager's viewpoint it should be convenient and of low cost.

A comfortable house does not necessarily mean a warm house, but it does mean a dry, well ventilated house where no moisture adheres to the walls. If a house is damp, the dampness comes from without or within or both. That from without is due to lack of drainage and will be considered under location, that from within may come no matter how dry the location. It is sometimes hard to determine the cause, but it may be due to too many birds to the size of the pen, to lack of ventilation, or to both. See that the house receives no moisture because of location, and make sure that lack of ventilation does not create moisture within.

For most breeds kept in Canada, a house need not be artificially warmed. If the air is dry and the birds healthy it is almost impossible to freeze them. A well-fed hen in a dry house will be comfortable.

SANITATION.—This can be obtained by cleanliness and ventilation. A house must be kept clean at all costs, not that it has to be cleaned and swept out each day, but kept free from foul smells and vermin. Some system of cleaning and disinfecting the house should be adopted; the simpler the system the better the chances there are for gaining the results.

Thorough ventilation is most important. If poultry houses were ventilated as they might be there would be fewer diseases than there are. Allow both the fresh air and the sunlight in, and the hens will not suffer from lack of sanitation, the house will be dry and the birds healthy.

CONVENIENCE.—Though this feature concerns the manager directly, it indirectly affects the poultry. The more convenient it is to do the work the easier it is, and the surer that it will be done. Often no thought is taken of the location of poultry buildings, and the poultry house is just as likely as not to be at the far side of the stables, just as far away from the house as possible. As a rule the woman on the farm looks after the poultry, and her poultry work is often made much harder than is necessary. Owing to inconvenient arrangement, the person who feeds the poultry spends at least double the time and walks twice as far as there is need of. No matter who is expected to look after the poultry, put the poultry house where it can be got to readily, and also make it possible to feed the poultry without having to run to the granary or stable for grain. In the gate, the door, the driveway, and everything connected with the poultry, convenience should be studied. Often this one item determines the difference between pleasure and drudgery, and the one is as easy to have as the other. Not only should the house be accessible, but the internal arrangements ought to be such that the necessary work may be done with the least amount of labour. If the man can do the work in the hen house with the ease with which it is done in the horse stable, there will be fewer filthy poultry houses and much better returns.

A gate that swings both ways is a convenience, as the feeder may be carrying two pails of water or feed; so is a gateway wide enough to admit a wheelbarrow and high enough that one does not strike the head. A plank or a wheelbarrow load of gravel should be laid down to enable one to pass over the wet place dry-shod. Up-to-date farmers have all this in their other farm buildings; why should they not have it for their poultry? Inside the door have a covered box or barrel into which a sack or two of feed can be put from the load at the door by the boys or the hired man. On a card tacked above can be marked the amount of feed put in during the year; on this same card can also be marked any other data, number of eggs, hens setting or dying, etc. The feed box will insure that there is always feed when the time to feed comes. A measure can be kept in the box, and the feeding operation is simple.

ECONOMY.—This should always be practised in house construction. One can go to the extreme both ways; a house can be built too expensively as well as too cheaply. Few people, however, put too much expense on the poultry house, though occasionally, where special attention is given to appearance, there may be such a tendency. As long as the house gives the hens comfort it need not be elaborate. It is not fair to lay a burden of several dollars of debt on each hen if the house can be built for \$1.00 per head. The extreme, however, usually goes the other way—the house is not good enough. A good house is economy though the aim should be to build a house that suits local conditions with as little expense as practicable.

LOCATION OF POULTRY HOUSES

When movable poultry houses are used, the location is of minor importance, as it can be changed as often as necessary, but where permanent houses and yards are constructed the question of location is of primary importance. Many farm poultry houses are situated just where they ought not to be. Sometimes the location is of so much importance that it means success or failure.

MUST BE DRY.—For this purpose, light land gives best results, but by this it is not meant that sandy land is to be preferred. It is better to have land that will grow green food for the poultry than bare sand, but good underdrainage is desirable. Where heavy land only is available, it must be made dry by being well underdrained. It is best to place the house on the highest part of the land so that all surface water will flow away rather than toward it. It should never be placed in a hollow, not only because the water gathers there, but because of the atmospheric drainage. The cold, damp air flows to the hollows. Cold air settles in low places. A low place, though sheltered from the wind, may be several degrees colder than a higher place a few yards distant. The floor of the house should be at least several inches higher than the surrounding land, and where the land is flat a foot or more may be desirable. It is an advantage to have the land fall away from the south side of the house.

FACING THE SUN.—The front of the house should face south or southeast. The aim is to have the windows facing the direction from which the most sun comes. The sun is our cheapest disinfectant. If it is inconvenient to build a permanent house with its face to the south good results have been obtained by facing southeast or even east and putting a row of windows along the back of the house under the drop-board. Care must be taken to have these windows tight so that no draught will strike the hens.

WINDBREAK.—If poultry houses are placed on the top of knolls, they will get more wind than if placed on the side of a slope. Too much wind is not desirable, however, and provision must be made against it. If there is a bluff, orchard, or other windbreak, and the house can be placed to opposite side from the prevailing winds, put it there. In some sections, where the wind is very severe, it will be a decided advantage to plan an artificial windbreak if nothing already exists. It is better, however, to have a dry location though one may have to put up with some wind, rather than have a damp location even though surrounded by windbreaks.

ALLOW FOR GROWTH.—Where permanent buildings are constructed—that is, buildings that will last for years—it is well to look ahead. Plan so that the buildings may be enlarged or added to, as the poultry operations may grow. Trouble is sure to exist if poultry are crowded into small houses and runs. Plan to be able to provide sufficient room for any growth in the future.

COLONY HOUSES

One of the most useful of houses to the farmer and poultryman is the colony type of house. It may be used for brooder house, rearing pen, laying house or breeding pen.

In using as a brooder the nests, dropping boards, roosts, etc., which are made movable to facilitate cleaning and to lighten the house in moving, are taken out. A coal burning brooder stove and hover or equipment of a similar type is put in, an outlet for the pipe of which is provided as a permanent feature, and the house is ideal for brooding purposes. In using for rearing, the stove is removed and temporary roosts put in the long way of the building. For both brooding and rearing the colony house has the important advantage of being easily moved by team or tractor to fresh ground. To become a laying house the above mentioned equipment (roosts, nests, etc.) are merely replaced. The same equipment is satisfactory for the purposes of a breeding house except that a temporary partition may be put in to make two breeding pens.

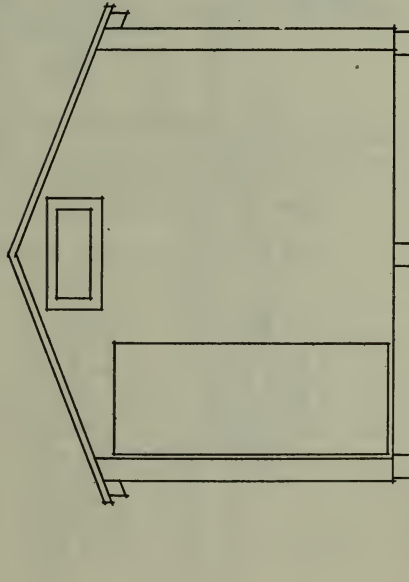
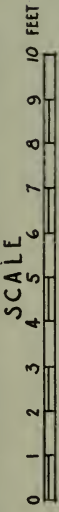
In using this house for the above purposes it is absolutely essential, in order that disease be kept down that it be cleaned frequently and thoroughly disinfected between brooding, rearing, laying and breeding periods of use. It must also be moved a short distance as often as possible as the land becomes bare and contaminated in the neighbourhood of the building. By using such a house for the above mentioned purposes there is no equipment lying idle at any season of the year.

An alternative suggestion might be the use of a section of a laying house as a brooder and transferring to a range rearing house as illustrated later in this bulletin (See "Range rearing coop") without the use of a brooder house at all. Most farmers cannot afford to have a permanent brooder house which is in operation only for a short period of the year.

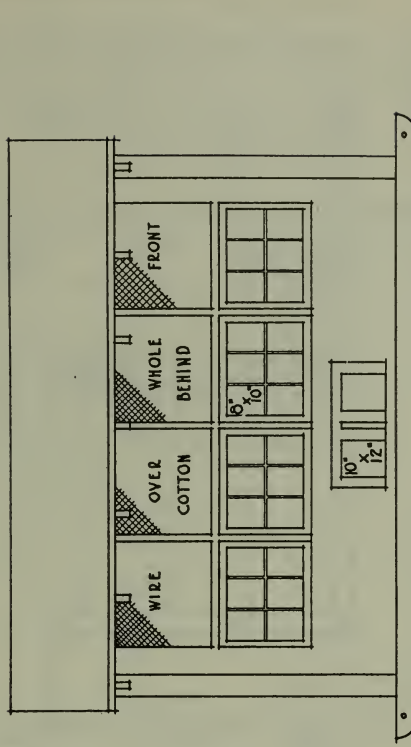
COLONY HOUSE—DOUBLE PITCH ROOF

Skids	3—6" x 6" x 14'—0"
Sills	2" x 4" x 44'—0"
Plates	2" x 4" x 24'—0"
Studding	24—2" x 4" x 6'—0"
Tie	5—2" x 4" x 10'—0"
Rafters	10—2" x 4" x 6'—0"
Ridge cover boards.....	2—1" x 6" x 12'—0"
Ceiling boards	27—1" x 3" x 12'—0"
$\frac{3}{8}$ " T. & G. sheathing.....	375 ft.
1" roof boarding.....	150 ft.
1" flooring	120 ft.
Roofing or shingles.....	150 sq. ft.
Eaves and trim.....	100 ft., 1" x 5"
Roosts	2—2" x 3" x 12'—0"
Building paper	400 sq. ft.
Wire mesh	50 sq. ft.
Sash	4—6 lt., 8" x 10"
	1—lowered window 1'—0" x 2'—0"
Door, 1 or 2 as desired.....	—2'—6" x 6'—0"

MOVEABLE COLONY HOUSE

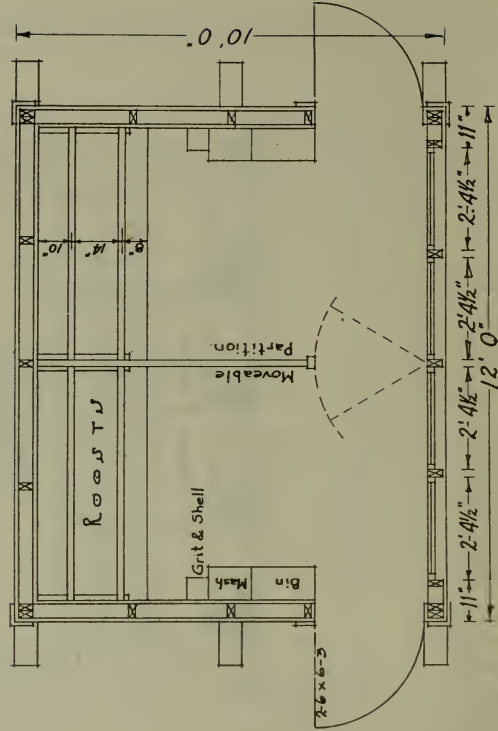
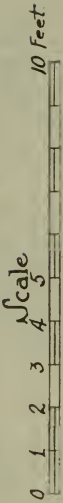


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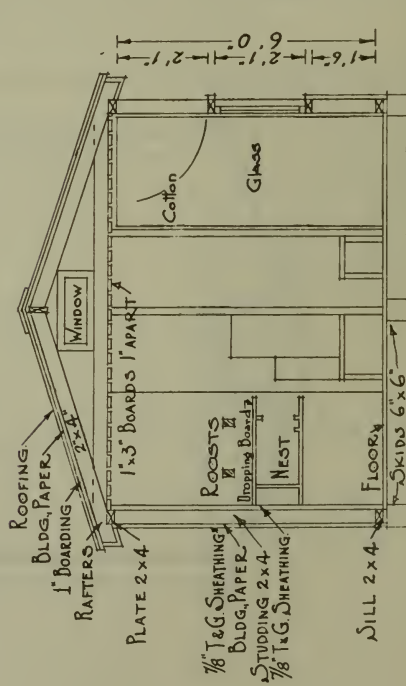


FRONT ELEVATION

MOVEABLE COLONY HOUSE



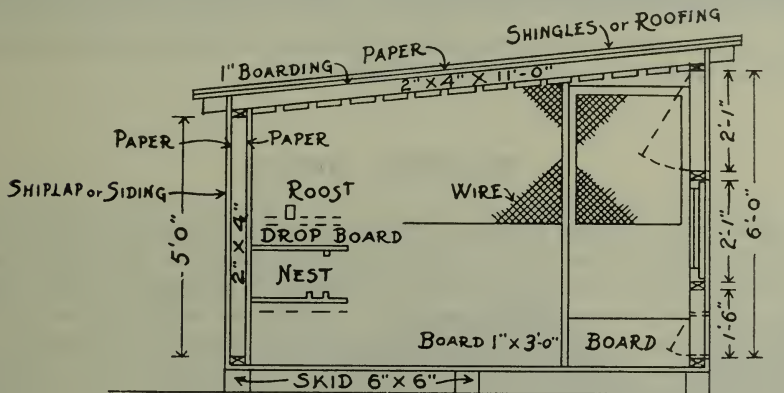
PLAN



CROSS SECTION

SHED ROOF MOVABLE COLONY HOUSE

The floor plan of this type of colony house would be identical with that of the gable roof colony house detailed plans of which have been given in the section immediately preceding. The front elevation and cross section for the shed roof type are given herewith.



COLONY HOUSE—SHED ROOF

Skids	3—6" x 6" x 14'—0"
Sills	2" x 4" x 44'—0"
Plates	2" x 4" x 24'—0"
Studding	9—2" x 4" x 6" —0"
	9—2" x 4" x 4'—6"
	2" x 4" x 32'—0" (ends)
Rafters	7—2" x 4" x 11'—0"
$\frac{3}{8}$ " T. & G. sheathing.....	310 ft.
1" roof boarding	150 ft.
1" flooring	120 ft.
Roofing or shingles.....	150 sq. ft.
Roosts	2—2" x 3" x 12'—0"
Building paper	375 sq. ft.
Wire mesh	50 sq. ft.
Sash	4—6 lt., 8" x 10"
Door	1—2'—6" x 5'—8"

INCUBATOR HOUSES

In recommending the best type of incubator house, the principles which favour good hatches are our only guide. In past practice the incubator cellar has proven the most efficient mainly because of the fact that temperature can be kept more even, since a cellar is the least affected by outside weather conditions of any part of a building, and also because the air is always fairly moist due to moisture in the walls from the outside ground. Again a cement floor can be readily sprinkled to increase the moisture content of the air upon which depends to a considerable extent the amount of moisture in the machine, a factor of considerable importance in incubation. Good ventilation, freedom from draughts, evenness of temperature and a sufficiency of moisture are the important points to consider in choosing a location for incubators.

Incubators have been successfully operated in almost all types of houses from the owner's house to the root cellar with varying results, depending to what extent the conditions mentioned above were fulfilled.

Experience has taught that for most machines smaller in capacity than a mammoth, a steady temperature of 103° F. is best and that a relative humidity in the machine of from 60 to 65 per cent seems to give good results, conditions which can only be readily attained in a proper incubator room.

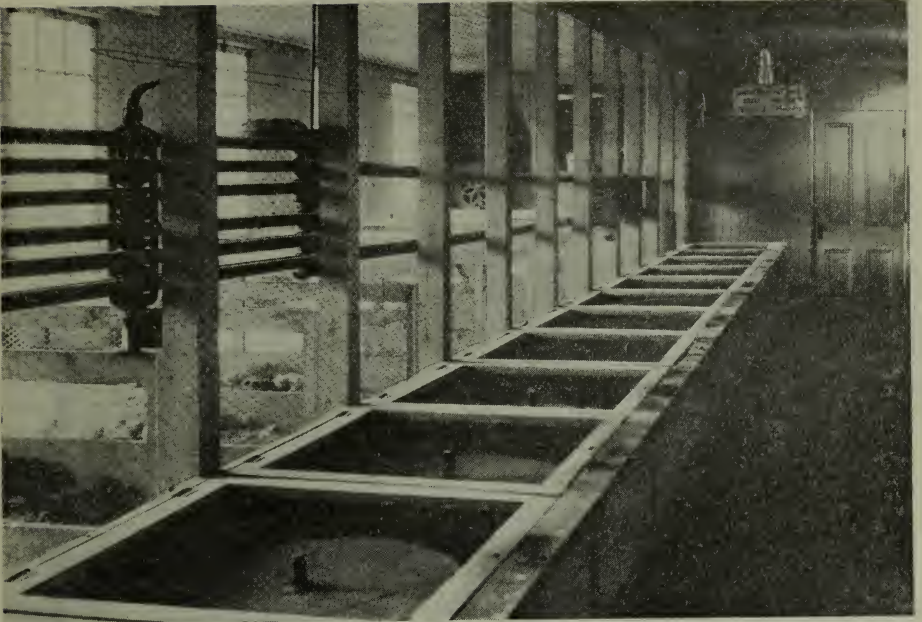
All windows, and other openings for purposes of light or ventilation should be high enough to avoid draughts on the machines and covered so as to exclude the direct sunlight which would cause too great variation in temperature.

If a cellar is not used the incubator house should be built where air drainage is good and where it is not exposed to high winds.

BROODER HOUSES

A great many widely differing types of brooder houses have been used with success but of these three distinct types are outstanding, viz., the long house using the continuous pipe hot water heating system, the permanent house using coal or oil burning stoves and the movable colony house with coal or oil brooder. Of these the colony house is perhaps the most popular, using either the coal or kerosene heaters with hover. More satisfactory results have been obtained with this type of brooder and coal heater than with any other. The long divided permanent house with the coal hover stoves is becoming increasingly popular on account of the convenience in having the chicks close together for the period during which they require heat. Care should be taken to avoid overcrowding of brooders since it is practically impossible to control disease if once started under overcrowded conditions. This does not mean that large capacity brooders are less desirable than the smaller sizes.

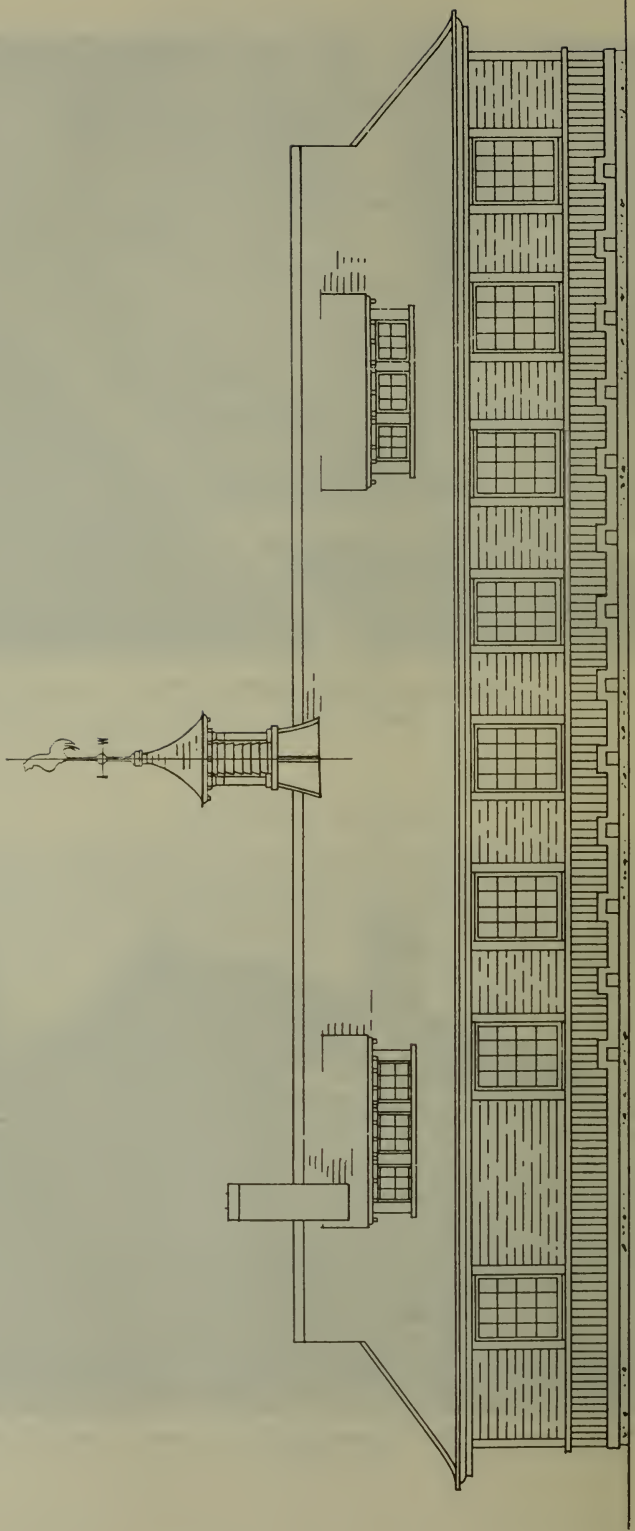
With long continuous brooder houses small cement runs are probably best as dirt runs are quickly contaminated and trouble results. Cement runs permit the birds to get out into the sunlight and can be washed off readily permitting the sun to disinfect. When the chicks no longer need heat they may than be transferred to clean range.



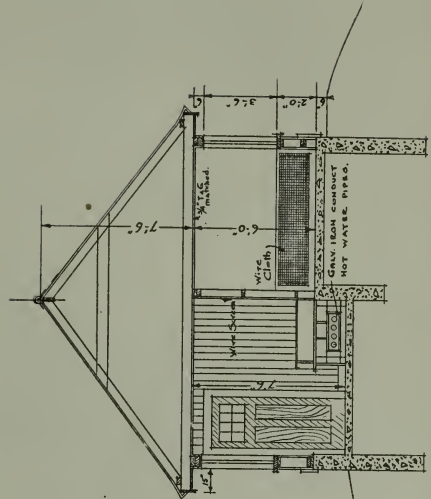
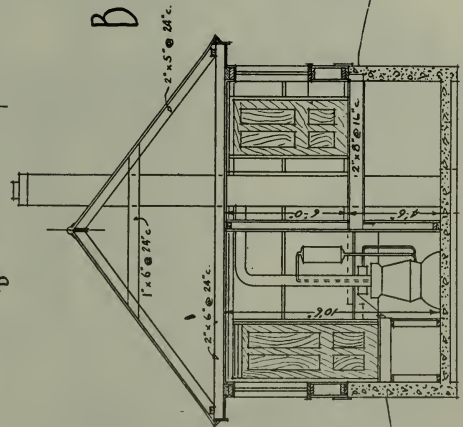
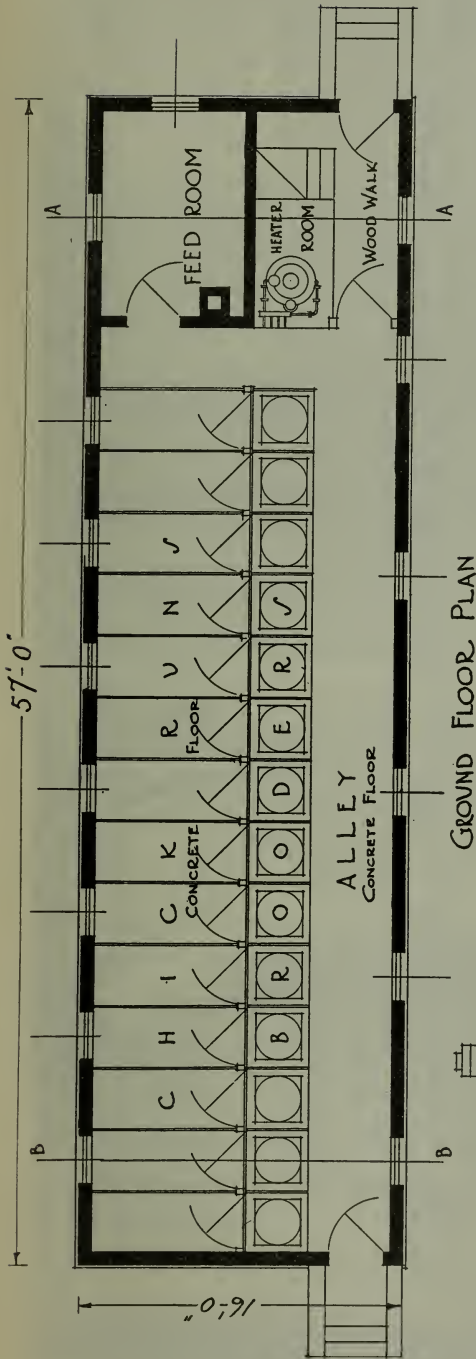
Interior of brooder house, Ottawa.

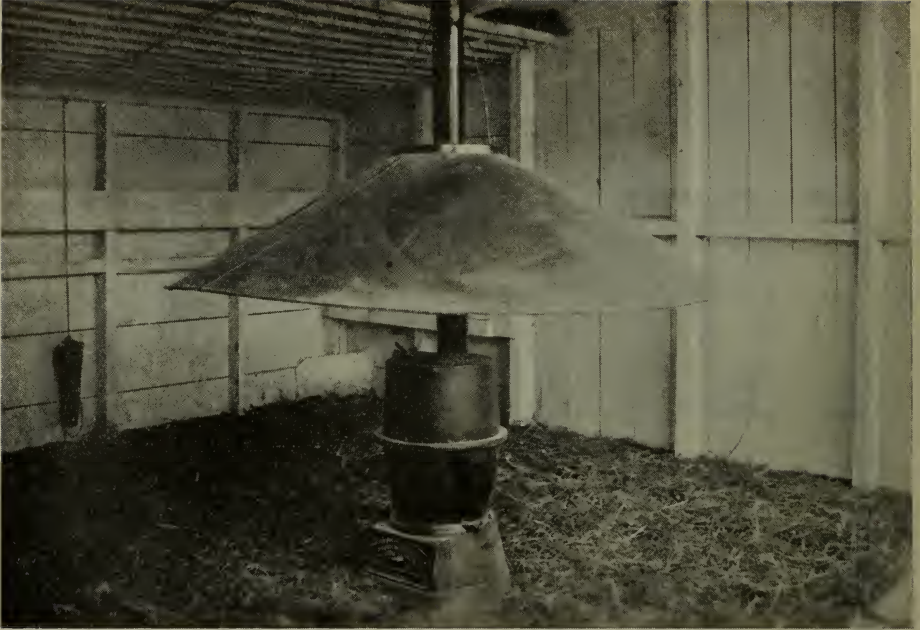


Continuous brooder house, Central Experimental Farm, Ottawa. Detailed plans of this house follow.



Continuous brooder house—south elevation





Colony house with brooder. A coal burning brooder in a colony house for chicks. These stoves are made in several sizes to accommodate anything from 200 to 1,000 chicks. They are very cheaply operated as to labour and fuel and are quite satisfactory for flocks of varying sizes.



A two-pen colony house (see plans page 23) in use as a brooder. The temporary partition is taken out and coal brooder stove set up.



Continuous brooder house, Dominion Experimental Farm, Brandon, Man. Four coal-burning brooder stoves used, one to each section.

RANGE ROOSTING COOP

During the warm months of the summer and fall a closed in house is not necessary for the growing stock. Consequently a house has been devised, a plan and photo of which are given, which has given outstanding results with economy and ease of moving. The house is simple in construction and can be taken down in six pieces. Being built on skids it can be drawn short distances by a team. A plan and photo is also given of a suitable range hopper.



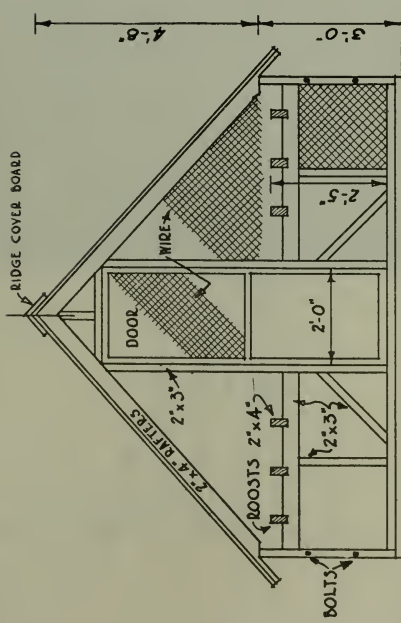
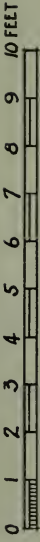
A very useful open air range roosting coop. Note the large range hopper for which a plan is given.



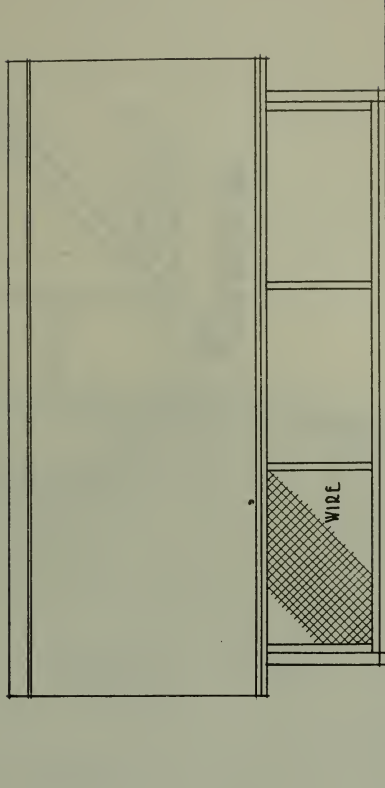
The two-pen colony house used as a rearing house.

RANGE DOOSTING COOP

SCALE

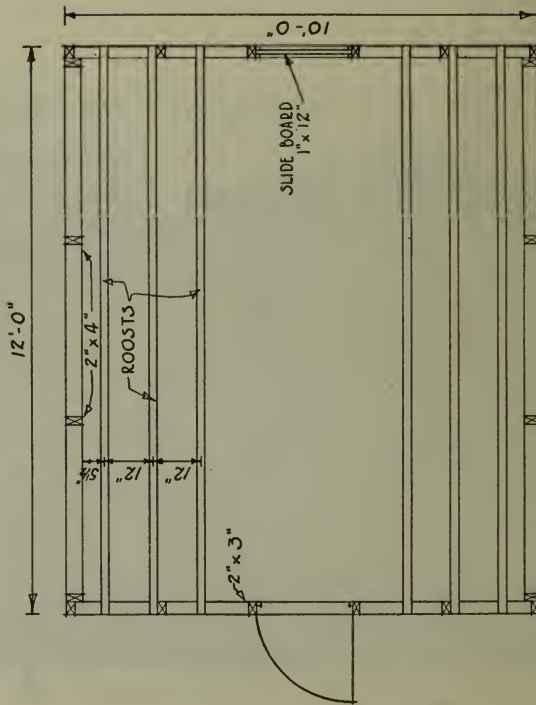


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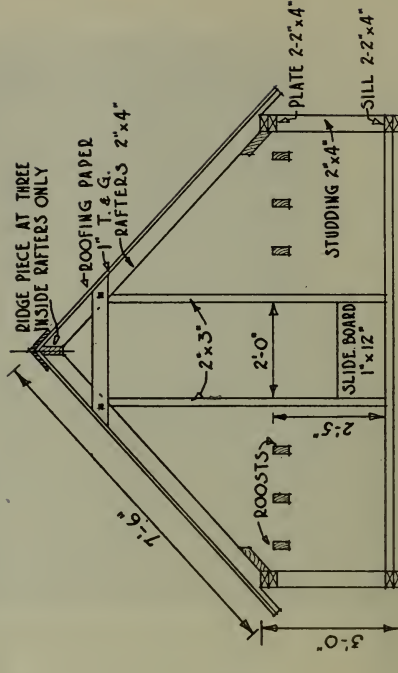


SIDE ELEVATION

RANGE ROOSTING COOP SCALE



PLAN

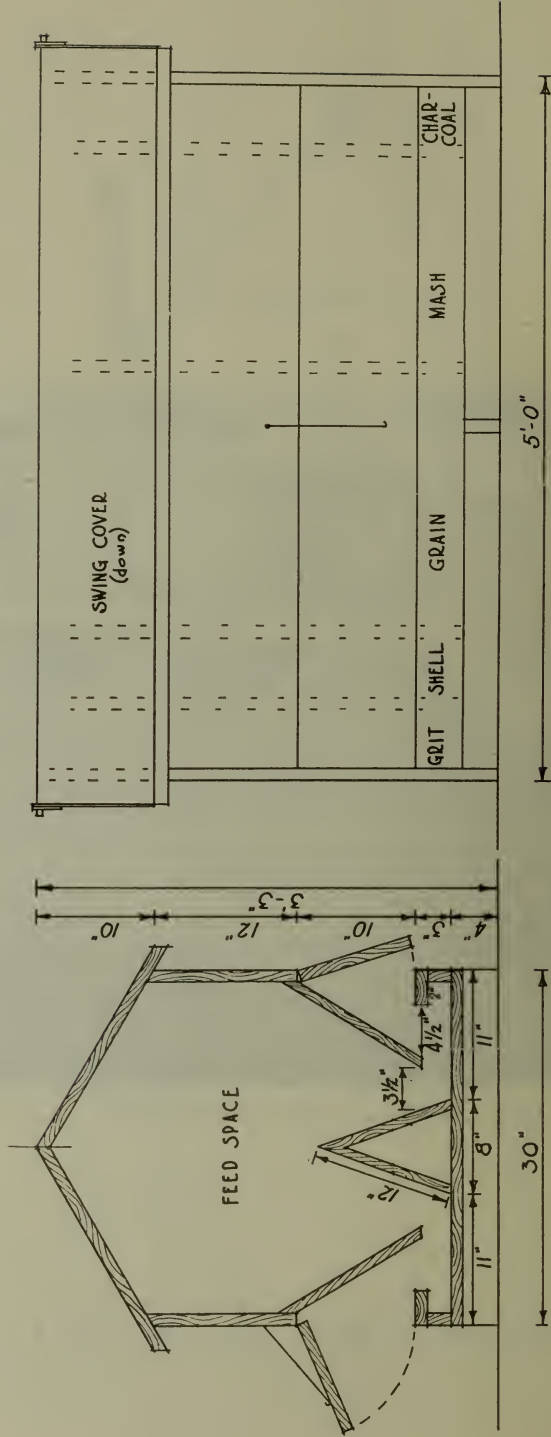
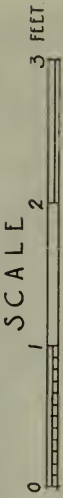


SECTION



Large compartment range hopper with feeder closed on one side.

FIELD HOPPER

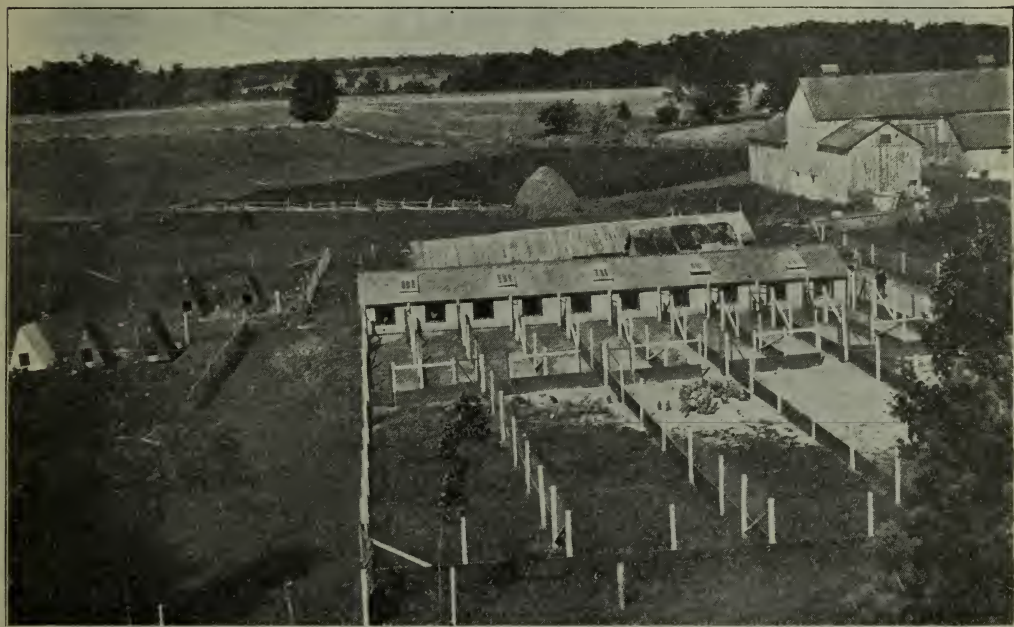


Front elevation and section of the field hopper shown on page 35. The top is covered with ready roofing. This stops short of the ridge over which is fastened, with cement paint, a strip of heavy canvas, making an absolutely water-tight cover.

YARDS

The yards adjoining poultry houses have not in the past received the consideration they should. Very often the yards are responsible for disease and unthriftiness in the flock.

In general, yards should be large, and there should be more than one of them to each house. A good plan is to have two yards, one to the front of the house and one to the back. This arrangement makes it possible to alternate them year about. The year that the birds are running in the south yard the north yard should be cultivated and growing a crop. These yards are sometimes recommended for the kitchen garden. This arrangement is quite satisfactory if clover or some green feed crop is sowed early enough to give green feed for the next year when the birds use this yard for the run.



Too many yards. In this house, where but one breed was kept, the farmer had fifteen different yards. The yards in this case cost about as much as the house. It is practically impossible to cultivate yards of this type. Note how bare they have become.

Interior fences should not be used if it can be avoided. If it is necessary to divide the large yard into small breeding yards temporary fences are best. The absence of interior fences and small yards makes it easy to cultivate the yards which is essential in having sanitary conditions for the birds.

The birds should not be allowed to run upon soil that was used for poultry runs the year before unless cultivated and cropped in the meantime.

The above applies to laying and breeding stock, and too great care cannot be exercised in keeping the birds healthy through clean yards. This also applies to the young and growing chick to an even greater extent. So much has the yard to do with the health of the brooder chick that where permanent houses

are utilized for brooding and the small yards used for runways, it is better to cement the small yard. This allows for cleaning the yard to an extent that is impossible in a grass or earth yard.

Where movable houses are used for brooding, care must be taken to give fresh soil not only each year, but, better for each brood. The same applies to rearing, and it is well to rotate the rearing grounds with other crops and keep the chicks from the time they come out of the shell until they are marketed or put into winter quarters, on fresh soil. It is important not to crowd the yards. If this cannot be done it is better to keep the chicks inside or on cement yards or, failing this, do not attempt to raise chickens at all for disease will appear sooner or later. A rotation of four or five years between using land for poultry is usually satisfactory. Clover, alfalfa or hoed crops are excellent soil cleaners for the intervening years.



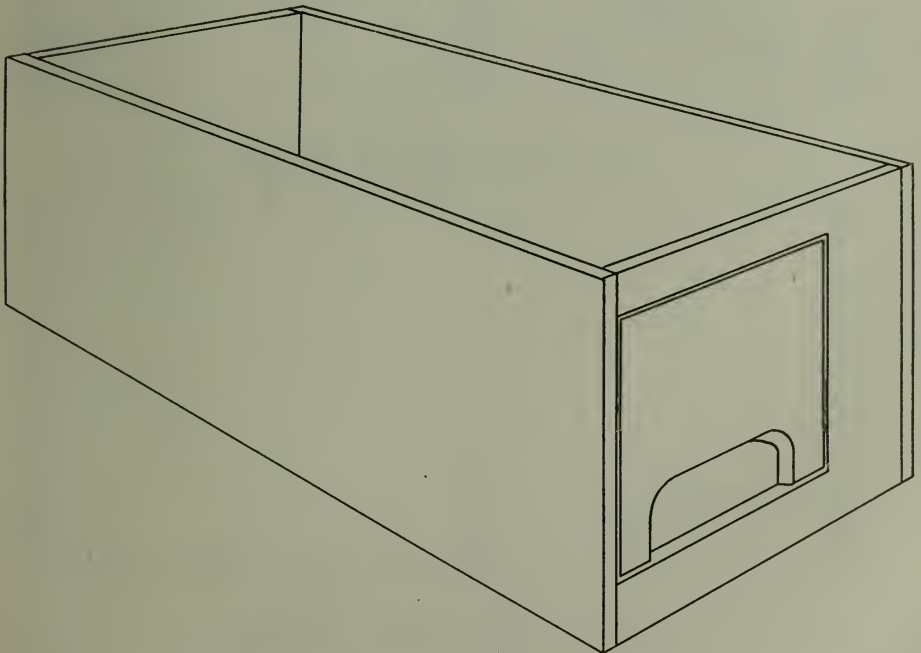
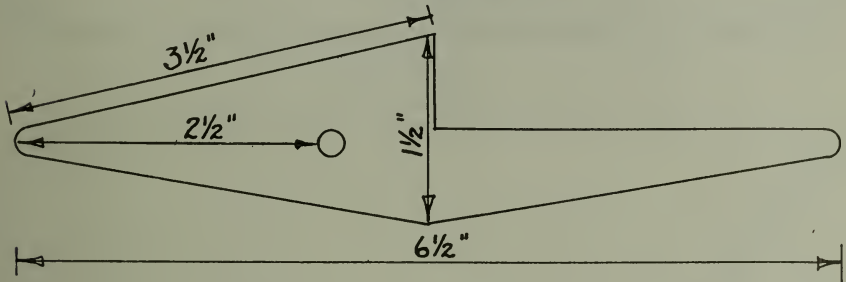
Yards under cultivation in a tobacco rotation. Note the absence of interior fences making for ease of cultivation.

A GOOD TRAP-NEST

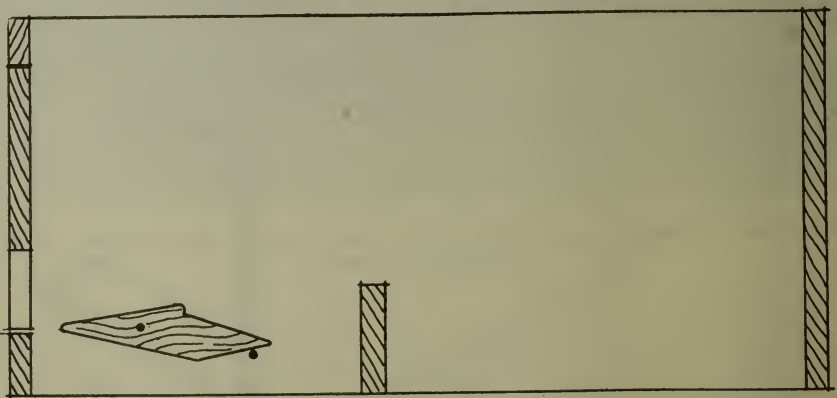
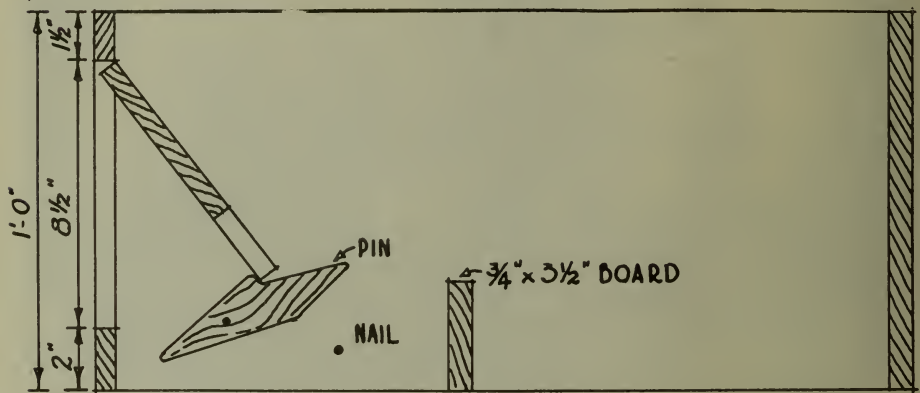
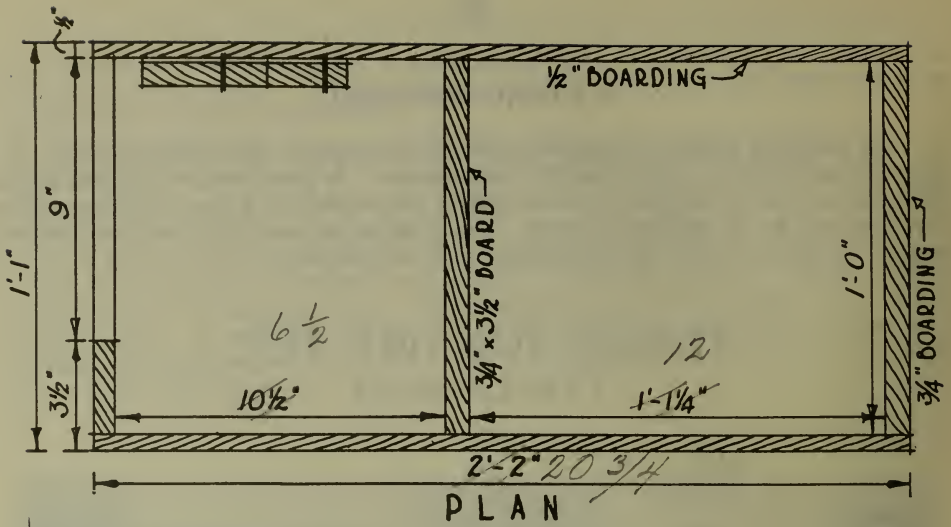
No breeding house is complete without trap-nests. The nest shown in the plan is one that has given excellent satisfaction. A great many different types of nests have been tried out at the Central Experimental Farm, and this one is considered to be as efficient as most. The dimensions are for large fowl. Where smaller breeds are kept the dimensions may be reduced.

TRIGGER FOR TRAP NEST.

1" Thick, hardwood.

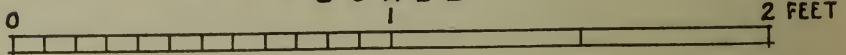


SKETCH OF TRAP NEST



TRAP-NEST

SCALE



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1930