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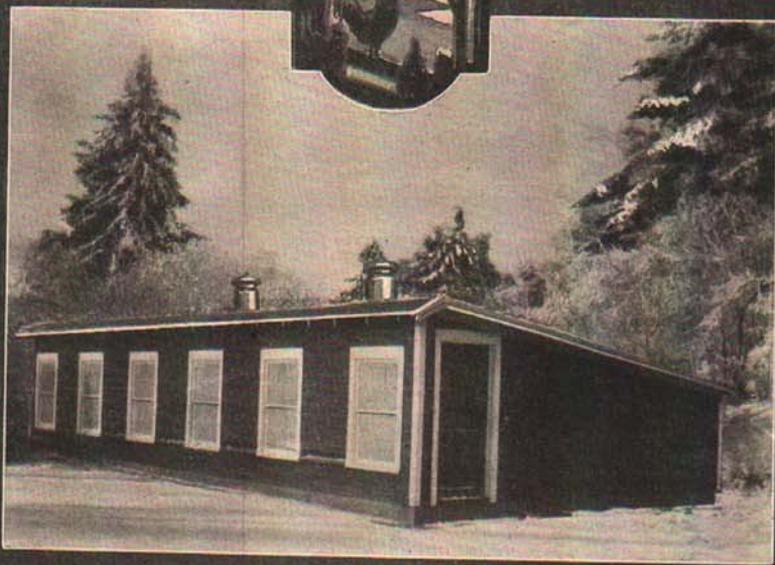
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WITHDRAWN

# MICHIGAN SHED TYPE POULTRY HOUSE



MICHIGAN STATE COLLEGE  
OF AGRICULTURE AND APPLIED SCIENCE  
EXTENSION DIVISION  
R. J. BALDWIN, Director

57-2

**IF A POULTRY HOUSE IS:**

**DRY**

**DURABLE**

**WELL LIGHTED**

**EASILY CLEANED**

**REASONABLY INEXPENSIVE**

**UNIFORM IN TEMPERATURE**

**IT WILL MAKE A COMFORTABLE HOME FOR HENS.**

## MICHIGAN SHED TYPE POULTRY HOUSE

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Profitable poultry husbandry can become a fact only where the business is pursued in an intelligent way. Birds of good breeding, no matter how well fed, will not return maximum profits unless well housed.

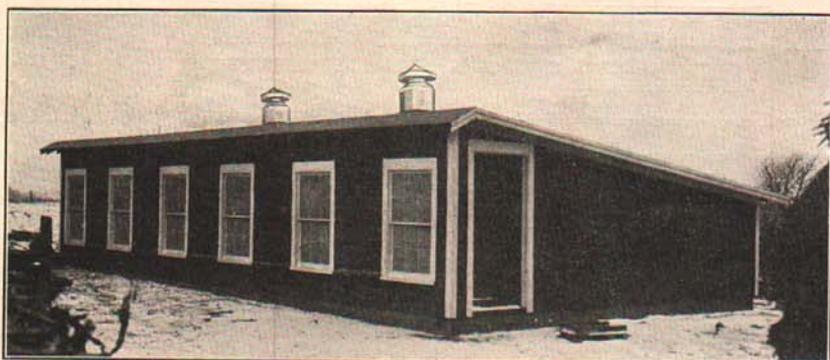


Fig. 1.—The Michigan Shed Type Poultry House—an efficient house of simple and economical design.

### EXPENSIVE HOUSES ARE NOT NECESSARY

It is not necessary that elaborate and expensive houses be constructed in order to secure the best results. The fact that excessive overhead will of necessity limit profits, must be borne in mind. In planning to build or remodel a poultry house, the conditions which will make it most suitable must be considered.

### DRYNESS IS ESSENTIAL

The first essentials are dryness and adequate ventilation. Hens void a large amount of the moisture from the system through the respiratory tract. This means that the air is continually being charged with moisture. If this moisture laden air is not continuously removed, the litter becomes damp, the ceilings are covered by drops of condensing water, and the house has a damp, stuffy odor.

### DIRECT SUNSHINE IS A FACTOR IN HEALTH

Light is the second essential. Birds will not remain healthy in dark, dingy houses. Not only is light essential, but direct sunlight is far superior to sunshine filtered through glass. The ultra-violet ray, one of the short rays of the sun, has decided medicinal factors. It prevents rickets; aids in calcium retention, and consequently improves the quality of the egg and its hatching power. This ray does not pass through glass, and in order to be sure that the birds are exposed, direct sunshine is necessary. The windows should be arranged accordingly and hinged to permit opening on fine days.

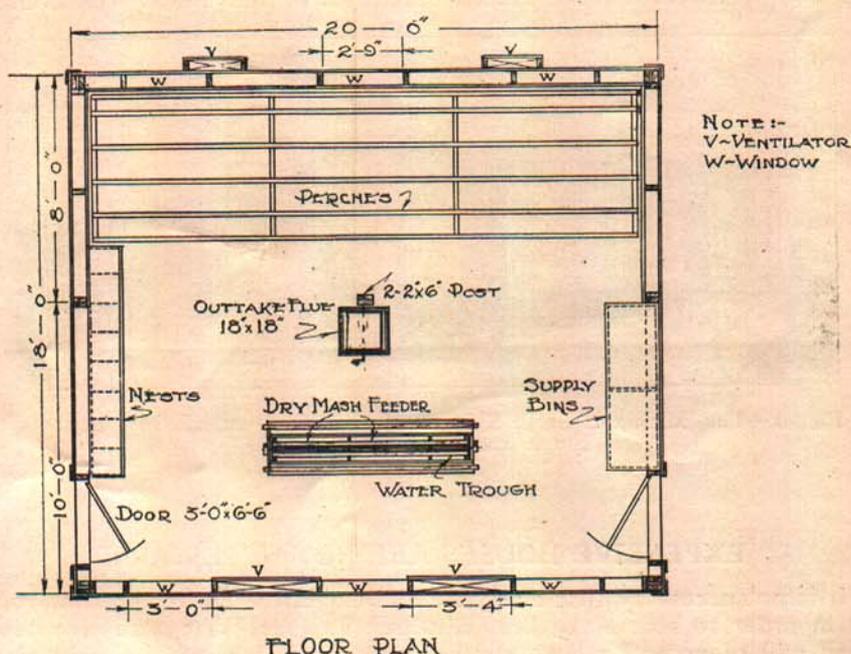
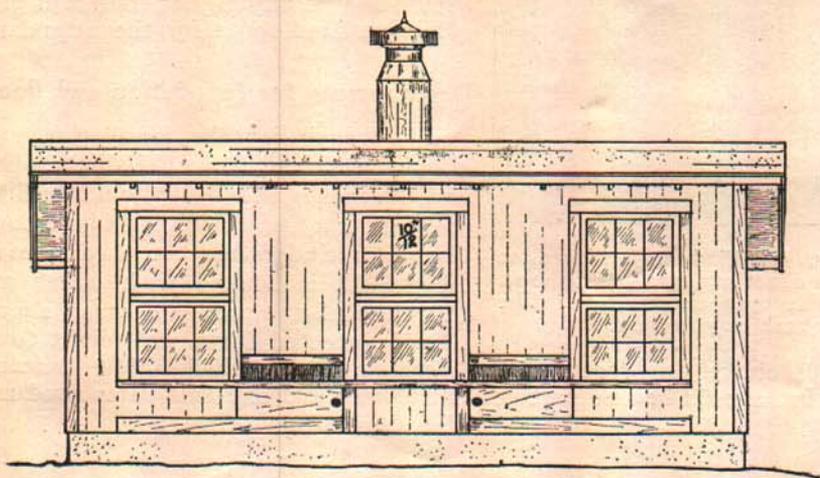


Fig. 2.—Floor plan—note the arrangement of openings, nests, perches, ventilators, and dry mash feeders.

In constructing a house, one must consider subsequent cleaning operations. Disease and parasites are a constant menace to the health and productivity of a flock. Most of our common diseases are transmitted from bird to bird through the droppings. Mites are harboured in chinks and crevices about the houses and attack the birds while they are roosting or laying. To make it possible to combat these pests, the houses must be so constructed that a thorough cleaning can be readily accomplished. Concrete floors are the only ones that can be thoroughly cleaned, scrubbed, and disinfected. Roosts, nests, dropping boards, and all equipment should be removable for cleaning.

### A DRY SITE IS ESSENTIAL

The first consideration in building a new poultry house is the location. Soil drainage is highly important to maintain dry, sanitary conditions. The most suitable location is a southern exposure, on a light sandy loam or gravelly loam soil. Heavy clay soils are difficult to drain and soon become contaminated. Very light sand is not highly desirable. While sanitation is easily maintained on a soil of the above mentioned type, it is extremely difficult to maintain on it any growing crops for forage.



**SOUTH ELEVATION**

Fig. 3.—South Elevation—Sun light and ventilation are essential. This window and ventilator arrangement provides both.

Air pockets or locations where the air circulation is poor should be avoided. Low land, frequented by fogs, is damp and undesirable. Air drainage is as essential as land drainage, since ventilation in the house is largely dependent on the movement of air outside the house.

The poultry house should be located reasonably close to the other farm buildings to facilitate the handling of feed and litter, but it should be at sufficient distance to prevent the birds taking up temporary abode in the horse stable, tool shed, garage, or other buildings. Barnyards and ponds of stagnant water should be fenced to prevent the birds from consuming foul water and filth.

### BUILD TO AVOID EXTREME TEMPERATURES

While a hen will thrive in relatively low temperatures, extremes should be avoided. In cold locations, more attention must be given

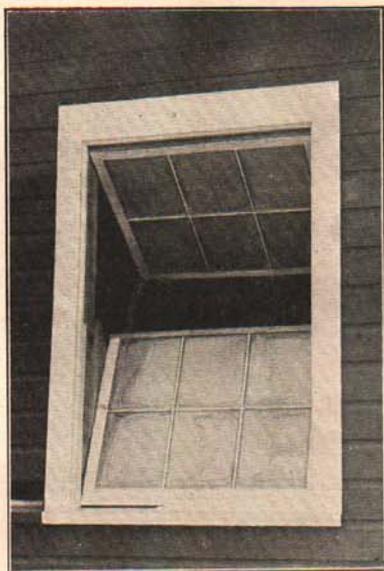


Fig. 4.—Windows arranged to admit direct sun light—they should be wide open on fine days. The lower sash may be removed.

inches above the ground level, and six inches thick. The concrete mixture should be one part cement to two and one-half parts sand and

to the insulation of the houses. Narrow houses of ten or twelve feet width, expose the birds to lower temperatures than do houses eighteen or twenty feet wide, where the birds roost at a considerable distance from the front of the buildings. An excess of glass area causes the temperature of the houses to drop quickly at night. Allow one square foot of glass to every ten or twelve feet of floor space. Houses which are too high are much colder than lower buildings. The houses should not be any higher than will give sufficient head room for the attendant.

#### Use concrete for foundation and floors

The trench for the foundation wall should be about two feet six inches deep and ten inches wide. It should be filled one foot six inches with cobble stone. Gravel or cinders may be used, provided the fill is soaked with water and thoroughly tamped. Forms should then be erected for a wall eight to 12

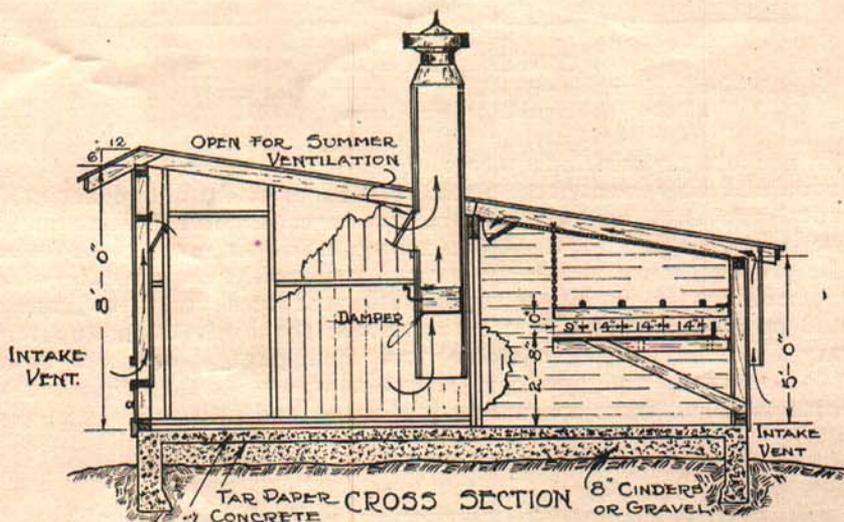


Fig. 5.—Cross section of the house—floors must be well insulated to prevent moisture. Note the fill of gravel. The movement of air is indicated by the arrows.

five parts gravel. A mixture of one part cement and six parts of clean, sharp, bank-run gravel may be used. Good bank-run gravel should contain as much material which will stay on a one-quarter inch screen as will go through it. Concrete floors should always be built eight inches to 12 inches above the ground level, to insure good drainage. Gravel or cinders make the most satisfactory fill.

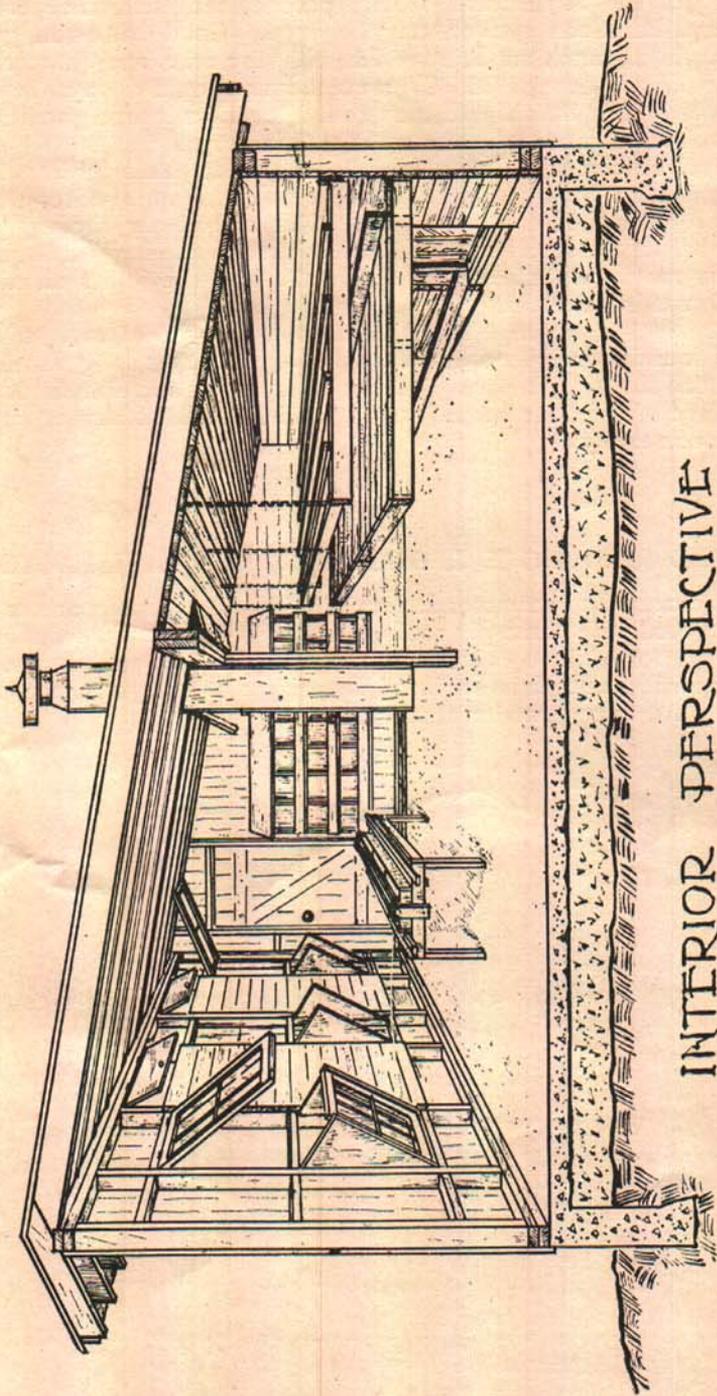
The gravel or cinder fill should next be placed. This fill should be thoroughly settled by soaking with water and tamping. After the fill is leveled, it should be covered with a layer of two-ply roofing paper to act as an insulator and to prevent moisture coming through the floor. This roofing should be carefully laid, and the joints should be sealed with roofing cement.

The three inch concrete floor is then laid, using the same mixture as for the foundation. Two anchor bolts eight inches long should be placed in each side. By means of these bolts the sills are made secure.

The surface of the floor should be troweled smooth, so that it may be cleaned more readily.

#### **PREPARED ROOFING IS ECONOMICAL AND SATISFACTORY**

Shingles cannot be recommended on a flat roof. Shiplap or six inch flooring, covered with three-ply roofing, is very satisfactory, economical, and easily put on. Slate covered roofing is better in appearance and wearing qualities, but plain surfaced is satisfactory if given a coating of roofing paint every two or three years.



## INTERIOR PERSPECTIVE

Fig. 6.—Interior perspective. The equipment is arranged to give as much clear floor space as possible. The roosts are suspended in front from the ceiling, and the dropping boards are braced to the foundation, giving more clear floor space.

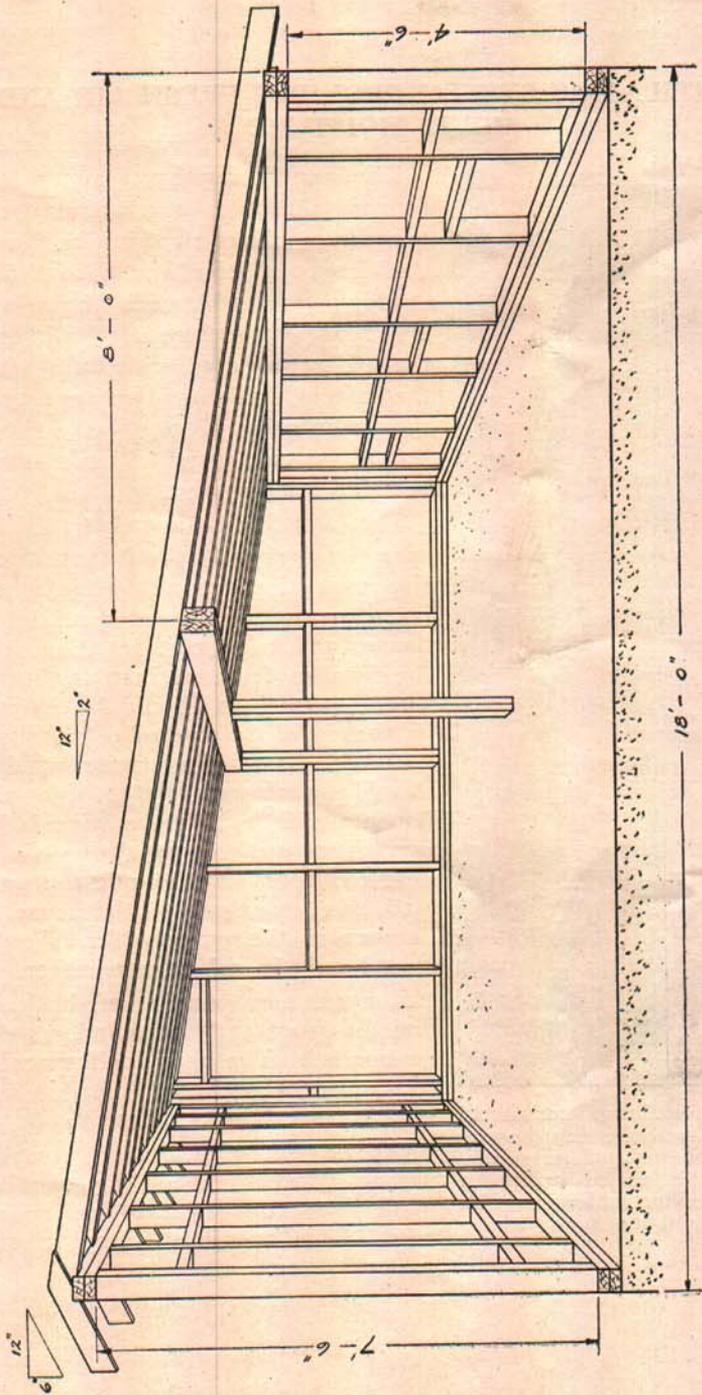


Fig. 7.—Framing perspective as used for vertical siding. When horizontal siding is used, the studding should be placed two feet apart, without girts. The purlin plate prevents sagging of the roof.

## THE VENTILATING SYSTEM PROVIDES FRESH AIR AND REMOVES MOISTURE

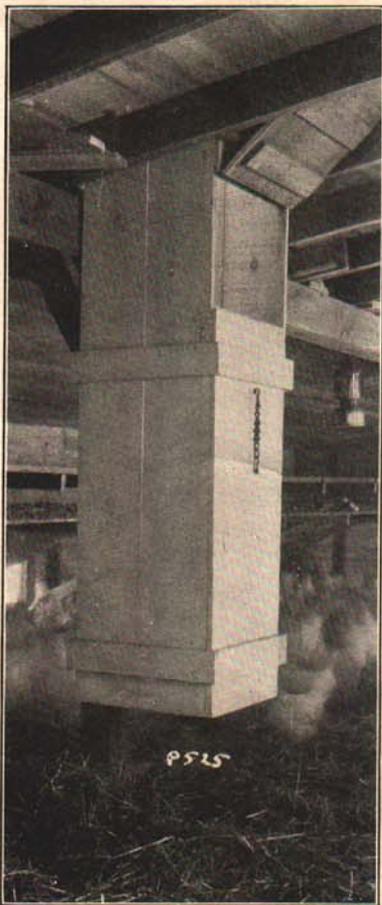


Fig. 8.—Outlet ventilator is 16 by 16 inches—note the hinged opening at the top for summer ventilation. This is closed except in summer. Gasoline lantern may be used for illumination in the winter months.

The ventilating system consists of four intake flues and one large outtake flue. The two intake flues on the front of the house are in the studding space between the windows. The rear intake flues are built outside the wall, connected with flues between the rafters, and they discharge air near the purlin plate. A portion of the plate should be cut away to make the flue full size at this point.

The inlet flues admit air to the house near the roof and take it from the outside near the ground. This arrangement prevents a direct draft into the house, and to a certain extent keeps the intakes from acting as outtakes. The intake flues should be closed, or partly closed, in case of extremely cold weather. During a strong wind they should be closed on the side of the house against which the wind is blowing. The outtake flue draws air from near the floor, thus holding the warmer air in the upper part of the house. The damper in the outtake flue should be closed only in sub-zero weather.

For summer ventilation, both doors and the front and rear windows should be opened. The four inch space back of the dropping boards permits a circulation over the perches.

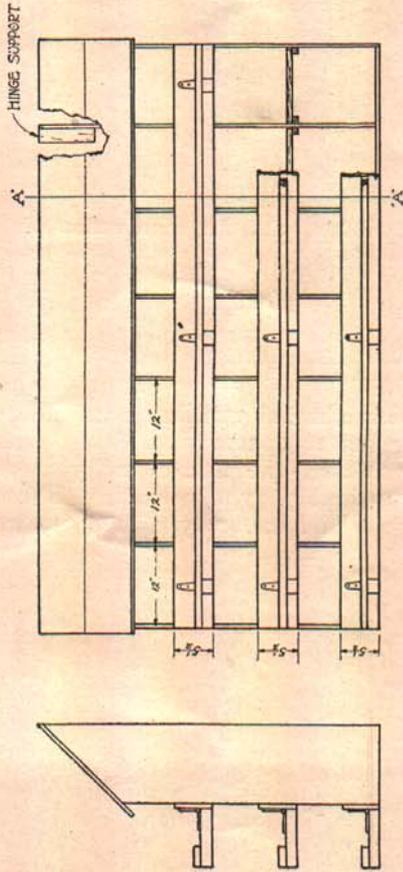
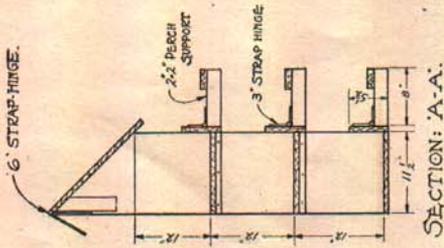
As an extra means of ventilation during warm weather, an opening is made into the outtake flue near the roof. This opening is kept closed in cold weather.



Fig. 9.—Rear Elevation—note the rear windows and the construction of the intake flues.

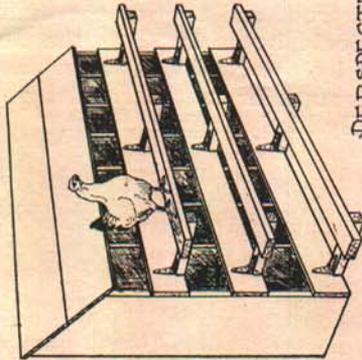
### THE OUTTAKE VENTILATOR

The outtake flue should be fitted with a metal ventilator to make it weatherproof and to give the building better appearance. The ventilator should be as large as the flue; so that the flue capacity is not limited by the roof ventilator. The stationary type ventilator is considered superior to the revolving type. The latter type is noisy and especially likely to freeze fast.



FRONT VIEW

END VIEW.



PERSPECTIVE

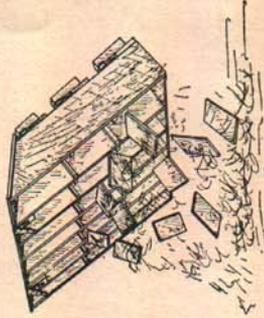


Fig. 10.—Loose bottom nests are easily cleaned and disinfected. The hinged perch, when closed, will shut the hens out of the nest. The bottom of the nest should be from 12 to 18 inches above the floor.

## WATER PANS AND FEEDERS SHOULD BE PROTECTED FROM FILTH



Fig. 11. A simple method of protecting watering pans.

Fig. 11 shows a simple method of protecting drinking dishes from contamination. The drinking dish may also be protected by a revolving cover of the type used on the dry mash feeder. The watering pan is an excellent medium for the distribution of infectious disease. It should be cleaned frequently, and filled with fresh, clean water daily.

## NESTS

Clean eggs can be produced only in clean nests. The straw must be frequently changed, and during warm weather a close watch must be kept for mites. Figure 10 illustrates a simple battery of wall nests. These should be set so that the lower nests are not less than 12 inches from the floor. Nests may be placed under the dropping board, but they are more difficult to clean and reduce the amount of light in the rear of the house.

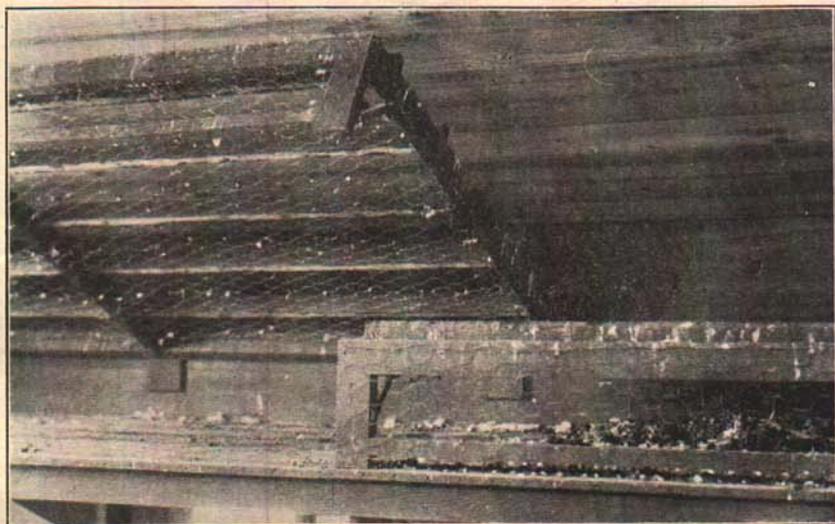


Fig. 12.—Dropping boards protected by a wire netting aid materially in the production of clean eggs and in the prevention of spread of disease.

## CARE AND MANAGEMENT OF THE POULTRY HOUSE

### Dropping boards aid in sanitation if cleaned regularly

The purpose of dropping boards is to prevent the soiling and contamination of litter. Where the boards are protected by wire, as shown in figure 12, the birds cannot scratch in the droppings, thus spreading disease and soiling eggs. It is good practice to clean the boards every morning as part of the daily routine, but where this is not possible they should not be left more than two or three days, particularly in warm weather.

The accompanying figure, No. 13, shows a type of feeder which is particularly adapted to general poultry keeping conditions.

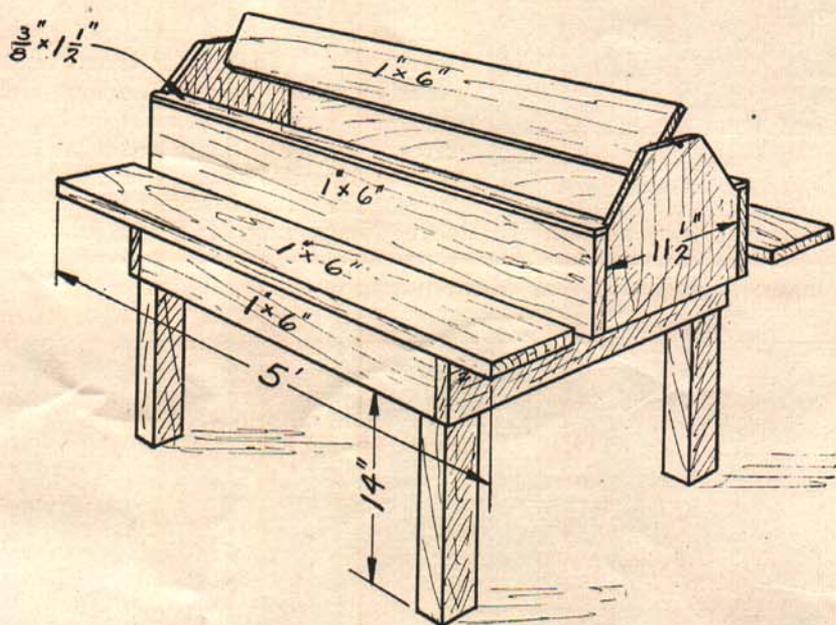


Fig. 13.—A simply constructed dry mash feeder. The revolving board on top prevents contamination of the feed.

### Litter provides exercise

The floor should be kept covered with about six inches of dry litter. Wheat or rye straw is most suitable for this purpose. This should be replaced as soon as it becomes damp or badly broken up and soiled. When houses are filled to capacity, litter should not be left in more than a month.

### BILL OF MATERIAL FOR MICHIGAN SHED TYPE POULTRY HOUSE, 18' x20'

Use	No.	Size	Quantity	Description	Price	Amt.
Foundation and Floor			8 yards	gravel	\$1.75	\$14.00
Foundation and Floor			8 bbls.	cement	3.25	26.00
Anchor bolts	8	1/2"x8"		carriage	.06	.48
Frame	28	2"x4"x12'	224 bd. ft.	No. 2 Y. Pine	50.00	11.20
Frame	8	2"x4"x14'	75 bd. ft.	No. 2 Y. Pine	50.00	3.75
Rafters	24	2"x4"x10'	160 bd. ft.	No. 2 Y. Pine	50.00	8.00
Ridge, Purlin, Post	6	2"x6"x10'	60 bd. ft.	No. 2 Y. Pine	50.00	3.00
Dropping Boards	10	2"x4"x10'	67 bd. ft.	No. 2 Y. Pine	50.00	3.35
Perches	8	2"x2"x10'	27 bd. ft.	No. 2 Y. Pine	50.00	1.35
Roof Boards		8"	600 bd. ft.	No. 2 shiplap	50.00	30.00
Siding, doors		4"	600 bd. ft.	No. 1 Flooring	60.00	36.00
Vent. Flues		4"	240 bd. ft.	No. 2 Flooring	50.00	12.00
Ceiling		4"	520 bd. ft.	No. 2 Flooring	50.00	26.00
Dropping Boards		4"	125 bd. ft.	No. 2 Flooring	50.00	6.25
Roofing			6 rolls	3-ply	3.00	18.00
Cornice		1"x4"	300 lin. ft.		.02	6.00
Cornice		1"x6"	40 lin. ft.		.03	1.20
Sash	6	6lt. 10x12		Barn sash	1.65	9.90
Sash	3	3lt. 9x12		Cellar sash	1.25	3.75
Door Hinges	2 pr.	5"		T Hinge	.20	.40
Window Hinges	6 pr.	3"		T Hinge	.12	.72
Ventilator Hinges	5 pr.	3"		T Hinge	.12	.60
Door Locks	2			Rim Lock	.50	1.00
Roof Ventilator	1	18"x18"				15.00
Nails			35 lbs.	8d Common	.05	1.75
Nails			10 lbs.	16 d Common	.05	.50
					Total	\$240.20

NOTE: Prices must necessarily be approximate and should serve only as a basis for calculating costs, when local prices for materials and labor are known.

### MAKE AN ANNUAL CLEAN-UP

In addition to the maintenance of sanitary conditions throughout the year, an annual clean-up is advisable. This should come in the fall before the new pullets are put into winter quarters. All litter and removable equipment should be carried out; the walls and ceiling swept down; the floor and dropping boards scrubbed to remove all dirt and filth. The equipment should receive a similar treatment. When this has been done, the plant is ready to disinfect. It is useless to spray disinfectant over areas covered with filth and manure.

Any of the coal tar disinfectants are suitable as a poultry house disinfectant. These should be used according to directions, and will give better results if applied warm or hot.

### **DO NOT OVERCROWD BIRDS**

They require:

Three and one-half to five square feet floor space per bird.

Seven to ten inches of roost space per bird.

One nest to each five or six birds.

One nest to each four hens if traps are used.

Ten feet of hopper space per 100 birds.

Adequate drinking fountains.

Grit and shell always available in hoppers.