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AGRICULTURAL EXPERIMENT STATION OF

THE COLLEGE OF AGRICULTURE

Department of Poultry Husbandry

WORKING PLANS OF CORNELL POULTRY HOUSES

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This circular contains working plans and a brief explanation of several types of approved poultry houses and appliances. Very similar designs have been shown in Reading-Course Lesson No. 33, Circular No. 1 of the Department of Poultry Husbandry, and Bulletin 274 of the Cornell

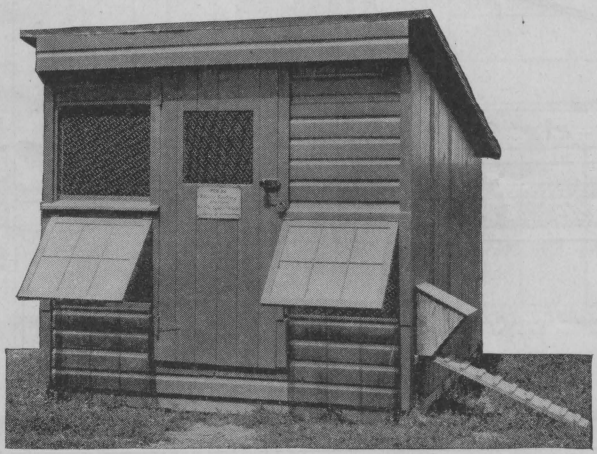

FIG. 3.— *The Cornell breed-testing house. The door and windows are cased over the siding. The exit door is boxed in so as to prevent drafts*

University Agricultural Experiment Station. All these publications are now out of print.

The poultry houses described herein do not represent any one person's original ideas. They are the result of a compilation of the suggestions and ideas of several members of this department, emanating from a study of other types and styles of houses recommended and in use in other parts of the country. Opinions on poultry-house construction are constantly changing as experience shows the wisdom of placing greater emphasis on different principles of construction.

THE CORNELL BREED-TESTING HOUSE

The building shown in Figs. 3, 4, 5, and 6 is a colony house eight feet square, which is used in the Cornell breed-testing work. It will hold ten to fifteen fowls. This type of house is suitable for a small flock of breeding fowls or for young chickens on the farm, and is especially desirable for a small flock in the village or town.

A cross-section view of this building is shown in Fig. 4. There are two 2x2-inch perches 3 feet 6 inches long. These perches are boxed in, so

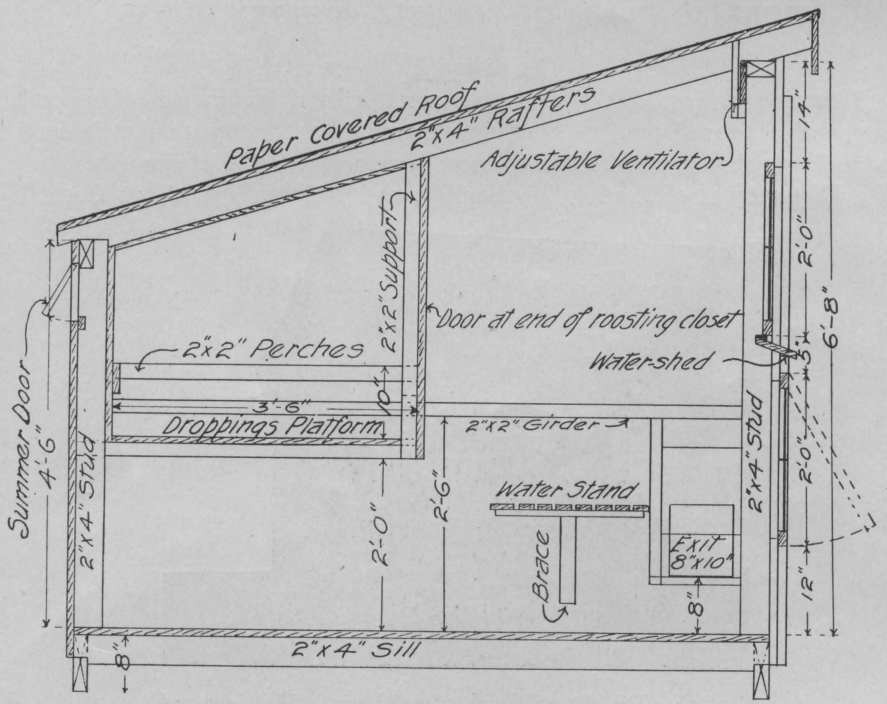

FIG. 4.— *A cross-section plan of the Cornell breed-testing house. Note the construction of the windows, water-shed, and ventilating doors in the back and front walls*

to speak, on all sides except the front. The rear 2x4-inch plate is placed on edge so as to allow a circulation of air around the roosting closet. The front end of the closet is hinged to swing back against the side wall in summer.

The water stand is made of slats in order to allow the filth to fall to the floor. All the fixtures are raised above the floor so as to give greater floor space, to make cleaning easier, and to elevate the water pan and other appliances above the litter, which is disturbed when the fowls are at work on the floor.

This house is ventilated, during the winter, through a cloth curtain in the door, shown in Fig. 5. During the summer, greater circulation of air can be obtained by opening the windows in front and the small door behind the perches, and by dropping the adjustable board ventilator in the peak.

Heavier timbers can be used underneath, if desired, to serve as runners

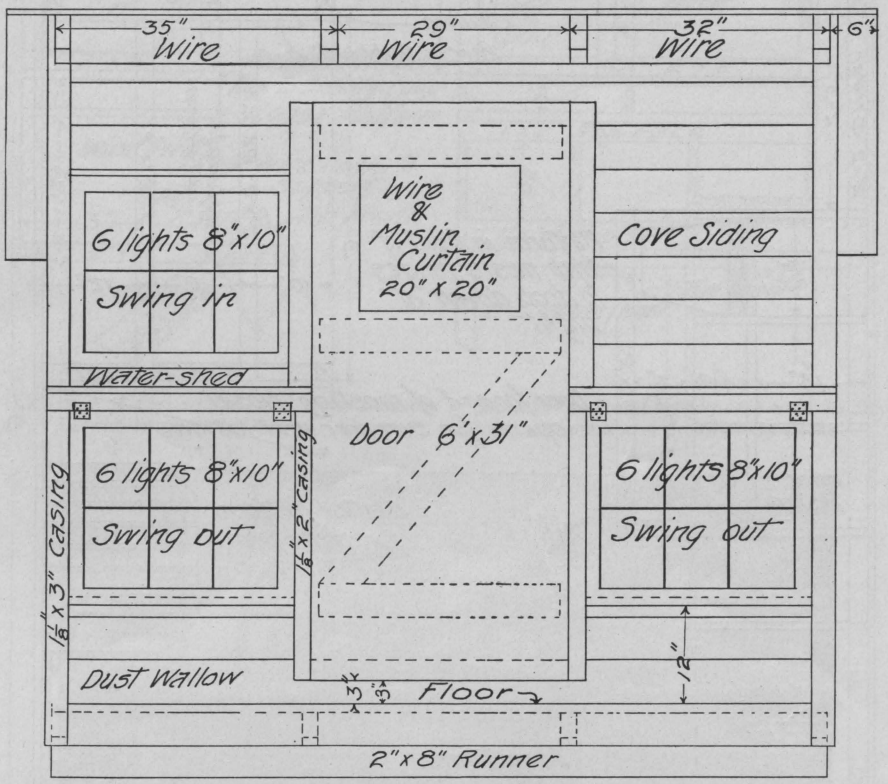

FIG. 5.— *Front elevation of the Cornell breed-testing house. Note the size and location of ventilators in door and in peak between rafters. The rafters are spaced unevenly in order to assist in the interior construction*

on which to draw the house from place to place. A double floor, also, would make the building stronger, tighter, and warmer.

The two lower windows are placed outside the siding and cased in with lumber of their own thickness. The opening in the siding, over which the window fits, is three fourths of an inch smaller on each side. This projection serves as a stop and makes a tighter construction. The upper window fits between two upright timbers and swings in from the side. The siding and casing are extended three fourths of an inch inside the edge

of the window sash, to serve as a stop and a wind cover. Between the upper and lower windows there is a water-shed with a small baseboard fastened to it on the upper side. This baseboard is similar to the construction shown in Fig. 28. The wire mesh covering the windows is fastened to the outside of the studding before either siding or casing is placed.

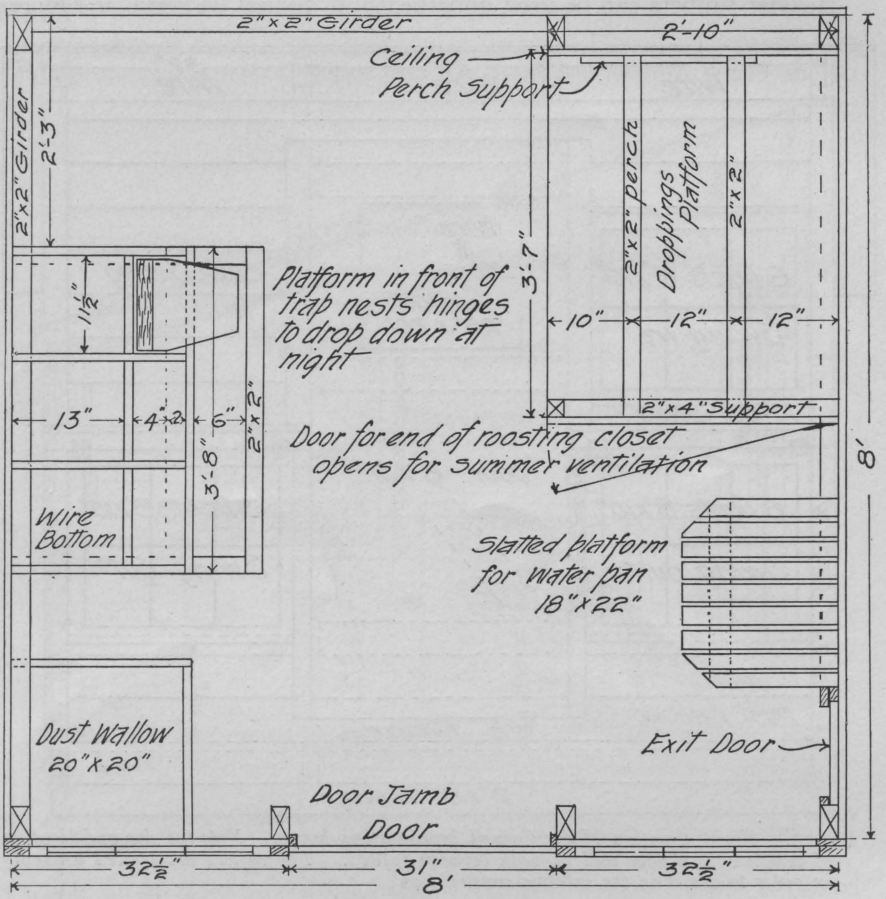

FIG. 6.— *Floor plan of the Cornell breed-testing house, showing the location of different fixtures and timbers*

The casings for the door, windows, and sides are placed over the siding.

The detail of the trap nest and broody coop used in the breed-testing house is shown in Fig. 7. The nest boxes rest on a 2x2-inch platform and are hooked to the rear wall. The top of the nest serves as a platform to catch the droppings from the broody coop. The platform is loose so that it can be drawn out for cleaning. The bottom of the broody coop

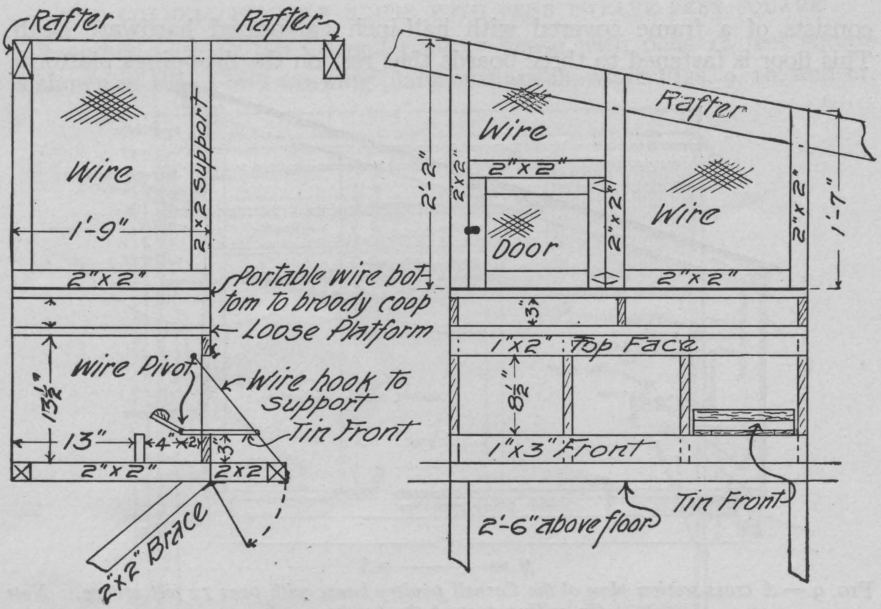

FIG. 7.— *Across-section and front elevation of the trap nest and broody coop used in the Cornell breed-testing house. There are three nests below and a broody coop above*

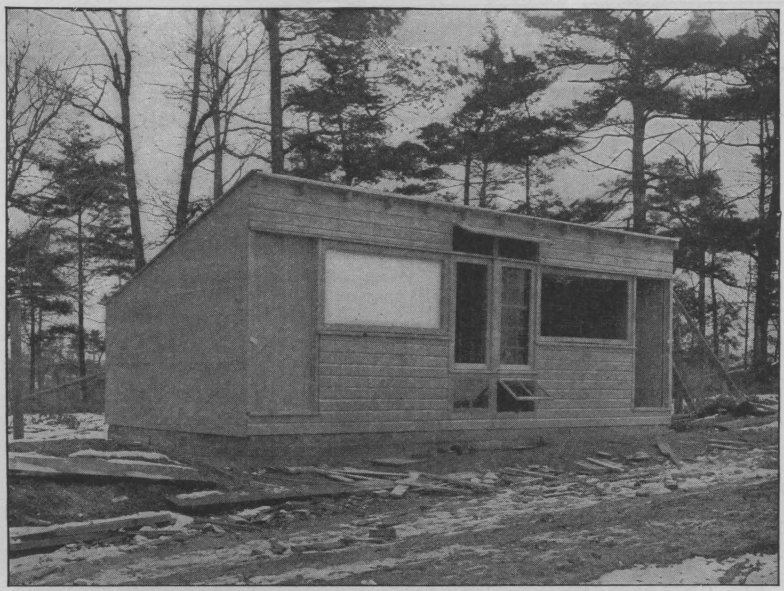

FIG. 8.— *The Cornell poultry house with pens 12 feet square. There is a door in the partition between pens. The cloth curtain is made of loosely woven unbleached muslin*

consists of a frame covered with half-inch galvanized hardware cloth. This floor is fastened to three boards that rest on the droppings platform.

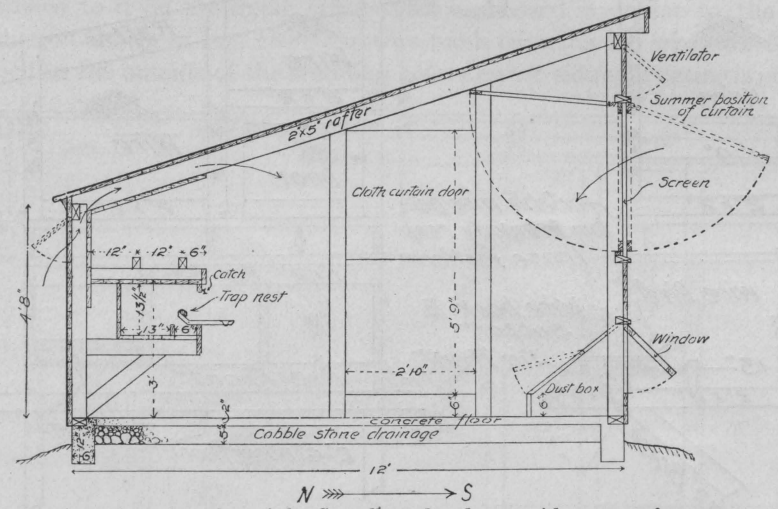

FIG. 9.— *A cross-section plan of the Cornell poultry house with pens 12 feet square. Note the ceiling around the perches*

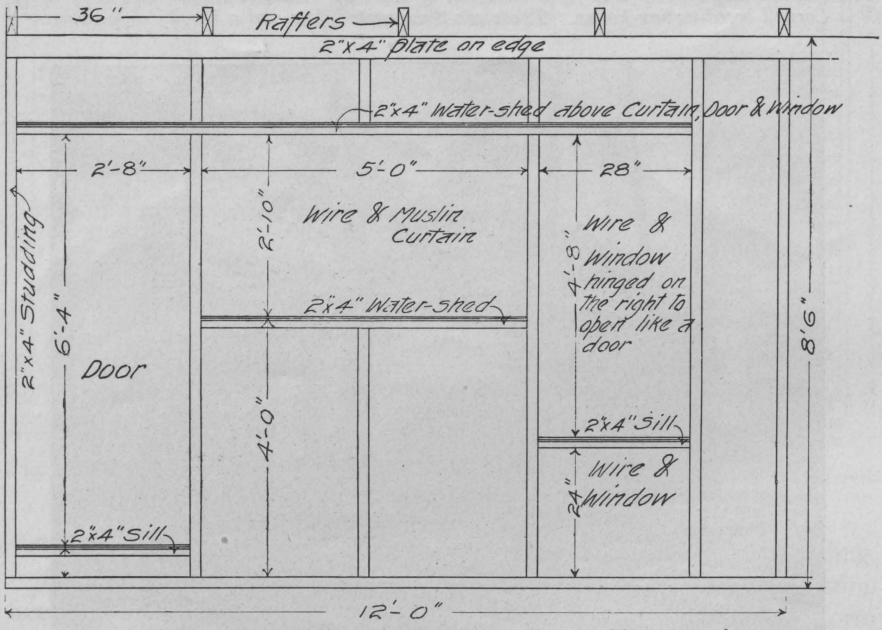

FIG. 10.— *Front elevation of the Cornell poultry house with pens 12 feet square, showing the frame construction*

It also is portable. The 2x2-inch supports and framework to which the wire for the broody coop is fastened are nailed to the rafters and side wall.

THE CORNELL POULTRY HOUSE WITH PENS TWELVE FEET SQUARE

A corner view of the Cornell poultry house with pens 12 feet square is shown in Fig. 8 and working plans of it are shown in Figs. 9, 10, and 11.

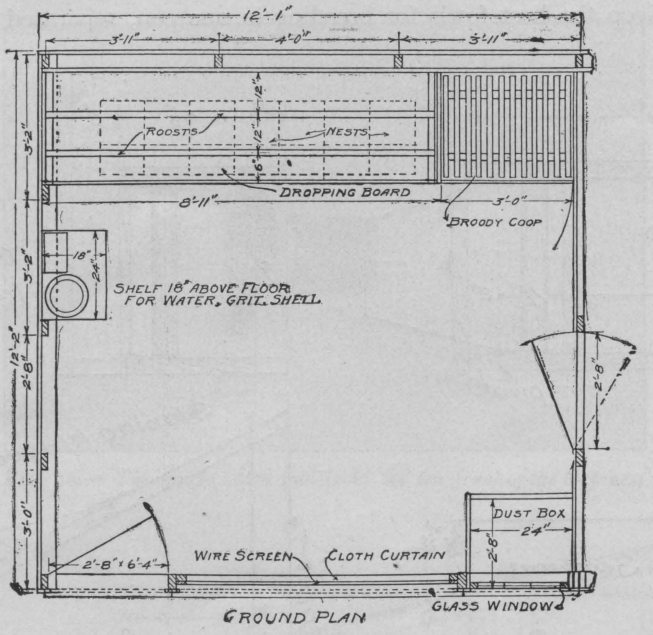

FIG. 11.— *Floor plan of the Cornell poultry house with pens 12 feet square, showing size and location of the interior fixtures and timbers*

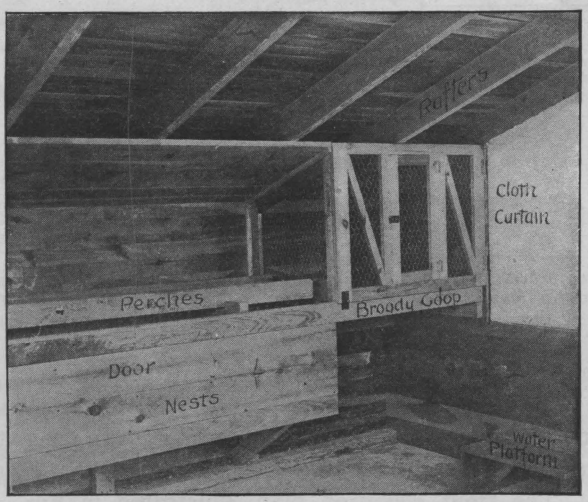

FIG. 12.— *The broody coop, nests, and roosting fixtures in the Cornell poultry house with pens 12 feet square*

This house is recommended for farm flocks of fifty to seventy fowls. For such a flock it should have two pens, as shown in Fig. 8. This makes it possible to keep the old fowls separated from the pullets, or, better still, to keep the best fowls for breeding in one pen, separated from the others.

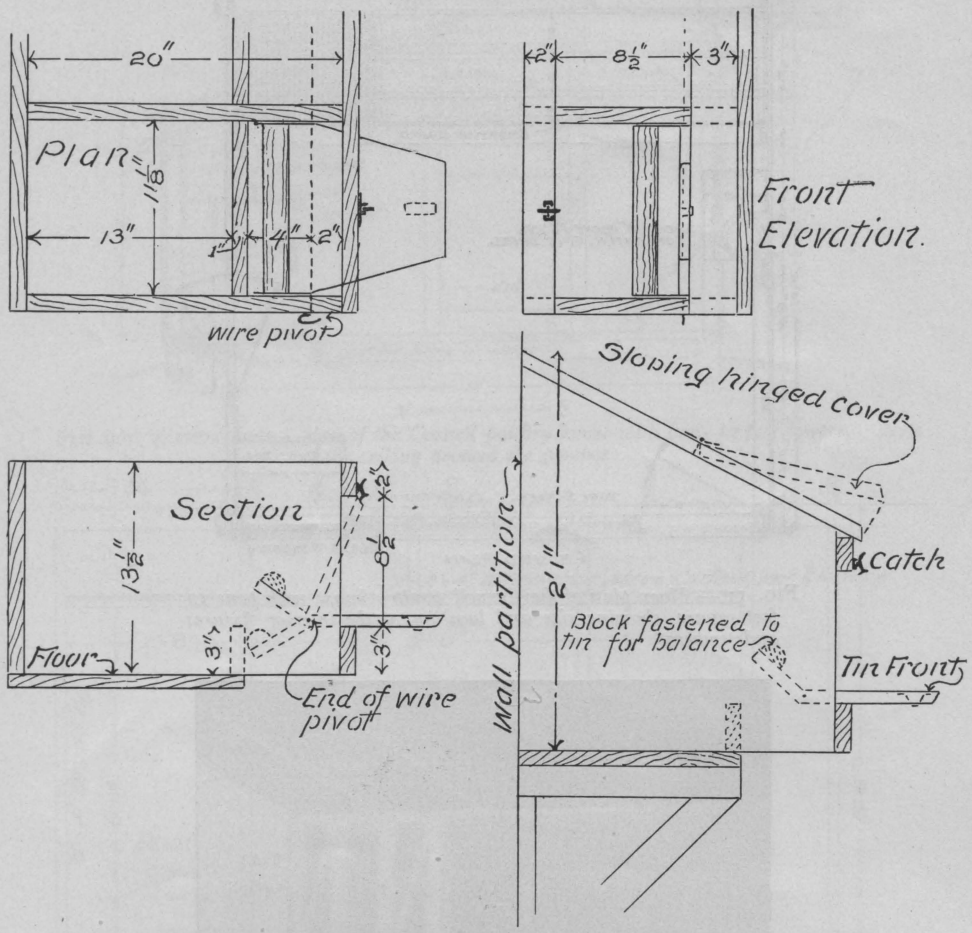

FIG. 13.— *The improved Cornell trap nest. This illustration pictures a nest with the medium-sized tin front. The fronts can be made by any tinsmith. Care should be taken to use a balance block heavy enough to close the trap when partly lifted*

The size of the muslin curtain should be varied in different parts of the State. The size of the curtain shown in Fig. 8, 3 feet 4 inches by 6 feet 4 inches, is recommended for the warmer sections. In the extremely cold counties a curtain only 4 feet long and 2½ or 3 feet high would be more satisfactory. The front elevation plan, illustrated in Fig. 10, shows a

curtain 5 feet long and 2 feet 10 inches high. This is suitable for medium temperatures.

The foundation and floor of this house are of concrete. A wall 6 inches

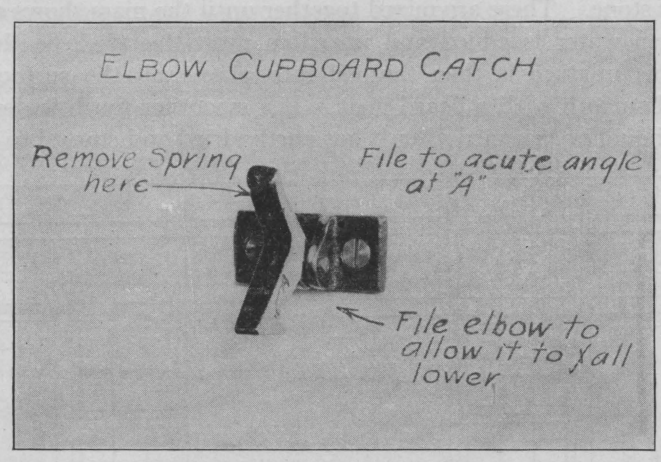

FIG. 14.— *The single catch that locks the tin front of the trap nest*

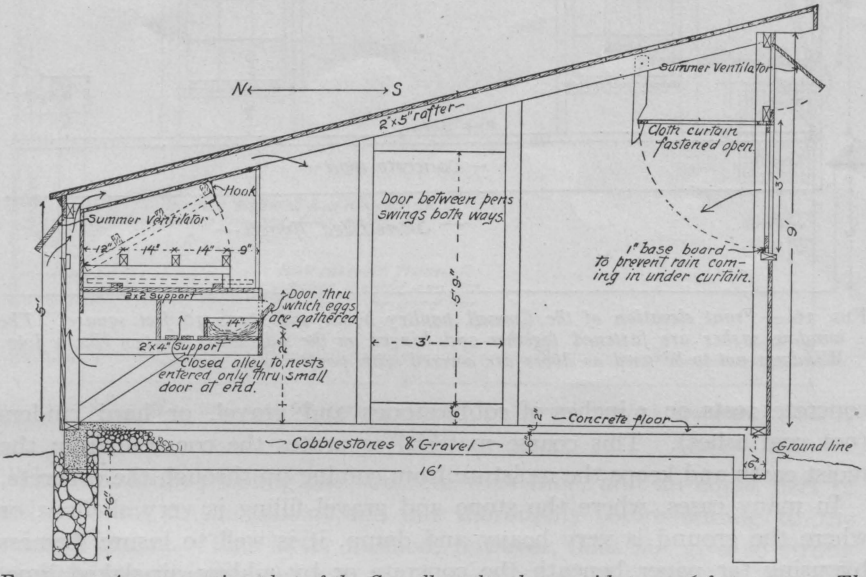

FIG. 15.— *A cross-section plan of the Cornell poultry house with pens 16 feet square. The summer ventilator extends the entire length of the pen*

thick and 12 inches high (7 inches above the ground) is built above a trench filled with cobblestones. The trench should be about 1 foot deep, except in a very cold climate and on a heavy soil, in which case it should

be deeper. The concrete floor is 2 inches thick and consists of rough concrete, only. This is made of one part of cement and six parts of medium gravel; or one part of cement, two parts of sand, and four parts of screened gravel or stone. These are mixed together until the mass shows a uniform color, then water is added and mixed in until the whole is thoroughly wet. This mixture is then tamped into place and the surface floated level and smooth with a board float. If a smoother finish is desired, the surface should be troweled after it has partly dried and started to set. The

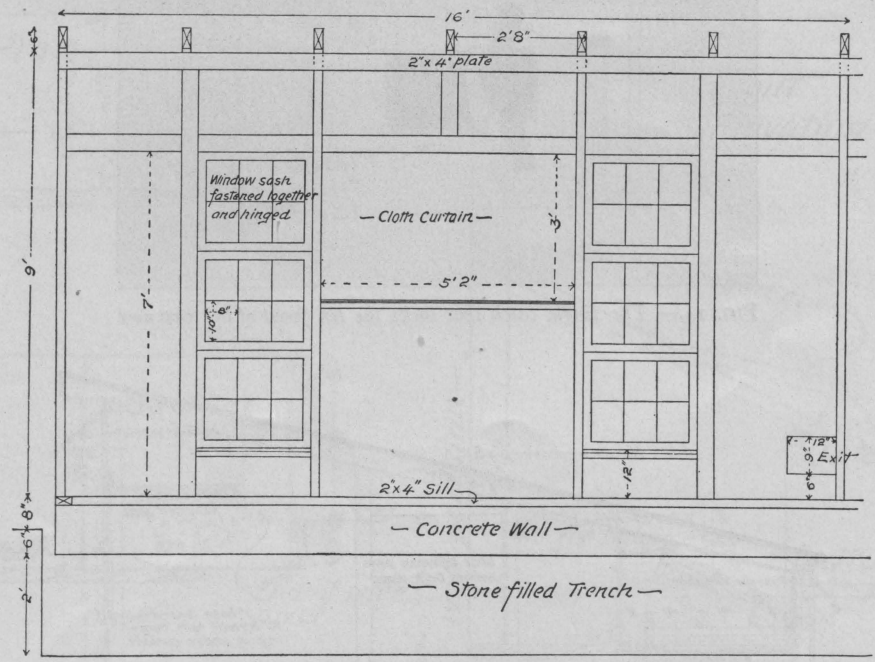

FIG. 16.— *Front elevation of the Cornell poultry house with pens 16 feet square. The window sashes are fastened together and hinged on the side so as to open like a door. Windows not to be used as doors are covered with poultry-wire netting*

concrete rests on 5 inches of cobblestones and gravel, or hard cinders (not coal ashes). This coarse material separates the concrete from the moist earth and keeps the moisture from coming up through the concrete.

In many cases, where the stone and gravel filling is very shallow, or where the ground is very heavy and damp, it is well to insure dryness by using tar paper beneath the concrete or by adding air-slaked lime. When using tar paper, level, dampen, and pound down the gravel filling. Sweep a light coat of clear sand over the gravel so as to protect the paper from being cut by the coarser parts of the gravel, and lay over this smooth surface one thickness of one-ply tar paper with edges overlapping one

half the width of the paper; or, better still, use three layers of one-ply tar paper with a coat of tar paint between the layers. Over the tar paper spread the 2-inch layer of rough concrete, as described above. In addition to preventing the upward passage of water, the tar paper prevents the downward passage of heat, thereby providing a warmer floor.

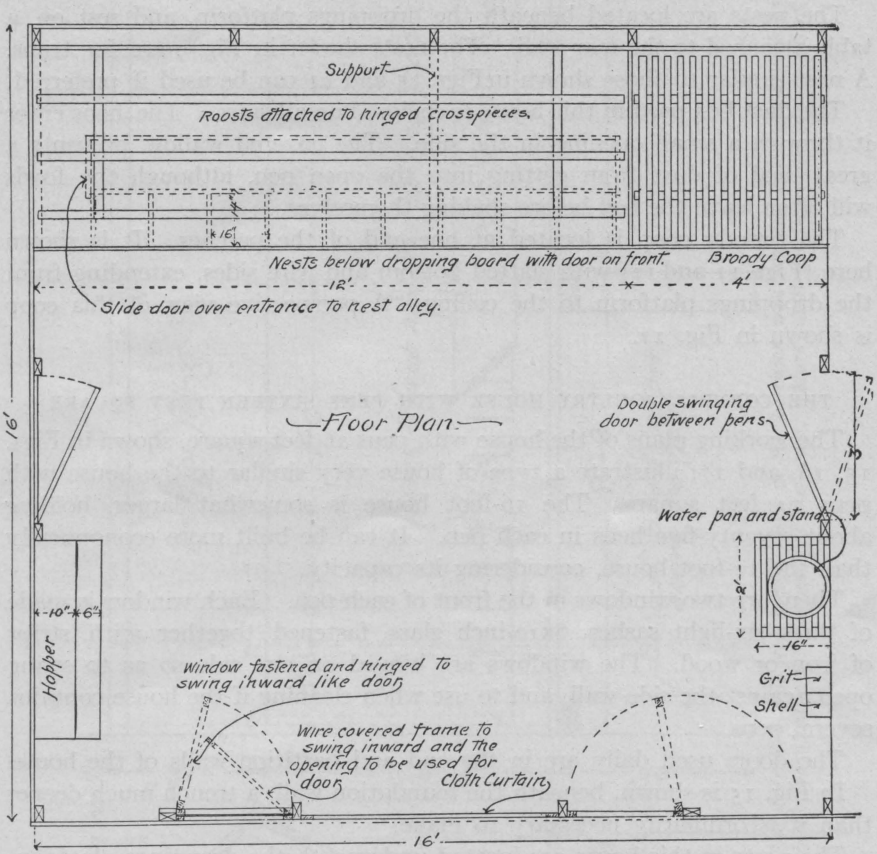

FIG. 17.— *Floor plan and interior arrangement of the Cornell poultry house with pens 16 feet square*

When moisture-proofing the concrete with lime, add an equal part of air-slaked lime to the cement and mix thoroughly before adding to the sand and gravel. This latter method, however, does not give so strong and satisfactory a floor as does the former.

The house is ventilated in winter by the cloth curtain, and in summer by a small door at the top of the front side, by opening the glass window, and by the small door at the top of the back side. The muslin curtain is hinged on the outside and fastened up to serve as an awning during the hot summer months.

The roosting closet is enclosed in the same way as in the breed-testing house.

The partition between pens should be made of wood alone, or of wood and cloth. The cloth should not be used where there is likelihood of striking and tearing it while cleaning the pens.

The nests are located beneath the droppings platform, and rest on a table attached to the rear wall. The nests shown in Fig. 9 are for traps. A nest similar to those shown in Figs. 15 and 21 can be used if preferred.

The dust box used in this house is enclosed on all sides. The hens enter it through a small opening in the side. The covered wallow prevents a great deal of dust from getting into the open pen, although the fowls will often leave the box before shaking themselves.

The broody coop is located at one end of the perches. It is shown here (Figs. 11 and 12) with slatted bottom and wire sides, extending from the droppings platform to the ceiling. A perspective view of this coop is shown in Fig. 12.

THE CORNELL POULTRY HOUSE WITH PENS SIXTEEN FEET SQUARE

The working plans of the house with pens 16 feet square, shown in Figs. 15, 16, and 17, illustrate a type of house very similar to the house with pens 12 feet square. The 16-foot house is somewhat larger, holding about seventy-five hens in each pen. It can be built more economically than the 12-foot house, considering its capacity.

There are two windows in the front of each pen. Each window is made of three six-light sashes, 8x10-inch glass, fastened together with strips of iron or wood. The windows are hinged on one side so as to swing open against the side wall, and to use when cleaning if the house contains several pens.

The doors used daily are in the end and partition walls of the house.

In Fig. 15 is shown, beneath the foundation wall, a trench much deeper than it is ordinarily necessary to make.

The nests in this house are located underneath the droppings platform. Behind the nests there is an enclosed passageway that is entered at either end. Slide doors can be used at these ends to be closed at night and thus prevent the hens from returning. The eggs are gathered through a door in the front. A more detailed plan of the nest, as it is adapted to side-wall use, is shown in Fig. 28.

THE CORNELL POULTRY HOUSE WITH PENS TWENTY FEET SQUARE

Although it is commonly believed that hens give greater production when kept in small flocks, there is abundant evidence of the satisfactory production of fowls in flocks of one hundred to five hundred hens.

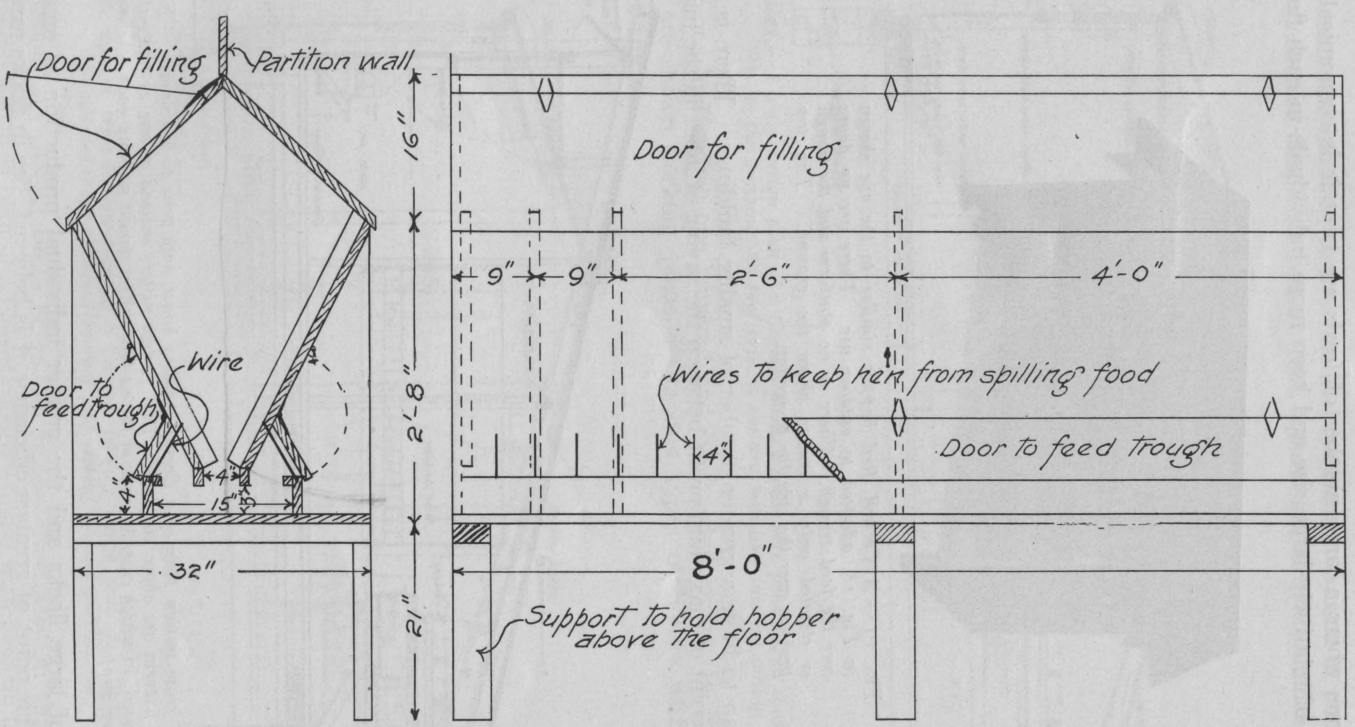

FIG. 18.— *A detailed plan of the Cornell double feed hopper used in the partition wall between two 20-foot pens in a long house. The partitions in this hopper can be adjusted to suit the needs of the feeder. More small compartments can be added. For smaller pens the hopper can be shortened*

On farms where a large number of fowls are kept it is economical to use pens of relatively large size and keep more individuals in each flock,

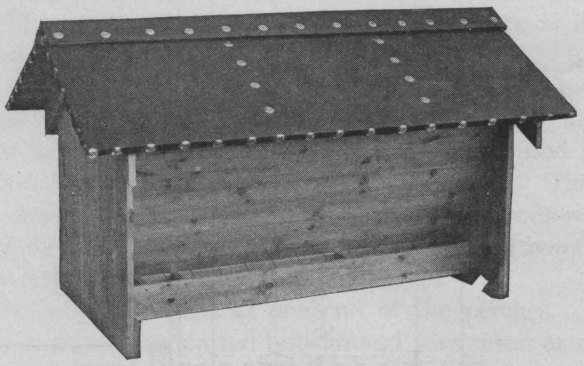

FIG. 19.—*A Cornell feed hopper similar to the one shown in Fig. 18, adapted to outdoor use. There are no doors over the feed trough. There is no platform and the trough is elevated only 2 inches above the ground. The top projects over the side for protection*

rather than to have a greater number of smaller buildings. There is, of course, a point of maximum profit between the saving of labor in the man-

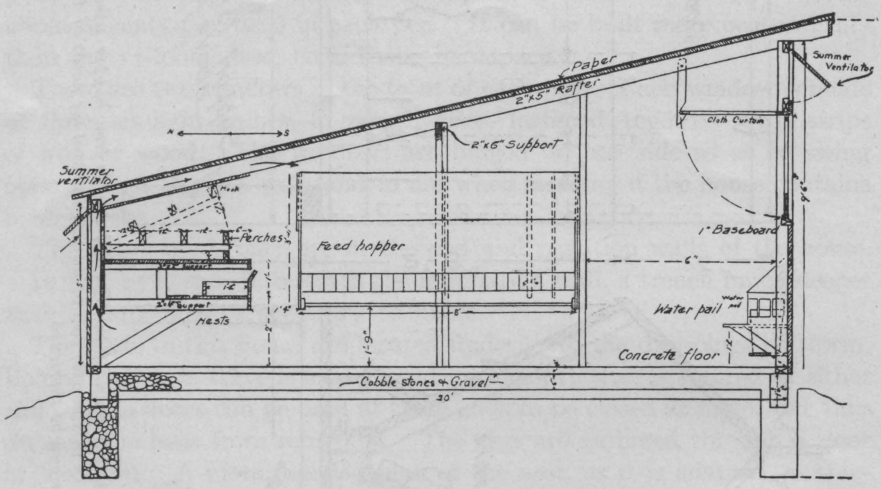

FIG. 20.—*A cross-section plan of a Cornell poultry house with pens 20 feet square. Note that all fixtures are above the floor. Two 12-foot rafters instead of one 21-foot rafter can be used, in which case the ends of the 12-foot rafters would side-lap each other over the center support*

agement of large flocks and the greater individual production of small flocks. This point of greatest efficiency, it is believed, lies in flocks rang-

ing from one hundred to five hundred fowls each, housed in pens twenty or more feet deep. A pen 20 feet square will provide sufficient space

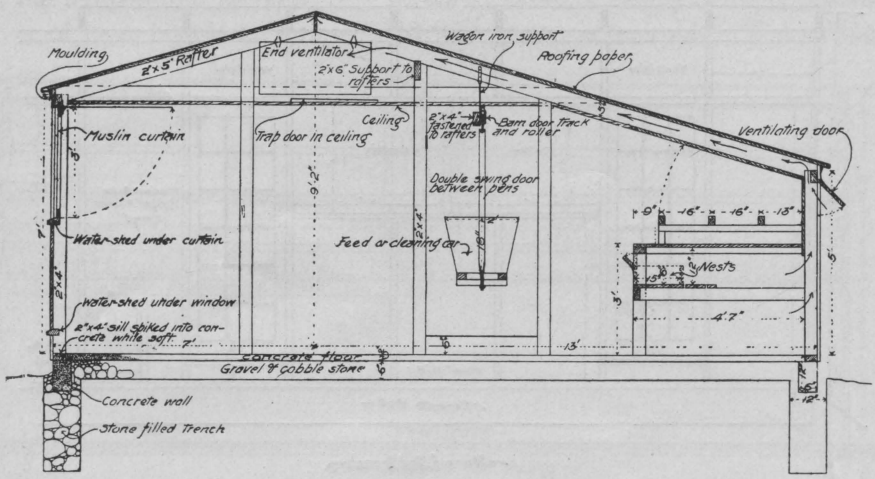

FIG. 21.—*A cross-section plan of a Cornell poultry house with pens 20 feet square, adapted to the combination roof type of construction and interior ceiling*

for one hundred to one hundred and twenty-five fowls. In Figs. 20 to 26 are shown working plans of various types of houses with pens 20 feet square.

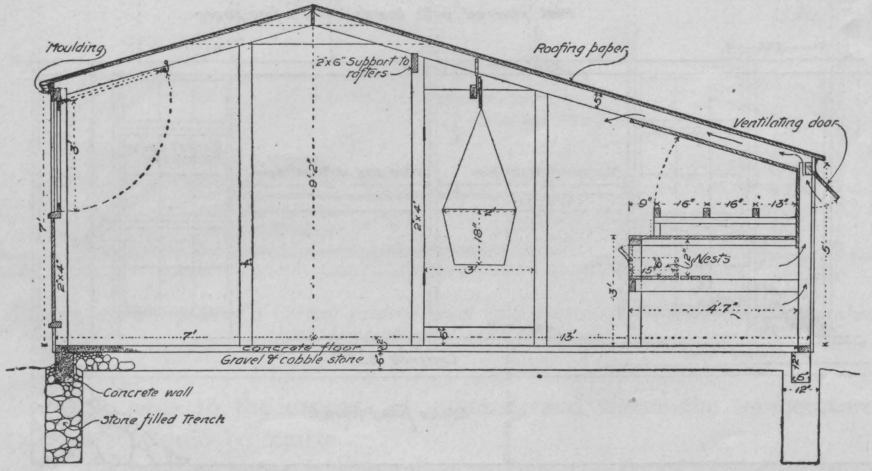

FIG. 22.—*A cross-section plan of a Cornell poultry house with pens 20 feet square, adapted to the combination roof and ceiling around perches only*

There are several types of 20-foot houses illustrated in this circular. The cross-section plan of a Cornell poultry house with pens 20 feet square

is illustrated in Fig. 20. In Fig. 21 is shown the cross-section plan of this house adapted to a combination roof with an inside ceiling of matched

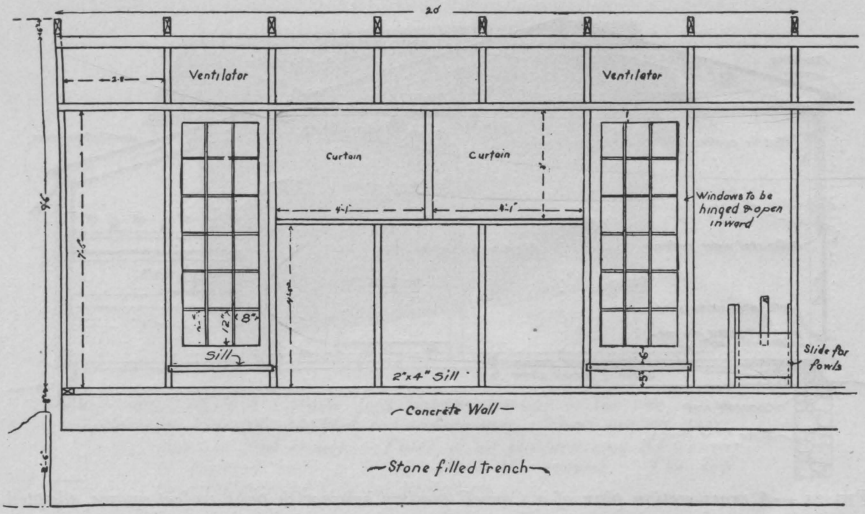

FIG. 23.— *Front elevation of a Cornell poultry house with pens 20 feet square. This has two cloth curtains, making it possible to open one or both at the same time. The windows shown here are of a special size made to order. Sashes similar to those shown in Fig. 24 can be substituted*

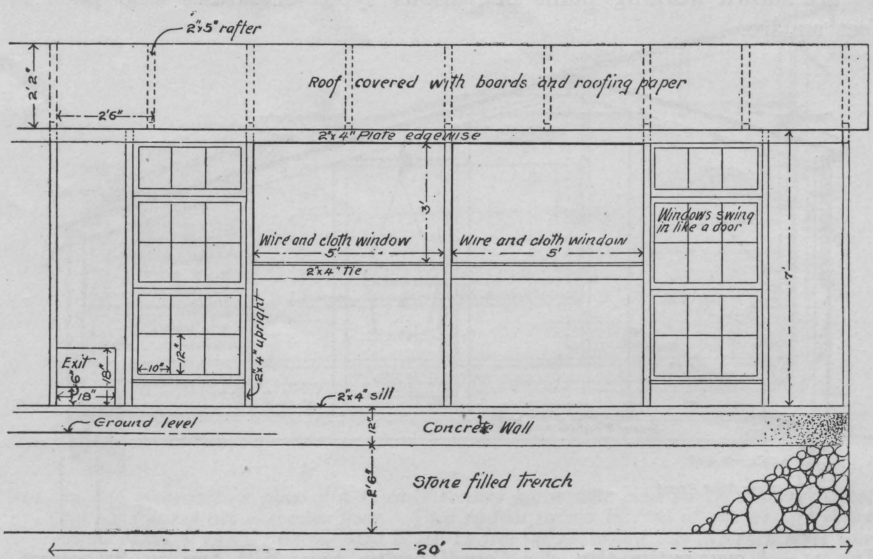

FIG. 24.— *Front elevation of a Cornell poultry house with pens 20 feet square, adapted to the combination roof*

lumber. In Fig. 22 is shown the end plan of a similar house without the ceiling. The interior arrangement and equipment of these pens is the

same for all practical purposes. The ceiling in the house illustrated in Fig. 21 makes the pen warmer in winter and cooler in summer. Where the temperature becomes very severe at times, a ceiling of tight boards, or of loose boards or wire covered with straw, is desirable. The ceiling,

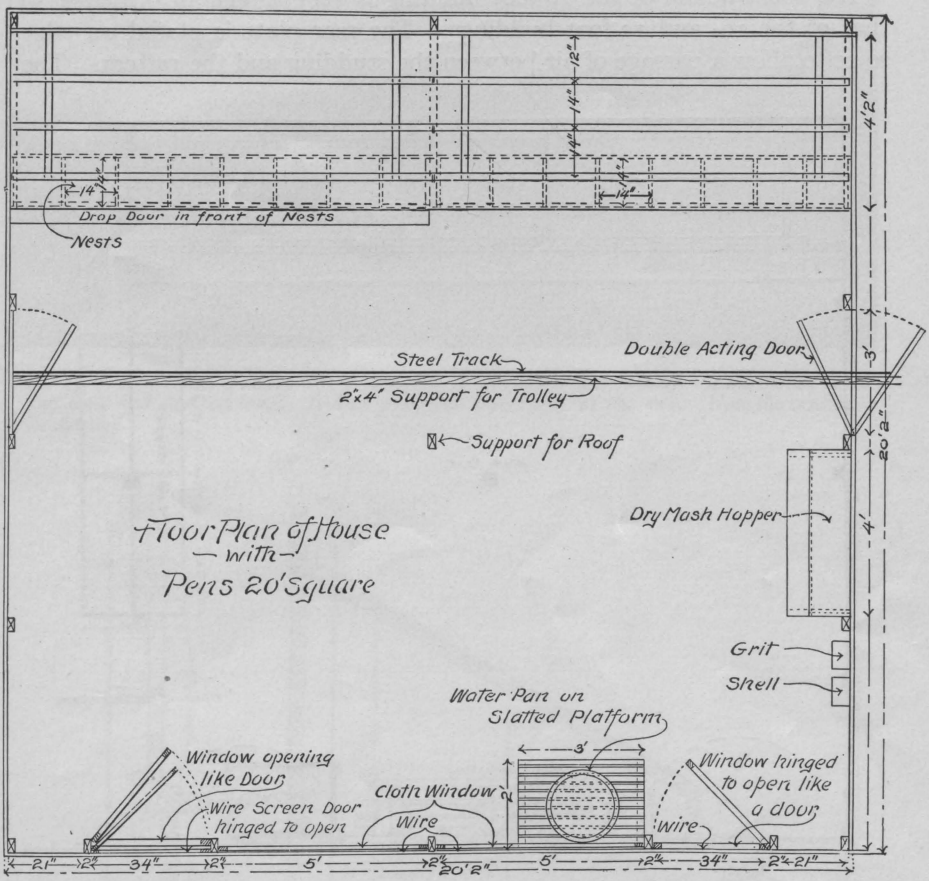

FIG. 25.— *Floor plan of a Cornell poultry house with pens 20 feet square, showing location and dimensions of interior fixtures*

however, adds to the expense of a house, and where the temperature permits it should be omitted.

In this type of house it is possible to keep the flocks separated by a complete partition of boards or a combination of cloth and boards, as illustrated in Fig. 25, or to use three-quarter partitions and allow the flocks to mix, as illustrated in Fig. 26.

In extremely cold climates it is well to use even smaller cloth curtains than are called for in Figs. 23 and 24. As an alternative, a wooden door or shutter may be hinged to close over one of the two curtains. The wooden shutter should be closed during the coldest weather only.

The construction of the 20-foot building is very similar in principle to that of the 16- and 12-foot buildings. The rear plate is placed on edge so as to allow a passage of air between the studding and the rafters. The

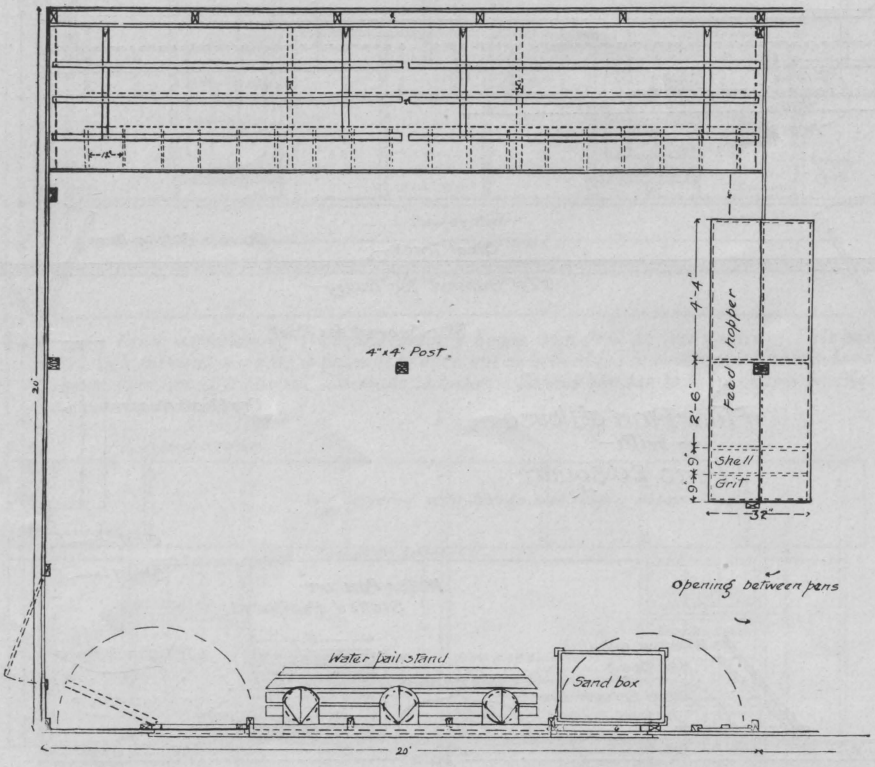

FIG. 26.— *Ground plan of a Cornell poultry house with pens 20 feet square, and "three quarter" partitions to prevent drafts and allow greater freedom to the fowls*

cloth curtains are hinged at the top, and fit tightly at the bottom over a window sill. The glass windows hinge at the side and open against the side wall, to be used as doors for cleaning. The ventilator in the back extends the entire length of the house. The ventilators in the gable ends of the house are kept open all summer, and one is kept partly open in the winter. The summer ventilators in the back are made perfectly tight during the winter.

FEED-AND-WATER CAR

The labor of caring for the fowls in a long house can be greatly lessened by the use of a feed-and-water car. The relative location of such a car

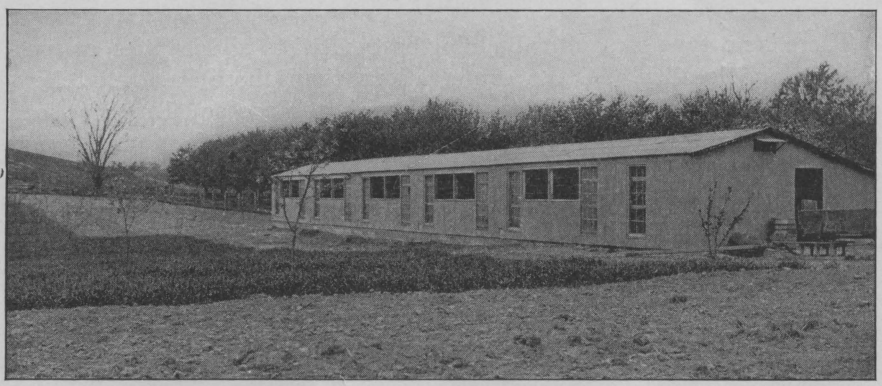

FIG. 27.— *A Cornell poultry house adapted to the combination roof. This house is 20 feet deep and 110 feet long. It has a 10-foot feed room at one end. Note the ventilator in the end*

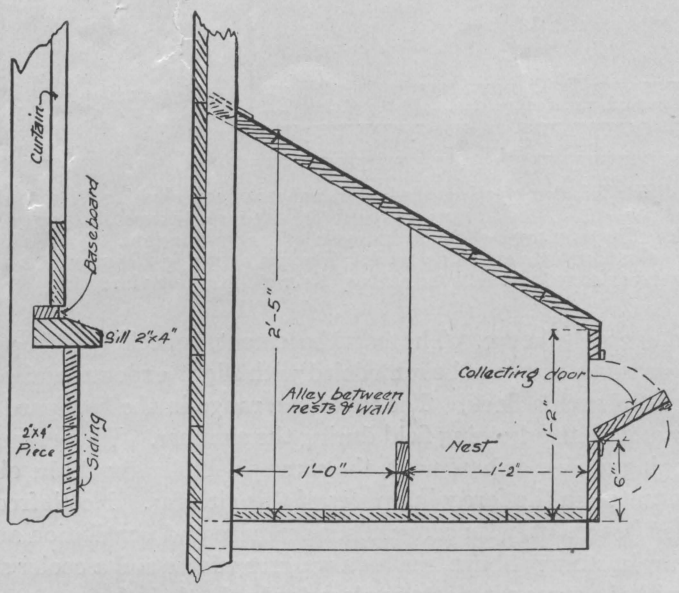

FIG. 28.— *A detailed plan of the sill and baseboard construction for a cloth curtain, and a detail of nest construction for side-wall use*

is shown in Fig. 21. There are several manufactured cars that can be used satisfactorily in such a house. The homemade car illustrated in

Fig. 29 is, in many respects, better adapted to poultry feeding and is much cheaper to install. A separate car should be used for cleaning.

SUMMARY

There is no type of poultry building best suited to all localities, or even to any one locality. Other combinations than those illustrated here can be made to meet special conditions with perhaps equal satisfaction. On farms where only a moderate-sized flock is kept, it is often unnecessary

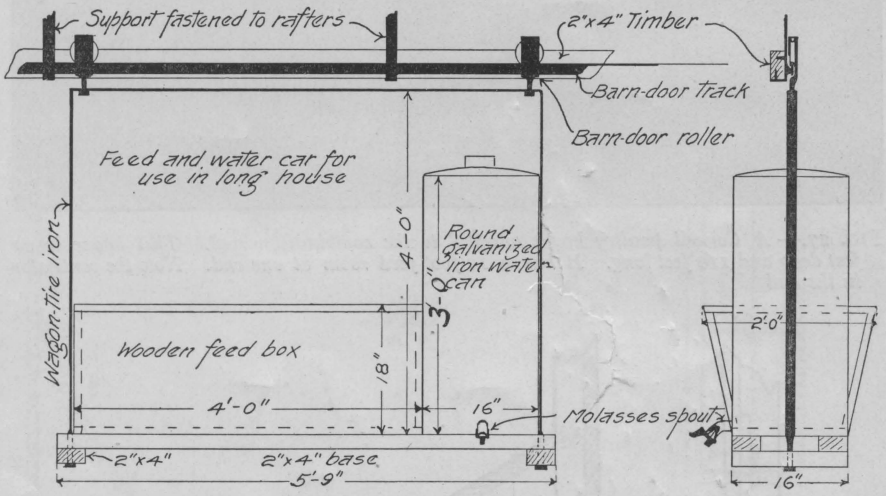

FIG. 29.— *A detailed plan of a homemade feed-and-water car, showing the method of supporting the track. Iron hangers support the 2x4-inch timbers that carry the barn-door track. The framework of the car is made of wagon-tire iron. Two roller-bearing barn-door rollers carry the car on its track. The size of the feed box and the water can may be varied in accordance with the needs of the number of fowls being fed*

to build a separate house. The barn basement, especially if it opens to the south or to the east, can be remodeled with slight expense and adapted to the needs of such a flock. The fowls can range in the barnyard during the winter and in an adjoining field during the summer. When remodeling and equipping a barn or basement, the same principles should be observed as are illustrated in the foregoing pages of this circular. Not infrequently a remodeled basement, with proper floor drainage and ventilation and with hay or straw in storage above, makes a warmer winter and a cooler summer pen, and withal a more satisfactory place for fowls, than the more elaborate poultry house.