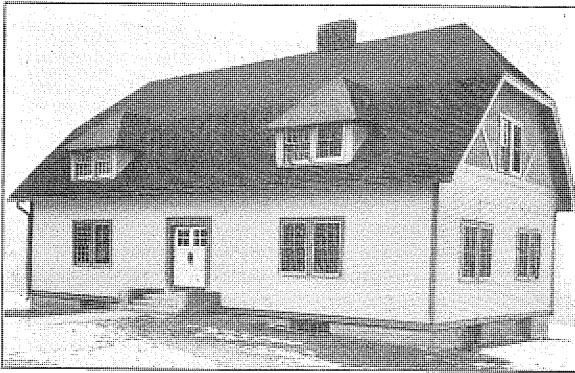


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Poultry Building at Wisconsin College of Agriculture

POULTRY HOUSE CONSTRUCTION

BY

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The University of Wisconsin Agricultural Experiment Station

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POULTRY HOUSE CONSTRUCTION

J. G. HALPIN and C. A. OCOCK

One of the most essential things in poultry keeping, is to have a suitable house which will protect the fowls from inclement weather and from their natural enemies. It is not the purpose of this bulletin to show each one exactly how to build a poultry house, but some of the elementary principles of poultry house construction are discussed and a few working plans are given, which it is hoped can be modified to suit different conditions on different farms. It is well understood that no two farms will present exactly the same conditions for instance, one farmer will desire to keep one hundred hens while another may want many more or less. Then again some farms will present one kind of soil, whereas on other farms the character of the soil and drainage are entirely different. Some farmers will desire a house which presents an attractive appearance whereas on other farms poultry houses will be so located that they are not conspicuous, and hence the matter of appearance is of little concern.

It must be remembered that from the standpoint of the hen, appearance makes very little difference, but the house must be so built and so arranged that it will be a comfortable place for the hens to live; otherwise they will not thrive and production will not be satisfactory. On many farms the hens are not provided with a house constructed especially for them but are housed in an old building originally made for some other purpose. As a rule this sort of a house is not economical for, unless it is constructed especially for hens, it will seldom be found possible to reconstruct it in such a way as to make economical production possible.

POULTRY HOUSE SITE

Poultry houses should be located where it is dry and well drained. If the ground is not naturally dry, it should be ditched and drained artificially, for poultry will not thrive in a house when the floor is constantly wet. A damp location means a damp poultry house all the way through and the result is that the fowls are affected with many troublesome diseases. Damp ground that is likely to remain muddy around the house is not satisfactory because the hens' feet become soiled and, as a consequence, the eggs and nests become dirty, and dirty eggs

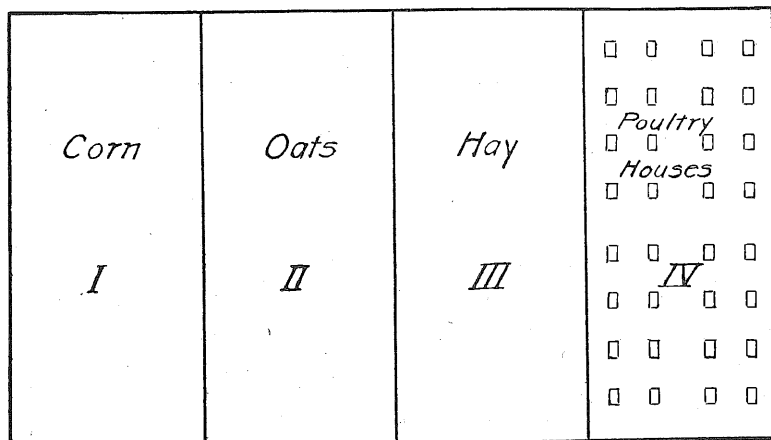


Figure 1.—A system of rotation is possible with portable colony houses. The houses can be moved each year to a different field

are unattractive on the market. If cleaned, a large amount of labor is necessary and with the best of care, cleaned eggs never look so well as eggs that have never been soiled. When hens run at large on wet ground, the litter on the floor of the house soon becomes dirty and wet, thus making a very unsatisfactory place for feeding. The ground out-of-doors is also unsatisfactory for feeding as wet ground soon becomes filthy and the filth sticks to the feed, making it impossible for the hens to pick it up without consuming more or less filth. Ground which is naturally wet is cold in the spring. It is also slower to become aerated and holds filth on the surface much longer than dry ground.

Houses should be placed so that they will not be subject to violent winds; yet, good air and drainage are essential. A

house should never be placed in a low, damp spot where early fall frosts are likely to occur. These places are always cold and unhealthy for fowls.

Build the house on ground that slopes to the south if possible. If this can not be done, always face the house toward the south so as to get the sun's rays throughout the day in winter to keep it bright inside. Where it is necessary to build a house in a windy place, trees can often be planted to break the wind. Small shrubs are also a great help and can be planted in such a way that they afford shelter to the house during the fall and spring when the winds are violent. Hens enjoy lying in the sun especially during the windy days after the leaves fall from the trees. The orchard can often be chosen as the site for the hen house and the hens allowed to run under the trees throughout the year.

Poultry houses should be convenient to other buildings, and yet, not so close that the hens constantly infest the other buildings. If the poultry house is too close to the barns, the hens are likely to get in the habit of roosting in the barn, cow stable, tool shed, etc.

COLONY HOUSE SYSTEM

The colony house system consists of having one flock or one colony in one building. Colony houses are of two types, the portable and non-portable. The portable type of colony house has many advantages, especially for growing young stock. The usual method is to nail them on runners and then have a team draw them from place to place as wished. This type of house saves much feed which has been wasted in the fields. You may draw the house into the grain field after the crop has been harvested, and then, after the oats is cut, the house and chickens can be moved into the oat field, etc. In this way, stock is always kept on clean ground and gets more insects than would be possible when kept around the farm buildings. In some years, especially when grasshoppers are abundant, poultry out in the field will pick their living and at the same time rid the farm of troublesome insects.

With this system of housing there is, of course, much more danger from thieves. In some localities, it would be found necessary to protect the windows and doors with iron bars while in other localities stock would be perfectly safe. A good watch

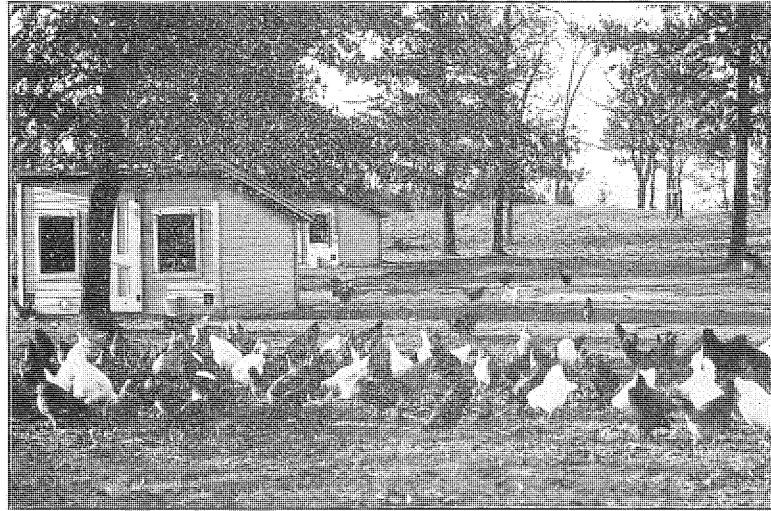


Figure 2.—Portable Colony Houses and Flocks on the Range.

dog can often be used. On some of the larger farms where poultry is kept quite extensively, it is found possible to keep the chickens in portable colony houses throughout their lives. The young stock is started while the houses are near the farm buildings so that they can be protected from their enemies and cared for without a great deal of trouble. As they get older they can be moved farther from the buildings out into the field. Toward fall the houses are drawn in near the farm buildings and placed close together so that they can be cared for readily throughout the winter.

A small house of the non-portable type is most frequently



Figure 3.—Long Poultry House at Wisconsin College of Agriculture.

used on the general farm. Its principle disadvantage appears in fall when with the chickens all in one colony, it is necessary to put the hens and pullets together, with the result that the hens, being accustomed to the house, abuse the pullets when they first come in from the range. With this type of house, there is no chance to select the best laying and most vigorous females. This plan makes it necessary to keep enough males to fertilize the eggs of the entire flock. Market eggs are not as good quality when fertilized for, fertilized eggs often start to grow before they reach the consumer. Farmers seem to be afraid of allowing infertile eggs because they feel that some hens will steal their nests and not be able to hatch. There is little advantage in hatching chicks from stolen nests for the hens that steal their nests are generally hens that did not begin laying until late in the spring and very often they are the poorest hens in the flock and do not produce chickens worth the raising.

THE LONG HOUSE SYSTEM

Long houses with or without cross partitions, are used on many large poultry farms. This type has the advantage of being less expensive to build, and they require less labor to care for the fowls as the attendant goes from one pen to another more quickly than he can go from one detached house to another. Long houses have the ground more closely stocked and there is much less natural feed such as insects, green grass, etc. As large numbers are kept closely together, the tendency to disease is greater. The grounds and buildings need more careful watching to keep them sanitary. Much fertilizer is wasted as the ground next to the house cannot be utilized to advantage for growing crops. Where large numbers are kept together, the tendency to form bad habits such as egg eating, etc., is much more pronounced. The long house with partitions across it is usually to be preferred to the long house without partitions. With several partitions in a house one can divide the hens to advantage and treat them much more as colonies of chickens are treated.

With this type of house one can resort to several methods of yarding. A good method is shown in Figure 4. In this diagram each pen has an individual yard on the south where the stock is allowed to run in fall and early spring. The north

side is left as an open field in which the hens run during summer after the breeding season, and, being accustomed to their pens, the majority of them return to their own places without trouble. While they are occupying the north yard, the south

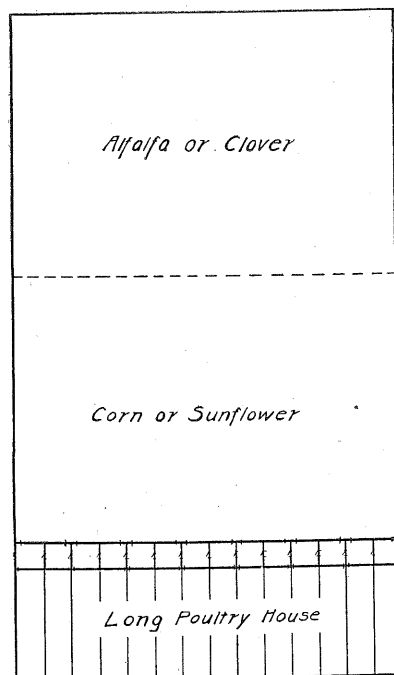


Figure 4.—Long Poultry House With Yards in Front and Open Field Behind.

yard is cultivated and sown to a crop of buckwheat and rye to sweeten the ground and furnish fall and spring pasture. This sowing would be done on most farms late in June or early in July. The space immediately north of the house is more likely to become contaminated. It is, therefore, desirable to grow a crop of some kind on this each year. Corn or sunflowers are grown on many farms as the corn is planted early and attains considerable size before the hens are turned on. The result is that the hens secure shade in the corn field and get an abundance of green stuff from the alfalfa or clover at the back of the yard. This yard at the back may be mowed and a good

crop of hay secured. Just what can be accomplished, of course, depends to a great extent upon the character of the soil found in the yard. The principal thing is to keep it constantly cultivated so as to get rid of filth as much as possible. The continuous house without partitions should be yarded on both north and south. This type of house, of course, is less expensive as there are no inside fences in the yard. The principal disadvantage of this system is that the hens crowd to the end of the house at feeding time unless hopper feeding is used almost exclusively. Expert care is needed to keep such a large number of hens from acquiring bad habits. An expert can care for a large flock, but an amateur might better care for fewer hens and give them more individual attention.

General farmers who keep only a few chickens, as well as large poultry plant owners can use the small portable houses for growing chicks. They are especially good for pullets which develop much better on free range than under closely confined conditions. A system of portable houses is used in many parts of the country where poultry is kept extensively. With a portable house system, there is no excuse for the ground becoming contaminated. The houses are moved from one field to another before the ground becomes filthy and the fertilizer is saved for growing crops. From the standpoint of fertility, this is by far the most economical system. The general farm which keeps only a few chickens should have either two small houses, one for pullets and the other for hens in the fall, or else one house with a division in it. In this way it is possible to make up the breeding pens from the best hens and pullets in the spring, and then later to allow all to run together, if advisable. In either case it is far better to fence in the hens that are not kept for breeding purposes giving the breeding flock free range of the farm. No matter what system is used, it is always best to encourage the hens to range near their house and away from the other farm buildings. To do this, keep the house clean. It often pays to store some feed there so that the hens expect to be fed from the house and not from the barn.

A common mistake is that of feeding the fowls from the back porch, in this way teaching them to come to the house where they are pests. All the kitchen scraps that are to be utilized for poultry feed should be placed in a pail, carried to the poultry house and fed in a clean place or in clean troughs near the house. Another common mistake is confining the hens in a small yard, when frequently a little more fence could be used around the garden and house and the hens kept where desired, yet allowed abundant range. At times a rather closely woven field fence could be erected around the orchard and thus give the hens abundant range without much additional expense. A low fence will confine hens when allowed a good sized range whereas a high fence is necessary where the range is small.

Poultry houses usually have one of two great faults. They are constructed either with an all glass front or with practically no glass. The house which contains a glass front becomes extremely hot during the day in winter and extremely cold at

night; whereas a house with little or no glass is damp and dreary, and the hens almost never thrive in such a place. A poultry house must be light so that the hens can readily see to eat and so constructed that it is comfortable. In order to make the hens comfortable it must be free from drafts, dampness, bad odors, or foul air, and constructed so as to be as free as possible from sudden changes of temperature.

A poultry house usually needs more ventilation than is given. Fresh air is far more important than warmth. Fresh air means health but must never be supplied by a draft. The hen was never intended to live in a house. A tree is her natural home; but the northern winters are so cold that it is impossible to get eggs from hens roosting in trees as it takes all they can eat to keep them alive. The poultry house, then, should furnish protection from storms and cold winds, and always provide a clean, dry feeding floor and a clean, dry roosting place. If a house is damp in winter it is usually because there is not enough ventilation, and more air must be admitted in some form to carry out the dampness and bad air. The best system of ventilation for the ordinary poultry house is a cloth covered window which will allow air to pass slowly back and forth through it. This cloth window will need to be open a large part of the time, only closed during storms and the very coldest nights. In most locations, a cloth window should be placed on the south side and hinged in such a way that it is readily opened. Where a house has a south side largely of glass, a part of the glass should be removed and cloth covered frames inserted. In houses with little glass, openings should be cut in the same way as would be done for a glass window, and a cloth covered frame inserted in the opening. As a general rule, a poultry house should have about one square foot of glass to fourteen or sixteen square feet of floor space, and about one square foot of cloth to eight or ten of floor space. The amount of cloth necessary will depend to a large extent on the operator, that is, if the attendant is careful to keep the cloth window open during all mild days, less cloth will be necessary. As a rule poultry houses are too low to permit of the King system of ventilation. Where a poultry house is located away from other buildings so that the wind does not blow over a building and down onto the house, the King system of ventilation may be installed, but where the house is located near the barn or on a side hill, this system will

not be satisfactory unless the ventilator tubes are built well up in the air above the house.

THE SIZE OF THE HOUSE

In determining the size of a house, consider the number of fowls that are to be kept in one pen. As a rule, fowls are too crowded for economical production. A flock of fifty hens should usually be allowed about five square feet of floor space per hen. Where the attendant is careful to keep the house clean and the floor heavily littered with straw, less floor space will be necessary. As a rule, it is far better to allow too much floor space rather than too little. The larger the pen, the less floor space will be required per hen. This is shown in Figure 5. One hundred hens will thrive in a pen 20x20 feet, that is, four square feet or floor space per hen, but one hen will not thrive in a pen 2x2 feet. In the large pen, each one has a chance to wander about over the entire floor space thus getting more exercise. As the number in the flock becomes less, the amount of floor space per hen must increase, and anyone keeping eight or ten

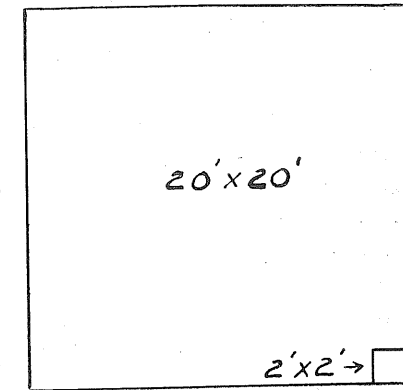


Figure 5.—The large pen is large enough for 100 hens, but one hen could not thrive in a pen 2x2 feet.

hen, unless he is prepared to give special attention to cleaning and bedding the house. A crowded condition in a poultry house is responsible on many farms for lack of winter egg production.

Farm hens are frequently kept at the rate of about one square foot of floor space per hen. Where hens have access to the barnyard, straw stack, feed lots, etc., the amount of floor space per hen is not so important as the house then becomes a roosting place and the barnyard is the feeding floor. Many mistakes are made when increasing the number of fowls on farms. When hens become numerous, the barn yard is no longer available as an exercising place for them, with the result that the hens are too closely kept. When 80 hens are kept in a house

which is sufficiently large for forty, the results are discouraging. It is always best to sell part of the hens rather than to try to keep more than the house will accommodate satisfactorily.

THE WIDTH OF THE HOUSE

As a general rule, it is far cheaper to build a wide house than a narrow one. A house 20x20 is cheaper than a house 10x40 and contains as much floor space for the hens. A house twenty feet wide, however, will be found impracticable for some types of roofs and will not be found satisfactory where one wishes to keep a number of small breeding pens. There are several common types of roofs used on poultry houses as shown in Figure 6. Just which style of roof should be chosen is largely a matter of personal preference, but the type of roof will be found to influence the cost of construction to quite an extent.

TYPES OF ROOFS

Shed Roof. A shed roof or "one slant," as it is sometimes called, shown in Figure 6—1, is probably the most commonly seen and has the advantage of requiring less cutting of rafters as one rafter should reach clear across from plate to plate. It also turns all the water to the north leaving the south or front dry and warm. It can be used advantageously on narrow houses but can not be used to so good advantage on buildings over fourteen feet wide. This roof is especially unsuitable on wide houses in places subject to heavy falls of snow. If it becomes necessary to build a shed roof wider than fourteen feet, heavy material should be used for rafters or else supporting beams should be run lengthwise throughout the house. On the wide houses this roof does not give a good appearance and should, therefore, be avoided if it is desired to construct a wide house in a conspicuous place. As a rule the roof on a poultry house is built rather flat, not over one-fourth pitch. A shed roof also has the advantage of giving a low rear elevation which makes the house warm, but has a disadvantage in some locations as the high front catches strong south winds, and also heats up rapidly during sunny days in winter. Most of the prepared roofings last longer on a north slope, and, therefore, are particularly adapted to the shed roof type.

Combination Roof. The combination roof shown in Figure 6—2 is merely a modification of the shed roof but is more at-

tractive, giving the same low elevation in the rear and a lower elevation in front. This house can be built wider and is especially valuable in houses more than fourteen feet wide. Built with the same pitch of roof and with the same elevation in the rear this house contains less air space and is, therefore, warmer than the shed roof type. It requires twice as much cutting of rafters as in the shed roof type. In constructing this type of roof it is usually better to build the gable back one-third of the

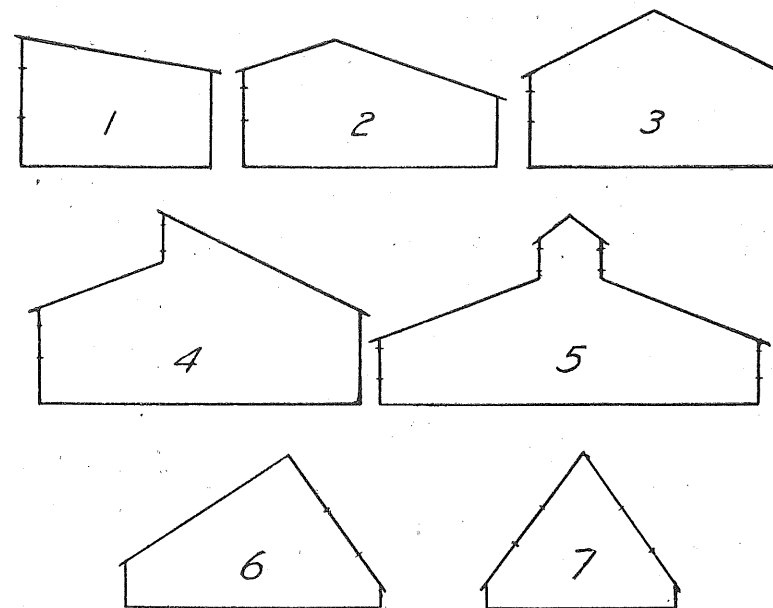


Figure 6.—Different types of roofs used in poultry houses are here shown. 1 is a shed roof; 2 a combination roof; 3 a gable roof; 4 a semi-monitor roof; 5 a monitor roof; 6 a slanting front roof; and 7 an A type roof.

way from the front. That is, in a house eighteen feet wide the gable should be six feet back from the front. This is a type of roof which should be used more extensively than it now is.

Gable Roof. The gable roof shown in Figure 6—3 is a common type and is very often used because it matches the other buildings on the farm. This type of roof permits of the house being built in any desired width, but gives more air space and makes the poultry house cold. That is, too high a rear elevation is needed to get the front high enough to admit sunshine and to allow for a door. The air space of such a house may be decreased by putting a ceiling from plate to plate, placing the boards so that about one inch space is left between each board. Then

cover this with about one foot of straw so that the air can readily circulate from the pen up through the straw. To make this complete, cut a small door or window in each gable end and then have these windows open except during the severest storms. This will be found the most satisfactory method of remodeling many of the old gable roof houses.

Semi-Monitor Roof. This type of roof shown in Figure 6—4 is often used and is practical. Many of the old narrow shed roof houses are remodeled by building an addition on the south side forming a roof of this type. This type of roof is utilized to better advantage in a small stationary house than in a long house. It is unsuitable for a continuous house as the south side is built so low that it is practically impossible to clean out the litter without carrying it to the end of the building. It is possible in this type of roof to reduce the air space and secure sunshine in the very back of the pen, and makes a very practical small poultry house. Many times the south side needs only to be covered with wire, and in mild localities it is to be recommended for the open front type. The south side being low, storms do not readily enter, but this type will not be found suitable in windy localities.

Monitor Type. The Monitor roof shown in Figure 6—5 is excellent for warm climates. It is not, however, satisfactory in cold climates as the house contains too large an air space and is too expensive to build.

Slanting Front Type. The slanting front type shown in Figure 6—6 is found on some of the old poultry houses but has not proven satisfactory.

As a general rule for the farm, it is better to use one of the first four types discussed, and just which type one uses should depend to quite an extent upon individual taste, but the style of the roof and the width of the house should always be determined upon before starting to build.

“A” Type. The “A” type of roof shown in Figure 6—7 may be used advantageously on the small colony house and in the large poultry house where an alleyway is desired in the center with pens on either side. In the small colony house the windows are placed in the ends; in the long continuous house the windows would be built in the roof and care must be taken to make them rain proof. To guard against breakage, a wide screen should be placed over them on the inside. They should

be so made as to be readily opened during the day but require considerable attention as they need to be closed before each rain.

TYPES OF FOUNDATIONS

Portable colony houses should be built on two runners, either of 4x4 material or better, two small trees of some durable wood which may be flattened on top and tapered off at both ends so as to make a satisfactory runner. Usually it is better to treat these runners with some wood preservative before building the house, and then, so far as possible, keep them off of the ground by standing them on blocks or stones. Some use 2x4 pieces spiked together, and as fast as the lower one becomes soft, it is removed and a new one spiked fast. A stationary house may be placed on four foot posts set in the ground at intervals of about four to six feet. Cement posts may also be used or better still, a three foot cement wall built as a foundation under the house. Some houses are made by laying the sills on the ground and replacing them whenever they rot out. This is the cheapest as a good sill will last for several years and can be readily replaced. This method is often used on commercial farms. It is not, however, to be recommended as the sill is not usually replaced until the building has become dilapidated and much lumber injured, costing in the end more than a durable foundation.

Where rats are at all troublesome a substantial cement foundation is a good investment. This should always be brought from six inches to a foot above the surface and then filled in with coarse material such as gravel, etc. In extremely wet locations, especially in clay soil, it often pays to excavate under the entire house and replace with stones or other coarse material, and then connect with tile drains to remove all the water from under the house. In many localities where stones are abundant, poultry houses are placed on stone walls, but unless cement is used to fasten the stones together securely, rats will often work under the house and do a great deal of damage. A loose stone wall soon becomes an ideal dwelling place for rats and should, on that account, never be placed under poultry houses.

KINDS OF FLOORS

In many localities a sand or dirt floor is cheap and advisable. Hens like a dirt floor if it is dry. It makes a natural dust wallow but must be replaced frequently in order to keep the house

sanitary. A dirt floor must always be well above the outside surface so that the water drains away leaving the floor dry and comfortable for the fowls. Where a cement foundation is used for the house, one can frequently tamp the surface hard and then fill in to the top of the foundation with sand. This sand should be replaced each year before cold weather.

A cement floor is much easier to keep clean and is durable and rat proof. A cement floor should never be left bare but should be kept constantly covered with at least three inches of sand and with from six to ten inches of straw in winter. When sand cannot be had, extra care should be taken to keep the floor heavily littered so that none of it becomes bare.

In case a cement floor is used, it should always be built so as to be just even with the top of the foundation so that the entire surface is smooth and easily cleaned. Where a cement floor and foundation are placed in a house, it is usually better to put in the floor before constructing the house. The method that has been found most satisfactory is to dig a trench for the foundation, fill it with concrete, erect the forms to the desired height and fill with concrete. As soon as the foundation is at all hard, remove the form from the inside and immediately fill with cinders if available. Tamp hard and then immediately lay the cement floor as shown in Figure 7. By building the cement

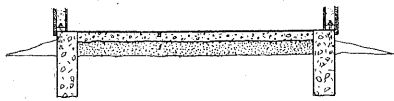


Figure 7.—A well-constructed floor for a poultry house is shown above.

floor while the foundation is green, the floor and the foundation become well fastened together, making it absolutely rat proof. A cement floor in a poultry house should be

reasonably smooth so as to make cleaning easy.

WALLS OF THE POULTRY HOUSE

Walls of poultry houses must keep out rain, snow and cold winds. They should also give strength and rigidity to the house, and must be made in such a way that they can be readily disinfected and cleaned. They must also be reasonably durable and not too expensive. To fulfill the first requirement the walls on the north, east and west are usually made wind tight. Cement blocks have been used in some localities and are giving good service. Solid cement walls should never be used in the poultry house as they become damp and frost covered and can never be

said to be satisfactory. Sometimes drain tiles are used in ordinary cement walls making air spaces which help keep out dampness. This method, however, is not used very extensively.

Metal covered walls are becoming more common and give fair service. They must be kept constantly painted in order to be durable. Most poultry houses are built with wooden walls. It is usual to use 2 x 4's about two feet apart for studding and either matched lumber or rough lumber with roofing paper or battens to make the wall windproof. Matched lumber, such as drop siding, is usually placed on horizontally and is used quite extensively as a house presents a good appearance and can be built rapidly. Where siding of this kind is used it should always be painted before being placed on the house, care being taken to have the tongues, grooves, and edges carefully painted. The boards should be placed on the house before the paint becomes too dry. Matched siding of any kind should be dry, well driven together and well nailed so as to be wind proof. Care should be taken that all matched lumber used in this way is of good grade and free from loose knots or other such defects. To add warmth, tar building paper or one-ply roofing paper are often placed between the siding and studding, thus insuring a wind-proof wall.

Many old poultry houses are built with rough boards running up and down and the cracks covered with battens. As a rule, this method of construction is not satisfactory as the battens become loose leaving cracks which are very undesirable. Rough boarding, either perpendicular or horizontal, is also being used quite extensively. When using roofing paper to cover rough boards it is advisable to cement the joints thoroughly and then batten with thin strips, at least every two feet, and then paint the entire outer surface with two coats of good paint. Other walls are constructed by nailing rough boarding to the outside of the studding, covering with tar building paper, and then with ordinary siding such as is usually used on houses. Just which form of wall is best to use will depend very largely upon the locality. With any of these, or with their modifications, which are many, a tight wall can be constructed so that which is advisable depends to a large extent upon the necessity of presenting a good appearance or the necessity of keeping the construction at a low figure. Where the boarding runs up and down, less studding are used and in this way this type of construction becomes advantageous. In the poultry house, however,

this requires more cutting and more labor to build. Where the boarding runs horizontally it is hard to construct a wall which will always be wind proof.

SELECTING ROOFING MATERIALS

A great many of the newer poultry houses are covered with prepared roofing materials and are proving very satisfactory. Many are constructed with such flat roofs that shingles are not desirable. Roofing paper is cheaper and, especially on a flat roof, is found to be more advisable. Where the roof is somewhat steep and shingles of good quality can be purchased they will be found to be more durable. When prepared roofings are used, it is always best to use a good grade of boards for the roof. About the most satisfactory method in Wisconsin is to use hemlock shiplap. The shiplapping makes a smooth tight surface and one on which prepared roofing can be laid easily. It will be found that roofing materials last much longer on a smooth surface of this kind and will pay in durability for the extra cost. Some of the older houses were roofed with rough boards and battens. This type of roof is not satisfactory.

MATERIALS FOR PARTITIONS

Wherever there is only one poultry house a partition is always advisable as it permits one to keep the hens separated from the pullets early in the winter and makes it possible later to make up a breeding pen of the best fowls. In a small house, that is one not over thirty feet long, one should use boards for the partitions for about two feet from the floor. The rest may be made of wire or cloth except between the roosts of the different pens where the boards should run to the roof. (See Figure 8.) A solid partition at the back prevents draft on the fowls when roosting and a solid partition at the bottom prevents fighting.

In extremely long houses it is desirable to put in solid partitions, either for each pen or at intervals of about forty feet, according to the size of the pen and the location of the building. In a windy location solid partitions will be found necessary more frequently in order to cut down the draft. Where cloth is used as a part of the partitioning, it will be found necessary to change it frequently. In most places wire will usually be found most advantageous. Long houses should have doors in each partition arranged in a straight line and hung with double acting

hinges. In a long poultry house, say a house over one hundred feet long, it is usually desirable to put in a trolley system so as to lessen the labor of caring for the fowls.

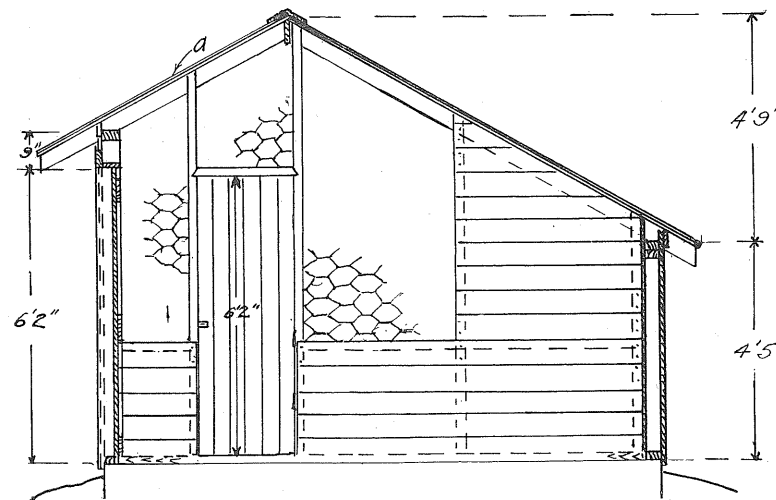


Figure 8.—Proper way to make a partition in a poultry house.

CEILING FOR WARMTH

In either a shed roof, semi-monitor, or combination roof, it is usually not desirable to ceil the roof except over the roosts, see Figure 9. In gable roof houses it is frequently desirable to ceil clear across as noted on page 13. For ceiling around the roosting closets it is usually best to use matched lumber with tar building paper between the lumber and the studding and the rafters. It is also advisable to leave the space open between the upper edge of the last ceiling board and the roof boards. This will allow one to spray into this space when disinfecting the house.

ARRANGING INTERIOR FIXTURES

The interior arrangement should be planned to make it easy to clean the house and care for the fowls.

Perches. The perches should be all on the same level in the warmest part of the pen away from drafts, and should be readily removable. If the perches are not all on the same level the fowls will fight for the opportunity to roost on the highest and the chances are that many fowls will be injured by falling off the perch. The perches should be in the warmest part of the

pen as they need the most protection from the cold during the night when the fowls are inactive. At this time the house is also usually colder than during the day. The perches should be easily removable to facilitate cleaning, disinfecting, and fighting mites. They should be so constructed that a disinfectant can be readily applied to all parts. They should be as simple as possible and made in such a way as to have the smallest number of cracks and crevices which offer hiding places for mites and other vermin.

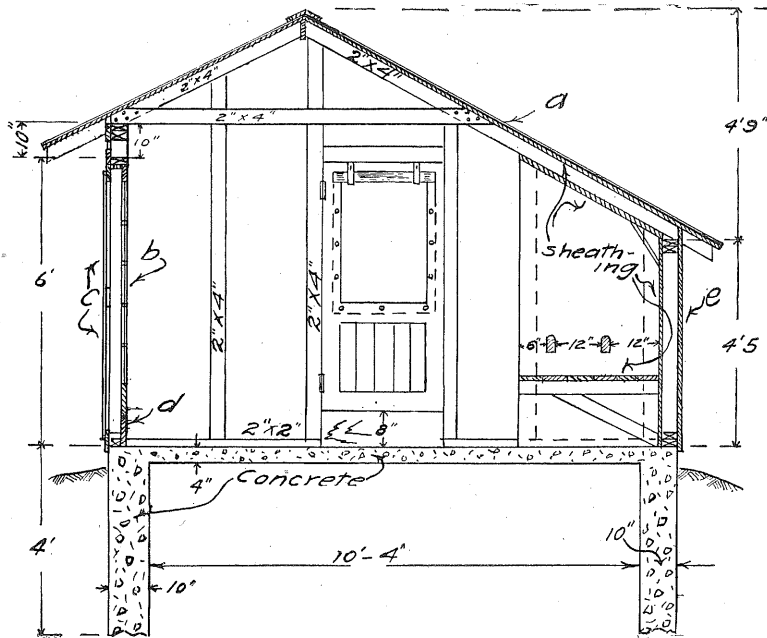


Figure 9.—Cross section of well constructed poultry house.

As a general rule small hens should have about six inches of perch space while the larger hens should be allowed eight inches. In the winter they huddle closer together, but in the summer there should be plenty of room to allow them to spread out. Perches should be twelve inches apart and not closer than fifteen inches to the wall or ceiling. Show birds, especially Leghorns, or similar types should be kept at a greater distance from walls and ceilings. Many good birds are spoiled by "brooming" their tails against the walls.

There are several methods of making movable perches. One of the most common is by hinging them to the wall at the back.

If these hinges are made with loose pins the entire set of perches can be readily removed. The perch itself should not be fastened to the supporting crosspiece which should be notched so that the perch sets into it as shown in Figure 10.

Dropping Boards. Where the hens are fed inside the house, as is usual in winter in many places, it is advantageous to place boards under the perches to catch the manure, thus keeping the floor clean so that it, as well as the rest of the house, can be utilized as a feeding floor. When no dropping boards are used a wide board should be placed in front of the perches on the floor so as to keep the litter away from the droppings under the roost. The use of dropping boards is economical, for it increases the size of the feeding floor. These

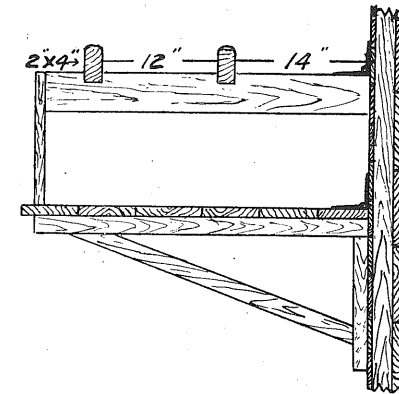


Figure 10—Hinged perches and dropping board.

boards, being close to the fowls, necessitate frequent cleaning, hence more labor, but if the manure is properly handled, enough fertilizer is saved to pay for the extra labor, and frequent cleaning means healthy fowls. On the general farm, dropping boards may be placed in the house in the fall and winter and kept cleaned. When the other farm work becomes pressing in the spring, and the hens are allowed to run at large, they no longer need be fed in the poultry house, so the dropping boards may be removed. Where this system is used it becomes very necessary that the dropping boards be removed in the spring and not left to accumulate a large amount of droppings which would be close to the fowls and very unhealthy. A hinged roost and dropping board is shown in Figure 10. This is a very good arrangement for the droppings are cleaned each morning and then the perches and dropping board swing up and out of the way, thus giving the hens a clear open space. This method is used in the long poultry house at the University of Wisconsin. Before this system was tried there was a great deal of trouble with hens laying under the dropping board instead of in the nests. After installing this system the trouble was greatly lessened.

Nests. Every poultry house should be well supplied with nests which are easily accessible and readily removed for cleaning and disinfecting. There are many methods of arranging nests, each method having some particular advantage over all others. The nests may in some instances be placed under the front edge of the dropping board as in *D* Figure 11 and so arranged that the hens enter from the rear and the attendant gathers the eggs by opening a door or doors on the front side. This is an inexpensive arrangement, as the dropping board forms a cover for the nests. These nests are dark, which is a decided advantage, as hens like to hide, and there is less danger of them learning to eat eggs. It has the decided disadvantage of making the floor under the dropping boards of little use in feeding. It darkens the floor and hens are much more likely to lay in the straw on the floor than in the nests, with the result that many times eggs are left for several days before being gathered. The careful poultryman who furnishes guaranteed eggs will not sell those which have been laid on the floor. In buildings which have a high rear elevation, some of this trouble may be obviated by elevating the roosts and dropping board. This can be done, especially with Leghorns or other light breeds that fly well. For the heavier breeds, it will be found necessary to put in a slanting board with cleats to enable the hens to walk to such a height. It will always be found necessary to keep the floor extremely well bedded. Many heavy hens will jump down from the dropping board instead of walking down the inclined perch and if the litter is thin, they may injure their feet.

Another and quite common arrangement is to fasten small open boxes to the walls of the poultry house. These boxes can be fastened with two 6 d nails and easily removed for cleaning. Where this system is used, if the boxes should accidentally become badly infested with mites, the entire box being of little value, can be burned and new boxes put in. This method does not allow trap nesting, and the nests are not dark, yet it is used very extensively by poultrymen.

Where hens are confined and allowed to lay in open nests of this type, the eggs should be gathered at least twice each day. This is an extremely good practice and should be followed, especially on farms where a good quality of table eggs is being produced.

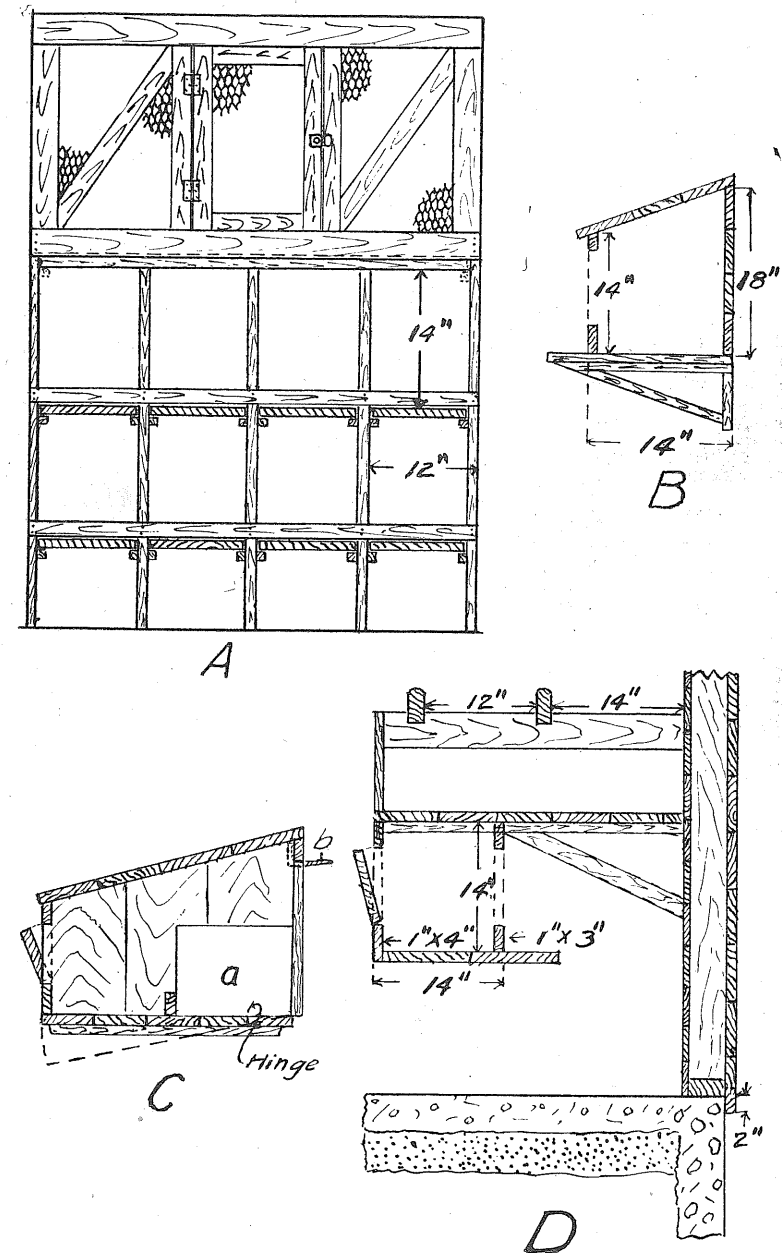


Figure 11.—Different types of nests. A is a tier of nests with broody coop on top. B and C are types of wall nests. D is a nest under the dropping board.

There are several good types of wall nests, some of which are darkened and others that are not. Figure 11 shows two different types which may be used successfully.

A nest for a Leghorn or other small hen should be 12 inches square; for the larger varieties, 14 inches square. The nest should give at least 12 inches head room and be about 14 inches high. They should be kept clean and well bedded with fine



Figure 12.—Double doors are needed when it is desired to have a screen door. The inside door should be of glass and shorter than the other so it will swing over the litter.

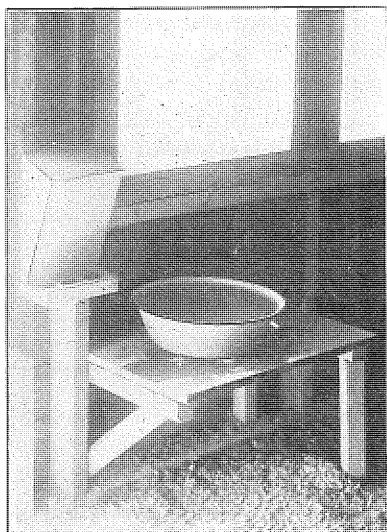


Figure 13.—A stand like the above with water pan insures clean water for the fowls.

nesting material, such as straw or hay. Shavings, excelsior, etc., are not satisfactory as a rule, for they may stain the eggs. Coarse straw and other harsh substances do not make satisfactory nesting material. A hen likes a pliable, soft substance in the nest.

Watering Devices. A convenient place should be provided for water. It is best to construct a small stand about 1 foot above the floor and place the water dish on this. This stand can be constructed in the partition so that the hens in two pens drink from one dish. It is, however, usually better to give each pen a separate drinking dish. The water stand should be placed where it is light, and also where it is convenient to empty the

dish and re-fill it. As a rule the water dish will keep cleaner if near the south side of the building, as the hens scratch the litter toward the north much more than toward the front of the house. A hen faces the light usually when digging in the straw for her feed and the result is that the litter works back.

There are numerous drinking devices on the market, many of which are valuable. A large number of farmers, however, use either a small pail or pan.

A low pail makes a very convenient water dish as the bale enables it to be readily handled with one hand. A pan as shown in Figure 13 also makes a convenient watering dish. Care should be taken not to use watering devices of any kind which have parts that cannot be readily cleaned. A dirty drinking dish is frequently a source of disease



Figure 14. The hen in the above picture is using fresh dirt thrown out of a post hole for a dust bath.

and should never be permitted in any poultry house.

Dust Bath. Fowls need a chance to wallow in the dirt in order to free their bodies of scales and lice. Without this, their bodies become covered with broken down scales which together with lice, cause intense itching. In the winter a dust bath usually has to be provided inside of the poultry house and should be near an open window so that the sun shines on it during a part of the day. For this purpose a common box filled with fine sand to which has been added a little insect powder is quite effective. Sifted coal ashes and road dust, etc., also make effective dust baths. In a house which has a good dry sand floor, or in a cement floored house where the floor is covered with three or four inches of fine sand, a dust bath is seldom needed as the hens will wallow in the sand on the floor.

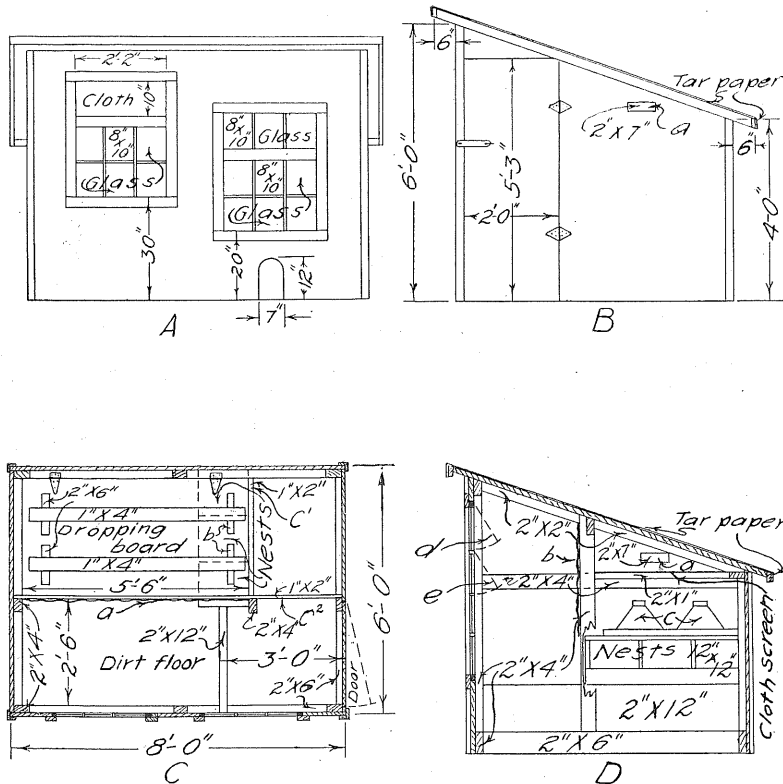


Figure 15—The Ocock chicken house is a convenient and satisfactory house for city lots. It will accommodate 15 individuals if good care is given the flock. A dirt floor is shown at the left in C. At the right in C is a board floor on which the straw litter is placed in winter months. A piece of 2x12 inch material is used as a partition, to prevent the straw from getting over on to the dirt, and is shown in D. The perches, c, on the dropping board are movable to make cleaning easier. The dropping board is hinged and should be swung up as high as the cloth screen during the day, especially during the winter and early spring. The nests are open under the dropping board and have small doors on the side next to the flooring for removing the eggs. The nests are so constructed as to be removed any time for cleaning. A cloth screen extends the full length over the dropping boards, roosts, and floored portion. The frame work being shown at c1, c2, in C. A drop curtain of canvas is in front to be used on cold nights; this is shown at a in C and at b in D. An opening is made in each end of the house above the screen and is shown at a in B, also at a in D. A cloth screen is hinged above the window in A and is shown open at d in D. The small three-light glass sash above the six-light sash is also hinged and is shown open at e in D. The roof, side wall and ends are covered with tar paper inside in the half which is devoted to the roosts, nests and part of the floored space. The boarding of this house is nailed up and down.

BILL OF MATERIAL FOR THE OCOCK HOUSE

Nail all boards up and down instead of around. Hemlock may be used instead of pine if kept well painted.

Siding, Roofing, Nests, Dropping board and Floor—
270 board feet of 8 inch shiplap, No. 2 pine.

Corner boards, Window casings and Dropping board frame—
6 pieces of 1x3 inch, 16 feet long, No. 2 pine.

Partition—

1 piece of 2x12 inch, 6 feet long plank, No. 3 pine.

Cornice fascia and cloth frames—

2 pieces 1x2 inch, 10 feet long, No. 2 pine, and
2 pieces 1x2 inch, 16 feet long, No. 2 pine.

Rafters, studding and girts—

1 piece 2x2 inch, 14 feet long, No. 2 pine.
2 pieces 2x4 inch, 10 feet long, No. 2 pine.
4 pieces 2x4 inch, 12 feet long, No. 2 pine.
2 pieces 2x4 inch, 16 feet long, No. 2 pine.
2 pieces 2x6 inch, 14 feet long, No. 2 pine.

Miscellaneous—

One 12-light plain rail window, glass 8x10 inches.

One 3-light barn sash, glass 8x10 inches.

One double roll, 216 square feet, 2 ply roofing paper.

Four yards muslin for screens.

Three yards heavy duck for drop curtain in front of roosts.

One pair 4 inch strap hinges for door.

One hasp and staples.

One pair T hinges, 6 inch, for dropping board.

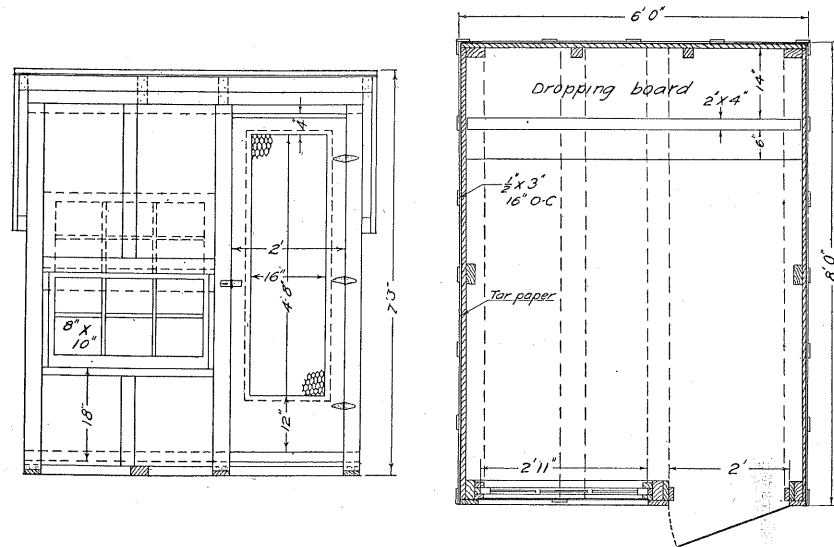


Figure 16.—This portable chicken house is designed for small flocks and will accommodate ten to a dozen chickens. This is 6 by 8 feet, boarded horizontally, differing from the Ocock house, which is boarded up and down. The portable house is covered on the exterior with tar paper, which is put on up and down, all joints being cemented. Over each joint and also between, nail a $\frac{1}{2}$ x3 inch strip to prevent the paper from working in the wind. The door has a screen wire covering for day time and a hinged cloth screen to cover the wire screen at night. The roost is movable and is placed 14 inches from the ceiling. Four skids of 4x6 inch material running lengthwise of the building on which the floor rests, make a ready means to move the house from one place to another.

BILL OF MATERIAL FOR THE PORTABLE HOUSE.

Nail siding horizontally instead of up and down. Hemlock may be used instead of pine if kept well painted.

Roof, Sides and Dropping board—

250 board feet of 8 inch shiplap, No. 2 pine.

Floor—

54 board feet of 6 inch matched fencing, No. 2 pine.

Cornice fascia, Dropping board frame and Window casings—

4 pieces 1x3 inch, 16 feet long, No. 2 pine.

Rafters, Studding, Skids and Girts—

7 pieces 2x4 inch, 12 feet long, No. 2 pine.

4 pieces 2x4 inch, 10 feet long, No. 2 pine.

2 pieces 2x4 inch, 16 feet long, No. 2 pine.

11 pieces $\frac{1}{2}$ x3 inch, 12 feet long, No. 2 pine.

Miscellaneous—

One 6-light sash, glass 8x10 inches.

One double roll 2 ply tar paper, 216 square feet.

Eight square feet poultry netting, 1 inch mesh.

Three strap hinges 4 inches long.

One hasp and staples.

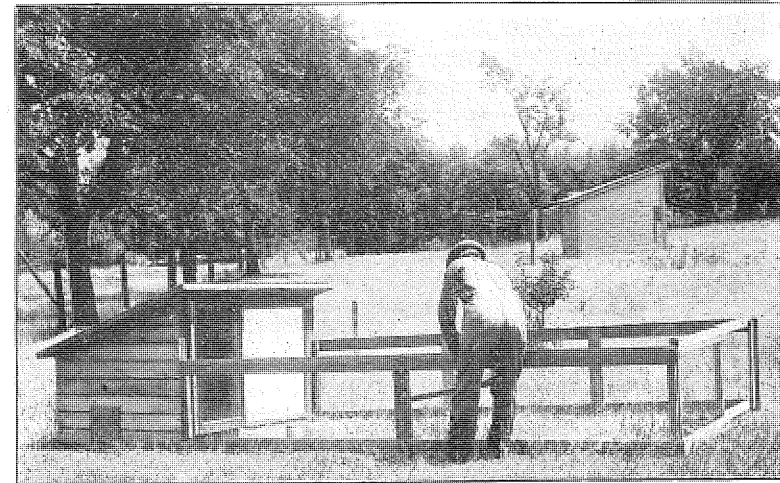


Figure 17.—Outdoor brooder and small run.

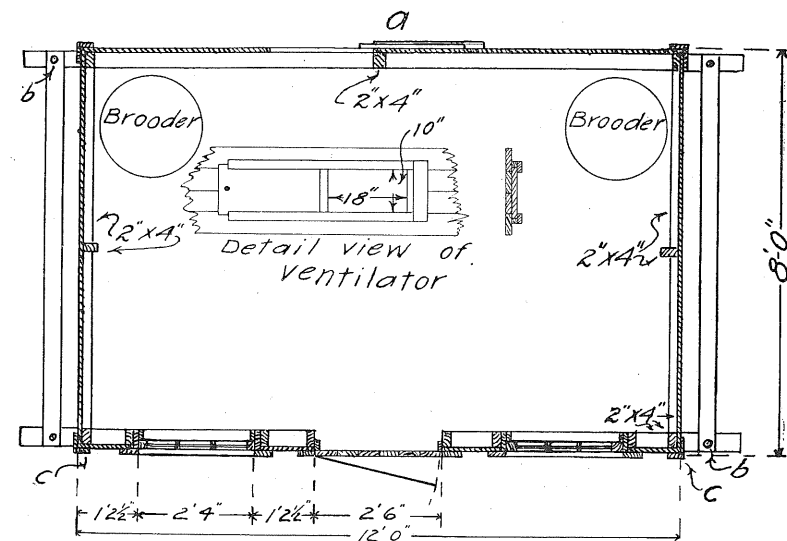


Figure 18.—Brooding house used at Wisconsin College of Agriculture. Note the details of ventilator. Location of ventilator is shown at a. Cross section is shown in Figure 19.

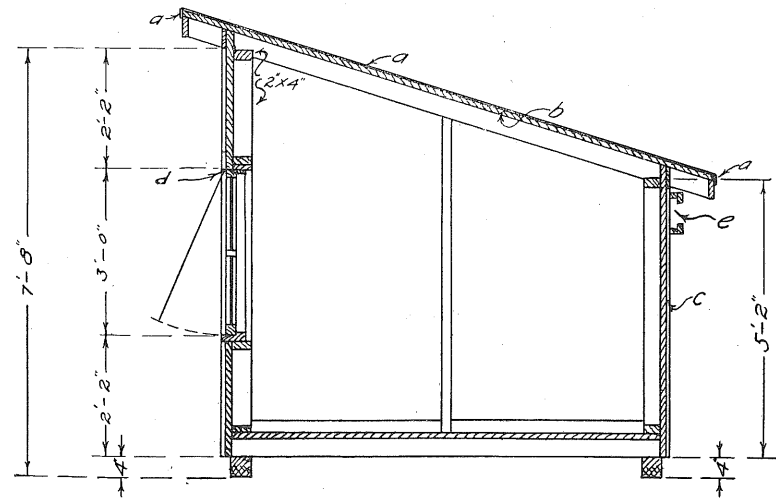
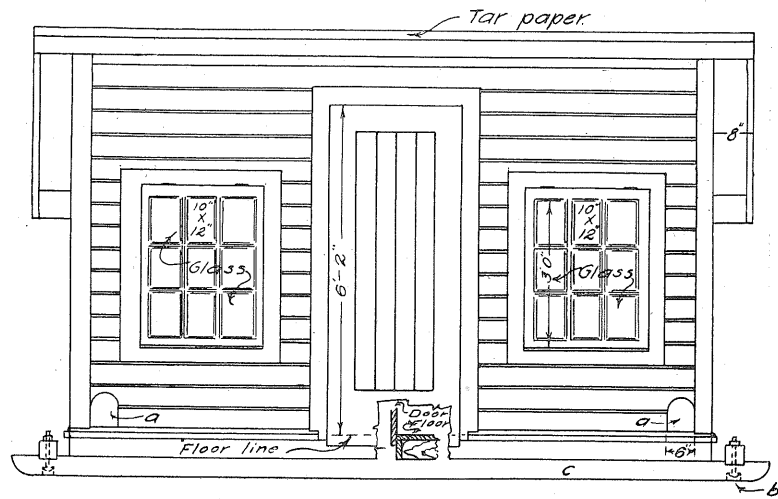


Figure 19.—Cross section of brooding house shown in Figure 18. a is tar paper; b roofing; c corner board; d hinge for window; e ventilator.

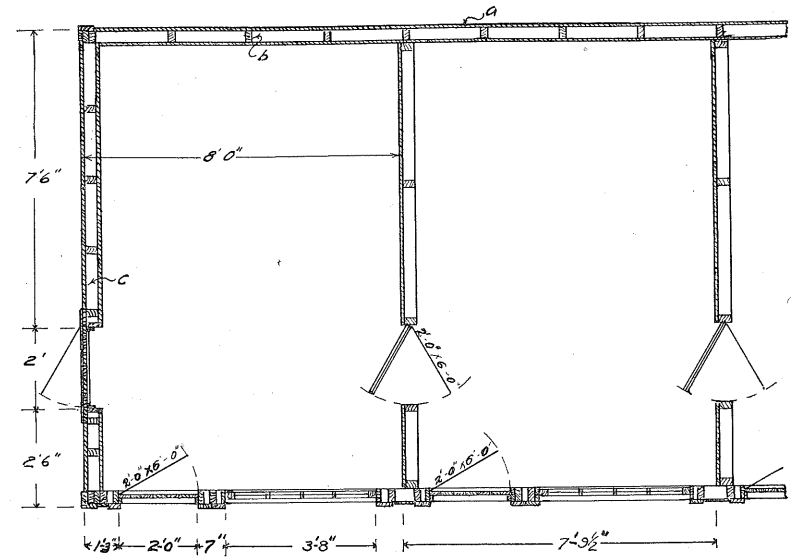


Figure 20.—Two pens of the breeding house at the Wisconsin College of Agriculture. a is drop siding; b studding; c tar paper.

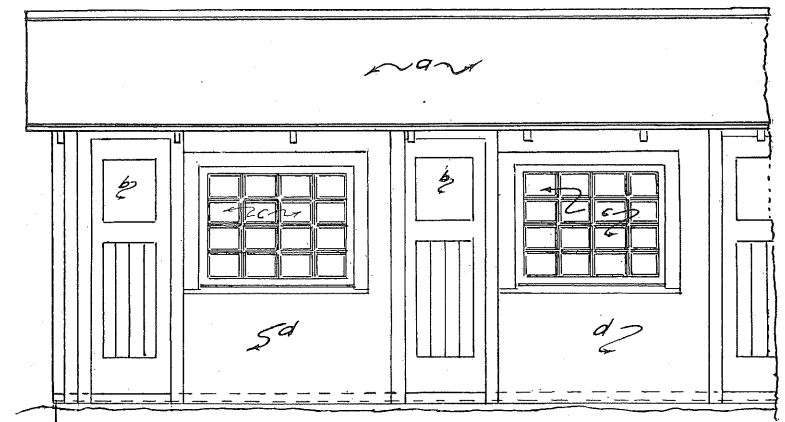


Figure 21.—Front elevation of the breeding house at the Wisconsin College of Agriculture. a is tar paper; b cloth; c 8x10 inch glass; d drop siding.

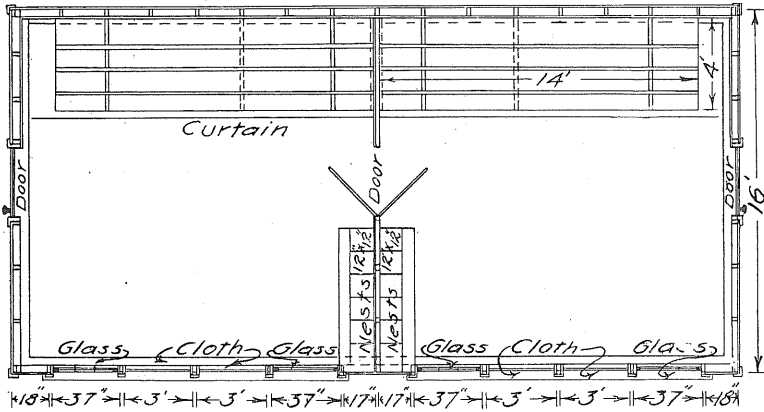
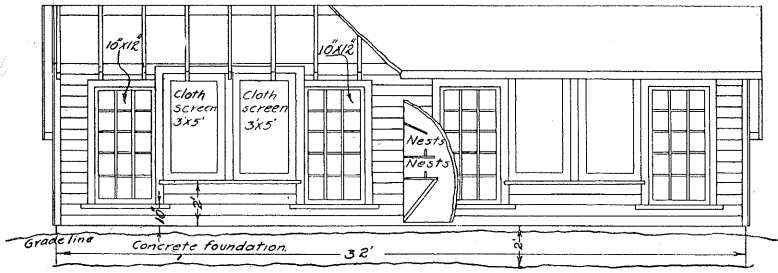


Figure 22.—A two-pen laying house for a small flock. A cross section is shown in Figure 23.

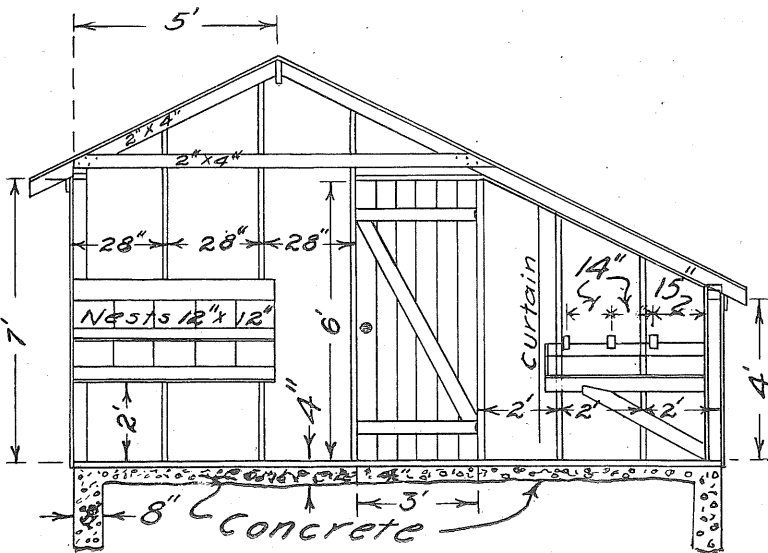


Figure 23.—Cross section of two-pen house shown in Figure 22.