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Poultry
Houses and Fixtures.

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POULTRY HOUSES AND FIXTURES



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POULTRY

Houses and Fixtures

SEVENTH EDITION

The Plans and Details for Constructing Closed Front, Scratching Shed,
Curtain Front, Fresh Air and Portable Poultry Houses
and Appliances for House and Yard

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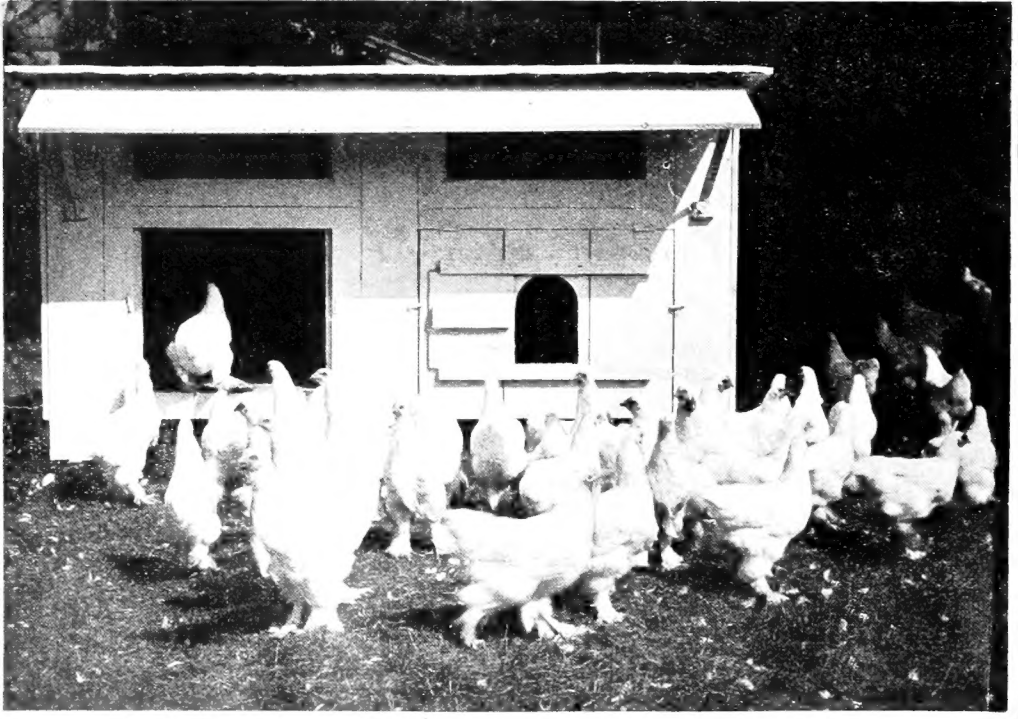
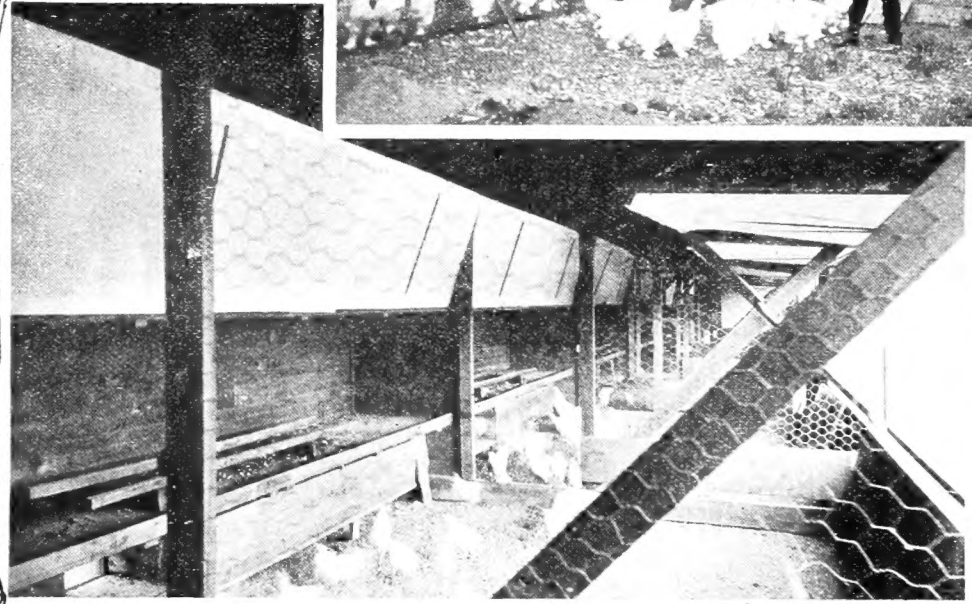
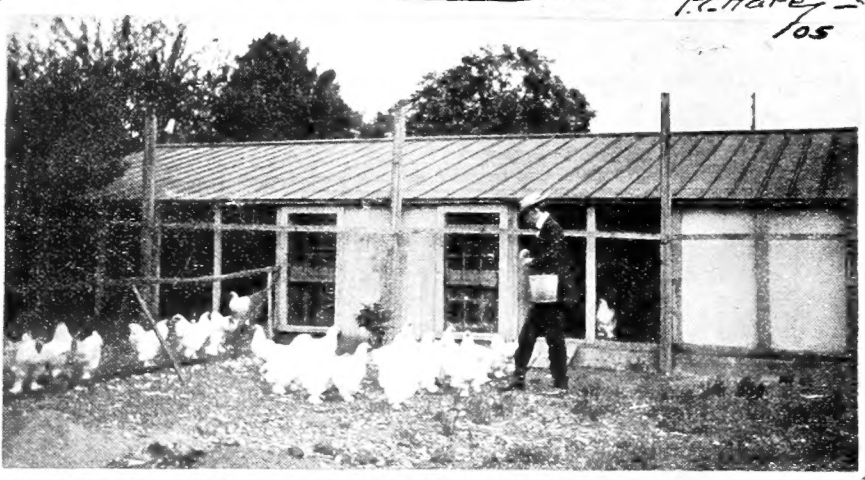
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HOUSES AND FIXTURES FOR STANDARD-BRED FOWLS

Preliminary Consideration



Determining the Type of House

The Governing Influences of Location, Soil and Climate The Merits of Continuous and Colony Houses

POULTRY houses and fixtures are among the first considerations of a person about to begin breeding poultry. If the buildings are commenced in a haphazard kind of a way disappointments and loss of time are bound to ensue. It will, therefore, be the endeavor in this book to assist the breeder in avoiding the difficulties which arise with a first attempt at poultry house building, in addition to which we will place before the already experienced poultryman plans which his fellow-breeders adopt. We present illustrations and descriptions of houses for the city and village fancier and for the professional breeder who intends establishing a large plant. The farmer, also, will find plans suited to his requirements.

There are important considerations which may not be mentioned in the detailed building instructions that follow, but which must not be overlooked, so it will be well to draw the attention of the reader to these at once.

The Location of the House

Location and surrounding of the poultry houses should be the first thought. A house suitable for one locality may be unsuited to another; a house adapted to a fifty-foot lot may not be the thing for a ten acre establishment. Hills and hollows, flat lands and swamps, sandy locations and clay soils, all more or less affect the style and position of a well-planned poultry house. Climate also has much to do with it. The southern fancier has an advantage in cost of buildings over his northern brother. He has also obstacles to contend with which are not met in cold climates. While he is worried about providing sufficient fresh air and protection from the hot sun, and while he is waging continual warfare against lice, his friend in the north is filling up all the openings, double lining his walls and doing his utmost to prevent the frost from penetrating his hen house.

Everybody agrees that an orchard is an ideal place for poultry houses, but everybody is not blessed with an orchard. The south side of a dense plantation or the southern slope of a hill is a favorite position in the north; the cold winter winds are thus broken and the snow disappears quickly upon warm days, giving the fowls an opportunity to wander forth in search of tidbits and vigor. "High and dry" applies particularly to fowls' houses. It is a necessity. To provide board flooring in a house that is built over a low wet spot is not sufficient. No house should have stagnant

water underneath, even though its effect is not visible on the inside floor. It is unhealthy. If there is no other choice of location, such spots must be filled in with earth and raised above the surrounding ground, so that water will drain away from the house. A sandy soil is much better than clay. The latter is nearly always either damp and sloppy, or baked so hard that the fowls can barely raise a dust; the droppings from the fowls remain on the surface and need frequent plowing under. Sand absorbs the droppings, and so saves much labor, though of course it also needs turning over occasionally.

Continuous and Colony Houses

Shall I build a continuous, or separated houses, is a question the answer to which depends upon circumstances. The continuous house is a labor-saver, and therefore a favorite with large establishments, where the main object is egg production or market poultry, where a few minutes' additional labor in each pen means hours lost every day. Many prominent breeders of fancy poultry adopt this plan for like reasons.

The colony plan is adopted by those who are of the opinion that fowls do not thrive when housed together in large numbers. Their preference is the house which accommodates not more than fifty fowls. These houses are dotted over the farm at such intervals as convenience directs, some having yards adjoining, while others are separated entirely.

The scratching shed plan is a "go-between" the continuous house and the colony plan. It may be in a way a continuous house, and the attendant may be under cover at all times while passing from house to house; again they may be built in pairs. They are simply open sheds alternated with closed houses. This plan is becoming quite popular, especially with breeders of exhibition fowls, who desire vigor and fertile eggs rather than enforced egg-production and infertility. At first glance the expenditure appears to be increased on account of the extra sheds, but it must be remembered that the closed portions of the buildings are in great part used only for a roosting and laying house, and are not November-to-March habitations, such as combine dining room and sleeping apartments. Six square feet of floor space per fowl would be little enough in such a house, but where the fowls spend most of the day in another apartment—the scratching shed—then the closed

room need only be slightly larger than they require for roosting and nesting purposes; that is to say, it must be three square feet per hen instead of six square feet.

It will be understood that increased floor space is desirable, but generally poultrymen wish to economize and we are keeping that in view. It is a great mistake to economize unduly in the construction of houses. Estimates should be made as to the cost of construction and material, then the number of fowls to be kept should be governed by the amount to be expended in the buildings.

Fresh-Air Houses

"God lent His creatures light and air and waters open to the skies;
Man locks him in a stifling lair and wonders why his brother dies."
—DR. OLIVER WENDELL HOLMES.

Dr. Holmes' poem from which the above lines are quoted was written many years ago. That distinguished physician and brilliant author well knew and taught his students the priceless value of pure fresh open air.

In spite of the fact that there were many practical and striking examples of successful poultry keeping in open or semi-open houses, poultrymen generally have been afraid of cold air methods and "fresh-air houses." The great majority have continued to lock their poultry "in a stifling lair" and have wondered why their fowls sickened and died. With the foul air, dampness and excess of filthy dust to be found in most closed poultry buildings it is not at all strange that fowls are commonly afflicted with a multitude of diseases, chief among them being rousy catarrhal colds and fungoid diseases of the respiratory organs.

It is only within the past few years that anything has been done to push the general adoption of fresh-air methods of poultry housing with a view to improving the health and productivity of our flocks. Possibly Mr. A. F. Hunter and others started the movement in the right direction by booming the "scratching-shed" house. Mr. Haywood, of New Hampshire, has for a number of years been using a tent shaped low cost house with a partly open front. Editor J. H. Robinson about 1902 published plans of a cheap convertible "cold" poultry house, having large doors in south front that made an open-front shed of the building when thrown wide open. Dr. Bricault and Dr. Nottage each published plans of convertible houses, the last named gentleman having a building of the continuous "semi-monitor top" type. All of these houses provided for an abundance of fresh open air by day but took no account of the night supply, when the house was tightly closed in cold weather. They marked a decided step forward, a step in the right direction toward fresh air, better ventilated houses and less damp, stagnant air and dust. Fresh air, however, is needed quite as much, if not more, at night, as it is during the day.

It remained for Mr. Joseph Tolman to take the really radical step in favor of fresh-air housing of poultry. In 1904, on advice of the writer that his fowls needed more fresh air, Mr. Tolman built his first fresh-air house, a deep, low building with an entirely open front. This house was a success from the start. The writer built two of them later and still likes them immensely after using them for four winters. It speaks well of this open-front building that when the first plans were published it received a warm welcome from progressive poultrymen, in spite of the fact that, with the exception of R. P. J., the leading poultry journals were most of them either opposed or indifferent to this rad-

ical departure from the conventional poultry house. Gradually this open-front building has won its way to public favor, chiefly on its practical merits, and today it is generally conceded by the leading authorities that the "open-front poultry house has come to stay" and that it means "better poultry and more of it."

Regarding the Construction

Elaborate poultry houses carry with them no advantage aside from appearances; in fact, there are disadvantages connected with them which do not exist in plainly constructed buildings. There should be as few nooks and ornaments as possible. Start in with the knowledge that every little nook, corner and crack will be a ready made breeding spot for lice, and shun them. Most poultry houses are built of rough boards (or barn siding as they are sometimes called) battened on the outside and lined with building or tar paper on the inside. In cold climates a second wall or boarding is built upon the inside face of the uprights, forming a space of four inches between walls. This space is sometimes filled with sawdust, ashes, earth, shavings or other material, but often remains unfilled. Some people prefer the natural earth for a floor, while others like boards. The main object should be to have a dry floor.

Windows should be of medium size. Large windows attract the heat of the sun during the day and release it after sundown, thereby causing extremes of temperature; they afford heat when the fowls, by exercise, can do without it, and withdraw it when they are at rest and need it.

Ventilation should be by open doors or windows. Attempts at ventilation by a system of pipes and traps are nearly always futile, frequently cause drafts and disease, and at the same time fail to carry off the foul air.

Nests, droppings boards and roosts should be so made that they can be easily removed and thoroughly cleaned, leaving no corners that are difficult to get at with the whitewash brush. The droppings boards are a necessity. They prevent an accumulation of manure on the floor, where it would be scratched around among the grain, and they render cleanliness less difficult of accomplishment than it would be if there were none.

There will be found in the following pages illustrations of the various styles of houses we have mentioned, with a full description of each. We have omitted estimates, because the prices of material vary greatly in different localities, and the cost therefore will differ accordingly; besides in many cases the owner of the house will be his own carpenter, thus saving the labor bill.

The best styles of houses that have come to the attention of the editor of the *Reliable Poultry Journal*, both at his desk and during his extensive travels among the successful poultrymen of the country, are represented, and we trust the reader will be able to find therein a style of house suited to his needs. Numerous handy fixtures for the poultry house and yard are illustrated and described, and many labor-saving devices are also given.

The smaller houses of necessity lack many conveniences which will be found in the larger ones, but there are many which may be adapted to all styles of houses, and the reader is recommended to study all the plans before commencing operations. He has our best wishes for his success.

Building a Poultry House

A Presentation of the Facts that Should be Considered by the Poultryman before the Construction of the House is Commenced—How to Arrive at an Economical Labor-Saving Plan of a House and Yards

James E. Rice

POULTRY keeping is an exacting business. The four corner stones upon which success rests are:

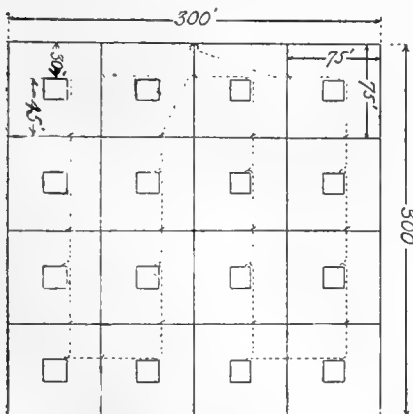
- (1) Suitable buildings properly located.
- (2) The right foods skillfully fed.
- (3) Good fowls carefully bred.
- (4) Facility and ability to hatch and rear chickens.

The Location of the House

The location should be dry. If the ground is not dry naturally, it should be made so by drainage. Damp ground means cold ground, because rapid evaporation cools the soil. It also means unhealthful soil because the air and sunshine cannot penetrate to purify it.

Air drainage is as important as soil drainage. Cold air settles in low places. A low place though more sheltered from the wind may be many degrees colder than a higher spot a few rods distant. Therefore avoid locating poultry houses where cold stratas of air can settle. Secure warmth by building in the lee of a windbreak, or in front of farm buildings, or a hill. Buildings that face the south will get the largest amount of exposure to the sun's rays. Other things being equal they will be warmer and dryer and more cheerful. An eastern exposure is usually preferable to a western exposure, barring prevailing winds from the east, because, like flowers, hens prefer morning to afternoon sun.

The form and location of poultry houses have much to do with their convenience. Time is money. Therefore a poultry plant should be built with a view to saving steps. With this point in mind a man would have to walk 1320 feet to go the rounds of the 16 houses shown in Ill. 2. Most men feed their fowls three times, water once, gather the



2

eggs once and clean house once daily, making 6 trips a day which would require the attendant to walk 7920 feet a day or 547 miles a year. Walking 4 miles an hour, it would take 136 hours, and at 12½ cents an hour would cost \$17. If the sixteen houses are brought together into one continuous house, Ill. 3.

the attendant would make the round by walking 540 feet. Six trips a day would make 3240 feet a day or 223 miles a year, taking 55 hours and costing \$6.97 per year, a saving of 324 miles, of 81 hours and of \$10 a year. A

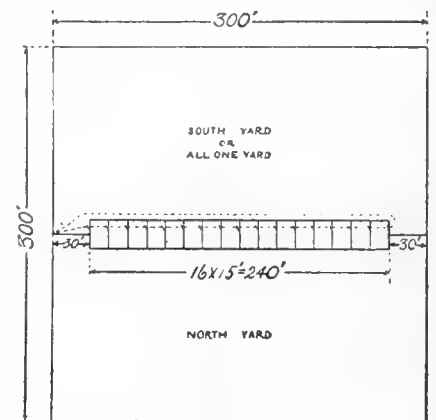
horse and cart to carry the food and water, eggs, litter, cleanings, etc., in case of the colony plan, and a trolley through the continuous house, could be made to save 2 or 3 trips a day—reducing the amount of travel proportionately.

The Type Influences the Cost of Construction

Houses built on the colony or separate plan, cost more to build than a continuous house of the same capacity. Ills. 3.

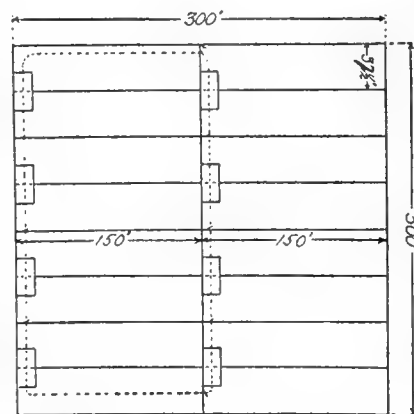
One end of each house is saved by bringing them together. Supposing the buildings to be 15 feet wide and 6 feet high on the sides, the lumber saved would amount to 127 feet 6 inches for one house equal to 2040

sq. ft. for 16 houses, and if double boarded would require 4080 feet besides other materials and cost of building. The colony houses are much cooler because more exposed.



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Fencing the Yards



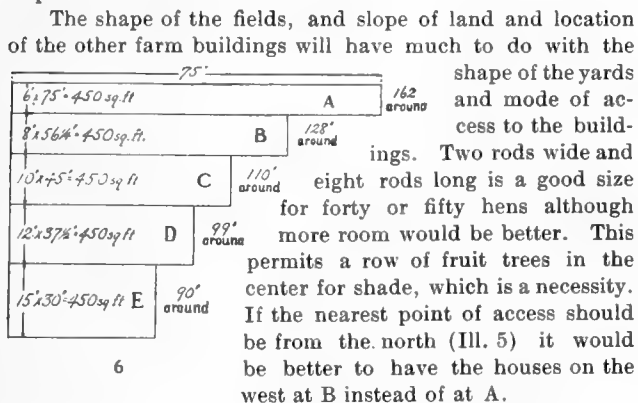
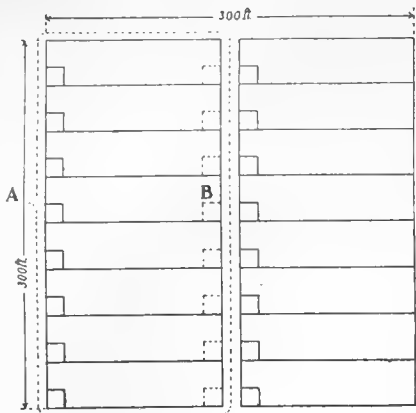
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To fence separate yards for the pens Ill. 2. would require 27½ rods of fence which would cost about \$20. Every time a division fence is taken out each flock has twice as much liberty as it had before. When all the division fences are removed each flock enjoys sixteen times as much liberty as it had before. The labor of cultivating

and seeding sixteen yards is greater than it would be if all were in one field. Again one would have to open and shut about 100 gates a day in caring for the stock in buildings arranged as in Ill. 2.

Features of Large and Small Yards

As a rule make them long and narrow. Double yards are desirable (Ill. 5). They allow one to rotate green crops. This practice converts the filth which would become a source of danger into a valuable food crop. Where several breeds are kept or many small breeding pens are desired the following plans are suggested to save steps:



6

Small Flocks Lay Best

Ordinarilly we expect to get more eggs from a small flock than from a large one. But every time we double a flock we divide the labor. Forty to fifty seems to be about as large as it is safe and economical to keep together. If more are together the weaker are crowded and the individual is lost sight of.

Construction of Houses—The Working Unit

A safe working rule is to allow about 5 to 6 sq. ft. floor space, and 8 to 10 sq. ft. air space for every fowl. The lighter breeds, because more active and restless, require about as much room as larger breeds.

Foundation walls should be built deep enough to prevent heaving by the frost, and high enough to prevent surface water from entering. Sometimes grout walls may be made with gravel or small stones where large stones are scarce; or the building may be set upon posts in the absence of foundation materials.

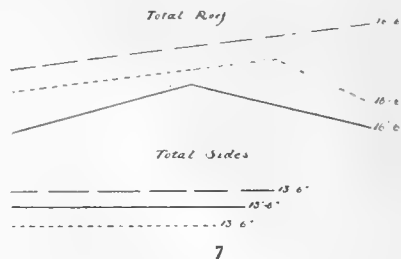
Square Houses Economize Lumber

The nearer square a house is—other things being equal—the less lumber it will require. (Ill. 6.) It is 72 feet further around house A than it is around house E, having the same number sq. ft. floor space. If the sides of the house are 6 feet high then one thickness of boards would take 6x72=432 ft. If the house is double boarded it would be twice as great, i. e., 864 feet, besides the extra material

required for 72 feet of framework, building paper, nails, labor, foundation, etc. The long narrow house is colder because it has 432 sq. ft. more of exposed surface.

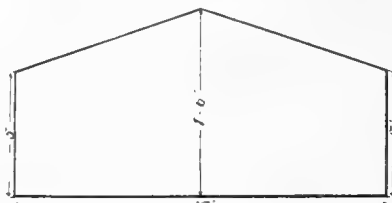
Cost and Value Affected by Form of Roof

The shape of the roof affects the value of a poultry house. It takes the same amount of material to build a gable roof—a one pitch roof or a combination roof, if the pitch of the roof and the ground plan are similar. (Ill. 7). The shape of the roof influences the cost of the sides of the house. If we assume that the window is 6 feet high in a building



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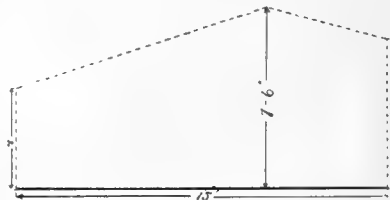
15 feet wide, it would be necessary with a gable roof to have both sides of the house the same height, which makes more interior air space than is necessary and requires the rear wall 1 foot 6 inches higher, than would be needed with a one pitch or combination roof.



8

house, or if a large garret space is desired, the gable roof style of house will be the most economical to build.

In order to build the three styles of houses, each taking the same amount of material and having the same area of roof and floor space, they would be as seen in Ills. 8, 9, 10, which would make the one pitch roof too low in the rear for convenience. The steeper the pitch, the greater the comparative expense of building a shed roof house, as compared with the gable or combination



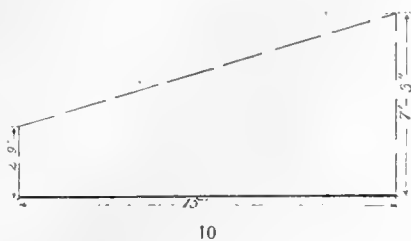
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roof house. The steeper the roof the greater the cost for roofing and the longer it will last. Most roofs can be one-fourth pitch. Shingle roofs should generally be one-third pitch.

Each Form of Roof Has Its Advantage and Disadvantage

The single span roof is the easiest to build. It gives the highest vertical front exposed to the sun's rays which are reflected back, drying the ground and making a warm shelter. It throws all the rain water to the rear, lessening the length of eaves-trough one-half and keeping the front of the house dry where no eaves-troughs are used. It allows the windows to be placed high up. A tarred paper roof will last

many years longer if the slope is toward the north. It is cooler in summer if not exposed to the vertical rays of the sun. The gable roof provides for a large garret space which can be stuffed with straw, making the house warmer and drier. The combination house shares in the advantages and disadvantages of each of the others.



Very large lights break too easily and are more expensive; 8 by 10 is a good sized glass to be used in a 12 light sash, making it about 3 feet 9 inches high, by 2 feet 5 inches wide. Use two of these for a house about 15 feet square. Single sash are usually less expensive than double sash of the same size, and the cost for window frame is less. Single sash may swing from the side or top, or be made to slide to one side. They can be opened and closed quickly and completely, and are against the wall where least apt to be broken. With double sash this is more difficult. Whitewashing the inside of a house makes it as much lighter as an extra window.

Alleyways are Expensive and do not Always Economize Labor

They occupy one-fourth to one-fifth the entire space of the house, which would accommodate one-fourth to one-fifth more hens or would give the regular number of hens one-fourth to one-fifth more room. Twenty to twenty-five per cent of the total area of a building is too much to pay for a free passage-way.

Every time one enters the pen from the alleyway he opens and shuts twice as many doors, as he would in a similar house without an alleyway, if one passes from pen to pen and returns outside (except in the case of a long section scratching-shed house). (Ill. 11.) If alleyways are boarded up tight one cannot see the fowls without opening the doors. If they are not tight they encourage draughts.

The nesting and roosting conveniences can be so arranged that most of the work may be done from the alleyway, which might be a saving of labor. But in so doing one would not be among his fowls, which would be a decided disadvantage.

Long houses should always be divided by tight partitions either cloth or board, between every two pens at least to avoid draughts. Otherwise cold and dangerous air currents will be formed whenever windows, doors or ventilators are open.

Sunlight is a Necessity

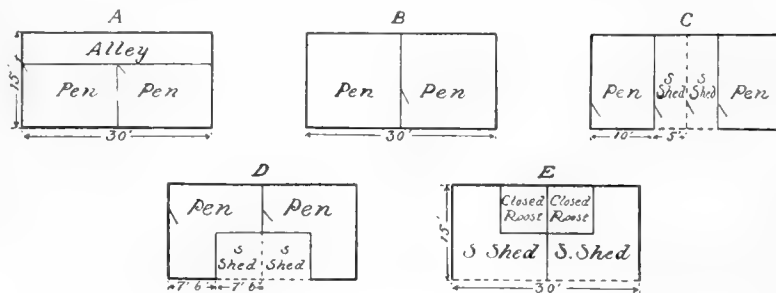
It carries good cheer and tends to arrest, or prevent disease. Too much glass makes a house too cold at night and too warm during the daytime, because glass gives off heat at night as readily as it collects it in the daytime. Much glass makes construction expensive. Allow 1 sq. ft. glass surface to about 16 sq. ft. floor space if windows are properly placed. The windows should be high and placed up and down rather than horizontally and low. (Ill. 12.) In the former the sunlight passes over the entire floor during the day from west to east, drying and purifying practically the whole interior. The time when sunshine is most needed is when the sun is lowest, *i. e.* from Sept. 21st to Mar. 21st. The arrows in Ill. 12 represent the extreme points which the sunshine reaches during this period with the top of a 4 foot window placed 4 feet, 6 feet and 7 feet high, respectively. With the highest point of the window at 4 feet, the direct sun's rays would never reach further back than 9 feet; at 6 feet it would shine 13 feet 6 inches back and at 7 feet it would strike the rear side of the house 1 foot above the floor. Window sash with small glass seriously obstruct the light.

Extreme Temperature May Be Modified by Careful Ventilation

It is as important that houses be kept cool in summer as it is that they be kept warm in winter. Therefore remove windows in hot weather. Curtains over windows, though adding to trouble and expense, can be used to advantage during night time in the coldest weather, and during the daytime in the hottest season. Hens must be kept comfortably warm. This is particularly true at night when the body is less active. The great difference between summer, when hens naturally lay most eggs, and winter when they always lay the least eggs, is a difference in temperature and sunshine. Therefore we must build our poultry houses so that we can as far as possible, consistent with cost, overcome this condition.

A Low House is Warmed Easier Than a High One

Solid walls radiate heat rapidly. The best way to make a poultry house warm is to build it as low as possible without danger of bumping heads. There will then be ample air space for as many fowls as the floor space will accommodate.



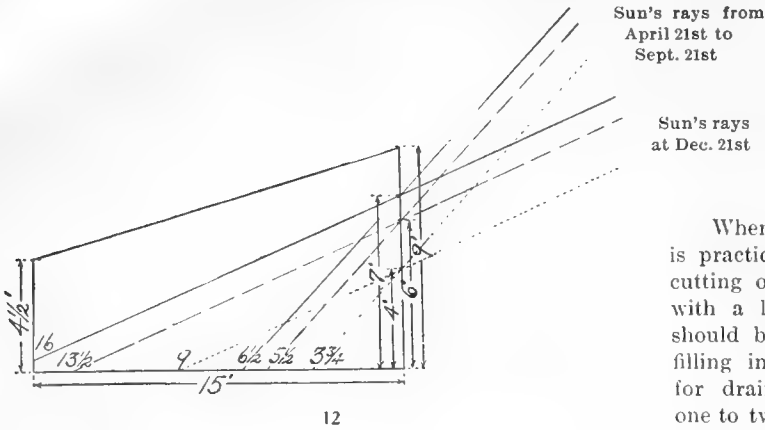
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Too much air space makes a house cold. It cannot be warmed up by the heat given off by the fowls.

With the house as seen in (Ill. 13) 15 by 15 by 6 ft., there would be 1912 cu. ft. of air space, which with 40 hens weighing five lbs. each, would allow $9\frac{6}{10}$ cu. ft. to each pound live weight. This is eight times greater than is recommended for each pound live weight for other animals. The gable roof alone has 562 cu. ft. air space or $2\frac{8}{10}$ cu. ft. air space to each pound live weight.

The Walls Should Furnish Insulation

Matched lumber is cheaper in the end than unmatched with battened sides. Planed lumber will pay for extra cost in the saving of paint and brushes. For durability, painting buildings may not pay, but for appearance's sake it is desirable. Line with tough building paper, always making the



soil is hard to clean, and only partially keeps out dampness. Board floors are short-lived if the air is not allowed to circulate under the house. If the foundation walls are not tight the floors are cold. In any case they harbor rats. A good cement floor is nearly as cheap as a good matched board floor, counting lumber, sleepers, nails, time, etc.

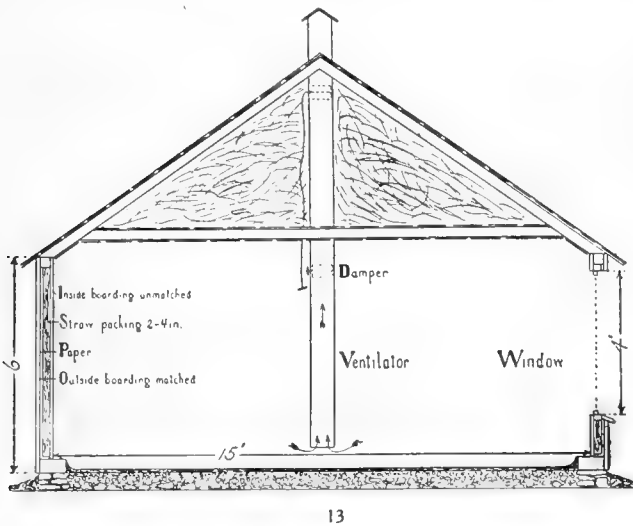
When once properly made it is good for all time. It is practically rat proof, easily cleaned and perfectly dry, cutting off absolutely all the water from below. If covered with a little soil, or straw or both, as all kinds of floors should be, it will be a warm floor. Make cement floors by filling in with small stones or coarse gravel, if possible, for drainage. Then work in and smooth off about one to two inches of mortar, made by mixing thoroughly while dry, one part good cement to three parts sharp sand, then wetting and thoroughly mixing again and again. Other things that can be done to keep dampness out of the air is to use absorbents like dry dust, or land plaster, or South Carolina rock on the droppings, which should be frequently removed; and by keeping plenty of dry straw or buckwheat hulls on the floor for litter or overhead.

When Air is Warmed It Expands and Rises—Cooling Has the Opposite Effect

Damp air may be removed by ventilators, which will necessarily make the house a little cooler. Warm air rises. Therefore the best ventilator is one that has an outtake near the floor, with a tight galvanized iron shaft leading up through the warm air of the house to the roof and out at the peak. The metal being more quickly affected by heat will cause currents of air in the shaft to rise more quickly. (Ill. 13.) The intake air should be received from the bottom on the outside and conducted to the ceiling before being allowed to enter the room. This avoids direct draughts and causes a circulation necessary to the removal of the moisture. The less the difference between the inside and outside temperatures and the quieter the air, the more difficult it is to ventilate. The tighter and warmer buildings are made, the easier they are to ventilate. The larger the amount of air space the less need there will be for ventilators, provided there is a change of air through windows or doors during the day. (Consult King on Ventilation.) Stuffing the sides and roof of the house with straw to prevent condensation of moisture will help to keep the moisture in the air so that it can be removed by ventilation.

Pure air is as necessary to good health and good egg production as pure food and pure water. It will require a perfect system of ventilation and considerable personal attention to keep the air in a poultry house as pure as it would be out doors. It will therefore often be found advisable to adopt the scratching shed plan of house, which allows fowls some discretion in choosing an open air temperature.

laps tight. Make the walls double with the space stuffed with straw rather than have a so-called dead air space, or the same material built solid together (Ill. 13). With the solid wall, heat passes through rapidly. The same is true of a dead air space where the air becomes as cold as the outside boarding and in turn, by direct contact cools off the inside boarding. This occurs less quickly when the space is stuffed with non-conducting material. Stuffed walls will not be necessary over the entire house except in the very coldest sections; or the coldest sides in the milder section, and not at all further south. It costs about the same to build a double batted wall with unmatched boards solid together with paper between, as it does to make two single walls of



matched boards with one lining of paper and the space stuffed with straw. With vertical boarding every board serves as studding and saves expense.

Dampness is Fatal in Poultry Houses—Drain to Promote Dryness

Better by far to have a cold, dry house than a warm damp house. The warmer the air the more moisture it will hold. When this moist air comes in contact with a cold surface, condensation takes place, which is often converted into hoar-frost. The remedy therefore, is to remove the moisture supply as far as possible, by first cutting off the water from below which comes up from the soil. The water table is the same under a poultry house as it is out doors. Dirt floors are therefore damp. Stone-filling covered with

Exercise is Necessary to Insure Health; Scratching Pens Provide for This

Hens do not like confinement. The fact that hens can go in and out freely from house to shed, seems to be a deceptive form of liberty which they crave and which is not provided in a single close compartment house. The fact of having been in the cooler air during the daytime seems to make the fowls less affected by the cold of night. In practice they are generally found to be more healthy and to lay more eggs in a year when proper scratching sheds are provided.

The relative size of the shed and closed compartment will depend upon the location. The further south, the larger the scratching shed and the smaller the closed pen, even to the extent of having all open sheds with cloth fronts and with hooded roosts. Such houses are far warmer than is generally supposed. The further north one goes, the smaller the scratching shed and the larger the closed compartment should be, until in very cold sections the open sheds might be entirely undesirable. Ordinarily they should be about equally divided.

There are several ways to provide scratching sheds, each one possessing some advantage over the other. Ill. 11, shows three styles. Plan C has the advantage of a scratching shed as deep as the house which is thus better sheltered from the wind. It has the disadvantage of having more doors to open and close in passing through a long house. Plan D does away with two doors thus saving time, and is no more expensive to build, but is more exposed to the wind and will make a somewhat dark corner unless a window is placed at the back of the scratching shed. Plan E is all scratching shed except a small warm roosting room. This would be a little cheaper to build but would not be adapted to the coldest sections. The fronts of the open sheds should generally be provided with heavy cotton cloth doors to keep out sleet and snow during heavy storms. They may be hung at the top and raised by a pulley, or sliding doors with cloth windows can be used. Hens are easily frightened. Any-

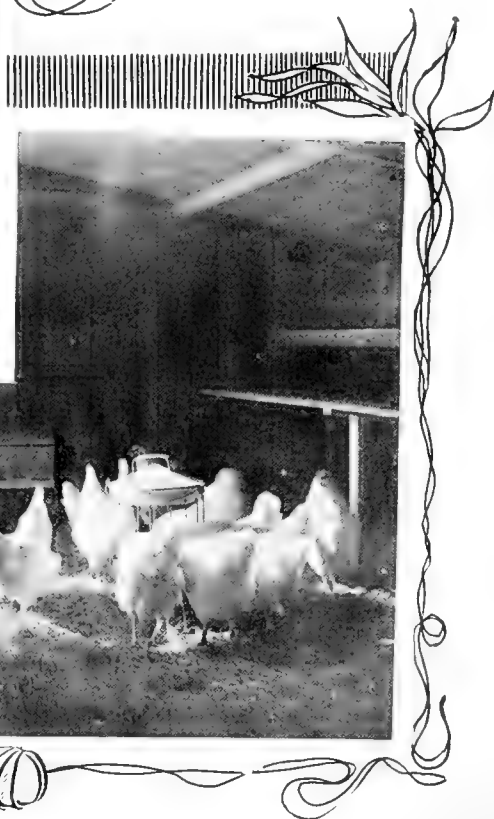
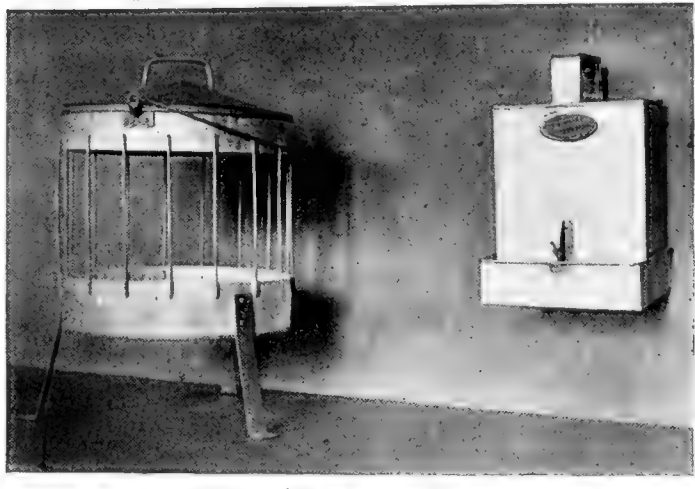
thing that causes uncertainty or suggests danger retards egg production. Therefore every house should provide a retreat. This is done by placing the opening through which the fowls pass to and from the shed and the house, in the house, at the rear side instead of the front side of the partition. When any person or animal approaches the shed the hens retreat without alarm to the house, or to the shed, if the alarm were to come from the other direction. Placing the opening at the rear side also prevents the wind from blowing into the house. It should be raised 3 inches above the floor to prevent the litter from being scratched out.

A Dust Bath is Essential to a Fowl's Health and Happiness

By it they scour off the scurf and scales from the skin and rid themselves of vermin. The finer, lighter, dryer the dust the better, because the dust must be light and fine to get into the breathing pores of the lice to kill them. Sandy loam is often better than sand or some kinds of road dust which are cold and heavy. Wood ashes and coal ashes lighten it up. The best place for the dust bath is in the open air of the scratching shed. Here the dust quickly settles and the hens that are not dusting are not compelled to breathe it. Fowls are apt to stand upon the edge of a dust box and defoul it. The interior arrangement of a poultry house should not occupy the floor space. The hens need it all. The floors are more easily cleaned.

Practical Feeder and Water Fountain

This feeder is made of galvanized sheet steel 13 inches in diameter, 18 inches high and weighs 5 pounds. The top and bottom are connected with No. 3 galvanized wires, the top of the feed tray being 8 inches from the floor and 3 inches deep, or just right for fowls to eat with ease and still high enough to prevent scratching litter into the same. The feeder has a bail and cover like a pail and it can be filled outside and simply taken in and set down in the pen. The drinking fountain is also made of galvanized sheet steel, the body being 4½ by 8 by 9 inches high and will hold five quarts. The pan is 1½ inches wider than the main body, giving ample room for the fowls to drink. The pan is hinged to the back of the main fountain and has an automatic catch in front, so that when the fountain is filled and the bottom is up you simply close the pan over the body and the catch snaps in place and cannot be emptied until released by operation of the catch. The water remains in the pan the same as in any other fountain.



Details of Construction

The Practical Advice of a Qualified Architect Concerning the Foundation, Floor, Walls, Roof and Interior Fixtures of Poultry Houses—The Acquisition of Desirable Features and the Avoidance of Errors

R. P. I.'s Architect

AN IDEAL poultry house has many requirements, more than would be supposed by the uninitiated. It should be simple, practical and convenient. It should be comfortable for both attendant and fowl. It requires to be built substantially and to be adapted to the purpose for which it is intended.

The foundation should be strong and well made. It may be built of concrete, rock or brick, or may consist of wood only. It should extend below the frost line so that cold weather will not injure it by causing it to settle, which would certainly be the case if not made sufficiently deep.

"Excavate trench below frost line, 15 inches wide. Grade bottom to drain to lowest point of surface. Lay two-inch tile in bottom; carefully fill in stone around and over tile, using large flat stones to cover the tile. Fill trench to within 6 inches of surface with small stones. Then set up 12-inch wide boards edgewise, 12 inches apart inside, having top edge perfectly level; fill in layer of small stones 3 inches deep, nicely fitted in on outer sides, and then run in grout composed of cement 1 part and sharp coarse sand 3 parts. Then tamp until the mass becomes jelly-like under the rammer and until the water begins to ooze out. Repeat until walls are filled even with top of boards, which can be removed when grout is set. The wall will then project 6 inches above ground. (Ill. 14.)

When using concrete, cement must be added to insure a thorough job. Without it the mixture would soon lose life and crumble away. Portland cement is best for underground work. It is advisable also to use cement in the mortar, if foundation is made of stone or brick, as it greatly adds to the durability of foundation.

Another very good and more economical foundation suggested was to take glazed drainage tiles of proper size; place them in an upright position, sufficiently deep, and fill the inside of tile with concrete, making a post that will never wear out or decay.

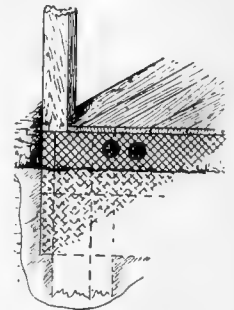
Wood Foundation

If wood foundation is used, cedar posts will be found the most desirable, as they will outlast any other. These should be placed at least 3 feet into the ground and be not over 8 feet apart to prevent building from sagging. Two-inch planks should then be nailed to the posts in a horizontal position. These boards should be at least 6 inches above grade at the lowest corner and should extend below the ground for some distance, not less than 12 inches, the deeper the better. The

main purpose of this is to keep out rats, etc. (Ill. 15.) If the boards were covered with small wire netting it would be still better, but the wire must be well galvanized. Cheap wire would not do. To prevent posts and lumber from rotting, especially below ground line, apply hot tar, *avenarius carbo-lineum* or some creosote preparation.

Stone and Wooden Floors

Floors should be raised above the surrounding ground to insure dryness, which is essential. A very good floor, quite frequently recommended, is composed of large stones laid on the ground about 6 inches high. These were covered with 3 inches of smaller stones, then gravel and topped off with 2 inches of coarse sand, making a moisture absorbing floor about 1 foot above grade. Wood floors can also be advantageously used. They should be raised some distance, say about 6 or 8 inches above the ground, and have ventilation underneath. Small holes at each corner of the foundation below the floor line will answer very well. (Ill. 16.) This will allow air to enter under the floor and keep it dry. All joists, timbers and the lower side of the floor might also be treated with tar or other preservatives above referred to. One of the main purposes of the foundation and floor is to prevent rats and other rodents from entering the poultry house. Floors constructed as stated above will go a long ways towards accomplishing this.



16-SECTION THROUGH WOODEN FLOOR

Constructing the Walls

Walls must be weather-tight. A great variety of walls have been suggested, some of boards only, others of boards covered with paper; some single, others double, and so on to the most elaborate one, built as follows: (Ill. 17.)

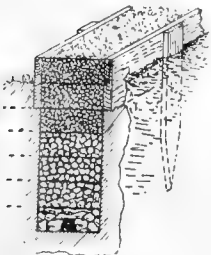


17-AIR-TIGHT WALL

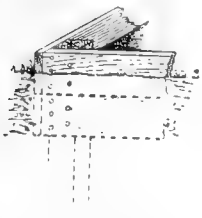
On the outside of the studs nail sheathing; cover with paper or sheathing quilt; then with drop siding or weather boards. On the inside studs fasten building paper and board up with matched flooring or ceiling. This gives us two thicknesses of paper, three of boards and an air space between, and forms an absolutely warm and air tight wall, better than many dwellings.

A good wall can be made of matched boards papered outside and in, at low cost. (Ill. 18.)

All walls should be constructed to exclude vermin, lice, dampness and draft and should be free from cracks, crevices or holes.



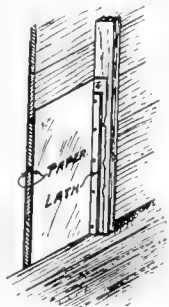
14-A SERVICEABLE FOUNDATION



15-CONSTRUCTION OF CORNER

The Roof

Roofs should also be air tight, and of sufficient pitch to shed water freely. They should extend over the building to protect it from the weather. If shingles are used on the roof, omit paper under them, for the paper absorbs and retains moisture, causing them to rot from below in a short time. All houses ought to have eaves troughs or gutters to carry away the water. (Ill. 19.) While not essential, they are desirable, for they not only protect the foundation, but also the walls, and prevent washing away of the ground, in districts where severe rain storms are prevalent. Lofts filled with hay, straw, leaves or other litter under the roofs and above the roosting rooms are used quite extensively and are advantageous, not only adding to warmth of house in winter and coolness in summer, but absorbing and holding moisture arising from the fowls and so preventing drippings from walls and consequent danger to the health of fowls. (Ill. 20.)



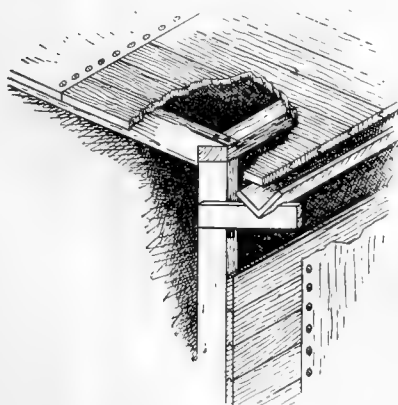
18—A SERVICEABLE WALL

The Doors

Doors should be of sufficient size to allow one to enter the building and pens with ease; the outside door wide enough, if the house contains more than two pens, to admit a wheelbarrow. The doors, both exterior and interior, should be located so as to save steps and as near the interior fixtures as possible. This in a large house is of great importance. Where there is no hallway, doors in the partitions should swing on double acting hinges, and be of sufficient width for cleaning house.

The Windows

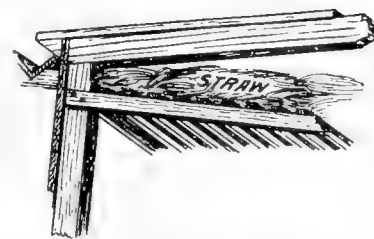
Windows should be located properly, preferably on the south side of the building, and of sufficient size to furnish ample light and ventilation, and low enough to give light



19—ROOF AND EAVE TROUGHS

in the front part of the pens. They should also be capable of being opened for ventilation. The most convenient way is to have them slide horizontally. This allows them to be opened partly or wholly, with no danger from winds slamming them and breaking the glass. In very long houses, as shown by some of the plans, the windows can be placed on small wheels and fastened to a rope, thereby enabling the attendant to close or open all, or a number of the windows, from one point. If the windows are to be raised and lowered with a cord, from the hallway, they should be counter balanced. They will then remain in position and can be more easily operated. High windows, as shown in some of the plans for lighting roosting rooms, or for other special purposes, are not only unnecessary, but detrimental. Sufficient light can be had from the south windows for all purposes, and any

further openings are only sources of heat, cold and expense. Too much glass is nearly as objectionable as too little. On bright days too much sunlight passes through it, making pens uncomfortably warm; at night the heat escapes very rapidly. This not only creates a cold house when fowls are roosting and should have warmth, but also condenses the moisture in the building, causing dampness, which promotes decay. Some plans err greatly in having a super-abundance of sash. They might be good hot houses, but are poor poultry pens.



20—LITTER-FILLED LOFT

The same with skylights. Being in the highest part of the building, they allow more warmth to escape in winter, and during warm weather produce extreme heat, more so than side windows.

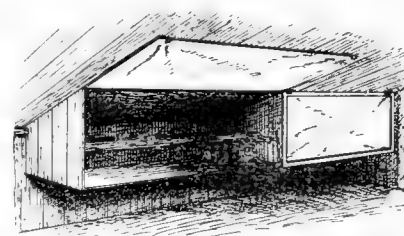
A number of competitors have discarded glass entirely in their poultry houses, and recommend muslin covered frames in place of sash, with good results. These would be very desirable also where glass is used, for then the admission of heat and light would be under perfect control.

“Ventilators are Superfluous”

Ventilators are entirely superfluous. Thorough ventilation may be obtained from doors and windows if properly located, and any further “unique” or “ideal” systems of ventilation are generally worse than useless in poultry houses.

Fixtures Should be Simple and Detachable

All roosts, droppings boards, nests, feed boxes, water fountains, etc., should be removable, for the purpose of cleaning and airing. Parasites will not thrive when exposed to sunlight; therefore all fixtures should frequently be given a sun bath, after being thoroughly cleaned. When fastening fixtures avoid unnecessary cleats, slides, notches, pegs, etc., since every one of these affords a loafing place for vermin. Droppings boards should be of first class material and as free from joints as possible, and spread with earth to facilitate cleaning. In cold climates the roosting place may be enclosed by curtains on frames hinged to the ceiling to be dropped at night during severe weather, or by having curtains hung by rings on wire to be drawn over the roost at night. (Ills. 21-22.) All fixtures should be raised sufficiently high above the floor to allow fowls to freely run under them, thereby giving an unencumbered floor space for exercise. This also makes it more convenient for attendant when refilling or cleaning these accessories. Feed and grit boxes or troughs, water fountains, nests, etc., should be so placed that no unnecessary steps need be taken when replenishing them. The larger the house the more important is this, for saving steps mean

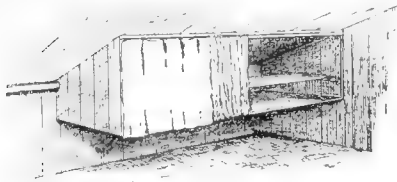


21—COVERED FRAMES IN FRONT OF ROOSTS

saving time, and it is surprising how much may be wasted in a year.

Unnecessary Expense

When building a poultry house be economical, whether a cheap house or an expensive one. Use nothing that is not needed to insure strength, comfort and convenience; not only on account of cost, but on account of time occupied in cleaning. In looking over plans a great many items are found that are

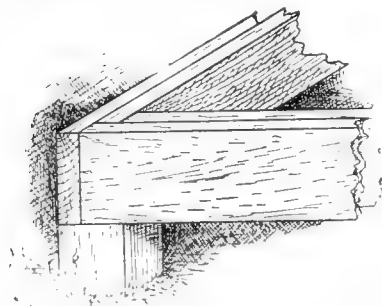


22—CURTAIN IN FRONT OF ROOST

superfluous and therefore wasteful. Among them are the following:

1—Feed rooms in buildings containing only two or three pens.

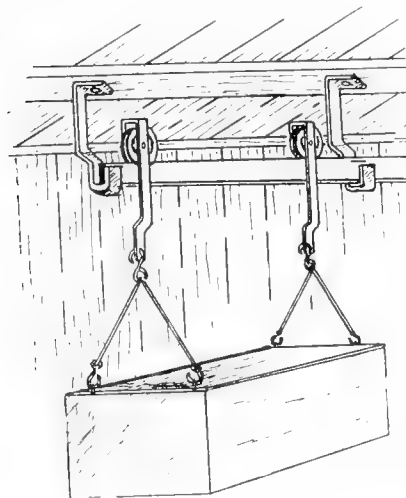
2—Passage-ways or halls that are not fully utilized.



23—A CORNER OF SILL

rooms are unnecessary; the nests could as well be placed on the walls of pens.

3—Unnecessarily large timbers in construction of buildings, such as the use of 4 by 4s where 2 by 4s would suffice, is wasteful. Lumber is frequently cut to waste, as for instance by having walls 6 feet and 6 inches high, when they might as well be 7 feet without additional expense and with added convenience, since 14 foot lumber must be used in either case.



24—OVERHEAD TROLLEY

4—Foundations if not below frost line are an uncalled for expense, for they will not properly carry the building nor prevent the admission of rodents.

5—Roofs when shingled and not having sufficient pitch cause premature decay and should be avoided.

6—Too many doors in buildings are absurd; some two-pen houses have five or six.

7—Upper rows of windows, skylights and ventilators are seldom necessary; generally troublesome.

8—Arrangements of interior fixtures so as to be dif-

ficult of access, create loss of time, consequently waste of money.

This list might be continued indefinitely, but enough has been said to indicate where expense can be avoided.

Excellent Features in Poultry Houses

Besides those already mentioned, some of the best suggestions follow:

1—Rock foundations laid in cement. (Ill. 14.)

2—Floors of pas-sageway lower than floors of pens in continuous houses, avoiding the necessity of stooping and facilitating the labor which is all done from the hall-way.

3—Pas-sage way running across a two or four pen building, thereby saving space by allowing attention to two pens from one point.

4—Boards and paper on both sides of studs; space between filled with sawdust or finely chopped hay.

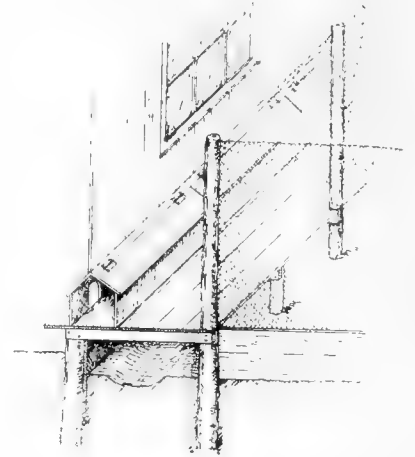
5—Alternate partitions between pens removable; when removed doubling size of pens.

6—Partitions covered with muslin in place of wire; this allows air to circulate without allowing draft, and should be a good plan in very long houses.

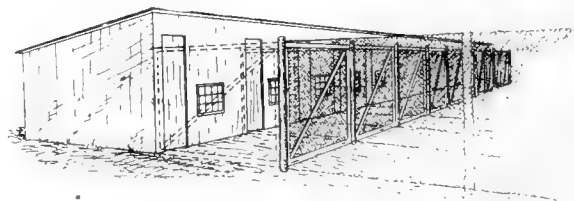
7—The front of scratching shed hinged on top, to swing in and to be fastened to roof in warm weather, the fowls being confined by a wire netting partition.

8—Sectional houses, fastened with bolts only, making them convenient for removal.

9—Sills made of 2 by 4s to 2 by 6s doubled, according-



25 PASSAGEWAY OUTSIDE HOUSE



26—GATES ADJOINING THE HOUSE

to the size of the house, for houses built on posts, thus giving strength and durability. (Ill. 23.)

10—Cars running on rails in long continuous house for ease of carrying mash, food and water, and for cleaning droppings board, gathering eggs, etc. This would be cheaper if overhead barn door hangers and track were used. (Ill. 24.)

11—Fitting or exhibition coops (which also may be used for broody hens or extra cockerels for fattening) placed about 3 feet from the floor; they take up no floor space and admirably serve the purpose for which they are intended.

12—A clever feature, though not belonging to the house proper, is the building of gates, the width of runs.

and adjoining the building. These gates when opened not only form an enclosure for fowls in the yards, but also form an alley the full length of the building, wide enough for driving through, when cleaning the floors of pens, or removing litter. (Ill. 26.)

13—Passage-way along outside of building being formed of raised walk for barrow to be used when feeding, cleaning, etc. (Ill. 25.)

Many minor improvements, such as wind-breaks, steel roofs, newspapers in place of building paper, and others too numerous to mention, are spoken of by different builders, and the persistent reader, after seeing the plans and specifications which are published herein, will certainly be able to erect a poultry house to his entire satisfaction, one that will be practical, economical and serviceable.



PIANO BOX POULTRY HOUSE

(For description see page 24)

Closed Front Houses



A Five-Pen Laying House

A Simple, Practical House Economically Built on the Shed-Roof Plan with a View to the Comfort of the Fowls, and a Saving of Labor for Their Attendant

Arthur Davis

WE WILL try to tell you in plain terms how we built the poultry house, the plans of which we send you. Neither my father nor myself is a carpenter, but we have built a poultry house which I think comes very near filling the requirements.

I will commence with the floor plan, which is 60 by 15 feet inside, with a three-foot passageway on the north. This gives a man room to walk and carry a pail or push a wheelbarrow and still clear the shelf containing feed pans and drinking fountains. The building is supported by posts set below the frost line—about 3 feet below the surface. These posts are 4 feet long, thus raising the building about 12 inches off the ground. In all there are 18 posts, 6 for the north and 6 for the south wall, with 6 to support the center. The inside posts, with the exception of the end ones, are set directly under the partitions and with the help of the partition posts support the roof, which will not sag.

The building is divided into 5 pens 12 feet square,* and accommodates 15 fowls to the pen nicely. The door may be at either end of the building and the gates to the pens may be at either side, the interior fixtures being arranged to suit. Two by six scantlings are used for sills, and 16 foot, 2 by 4's are used for stringers. The floor will never sag with this support. The stringers are 2 feet apart and a 2 by 4 rests edgewise on top of posts—running lengthways of the building to support the stringers. On the outside walls stringers are spiked to the 2 by 6, even with the top of the latter. On the under side of 2 by 4 stringers light strips are nailed, running lengthwise of the building and 4 feet apart to support any kind of light lumber or strips laid on them between the stringers. This is simply to hold up building paper which is cut in strips and laid between the stringers and tacked to each 2 by 4 with laths.

The floor proper is then laid. This makes a perfectly tight double floor with 1 set of stringers. If paper was put on top of stringers and then floor laid, it would sag down in

time from dampness. By being laid this way it can stretch and shrink and will not tear loose.

I believe in a floor in a poultry house, as it saves grain and is always dry, no matter where located, and rats or other vermin will not work under a building set off the ground as this is.

The south elevation is 5 feet 6 inches inside. Ten feet scantling 2 by 4 will cut to make this height, with the addition of the 2 by 4 plate spiked to upper ends. The lower ends are toe-nailed to the 2 by 6 sill flush with the outside. Studs are set 3 feet apart, or so as to accommodate the window. Our windows are 3 by 5 feet, with 6 lights. These windows are hinged to swing inward, with wire screen frames on outside of opening. I would not advise a smaller window, as that would make it dark in the passageway and the hens could not see well enough to eat.

Side elevation is self-explanatory; any one can nail that together. Studs are 3 feet apart. On the end where the door is, the first stud can be set to accommodate door frame. A 6 foot or 6 foot 6 inch door can be put in here nicely.

The north side is perfectly plain—no windows are necessary.

Interior fixtures: The partitions between pens are boarded up solid with light stuff to a height of 3 feet from the floor. The gate is hung to the 2 by 4 in passage partition. There are 4 partitions between pens. These prevent fighting among the fowls and they will not dash themselves against this partition at feeding time as they would if the partitions were composed wholly of wire netting.

The illustrations of a section looking from pen towards the passage show a very convenient and labor saving arrangement of fixtures, the construction of which is shown on the cross section. No. 1 shows the roosts; 2—droppings board; 3—nests; 4—nest platform; 5—brace for same; 6—leg to support droppings board; 7—door through which to clean same; 8—door for gathering eggs; 9—slats for feeding through;

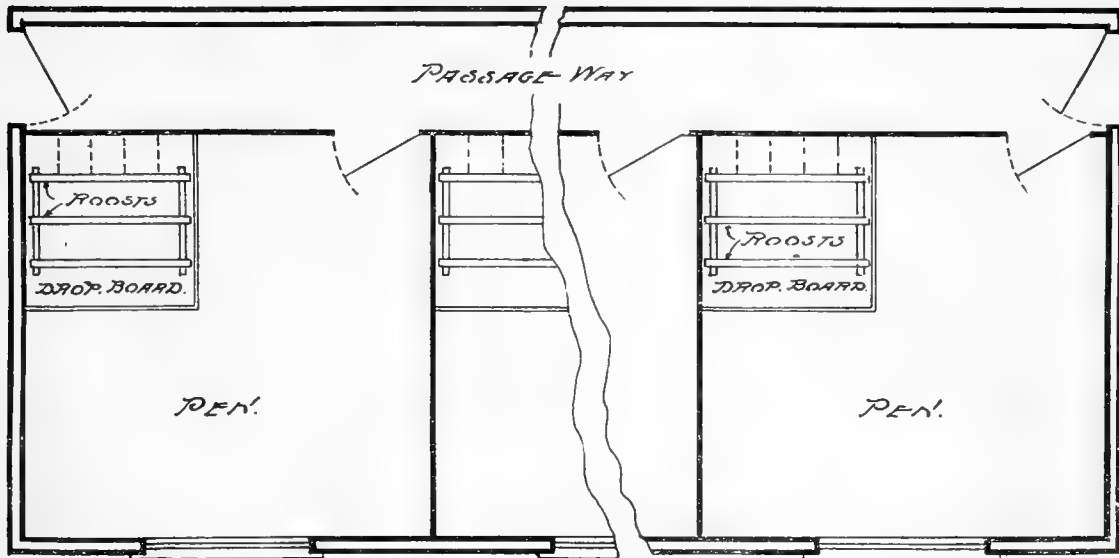
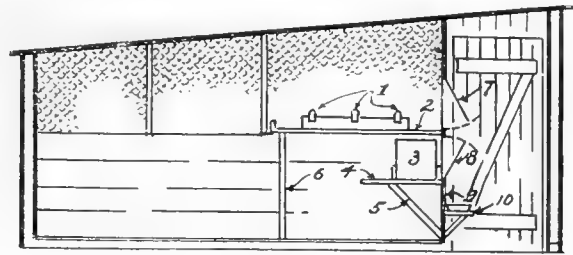
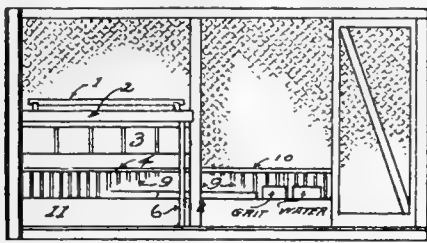
10—shelf for holding feed pan, water, etc.; 11—board running whole length to keep litter from being scratched into passage-way. It is plainly seen how much labor and food this arrangement saves. Understand that these fixtures are next to the partition which is boarded up 3 feet, consequently no fowls are roosting near those of the next pen. The droppings board can be hinged to the board partition, or the passage partition, so that it can be raised up and hooked to allow free access to nests for cleaning. Roosts are simply set on this platform—not nailed. A 4 inch board is nailed to the inside of droppings board to prevent scattering of droppings. Nest boxes have no top or bottoms. They are simply 5 boards 14 inches square fastened on the back with a 6 inch



The slats are 7 inches long, that is, the space between the strips running across pen and top of litter board is 7 inches. From the nest platform to the droppings board is 14 inches, and with an inch or two added for clearance, will make roost platform about 3 feet from floor, or a little less. Platform is 5 feet square. Under it there is room for 4 nests 14 inches or 5 nests 12 inches wide. Nearly all breeds of fowls can fly to roost without inconvenience, except possibly Brahmas or Cochins. In that case a ladder could be made to hook on to platform to aid them. These nest boxes under platforms are dark enough to prevent hens getting bad habits.

Our poultry house is ceiled inside, except overhead, with building paper between. The roof is matched stuff and covered with three-ply tar roofing, painted with tar paint. This house has withstood all kinds of weather and has never

been so cold as to admit frost sufficient to freeze a comb on a Plymouth Rock.



PLAN, AND SECTIONAL VIEWS OF 5-PEN LAYING HOUSE DESIGNED BY ARTHUR DAVIS

The leg (No. 6) is hinged so that when the droppings board is raised it lays back against the same out of the way. All these fixtures are made of $\frac{1}{8}$ by $1\frac{1}{2}$ or 2 inch strip, commonly known as roof lath, with the exception of the droppings board and nest platform, which are $\frac{3}{8}$ or $\frac{1}{2}$ inch sheathing. The nest boxes can be made of $\frac{1}{2}$ inch poplar or any light stuff. The distance from floor to top of feed shelf is 10 inches. Our pans are 2 inches deep and 7 feet long. The top of this pan is just even with the top of the 12 inch board.

been so cold as to admit frost sufficient to freeze a comb on a Plymouth Rock.

Architect's Comment

This is in general a simple, practical and convenient house. It has many desirable labor saving features, allowing the attendant to take care of many fowls, more, probably, than by any other plan. It is, everything considered, a very economical building, in which hardly anything could be omitted, except by sacrificing either ease of access and convenience for attendant, or comfort and warmth for both attendant and fowl.

Posts are set below the frost line, thus avoiding a mistake too generally made in buildings of this kind. They project one foot above ground, insuring a dry floor, not liable to decay, and protecting building and fowls alike from rats and other vermin.

Sills are 2 by 6 inches. This insures strength at a place where it is most needed. Many builders use 2 by 4's; these are insufficient.

An unusual feature is paper laid on strips that are tacked underneath the stringers, to form an air space beneath the floor for warmth and prevention of moisture from the ground. This could probably be done far easier if paper were laid on top of stringers, and might answer as well, though the designer gives a debatable reason for his method.

Walls being doubled (that is, boards on either side of studs), form an air space, keep out cold and prevent heat from escaping. It is presumed that the paper is next to the outer boards, which prevents the outer air from entering air space, and so keeps the house warmer in winter and cooler in summer.

Roof is made of matched stuff, covered with three-ply tarred paper. Being a shed roof, it is more economical than a hipped roof, and being highest on north side, it leaves sufficient height in passageway, where practically all of the work is performed.

Passageway partition is very conveniently arranged, allowing attendant to do feeding, watering, egg gathering, cleaning, etc., from it. In fact, all work can be done from the passage except the removal of litter from floor of pen. It would be more desirable if shelf for feed pan would not project into the hallway. To a slight degree it obstructs the passage of wheelbarrow, when cleaning droppings board, as the barrow cannot be brought up close to wall. Some of the droppings would likely fall into the passageway, or still worse, into the feed trough.

Feed troughs, water fountains, nests, etc., being along partition of passageway, leaves all of the floor space entirely clear, so that it is really a scratching shed. There ought to be a dust box somewhere on the floor, of which nothing is said by our friend, perhaps unintentionally, for we suppose he has provided it for his fowls.

Droppings board is 5 feet square. It might be narrower and still be sufficiently wide for the number of fowls mentioned. It is quite inconvenient to clean off a board 5 feet wide from passageway.

As stated before, the building is very convenient and well adapted for its purpose. It could be shortened or extended and still retain all of its good features. With a few alterations it would be very near what we are looking for, a perfect, well adapted and practical house for fowls.

DOUBLE POULTRY HOUSE

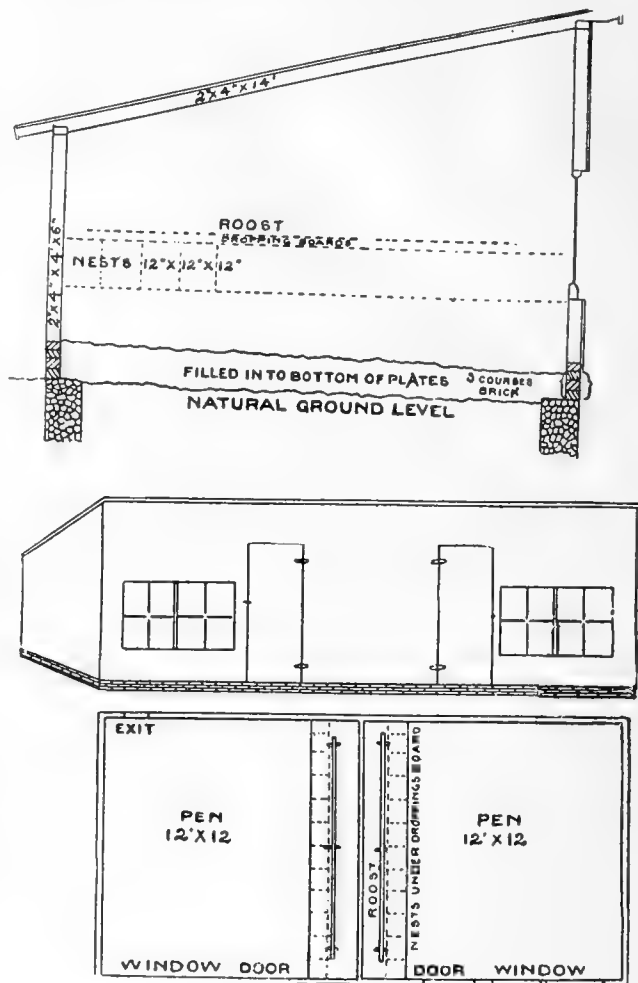
Plans, Detail of Construction and Bill of Material for a Poultry House, Together with Description of the Interior Equipment

William N. Hill

THIS house is designed to be either double or continuous. The plans show it double, but it can be extended to any length. The house shown is 12 by 24 feet, divided into two pens 12 by 12 feet, each of which will accommodate 20 to 25 fowls. There is no inside walk, but as the house should face south, the yards will run north, leaving the front of the house free from fences. Thus when one

wants to go into a particular pen, there is only one door to open instead of a number of gates or doors, to say nothing of the freedom from chickens in the path. It is a good plan to put a row of netting along the lower edge of the roof inclining outward, in order to keep the fowls from flying onto the roof and so getting out.

A narrow trench should be dug 18 inches or more deep to receive the foundation. Then broken stone or brick and mortar are put in, in layers, and thoroughly rammed. This should be brought up level with the ground; on this lay 3



28—PLAN, SECTIONAL VIEW AND PERSPECTIVE, OF HOUSE DESIGNED BY W. N. HILL

courses of brick, and bed the wall plate on them in mortar.

Twelve-foot 2 by 4s are then cut in lengths of 4 feet 6 inches and 7 feet 6 inches for studding and set at 24 inch centers. A 2 by 4 inch wall plate should then be spiked and set on top to support the roof. Use 14 foot 2 by 4s for rafters, placed at 24 inch centers. Board up tight and cover with a good quality of roofing felt or other material. Use good matched German siding for outside walls. Inside walls to be lathed and plastered 1 coat, so as not to leave any cracks to harbor lice or let in draughts.

Two standard sized windows are placed side by side in each pen and hinged on the inside at the top so that they can be swung up out of the way. The outside of the windows to be covered with netting. Place a good sized stop in the window frame so that the sash will shut up tight against it. The doors, one to each pen, made of matched lumber dress-

ed on both sides. Size, 2 feet 6 inches by 6 feet 3 inches, and hinged to swing outward.

Make the droppings boards of matched lumber 2 feet wide, their length to be governed by the width of the pen. Set them 28 or 30 inches from the floor level. The roost consists of a 2 by 4 scantling set flat, with the corners rounded, about 6 inches above the droppings boards and 1 foot from the outside edge. The nests are placed under the droppings boards. They are 12 inch cubit, a 12 inch board forming the bottom and boards 1 foot square the partitions. A 4 inch board is nailed along the lower side to keep the straw in the nests, leaving 8 inches for the hen to get on or off the nest. This side should face the partition wall. The back of the nest is closed by a 12 inch board hinged at the bottom so as to admit of gathering the eggs. The whole to be securely nailed to the under side of the droppings boards so as to let the droppings boards project an inch or more beyond the nests. This plan prevents egg eating, as the nests are always dark. It is easy to gather the eggs and the nests are easy to clean. The roost, droppings boards and nests are shown in detail in the plan. Place two supports under the nests 4 feet from each end.

The floors should be of natural earth at least 6 inches higher than the natural ground level. If the ground is inclined to be damp, put a layer of pounded clay in first, then fill in with sand or loam. In case the foundation is to

be omitted, set posts 6 feet apart and use 4 by 4 inch wall plates. A good plan is to take 6 inch glazed tile and set them in the ground, large end down, and then fill up with concrete. This makes a post that will never rot.

Bill of Material

72 feet 2 by 4s for plates
 25 12-foot 2 by 4s, studding.
 12 14-foot 2 by 4s, rafters.
 420 square feet German siding.
 350 square feet roof boards.
 100 feet 4-inch boards.
 325 brick.
 4 windows 2 feet 6 inches by 3 feet.
 1,300 lath.
 90 yards plaster, 1 coat.
 90 square feet matched lumber.
 6 1 by 12 foot boards for nests.
 375 square feet roofing felt.
 72 cubic feet rough masonry

By placing the roosts, roost platforms and nests against the back wall instead of next the partition and building a door in the partition the care-taker would be able to pass from one pen to the other without going outdoors, thereby making it more convenient.

House for Laying Hens

Specifications and Plans for a Poultry House Ninety Feet Long Divided into Six Pens for Forty Fowls Each—Interior Appurtenances; How they are Made and Arranged

C. S. Green

IN BUILDING a poultry house the first thing to be considered is the site. It should be located on land which is well drained; a slope to the south or east preferable. The house should always face the south or east, and in windy places a wind break is advisable.

A trench should be dug for the foundation, deep enough to prevent the frost affecting the wall. A good wall should be laid of stone or brick and mortar, extending about one foot above the surface of the ground.

The house described is 90 feet long by 15 feet wide, and has proved to be a practical house for 250 laying hens. Of course the length can be made greater or less as conditions require.

On the foundation 2 by 5 inch sills are laid, halved and nailed together at the joints. Next 2 by 4 studs are set up 2 feet 6 inches apart and toe-nailed to the sills. Plates of 2 by 4s double thick, nailed together, making them 4 by 4 in all, are nailed on top. Then 2 by 4 posts are set up through the center of the house 7 feet 6 inches apart, and a 3 by 5 center piece nailed on top of these. This of course is set on edge to support the rafters, which are 2 by 4, 10 feet long, spliced on the center plate, making them 16 feet 6¼ inches long. This length allows for cornice of 6 inches. This completes the frame work. (Rafters are 2 feet 6 inches apart.)

On the outside of the studs building paper is applied, and clap boards or any good siding is nailed over that. The roof boards are 1 inch thick laid close together and covered with tar building paper on which is laid a steel roof or roofing paper. The inside of the house, roof included, is ceiled with planed ½ inch thick hemlock and the intervening space of 4 inches is stuffed with straw or fine shavings as the ceiling is applied, pounding it in well.

In very cold mates where the mercury goes to 40 de-

grees below zero it may be necessary to make the walls 6 inches thick instead of 4 inches, and in very warm climates like Georgia and Alabama, of course one thickness of board is enough for the sides, but the roof should be thick enough to prevent the sun making the house too warm in hot weather.

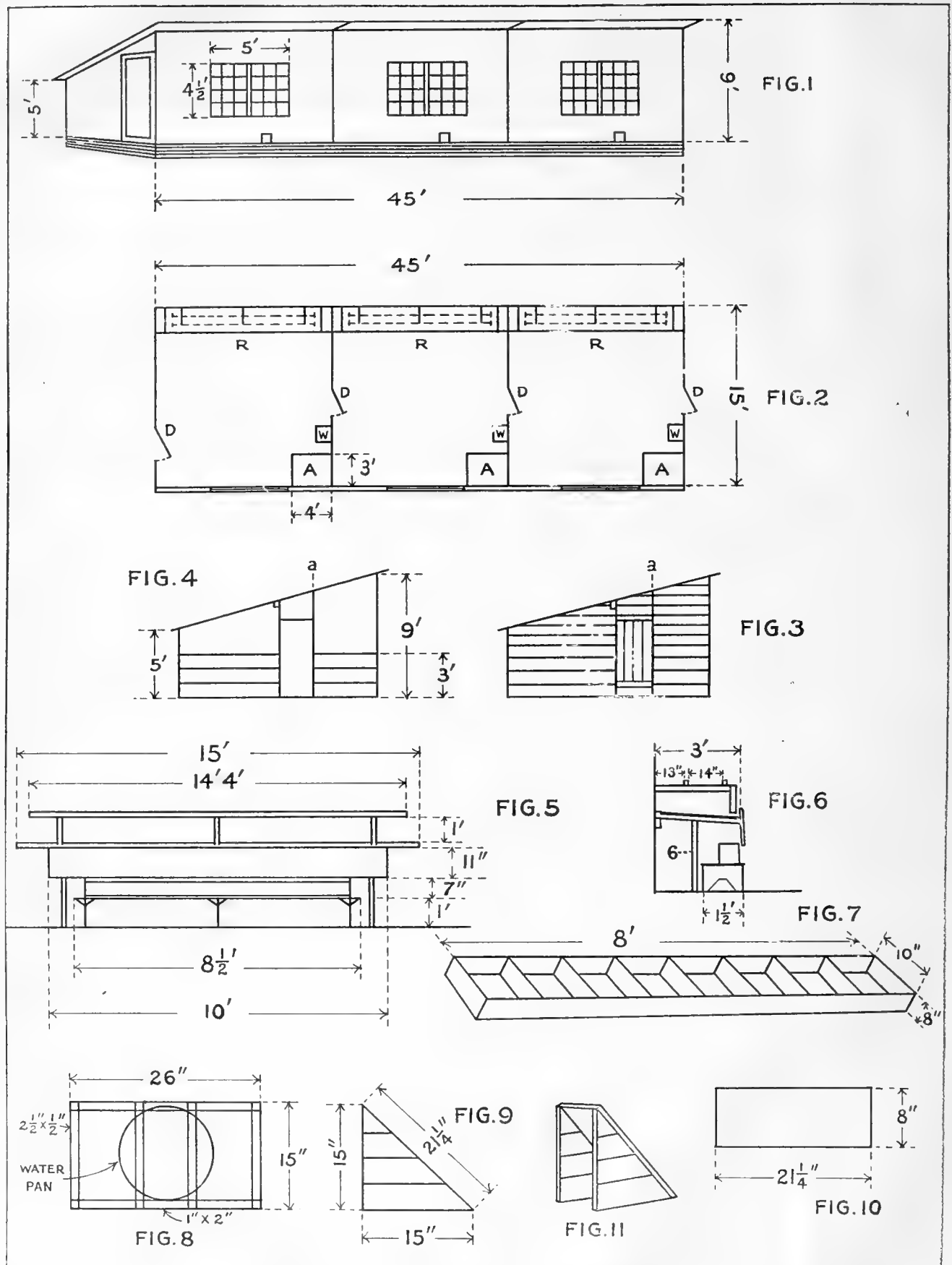
The house is divided into six pens, each 15 feet square. First a 2 by 4 is set in place where each partition comes 2 feet 6 inches from the one under the center plate, making a support for the partition and also leaving a space 2 feet 6 inches wide for the door. (See "a" Figs. 3 and 4, Ill. 29).

The floor is laid by filling in with loose stones nearly up to the bottom of the sills, finishing with gravel on top just level with the bottom of the sills, and a cement floor laid on this about 1 inch thick. The cement is mixed by using 2½ bushels of sand to 1 bushel of Portland cement. This makes a floor that is rat proof and will last indefinitely.

The center partition is solid to prevent draughts. (Ill. 29.) The other four are boarded up 3 feet high and finished with 2 inch mesh wire netting. [Figure 4 shows the boarding, but the netting which should appear above it was by mistake omitted.—Ed.]

The bottom of each inside door is 10 inches above the floor to prevent it hitting the scratching material in the pens; a board 8 inches wide being nailed to the floor and a 2-inch space between the door and board, except in the center door, which is boarded tight.

The front of each pen contains a double window 4 feet 6 inches by 5 feet and 2 feet 6 inches from the floor. Each window contains 12 panes of 9 by 12 inch glass and is hung on hinges, swinging in. In the front of each pen under the window is a hole 1 foot square fitted with a slide door, for the hens to go through.



PLAN AND DETAILS OF HOUSE DESIGNED BY C. S. GREEN

Fig. 1 shows the front elevation 9 feet high; also the arrangement of the windows and the doors for hens to pass through. (This shows only 3 of the 6 pens.)

Fig. 2 shows the ground plan of 3 pens. A.A.A. are dust boxes 1 foot high and 3 by 4 feet on the floor. D.D.D. are doors 2 feet 6 inches by 5 feet 6 inches. Those between pens are hung on double action spring hinges. W. Water pans. R. Roosts arranged along the back of house.

Fig. 3 shows the rear elevation, which is 5 feet high.

Fig. 5 shows the front view of roost platform, roosts, nest boxes, lid, and bench on which nests rest.

First the platform is built 2 feet 6 inches above the floor, as long as the pen, and 3 feet wide. It is furred in front 2 inches high to keep the droppings on. There are 2 roosts 2 by 2 inches and 14 feet 4 inches long nailed to 3 cross-arms 2 by 3 inches, 3 feet long, hinged to the back wall, so that the roosts will be 1 foot above the platform. Three posts 1 foot long are nailed to the front ends of the cross-arms, resting on the platform when the roosts are in position, the whole frame being raised and hooked to the wall for cleaning. The roosts are arranged on the cross-arms so that the first one is 13 inches from the wall, and the second one 14 inches from the first.

On the floor under the roost platform is a loose bench (Figs. 5 and 6) 1 foot high, 18 inches wide and 8 feet 6 inches long. The top and supports are all made of 1-inch boards. On this bench the nests are set. They are made of 2 1-inch boards 8 feet long and 8 inches wide, and 9 pieces of 1-inch boards 8 by 10 inches. (See Fig. 7.) This makes 8 nests 10 by 11 inches without top or bottom, but as they are set on the bench this forms the bottom, making them very easy to clean.

A board 11 inches wide and 10 feet long is hinged to the front of the platform so that when it hangs down it comes down 1 inch over the front side of nest boxes, and is raised to gather the eggs. The hens enter the ends and jump up on the bench and so on to the nests, which being darkened make an ideal place for hens to lay.

Fig. 6 shows the end view of the roosting platform and nest arrangement, all the dimensions of which have been given. "6" is a post under the center of the roost platform.

Fig. 8 shows a frame 26 inches long and 15 inches wide on which the water pan sets. The water pan is a common 12 quart milk pan. This rack is made of 2 sticks 1 by 2 inches, and 26 inches long and 4 sticks $\frac{1}{2}$ by $2\frac{1}{2}$ inches and 15 inches long nailed together as shown. It is set 18 inches high for Leghorns and 14 inches for the larger breed of fowls. One side of it is fastened to the side of the pen and the other side is held up by a post in the center of the front side extending to the floor. The pan rests on the two center cross pieces and the hens jump up on the two outside cross pieces, standing there to drink. To keep the hens out of the pan and keep the water clean a cover is hung over the center of the pan and fastened to the wall, leaving a space 2 or 3 inches wide and $21\frac{1}{4}$ inches long, which when in position sets at half pitch over the pan. (Figs. 10 and 11.) It is nailed to two triangular pieces of $\frac{3}{4}$ -inch stuff (Fig. 9 shows one of the pieces) made by sawing a board 15 inches square through the center diagonally. The long edges of the two pieces are then nailed to the 2 edges of the cover corresponding in length. It is then ready to be nailed to the wall $\frac{1}{2}$ inch above the pan so it can be easily taken out to be cleaned and filled. The cover being slanting prevents the fowls from standing on it and the 2 side pieces make it impossible for the hens to get into the pan. Fig. 11 shows the rear view of cover ready to place in position.

Each pen is also equipped with a coop 2 by 3 feet hung

at the side of the pen in a convenient place, 4 feet from the floor and the sides extending to the roof so that hens cannot stand on top of it. The coop has a slat front and is used for broody hens, male birds, etc.

For a simple, practical, economical house this plan is hard to beat. It is equally well adapted for use on small and large plants for housing exhibition breeding stock and and fowls kept for egg production, or other market purposes.

It provides a liberal amount of room for the fowls at a reasonable cost for construction and is well arranged to facilitate the work to be performed by the care-taker. It should prove satisfactory to any poultryman favoring a closed house.

Material to be Used

2,400 pounds cement (Portland), 3 tons sharp sand.

14 sticks 2 by 5-16 feet long for sills, 187 feet.

10 sticks 2 by 4-8 feet long for posts, 40 sticks 2 by 4 5 feet long for studs, 50 sticks 2 by 4-9 feet long for plates, 6 sticks 3 by 5-16 feet long for plates, 1,340 feet.

$\frac{1}{2}$ -inch ceiling planed but not matched, 2,830 feet.

1-inch roof boards, 1,547 feet.

$\frac{1}{2}$ -inch siding, 1,836.

Material for interior fixtures, including window frames, 900 feet.

Building paper, 3,103 square feet

Roofing material 1,547 feet.

Total amount of lumber, 8,640 feet; no allowance being made for doors and windows.

A SATISFACTORY HOUSE

After Due Consideration the Plan Described and Illustrated is Said to be Satisfactory to the Birds and Builder

Fred W. Carmen

THE never ending subject of poultry houses seems to be in order at any and all times. There is hardly a month goes by but an article on poultry houses appears in some of the poultry papers, and some of them are good ones, too.

I was particularly interested in the one described in a recent article by Dr. Bricault; not so much because his idea is a good one, but for the fact that I had infringed to a certain extent on his idea of the double or two-part door. I did so unintentionally, the only difference between his door and mine being that I used a piece of an old piano cover and tacked it to a frame, which I hinged on the outside of the building, instead of using oiled muslin.

There are as many different styles of poultry houses as there are different breeds of fowls, and of course different breeders have their own ideas as to which is the best. The one that we are about to consider is intended for laying stock, but can be used for cockerels and young stock as well.

The open front scratching shed house seems to be very popular, and is used a great deal, but what I dislike about it is that in stormy weather when the curtains are drawn it makes the pen too dark unless there is a sash fixed in one-half of the opening. Another objection I have to them is that one really has to build two houses to get one, as the floor space in the roosting room is used but very little, because there is not a great deal of light in there. I don't care what some of them say, the more light and sun you can get into the pen the more the chickens will enjoy it. And you will

POULTRY HOUSES AND FIXTURES

need the windows low so that the sun may reach clear back to the rear wall of the house in the winter time.

The long house with the hall in the rear is another popular plan and is a good idea where the building is intended for a brooder house. In the contest held by the R. P. J. I submitted a pencil drawing of a house intended to be used both ways, but when I came to build one for laying hens I found it too complicated, and it cost too much to build. After I had tried many different plans I hit upon the one I enclose, and it has given me satisfaction. I have found the simpler and plainer you make your house the less trouble you will have to keep it clean and free from vermin. Another thing I discovered is that where you close up 15 or 20 fowls in a small roosting room, say 4 by 7, they do not do so well, but where the roost is placed in one corner of a pen 14 by 10 and left open in the front they will do all right.

I will now try to give as clear a description of the enclosed plan as I can and I invite the readers to pass their opinions on it.

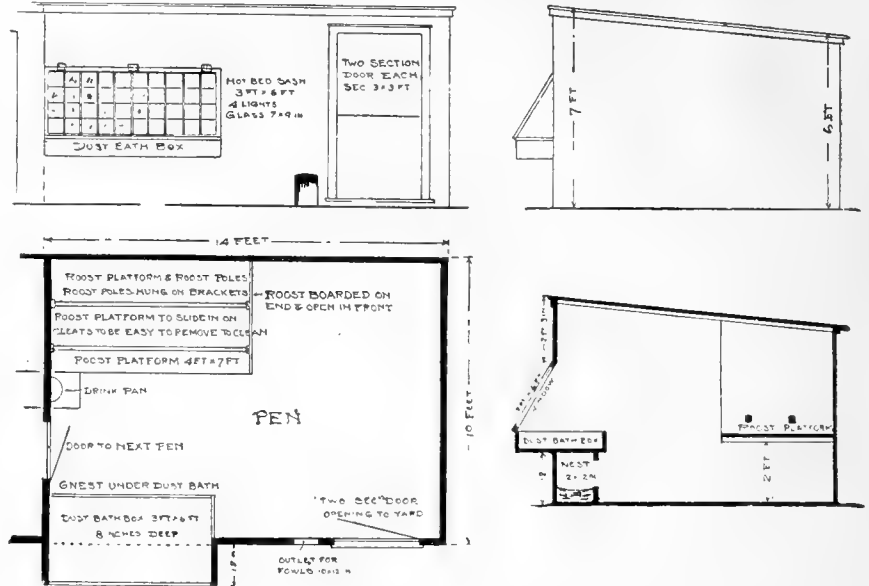
In the first place, select the site on ground that is a little higher than the surrounding land; then your house will be free from dampness, which, if in a low spot, would be bound to affect it and a damp house is worse than none at all. Face the building to the south if possible.

The house is 14 feet long, 10 feet wide, 7 feet high in front and 6 feet in the rear and of a shed roof style. It can be built singly, or two or more in a row. The frame is made of 2 by 4 hemlock and the siding, drop boards, etc., are of N. C. pine 8 inches wide. The back, sides and roof are covered with tarred paper, and the roof has an extra covering of Neponset roofing paper. Give the floor a good layer of sand and then put about 6 inches deep of hay or straw on that. In the front of the building on the west side 18 inches above the floor is a dust box three feet wide, six feet long and 8 inches deep. Eighteen inches of this box projects beyond the front of the building, and when the sash is in position the whole thing forms a sort of a bay window. You would be surprised to see how the chickens enjoy a dust bath in this window. Under the part that comes in the building build six nest boxes about 12 by 14 inches. Over the dust box (with the top hinged to the building and the bottom resting on the outer edge of the box) is a hot bed sash 3 feet by 6 feet. This sash can be raised in warm weather, and with a cover over it or a sunshade, it is a fine, cool place for biddy. The door to the pen is in the front near the east side and is divided into two equal parts, top and bottom; each part 3 feet by 3 feet. A curtain 3 feet square is used for the upper half and is hinged on the outside.

This curtain is very useful on stormy days when the wind blows hard. The roost platform is 2 feet from the ground and is 4 feet wide and seven feet long. To make the platform we batten 6 pieces of 8-inch boards together and board up where the end of the roost comes, allowing the boards on this end to go two inches below the roost platform so the platform has a cleat to slide on, and in that way it is an easy matter to remove and clean. Make the roost poles of 2 by 3 material and round the upper edges. Secure them at the ends by patent brackets or notch out a block and nail on

each side of them to fit in. They are placed 6 inches above the platform, the rear one being 14 inches away from the back of the building, and the front one 18 inches from the back one.

That is about all there is to explain. As regards the cost and amount of material, of course that varies in different localities. Here on Long Island a single house like this plan would cost about \$22 without labor, and as it will house 25



30—PLAN, FRONT AND END VIEWS OF HOUSE DESIGNED BY F. W. CARMEN.

fowls comfortably it makes a cheap building. It will take about 600 square feet of boards, 15 wall strips 14 feet long, 6 rolls of tar paper and 3 rolls of Neponset roofing paper, besides one hot bed sash 3 by 6 and four pairs of hinges, nails, etc.

By carefully looking at the plan, any point that I have not covered in this explanation may be understood.

If it is desired to build a long house of this description, in which a walk, or passage, is provided at the rear, it can be accomplished by adding sufficient width and covering the house with a double-pitch roof.

POULTRY HOUSE WITH HALLWAY

A Double-slant House with a Convenient Arrangement of the Interior Fixtures—The Bill of Material Required

R. H. Thomas

THE poultry house illustrated herewith is 14 feet wide, 32 feet long and 8 feet high at the highest point, measured 4 feet in from the back wall. This forms a two-slant roof. The back wall is 6 feet high. The front is the same height. This house contains four breeding pens. There is a window in each pen, 2 feet 4 inches by 3 feet 10 inches, containing twelve 8 by 10-inch lights. The hallway is 4 feet wide, thus making the pens each about 8 by 10 feet. The distance from the floor to the landing place in front of the nests is 3 feet, and as this may be considered too much of a jump for the heavier breeds a slanting board with slats nailed on may be used for them to walk up. It will extend from the floor to the landing mentioned.

The following is the mode of construction and dimensions of the lumber.

1,530 feet of hemlock boards for sheathing and floor.

520 feet of white pine for siding.

4 pieces 4x4x16 for bottom beam sills.

2 pieces 4x4x14 for bottom beam sills.

14 pieces 2x6x14 for floor joists.

16 pieces 2x4x12 for studdings.

24 pieces 2x4x10 for rafters.

9 pieces 2x4x16 for interior stud-dings.

16 pieces 1x6x8; 8 pieces 1x3x8 for nest and drop board supports.

24 pieces 15 inches by 2 feet for nest division.

8 2x4x1 foot 6 inches to support nest and drop board.

1 bundle of laths.

145 square feet matched boards for drop boards and nest bottoms.

68 lineal feet 1x3 for doors.

8 pieces 2x2x8, half-round, for perches.

24 feet 2-inch wire mesh for doors.

24 feet 2-inch wire mesh for pen divisions.

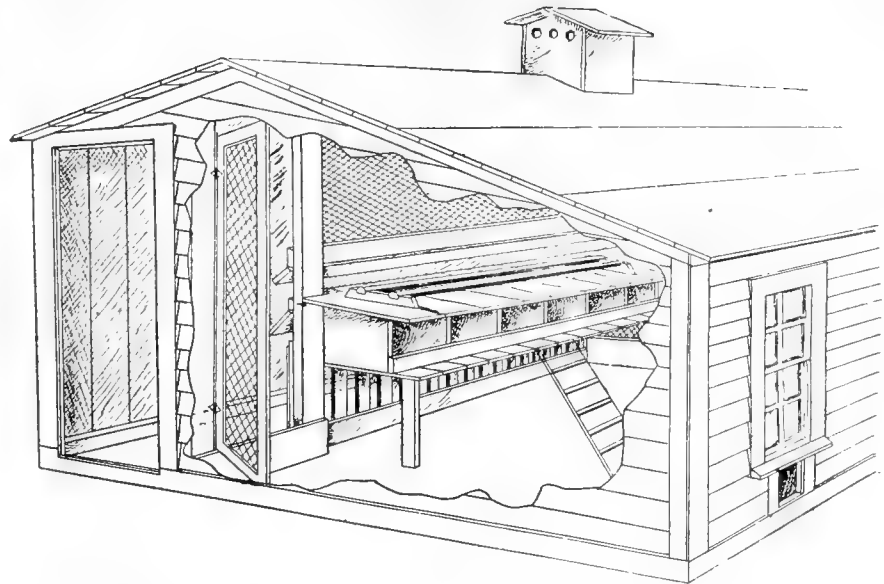
22 feet 2-inch wire mesh for space from drop boards up.

5 rolls 3-ply roofing paper.

4 pieces 1x12x8 for partitions.

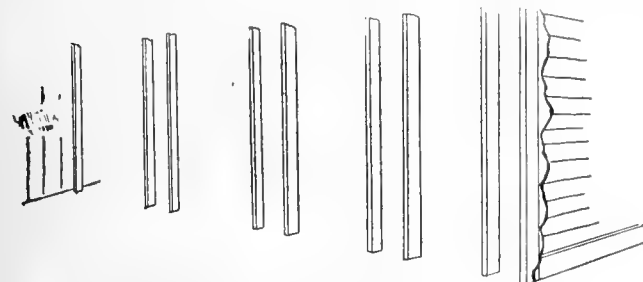
24 hinges.

Mode of constructing interior is as follows: First divide the house 4 feet from back by placing nine pieces 2 by 4s spaced



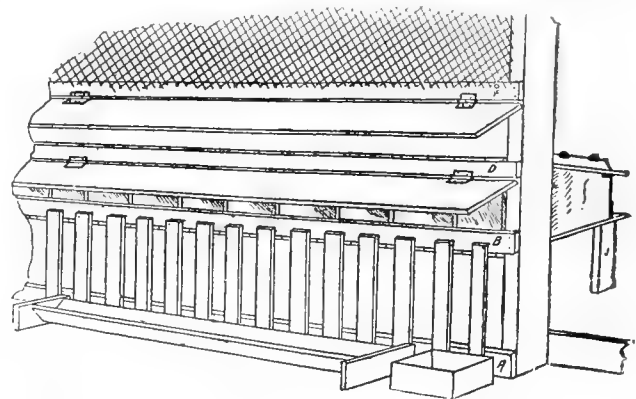
31—INTERIOR ARRANGEMENT OF HOUSE DESIGNED BY R. H. THOMAS

tend about 6 inches in front of nests. Then divide into 5 nests, using divisions same as ends. Nail on strips (1 by 3 by 8) marked D, Ill. 34, at back of nests, and also strip (1 by 3 by 8) marked I, Ill. 33, on top. Then nail on drop boards cut in 2-foot lengths on top of strips marked D and I, Ill. 33. Now nail on top of drop boards two strips of wood (1 by 6 by 2) standing on edge, one at each end of drop boards, and nail on these two strips of half-round (2 by 2 by 8) for perches, and space them 16 inches apart. Next nail on strip marked F, Ill. 34, (size 1 by 3 by 8) 6 inches above strip D. Hinge board E, Ill. 34, (size 1 by 6 by 8) to board F, Ill. 34. This makes door back of drop boards for cleaning. Next hinge a board C, Ill. 34, (size 1 by 6 by 8) to



32—ARRANGEMENTS OF UPRIGHTS IN HALLWAY OF R. H. THOMAS' HOUSE

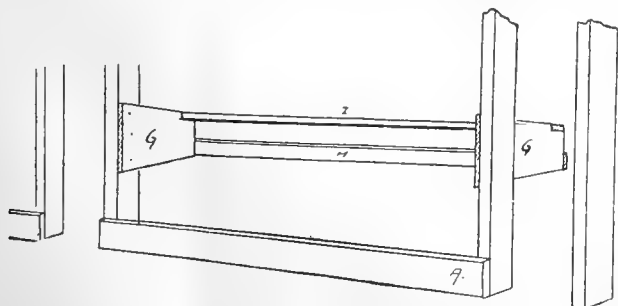
in as in Ill. 32. Nail on 4 pieces 1 by 6 by 8 (see A., Ill. 33). The ends of nests marked G, in Ill. 33 (size 1 by 15 inches by 2 feet) must be nailed on; the bottom edge being 18 inches above the floor. Nail strip marked H, Ill. 33, (size 1 by 3 by 8) on the front and a similar one on the back marked D, Ill. 34. Nail on bottom of nests made of matched boards cut in 30-inch lengths. This will allow bottom to ex-



34—HALLWAY CONVENIENCES IN R. H. THOMAS' POULTRY HOUSE.

strip D, thus making door at back of nests through which to gather eggs. Nail laths from A to B spaced 4 inches apart. Next two strips 2 by 4, 18 inches long, marked J, to support nests and drop boards (see Ill. 34). Now make light frame door 6 feet 6 inches by 2 feet 6 inches, of 1 by 3 boards and cover with 2-inch wire mesh. Hinge the door to open in. Then nail on wire mesh from above drop boards up to roof, and the pen is completed. Proceed with the other pens in like manner.

Although the house I have described is but 32 feet long, there is no reason why one built on the same plan cannot be constructed as long as the owner desires. In a very long house build solid partitions every 100 feet to cut off drafts.



33—PROVISION FOR NESTS IN R. H. THOMAS' HOUSE

Poultry on a City Lot

The Rear of a City Lot Can be Made to Yield Profit and Pleasure When Devoted to Poultry and Fruit—
The Author's Methods and Arrangement of Yards and House Described
In Detail—Advice to the Beginner

Dwight L. Stoddard

DO not expect this article to be of special benefit to the extensive poultry breeder, but if it is of small benefit to the thousands of families who are trying to raise chickens in the towns, I will be glad indeed that I have taken the time to write it. Never in my life did I have as good success in the poultry business as I am having today, and all the ground that is devoted to it is 40 by

Plan of the Yard

The yard should be fenced in to suit your space and poultry. If it is small it may be hard to get the fence high enough if you have an active breed and they have been accustomed to a free range. A low fence will do for the larger breeds, especially if it is poultry netting and you do not place any rail at the top. With a rail they know just where to fly and may go over. A wire they cannot see as well, so they seldom try to find the top, although it may not be very far from the ground.

Illustration 35 is the plan of my yard and shows what you may think is a queer arrangement, but you will note that each yard has three fruit trees in it, which not only increase the value of the rear of the lot but are valuable to my poultry as well. You will also see how I arrange the front end so as to have the water dish for each yard close together, and handy for throwing any scraps over the fence. The back end of the main yard I try to keep covered with litter as the fowls greatly enjoy scratching in it and it gives them exercise.

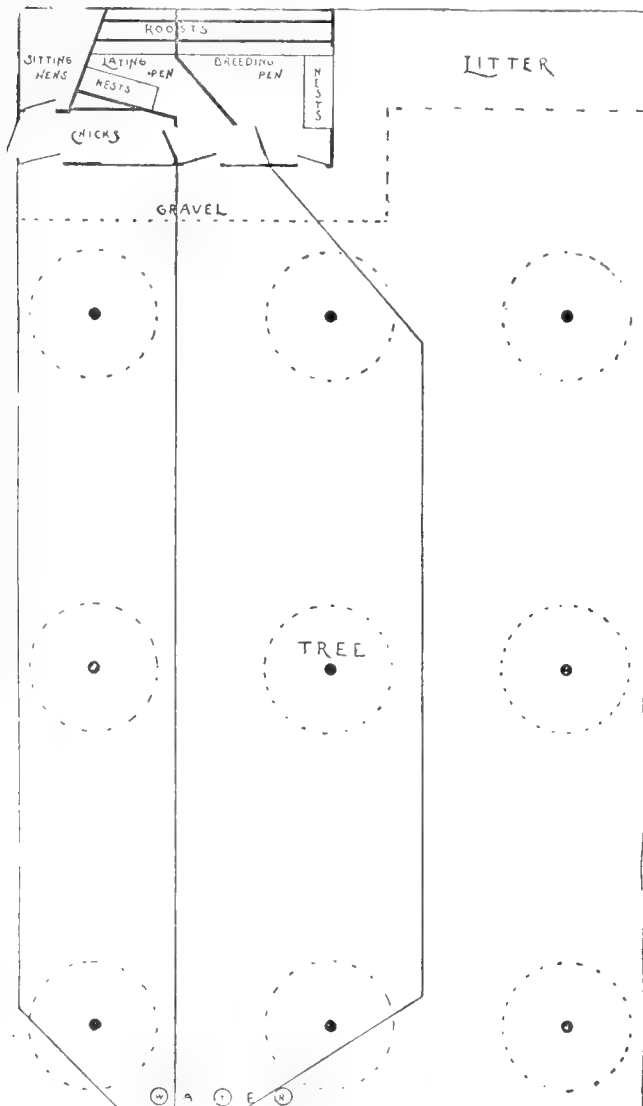
When I built my poultry house I made the two rooms square and intended when I needed more pens to build on one or two more. I found in the late fall that I did not need the room I had and as I wanted a place to store some coke I partitioned off with boards about three feet high, the pen I now use to set my hens in. Above the boards is poultry netting. I have my coke used about Christmas and then I'm ready to set the first hen. I have my little chicks in the hallway and divide the rest of the house so that I can have breeding and laying pens—or, in fact, I divide them up as circumstances demand. If I can get along without one of the yards, I sow it with oats, and the fowls that are lucky enough to eat the young oats are, indeed, happy.

Around the house on the east and south sides I have gravel. The fowls can pick all they wish and it makes the house drier and warmer in the cold months.

To secure shade as soon as possible I first planted peach trees which grow rapidly but are not very long lived. My peaches are all gone and I have plum and cherry trees which are well suited for the chicken yard. While the first trees were small, I planted sunflowers by the fence and also grape vines. The vines also completely cover the fence at this time so that I am receiving an income from the rear of the lot outside of what the chickens bring in.

Construction of the House

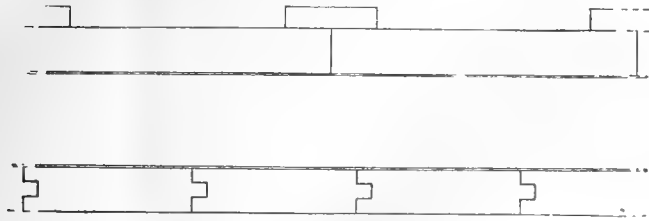
The house should be tight and warm, especially on the north side. Illustration 35a shows my wall, which is 6-inch boards, batten and tarred paper on the outside of the studs, and tarred paper and flooring on the inside. The flooring was as cheap and pitchy as possible and when I put it up I varnished each tongue and groove as I went along. Each year I give it a coat of varnish thin-



35-ARRANGEMENT OF YARD

70 feet, with even a corner of that cut off. I do not advocate small pens for the poultry business when larger ones can be secured, as I believe there is no danger of wide range if the fowls can be properly cared for.

ned down with turpentine. I thin the varnish so that it will dry quickly and it makes a cheap finish that the insects do not like. In fact, so far they have positively refused to have anything to do with it.



35-A—CONSTRUCTION OF WALL

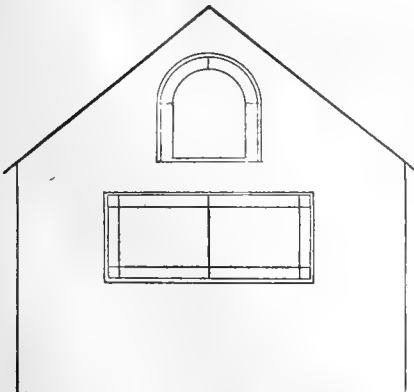
In Illustration 36 is shown the south front of my house. I believe that this wall should be open as much as possible to let the fresh air and sunlight in. You will note that the place where I raise my little chicks is nearly all glass. This gives good light all through the house, as the partitions are made of poultry netting. There is no flooring on the inside of these studs as on the other sides of the house. While the doors are made



36—SOUTH FRONT HOUSE

solid yet they are seldom closed—practically never, except on the very 'coldest and stormy days. The open spaces are all covered with screen wire; the windows can be opened over to the doors, which with the open doors, give plenty of fresh air. As the ventilation comes from the one side, there is no objectionable draught.

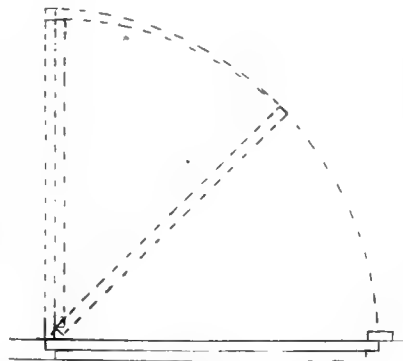
The east end of the house should be well lighted and may be ventilated also, but I never open the window in the east except in the hottest weather. Illustration 36-a shows my plan which I think is fairly good. It looks better and is really cheaper than a shed roof, for with the same pitch of roof there would be just that much more front, and this is not necessary. There is no roof equal to the shingle roof, for it makes a good, dry roof and leaves openings for ventilation. Concrete makes the best and cheapest poultry house floor that it is possible to construct.



36-A—EAST END OF HOUSE

Illustration 36-b is my way of constructing the doors.

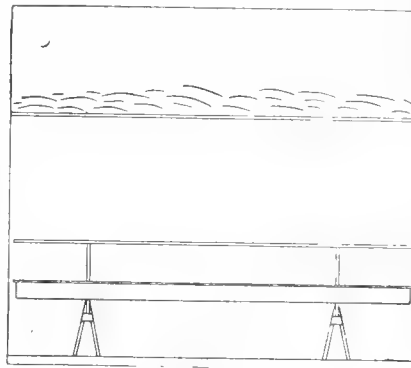
Each door consists of a solid door that is seldom shut—yet nevertheless, very necessary at times—and a screen door hinged to the other door. The screen door is shut when the solid door is open, and when the solid door is closed a square-turned hook is simply turned over the screen door. This fastens it completely to the solid door and then the screen door is absolutely nothing. Unless you look for it you would not realize it was anywhere. The swinging of the doors makes them both shut in the same place and fasten with the same fastener. When the solid door is shut and the screen door fastened to it, it comes back, as you will notice, and the



36-B—DOOR PLAN

screen door comes clear of the rabbet. Of course the screen doors on our dwelling houses swing from the outside of the jamb while the solid door swings from the inside, but the wall on the south side of my chicken house is too thin to afford a door jamb. Again, I do not want any of my chicken house doors swinging out in the wind.

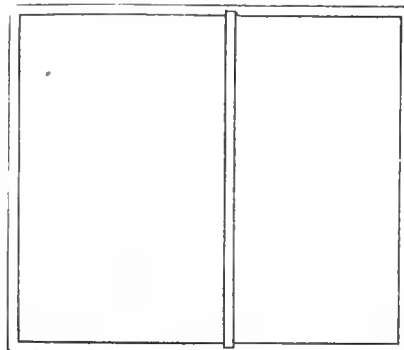
In illustration 36-c is shown my plan of roost which is very simple and easy to handle. You will notice that there are two light trestles sitting on the concrete floor. On



36-C—ROOST PLAN

them are two 1 by 4's covered with 1/2 inch lumber which make a nice, light drop board. Above that are two boards 10 inches wide and the roosts are nailed to them. All can be taken out quickly, and easily and thoroughly cleaned, though as each time I clean the drop boards I sprinkle on fresh lime and fresh dirt, I do not find it

necessary to take them out often. Above the roosts are loose flooring boards which I cover with straw in the winter and remove them in summer. Early hatched



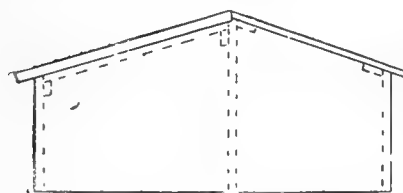
36-D—CHICK PEN

chicks should have a chick pen from 2 to 4 feet wide, according to the number of chicks. Illustration 36-d presents the plan of one which is nothing but a box with a loose partition in it. The partition should be removable so that it can be readily cleaned. It should be there also so as to make

a room to eat and another to sleep in. Illustration 36-e shows the construction of the roof over the brood chamber. The roof should be solid and can be easily made from flooring nailed together with a cleat. The roof over the exercising pen should be a window sash hinged to the roof of the brooding chamber. Just below the glass there should be a screen so that you can give the needed ventilation and yet prevent any rodents from molesting the chicks.

Illustration 36-f shows my style of nests. They are simply four boards about 15 inches long with a top on them and a little piece at the bottom to keep the eggs from falling out. This latter board is independent of the bottom part so that the nests can be quickly removed and cleaned. These three large nests are sufficient for any small pen.

Illustration 36-g is the rear view of my nests. By looking at the plan of my house and yard (Ill. 35) you will note that one side of the nests—the nest side—opens into laying pen, while the other side opens into the chick hall. I think you can plainly see how easily the slat doors can be taken out and how they are arranged.



36-E—ROOF PLAN

The nests are above, and below there are accommodations for two hens and their chicks.

Destruction of Vermin

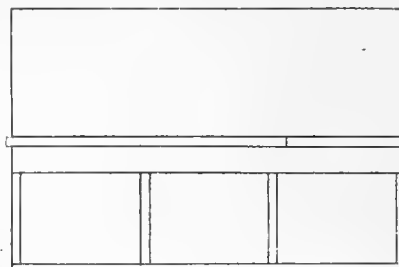
You have probably heard of the man who burned his barn to get rid of the rats, but I find that concreting the floor is better. I like one of the liquid lice killers or kerosene and carbolic acid for painting around the roosts, and occasionally dry lime and sulphur. Wet lime (which is commonly called whitewash) is a good thing, indeed, in the beginning, but to keep it up and let it get dry and full of filth, and then continue to cover it up is too filthy for me. The above and many other ways are satisfactory to keep the building free from lice. I know of nothing as reliable as insect powder or dry lice killer for the poultry proper.

The Value of Poultry

To a resident of the city that has to purchase every article he eats and much of it greatly adulterated, the value and pleasure it is to know that you always have

absolutely new-laid eggs; fine fryers and all other sizes always at your command can never be known or appreciated.

A man in the city spends hundreds of dollars taking his children out in the fresh air and to places of amusement and enjoyment, and unless it is carried to the extreme it is money well invested. I suppose my children are much like all

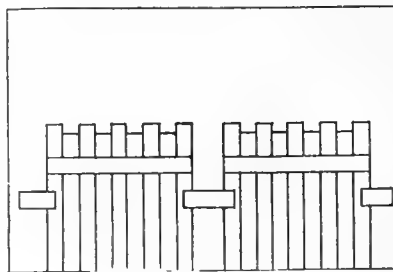


36-F—NEST PLAN

others, still there is nothing they enjoy as much as to go out and take a peep at the little chicks just out of the shell—although they have seen the same thing hundreds of times, yet they enjoy my poultry from the baby chick to the cock o' the walk. The fowls are not only an enjoyment to myself and family, but an education to my children, and there is nothing more valuable than practical education. There is far more value in raising poultry on a city lot than the mere dollars and cents you realize from it in a direct way.

Commence right by having nothing but healthy fowls in your house, keep it clean of filth and free from vermin, feed as good variety of all poultry foods as you can easily secure, don't forget the green food and above all don't neglect giving your fowls plenty to eat, plenty of fresh water to drink and plenty of exercise. On your city lot keep the birds on the run from the time they come out of the shell until they are ready for the market, dispose

of them as soon as you can, thin out the large ones and fill up with more chicks and you will be surprised how many you can handle in a small space. Don't make the mistake of trying to keep too many by filling the main pens too full.



36-G—REAR OF NESTS

This method has turned thousands of good eggs into healthy, full grown chickens for me, and a similar method will undoubtedly do the same for anyone who is in love with the work—whether on a city lot, a few acres or a farm.

PIANO BOX POULTRY HOUSE

(For Illustration see page 13.)

This house is made by removing the backs and tops of two piano boxes of the same size. Two pieces 6 inches wide and 20 inches long are ripped diagonally across from corner to corner and fastened to the top of both boxes at each end to give a sufficient pitch to the roof. Then a door 4 feet, 6 inches high and 16 inches wide is cut out of one of the boxes. Place the boxes back to back and fasten them together with two upright strips about 4 inches wide and 4 feet, 6 inches long; each fastened with four screws 1½ inches long. Then the top boards are nailed down and a strip of 2 or 3 inches wide is nailed around the edge of the roof to give it projec-

tion. The roof is then covered with a layer of tarred felt.

A small window is then cut out near the top and contains an 8 by 10-inch sliding glass. The other window contains four 8 by 10-inch panes. Both have iron bars across, made from old buggy tires. There will be plenty of lumber left from the backs of the boxes to make dropping board, roost, window casing, corner casing, etc.

The total cost of this house to me was \$1.85, as follows: Paint, (two coats) 80 cents; padlock, 25 cents; hasp, 10 cents; hinges, 10 cents; roofing, 35 cents; window, 25 cents.

HARRY B. PHIPPS.

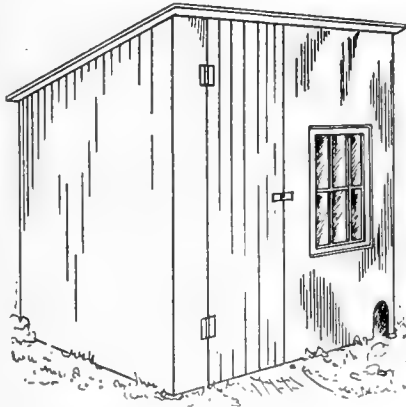
CHEAP HOUSE FOR SMALL FLOCK

A Simply Built and Convenient Low-Cost Poultry House with Maximum Amount of Floor Space and Heathful Method of Ventilation

A. F. Almendinger

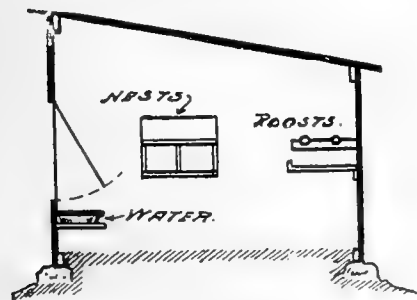
THE house illustrated is 8 by 8 feet in size. The front wall is 6 ft. 2 in. high, the rear wall 5 feet high. The window is 2 ft. 6 in. square; the door, 2 ft. 6 in. by 6 ft. 6 in. This house has a shed roof and is covered, roof and sides, first with good sheathing paper, then with Neponset Red Rope Roofing, secured by strips $\frac{5}{8}$ by $\frac{3}{8}$ inches, placed 18 inches apart. Make the sills and plates by halving 2 by 4's and place in position, using no studs, but nailing boards right to sills and plates.

I have used four of these houses for the past five years and do not believe they can be improved on for comfort and health of both fowls and their keepers. They face south and rest on stones at each corner, thereby being raised 6 inches above the ground. They are filled up inside with 1 foot of dry earth and sifted coal ashes. The ground outside is graded so that the water will run away from the building. The floor inside is of earth and is perfectly dry and they need no dust box, for the whole floor is a dust heap. Floors are covered with 6 inches of straw, into which all grain is thrown, and the hens have to work or starve. The window is hinged at the top and swings in. The window and door in winter, no matter how cold the weather, are always opened at 9 a. m. (except in a driving snow storm) and closed at 4 p. m. I have never had a Plymouth



37—A SIMPLE, CONVENIENT POULTRY HOUSE DESIGNED BY A. F. ALMENDINGER

Rock or a Wyandotte freeze a comb under these conditions, and although water would freeze solid in the watering pans, I always got plenty of eggs during the coldest weather, and the eggs gathered before being chilled were almost all fertile. This year I have covered the window with mus-



38—SECTIONAL VIEW OF POULTRY HOUSE DESIGNED BY A. F. ALMENDINGER

lin and shall never close it except at night in the coldest weather. I think that with a house of this kind a scratching shed is unnecessary.

The droppings boards are along the north wall, made of

matched boards 20 inches wide and 8 feet long, with a 1 by 3 piece nailed to the front to strengthen it, and to prevent the droppings from falling off. Cleats are nailed to the side and rear walls on which the droppings boards rest 2 feet from the floor. The droppings boards are not fastened, so they can be easily removed. The roost, is 3 by 3 inches, 8 feet long, having the upper edges rounded. It is 9 inches above the droppings boards and held in place by cleats nailed to side walls and notched to hold it firm. It can be quickly and easily removed.

A double nest is hung by hooks to each side wall, 2 feet from the floor. A piece of common sacking nailed to the top at front and hanging down to within an inch of bottom, serves as a curtain and darkens the nests. When trap nests are used these curtains are taken off and trap doors hinged to the front. Nests placed so are much easier to handle than when under droppings boards and do not take up any floor space.

For a water vessel I use in winter a porcelain-lined granite pan 14 inches in diameter and 4 inches deep, placed on a shelf near the door, 9 inches from the floor. These pans are high priced, but are easily cleaned and will last. In summer I use a low one gallon butter jar. I use a four compartment grit-hopper for grit, oyster shell, charcoal and dry ground bones. My feed tray for mash is 4 feet long, 6 inches wide, 4 inches from the floor, with $1\frac{1}{2}$ inch strips on sides to keep mash in. Its ends are 10 inches wide at bottom, narrowing at top to 2 inches.

It is 10 inches high. A 2 inch strip 4 feet long is nailed to tops to keep fowls from soiling their food.

Scraper for cleaning droppings board is a piece of galvanized iron 12 by 12 inches, turned up two inches on one end and a 1 by 2 piece of wood nailed to it. Sides turned up 1 inch with ends cut to a point similar to a dust pan.

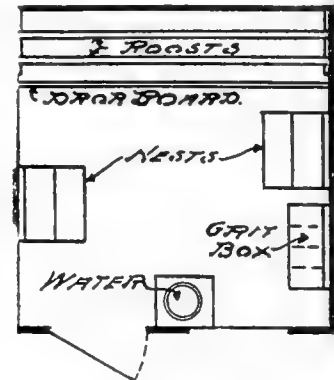
If I were to build a long house it would be exactly on this plan, making pens 8 feet square, with a window and a door in the front of each pen. Solid partitions between all pens with doors connecting pens, swinging both ways and placed near the front of the pens.

Material Required

- 6 pieces 2 by 4 in. 8 ft. long.
- 2 pieces 2 by 4 in. $8\frac{1}{2}$ ft. long.
- 264 ft. 1 inch rough hemlock.
- 1 old sash.
- 195 ft. $\frac{5}{8}$ by $\frac{3}{8}$ strips to secure paper.
- Matched boards 8 ft. long, 20 in. wide.
- 1 piece 3 by 3, 8 ft. long for roost.
- About 300 ft. sheathing paper.
- About 300 ft. Red Rope Roofing.
- 2 pairs hinges.

Architect's Comment

The main features which recommend this small house are cheapness and simplicity. As will be seen by the description there is not one superfluous board or timber in the



39—PLAN OF POULTRY HOUSE DESIGNED BY A. F. ALMENDINGER

entire building. It is, however, sufficiently strong for the purpose and is practical and convenient. All fixtures are raised above ground, leaving the entire floor space for use as a scratching shed.

This would make a satisfactory colony house. It is not so heavy but that it could be easily removed from place to place.

The fixtures shown are simple and answer the purpose well.

The building might be six inches higher in front without additional cost, as the lumber now cuts to waste and this is not necessary.

CLOSED FRONT HOUSE

A Cheaply Constructed, Convenient Poultry House for Two Flocks

George Wolfrum

THIS plan is for building a small closed front house. It is 20 feet long, 10 feet wide, 8 feet high in front and 5 feet at the rear. To build the frame for this house requires four pieces of 2 by 4, 20 feet long, two pieces of 2 by 4, 10 feet long, three pieces 8 feet long, three pieces 5 feet long and five pieces 12 feet long. It will require 200 feet of boards to cover the roof. The siding should be nailed on up and down and 400 feet of tongued and grooved hemlock siding and flooring will be needed. Put single-ply tar paper, held by caps and nails, on the sides of the house to prevent drafts and dampness and protect the fowls; it is water and wind proof. It will take 2000 shingles to cover the roof.

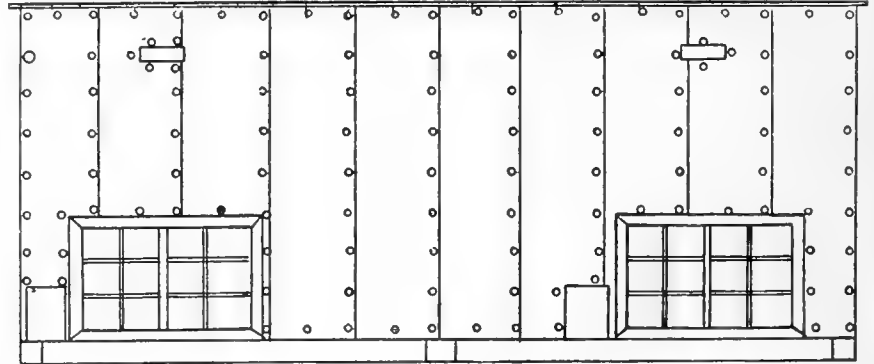
Doors 2 feet wide and 5 feet high should be placed at each end of the building near the front. The one in the west end may be closed and battened in winter to keep out the wind. It is well to put a small window, 24 by 30 inches, in the east end to admit more light in the forenoon. Place two windows on their sides on the sills of the house in such a manner that the sashes

will overlap and will slide both ways to secure ventilation. These windows may be of any size, but I prefer to have them 30 by 48 inches, as that size admits plenty of light during the day and does not radiate so much cold during winter nights as larger ones. Build small doors near each window through which the fowls can pass in and out; these can be closed by dropping boards a little larger than the opening into grooved uprights fastened to the inside of the boarding.

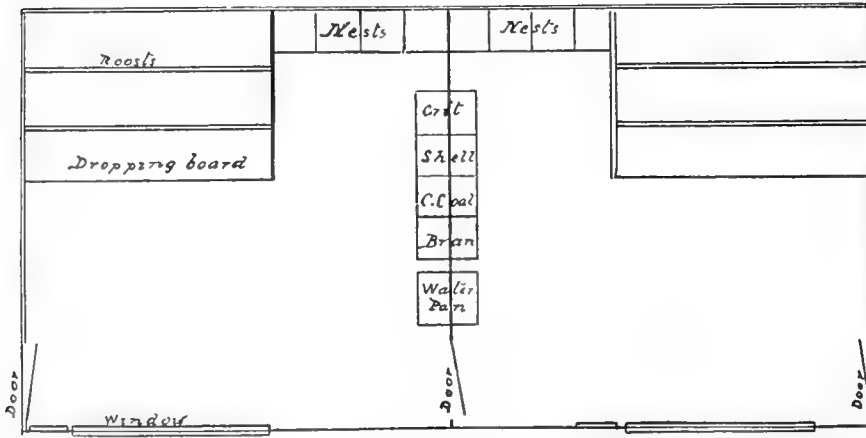
To ventilate this house place a 14-inch board, 2 feet long on end at one side of each small door, so that the 14-inch dimension will be at right angles to the front of the house. To the inner edge of this board nail a 16 inch board, 2 feet long, so that it will be parallel to the front of the house and prevent the wind blowing directly into and across the floors of the building through the opening. If too much air enters it may be regulated by placing a small board on top of the 14 and 16 inch boards. Then cut a 4 by 12 inch opening in the front side, 6 inches below the roof, to let out hot and foul air. These openings can be closed at night by small doors.

Nail boards to the inside of the sills to fill the space from the ground to the base of the building, which is supported by bricks placed under the sills. Fill the space even with the sills with dry earth.

Place tables 4 by 6 feet in size and 3 feet high in the northwest and northeast corners of the building. A few inches above these tables place two roosts of 2 by 4 material, each 6 feet long and supported by pieces resting on the table. Tack pieces of burlap to the under side of the roof to hang to a point below the top of the tables and enclose the space in which the fowls roost. The burlap in front can be rolled up



40—FRONT ELEVATION—MR. WOLFRUM'S POULTRY HOUSE



41—PLAN SHOWING LOCATION OF INTERIOR FIXTURES—MR. WOLFRUM'S POULTRY HOUSE

and fastened to the ceiling by strings when not needed.

Build a partition across the middle of the house running from the rear wall to within 2 feet of the front wall. This partition should be built of boards to the height of 4 feet and filled above the boards with poultry netting. Hang a door 2 feet wide and 5 feet high in the space left. Hang grit, shell, charcoal and bran boxes on each side of this partition, 12 inches from the floor. Cut a hole in the partition, near the door, 4 inches high by 16 inches wide, and place a board at the bottom of the opening to form a shelf. On this shelf place a sheet iron water pan 2 inches deep, 14 wide and 20 long.

This will contain water enough for the fowls in each pen. If this shelf is built wide enough so that the birds will perch upon it when drinking, less dirt will get into the pan.

We had 30 Single Comb White Leghorn pullets confined in a closed house like this all winter and they have layed remarkably well.

This would make a very good colony house in which to house a large flock kept solely for egg production. The partition could then be omitted and the boxes for grit, shells, charcoal, bran, etc., could be hung on the walls.

A CONTINUOUS HOUSE

Description of House With Bill of Lumber Necessary to Construct It

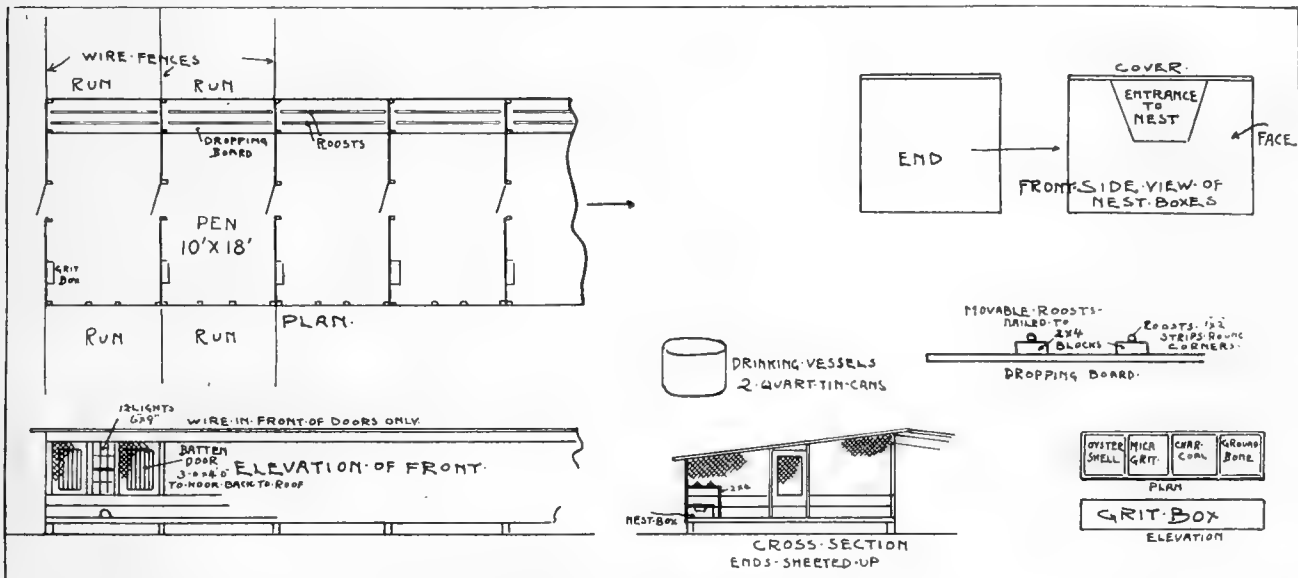
J. D. W. Hall

MY ILLUSTRATION shows the scratching-shed plan, with roosting room in connection. The roosting room is protected by a muslin curtain that drops down from the roof on cold nights. The front of house can be entirely opened by doors swinging to roof and

- Floor joist, 4 2x4 18 feet.
- Rafters, 4 2x4 20 feet.
- Rear studding, 4 2x4 5 feet.
- Front studding, 4 2x4 7 feet.
- Side studding, 2 2x4 5½ feet.
- Side studding, 2 2x4 6½ feet.
- Plates for rafters, front and rear, 2 2x4 10 feet.
- Floor joists, front and rear, 2 2x4 10 feet.
- Matched boards, 375 feet.
- Roof sheeting, 200 feet.
- Flooring, 180 feet.
- Two 6-light windows.
- Droppings boards, 27 feet, barn boards.
- Roosts, 18 feet 1x2 strips.

For continuous house plan, add inside doors on spring hinges; partitions (boards 2 feet high, balance wire netting). Wire netting is nailed to front of house to keep fowls inside of pen when doors are fastened to roof. No wire is in front of window. For continuous house the runs are opened up so that a wagon and team can go the entire length of house to haul out old litter and place fresh in pens.

This plan saves a great amount of labor. We use crack-er boxes with end cut down half way, top fastened on with hinges, for a cheap form of nest box.



42--PLANS OF CONTINUOUS HOUSE, DESIGNED BY J. D. W. HALL

hooked to screw-eye hooks. In warm weather the front is always left open, much to the enjoyment of the fowls; it is also opened up on bright warm days in winter to dry the house. This is very essential to the health of the fowls, and is the best way to keep the walls dry after frosty nights.

Each pen has a run 10 by 100 feet on north and south sides. Grit boxes are hung on screw-eye hooks to partitions. Nest boxes are placed on the floor under the roost boards. Water cans sit on a little elevated stand.

The plan can be used with floors or not. Floors are much better for sanitary purposes as well as to protect fowls from rodents. The floors are set 1 foot from the ground.

Our fox terrier resides under the floors.

Timber and Dimensions

For one pen 10 by 18 feet, 5 feet high in rear, 7 feet in front:

LOW COST POULTRY HOUSE

A Scratching Shed Colony House for Twenty Fowls —Cost, Including Labor, Twenty Dollars

R. G. Buffinton

I WISH to describe one of my poultry houses. I have forty-one of these placed in a row; each is 14 feet long, 7 feet wide, 6 feet high in front and 4 feet in the rear, with a shed roof.

The frame is of 2 by 4 spruce and the building, except a space 4 feet long on the front side, is enclosed with hemlock boards dressed on one side. It is covered with Neponset or Rubberoid roofing and painted with tar paint. There is one full window in the front (south) side. Ten feet of the length of each house is floored with hemlock boards and partition-

ed off, dividing the house into a floored room 10 feet long and a shed 4 feet long. The door in this partition is 2 feet wide with a 12 inch space in the top, covered with wire netting. Two frames of 1 by 2 inch spruce each 2 by 6 feet in size, and covered with oiled cotten cloth hung together with hinges, form the front of the shed. One of the frames is made fast and the other serves as a door.

A roost platform 3 feet wide extends across the far end of the 10 foot room and two roosts are placed 10 inches above the platform. In each house there is a feed hopper with three compartments; one compartment for the meal mixture, which is fed dry, one for the whole grains and one for grit and shells.

In one of these houses I have successfully wintered twenty hens of the larger breeds, or twenty-five of the smaller breeds. The cost of construction, including the amount paid for labor, was not far from \$20 each.

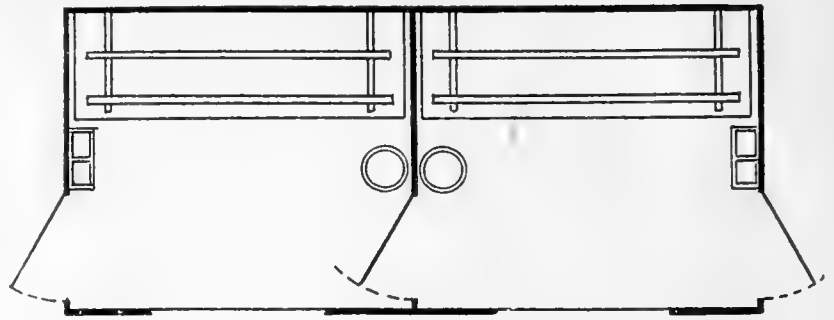
SUCCESSFUL SOUTHERN HOUSE

A Poultry Building that has Proved Satisfactory in the South

M. Bock

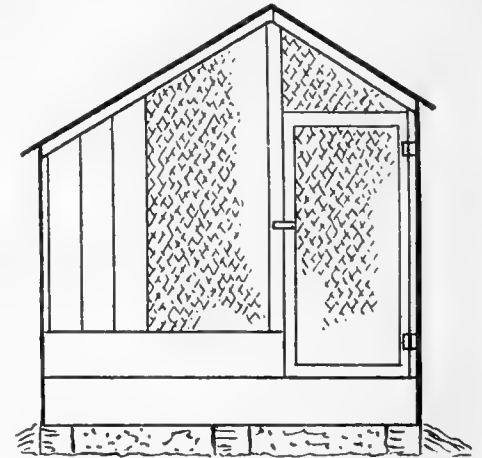
WHEN we have our young stock in winter quarters we begin to look for a full egg basket, as eggs are most valuable during the winter months. Some people in this locality wonder why their hens do not lay in winter. In many cases this is due to neglect or bad housing, as the houses are of the "catch-a-cold" kind. The poultry breeder who cares for his fowls will build them a proper kind of a house, such as can be made cool in summer and warm in winter. I am a firm believer in fresh air, but it should not be obtained through cracks or open spaces all around the house.

The house I prefer is 16 feet long and 8 feet wide, 7 feet high in front, 6 feet at rear and 9 feet at the peak, the roof being made of the short front and long back style. The house is built facing the south, there being two large windows in front, each 4 feet 6 inches in height by 3 feet 10 inches wide. These windows are divided in the center. The outside of



45—PLAN SHOWING LOCATION OF ROOSTS, WATER DISHES, GRIT BOXES, ETC.—SUCCESSFUL SOUTHERN POULTRY HOUSE

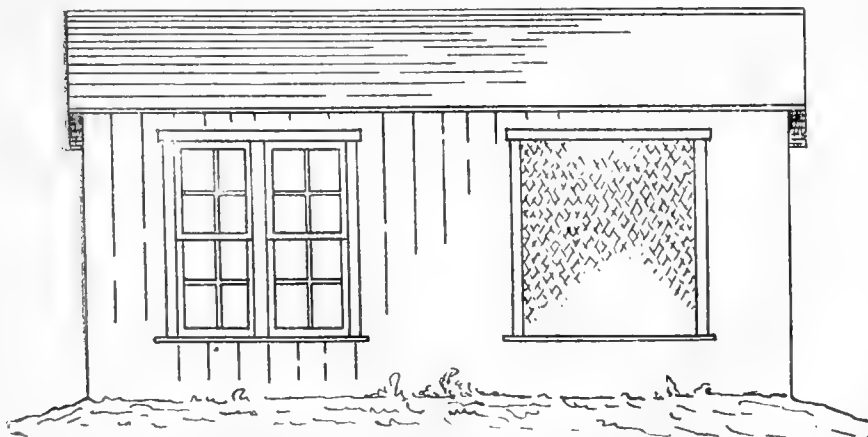
windows is covered with 1 inch mesh wire netting, to keep out sparrows, minks and rats. In summer the windows are left wide open, thus making the house equal to an open shed. As winter approaches, the temperature is controlled by opening or shutting the windows, as is thought best. As the windows are large, they will admit plenty of sunlight in the pens. The house is divided into two rooms, 8 by 8 feet square. The droppings boards are 3 feet 4 inches wide and are placed along the rear wall, 3 feet from the floor. The roosts are placed 1 foot above the platform, 1 foot from the wall, and are 18 inches apart. This



44—VIEW SHOWING PARTITION—SUCCESSFUL SOUTHERN POULTRY HOUSE

may be a little too high for the larger breeds, but is suitable for our S. C. White Leghorns. Litter is placed on the floor, which prevents them hurting their feet when jumping from the roosts. Nest boxes, 12 by 12 inches in size, are placed under the roost platform.

A house such as I have described can be built cheaply, and with a little care, will last a lifetime. It is built entirely of tongued and grooved lumber, 1 inch thick. The sills are 4 by 6 inches, and the plates and rafters all of 2 by 4 pine. If the farmer would take more pains to properly house and feed his poultry there would not be so many complaints of empty egg baskets. A gentleman once boastfully remarked to me that when he lived in the country he raised plenty of chickens without building a chicken house, allowing them to roost in the trees and on fence tops, and he said they were none the worse for it. He fed them some whole corn and they hunted for the rest of their food. When I asked him if his hens laid in winter he admitted that they



43—FRONT VIEW SHOWING ONE WINDOW THROWN OPEN FOR VENTILATION—SUCCESSFUL SOUTHERN POULTRY HOUSE

did not, but said he believed nobody's hens did. I told him I gathered eggs all winter, but that I did not let my hens roost in the trees. When I mentioned that I sold eggs at 40 cents a dozen from November to February, he said, "You must have made money." I said, "That's just what I did."

To be satisfactory in the warm weather which sometimes prevails in the south, a poultry house must be so constructed that it can be transformed into what is very near an open shed. This can best be accomplished by opening windows and doors. If the house is simply a shed it will be sufficient to protect the fowls housed in it during the warm months, but is not at all adequate for use during the cold, rough weather that sometimes is experienced in the winter season.

In the house I have described enough air can be admitted to make the fowls comfortable during the warmest nights. The same building may be tightly closed when the colder and stormy weather of the winter months makes better protection for the fowls necessary. Very likely our southern fowls are more susceptible to cold than those raised in the north and need as much protection as northern birds would in a lower temperature.

A BUSINESS POULTRY HOUSE

A House Well Lighted, Enclosed Scratching Shed That Can Be Thoroughly Ventilated

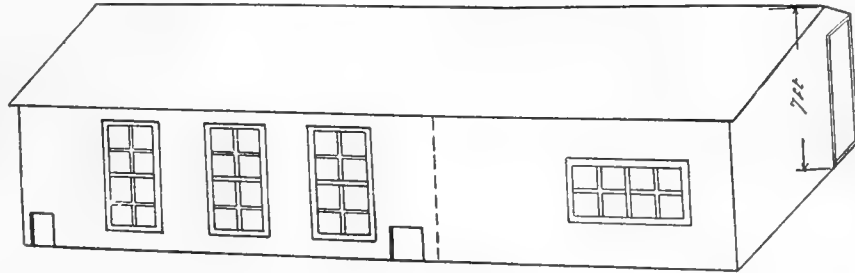
Percy J. Trail

THIS house will very likely secure the approval of poultrymen who do not like the ordinary open front scratching shed, but would like to provide some place other than the roosting room where the fowls can exercise and be protected in cold weather and where plenty of air can be admitted in mild weather.

The house that I constructed from this plan is 48 feet

each end of the house, and each pen is lighted by a horizontal window containing eight lights of glass.

The roosts and roost platform, instead of occupying a position at the rear of the pen, as in most houses, are located at the front of the pens extending at right angles to the front wall. Both roosts and platform are hinged to the wall and



47—VIEW SHOWING END AND FRONT ELEVATION—A BUSINESS POULTRY HOUSE

may be turned up and hooked to the roof during the day.

The dust boxes are placed directly in front of the windows, where they get the most benefit from the sun. The food troughs occupy spaces in the bases of the rear partitions, where they may be pushed far enough into the pens when filled for the fowls to eat and draw back into the walk after they have finished. When the fowls are eating the back of the trough fills the space in the partition and when it is drawn back the front side closes the opening.

The nests are in the partitions above the feed troughs, where the eggs can be gathered from the walk.

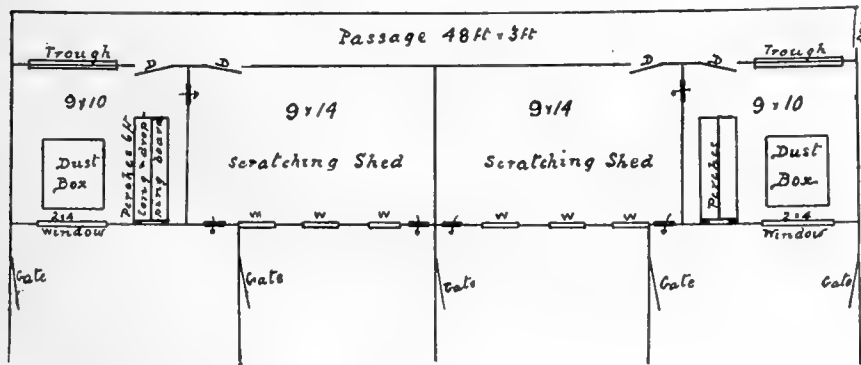
The scratching sheds are 9 by 14 feet. Every foot of floor space is available for the use of the fowls. Three full vertical windows admit plenty of light when closed during storms or very extreme weather and convert the pen into nearly an open shed when thrown open in pleasant or mild weather.

Both the roosting and scratching pens are entered from the walk. There are no doors between the pens.

The yards extend forward from the front of the house, two to each combined roosting and scratching pen, each 12 feet wide. By having two yards for each flock one can be used while the other is sowed with grain to furnish a green run when the green food in the other is used up. By alternating in that way the flock can have a green yard at all times, unless it includes more fowls than should be kept upon the area enclosed.

The partitions that enclose the roosting room are tightly built of boards; all other partitions are built 2 feet high with boards and above that with wire netting.

The fowls go from the roosting pens through the scratching sheds (more properly pens) to reach the yards; there is no direct entrance from the yard to the roosting pen.



46—PLAN SHOWING INTERIOR ARRANGEMENT AND LOCATION OF YARD—A BUSINESS POULTRY HOUSE

long by 12 feet wide. It is 7 feet high at the peak, which is directly above the partition between the wall and pens. The front posts are 5 feet high and the rear posts 6 feet high. The passage, from which the pens are entered, occupies a space 3 feet wide between the pens and the north side of the house.

There are two roosting pens, each 9 by 10 feet, one at

Every yard fence has a gate 3 feet wide, just in front of the house, through which a horse can be led to plow up the yards if desired.

This house can be framed of 2 by 4 stuff, covered with tongued and grooved boards and made water and wind proof by covering with roofing fabrics.

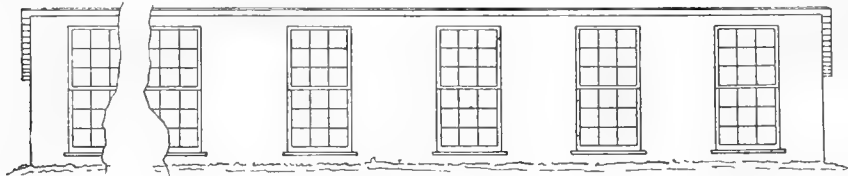
HOUSE FOR EIGHTY FOWLS

With Separate Scratching and Roosting Pens and Includes Many New and Valuable Features

—Comments by Architect

Ernest C. Bischoff

THE accompanying drawings show a poultry house for two flocks of hens, forty in each flock. The building faces the south, is 54 feet long, 12 feet wide, 7 feet high in front and 4 feet high in the rear. It contains two scratching pens, each 12 by 20 feet, and two roosting pens 12 by 7 feet. The scratching pens are lighted by two



48—ELEVATION OF HOUSE FOR TWO FLOCKS OF FORTY FOWLS USED BY ERNEST C. BISCHOFF

large windows 3 by 6 feet, with separate doors 3 by 6 ft. leading into yard. The roosting pens each have a 3 by 6 ft. window, provided with outside shutters, which are closed on winter nights. A 3 by 6 ft. double swinging door opens into each scratching pen from the outside. A similar door opens from scratching pen into roosting pen and from there into the next roosting pen, and so on. This takes the place of an alley and gives just that much more room for the hens, besides saving lumber in constructing the house.

On the rear wall of scratching pen are three platforms, each 2 feet wide and 4 feet long, with a board on the outer edge, 12 inches high. This will hold four nest boxes and they may be darkened by hinging a cover to the wall, 30 inches above platform. Twelve nest boxes are sufficient for forty fowls. Coops for holding extra males may be placed on a side wall, also the grit and feed boxes. Space under nest boxes may be used for three good sized dust boxes.

The scratching pen contains 240 square feet, allowing each fowl 6 square feet. The door leading into the roosting pen is placed near the rear wall so as to provide an easy retreat in case they are frightened and is raised 6 inches from floor to prevent litter being scratched out. This scratching pen gives ample room for poultry when the weather is inclement. The large windows admit the sunlight and air, which helps to prevent disease. These windows can be removed in the summer and replaced by wire netting, with half awnings to keep out the hot sun during the heat of the day.

The roosting pen contains absolutely nothing except the perches. These are 7 feet long, made of 2 by 3 in. stuff set on edge, and are raised 2 feet from the floor. There are six of these, making

42 feet of perch room for forty fowls, and they are spaced 15 inches, except the end perches, which are 12 inches apart. Computing the cubical contents of roosting pens, we have 462 cubic feet—11½ cubic feet for each fowl.

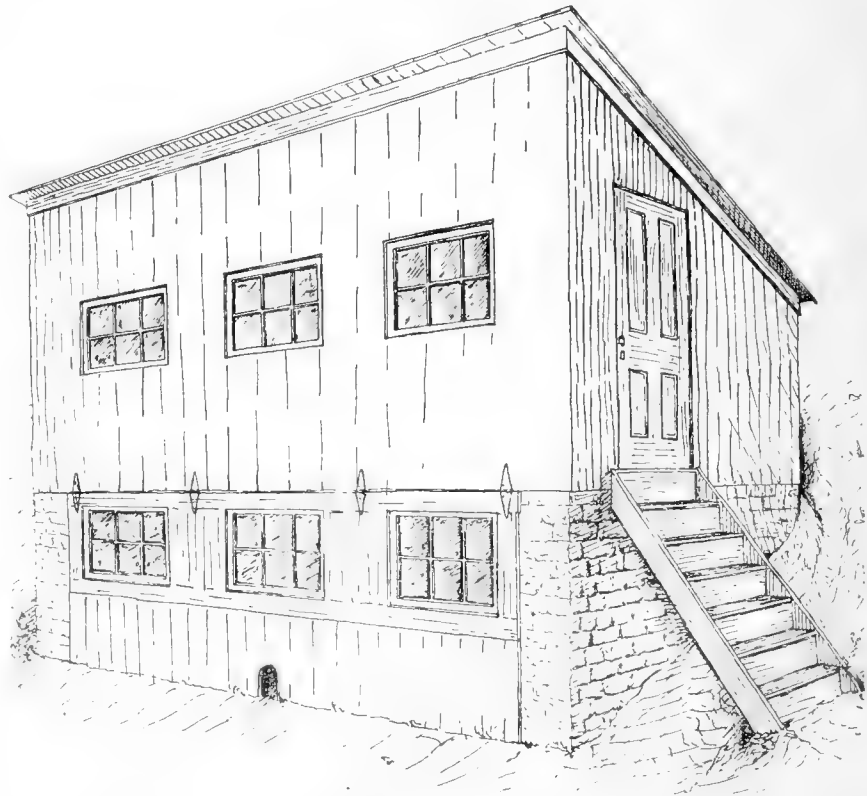
The foundation walls of this house are made of concrete, 3 ft. 6 in. deep and 6 inches wide. The floor is also made of concrete 2 or 3 inches thick and is proof against both rats and dampness, besides giving a clean floor. In the roosting pen this is a great advantage, as it does away with the droppings boards, and the perches being removable, makes the cleaning an easy matter.

The partitions between the scratching and roosting pens are built all the way up to the roof. We do not favor wire netting partitions for the reason that they create drafts. The outside walls should be built double, so as to make the building warm. The more air tight a house is built, the easier it is to ventilate. There are two 3-inch galvanized iron ventilating pipes in roosting pen, one opening outside at the bottom, the other opening outside at the top. A building such as herein described may be made 108 feet in length, so as to accommodate four flocks of forty hens. We consider forty hens

to be about the right number to a flock, as a less number requires the same amount of labor, with less profit. The yards are 27 feet wide and 150 feet long.

Comment

This building is a very good one and shows considerable thought. Some of the good features: Concrete foundation and floor. Foundation is sufficiently deep to be below frost line and also for preventing rodents from entering house.



49—PERSPECTIVE VIEW OF THE HILLSIDE POULTRY HOUSE DESIGNED BY P. R. MOORE

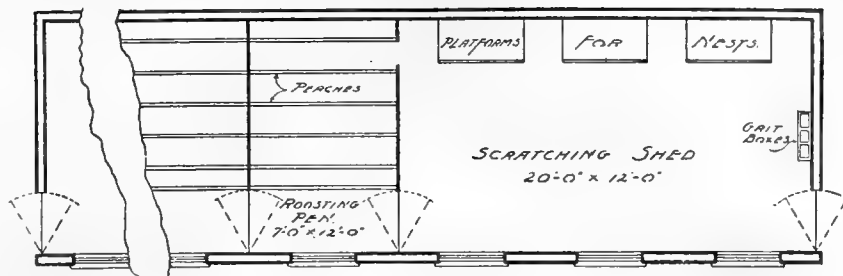
The walls are double, with air space, presumably, insuring warmth, as well as stability. The arrangement is good, the larger portion of building being used for scratching shed; however, the roosting pen is ample.

Suggestions: All perches should be 18 inches apart, especially the one next to the wall. As shown, this perch is only 12 inches from the siding. This is not sufficient room for fowls to turn without damaging plumage, particularly the tail.

Front windows would be better if only about 4 feet high. Too much glass means cold surface in winter and hot in summer; also unnecessary expense.

Dust boxes would be of more advantage in front of building where they could get sunlight for purification; and also because fowls prefer to dust themselves in the sun.

A curtain in front of perches, which could easily be supplied, would add to warmth of fowls in winter.



50—PLAN OF HOUSE FOR EIGHTY FOWLS

windows, containing six lights of glass each. The sash in the upper apartment should be arranged to slide to one side to ventilate the house. Those in front of the lower room do not slide, but the upper 3 feet of the front is hinged at the top, to swing up, so that the room may be converted into what is equivalent to an open shed.

The upper floor is reached from without by means of a flight of steps at one end and at the opposite end another flight leads down to the basement floor.

Nearly all the work of caring for the fowls is done on the upper floor, but when whole or cracked grain is fed dry it is buried in a deep litter of straw, hay, or leaves on the ground floor. There the fowls work busily for hours scratching it out and obtain needed exercise during cold weather when they cannot be out of doors.

The house may be built any length desired.

The land must be dry and well drained, or the basement will be damp, but where conditions are right this house is convenient for the attendant and comfortable for the fowls. The advantages of two-story poultry houses are many and what few disadvantages they have are by no means serious. They are not expensive to build.

A HILLSIDE POULTRY HOUSE

How a Satisfactory Poultry House with a Convertible Shed was Constructed on a Hillside

Paul R. Moore

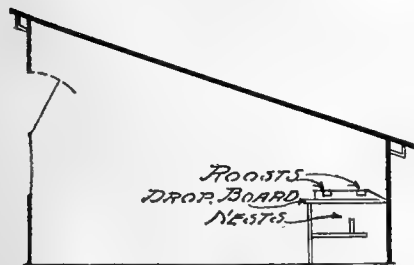
WHEN one must build on a hillside, a house with a basement is the most satisfactory. When building my house I excavated a space in the hill, making the bottom of the excavation level with the place that I selected for the front of the house for the floor of the basement to be constructed. In this space I built a wall of stone and cement, 5 feet high, for the back and both ends of a basement 10 by 14 feet; the front was built of boards.

Over this basement was constructed a frame structure, also 10 by 14 feet in size, with posts 9 feet high in front and 5 feet at the back. The sills and posts used were 3 by 4 inches in size, and the plates, rafters and joists were 2 by 4 inches. The building was covered with tongued and grooved boards and the roof made water proof by an additional covering of tarred paper.

The floor of the basement is of earth and is used wholly as an exercising room; the floor of the house proper is of wood. Two feet above this floor is a platform 5 feet wide and as long as the house. One foot above this are the roosts, four in number, also extending the full length of the house. Under the platform is the run-way by which the chicks reach the basement floor.

The nests are placed at the front, 18 inches from the floor and directly under the window-sills, as indicated on the illustration.

The upper and lower floors are each lighted by three



51—SECTION SHOWING POSITION OF ROOSTS AND NESTS, AND MANNER OF OPENING WINDOWS IN POULTRY HOUSE, DESIGNED BY FRANK S. HORNER

A SIMPLE PRACTICAL HOUSE

A Satisfactory Poultry House, Without Sheds, That is Not Expensive to Build—The Interior Equipment and the Fencing

Frank S. Horner

THIS house is not expensive to build and is convenient and serviceable. It is a closed house, without scratching sheds but plenty of fresh air can be admitted by opening the windows.

It can be built to any length and width desired, but 12 feet is about the best width. A building 12 feet wide should be 4 feet high at the back and 7 or 8 feet high at the front. The frame can be constructed of 2 by 4 scantling and the building covered with tongued and grooved barn boards.

To make it warm, and at the same time water proof, the structure can be covered with some kind of roofing fabric, or be shingled on the roof and clapboarded on the sides and ends.

The house should rest on a stone foundation, standing a foot above the ground and filled with dirt, or sand, level with the top of the sills. This will make a dry, warm floor. If a stone foundation seems too expensive, the house can be built upon posts, to which planks are spiked to fill the space between the sills and the ground. The space enclosed may be filled in as suggested for the stone foundation. If the house is 12 feet wide, it should be divided into pens 10 feet

long. The partitions between the pens are of boards for the first 2 feet above the floor and the remaining space to the roof is filled with wire netting except that part that comes between the roosts, which is boarded tight to prevent fowls standing on the roosts or roost platforms and fighting through. In each partition is a door 2 feet wide hinged to an upright in the frame of the house with double acting hinges so that it will swing both ways. These doors are made solid as high as the bars in the partition.

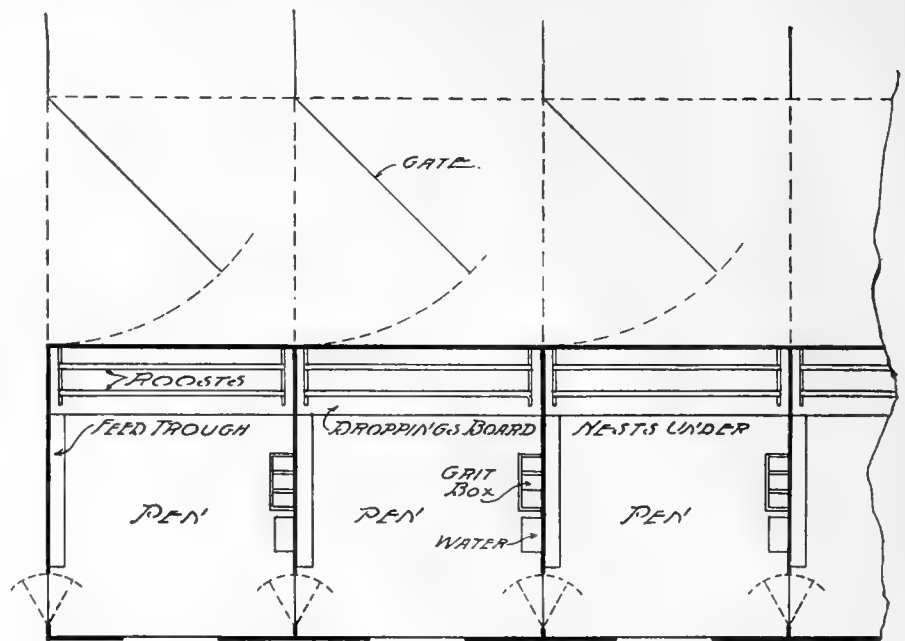
Each pen has a roost platform 30 inches wide and as long as the pen, placed 2 feet above the sill, against the back wall of the house.

Eight inches above each platform are two roosts, resting upon supports from which they can be easily removed, to be out of the way when the platforms are cleaned.

The nests are on platforms 1 foot below the roost platforms and are entered from the rear. The space occupied by the nests and the approach is enclosed by a partition dropped from near the front edge of the roost platform to the floor, with an opening at one end through which the hens pass when going to the nests. A board near the top of this partition is hung on hinges to make a door through which the eggs are collected and the nests cared for.

The house is lighted by a two-sash window in the middle of the front side of each pen. The top sash is hinged to the lower one so that it can swing in, opening at the top, to admit fresh air without permitting a draft to blow directly on the fowls when on the floor or when on the roosts. The windows may be arranged to slide to one side if preferred.

The troughs in which the mash is fed are hung on the partitions (position shown in cut) and the boxes for grit, shells and charcoal and the water dishes are attached to the partitions on the opposite side of the pens.



52—PLAN SHOWING LOCATION OF INTERIOR FIXTURES AND ARRANGEMENT OF YARDS FOR POULTRY HOUSE DESIGNED BY FRANK S. HORNER

The yards are at the back of the house, their width corresponding to the length of the pens inside. The first 10 feet of each fence (next the house) is constructed as a gate and can be opened so that a team may be driven to plow the yards.

By having the gates 10 feet wide, plenty of room is provided through which to drive a pair of horses drawing plow or harrow to work in the yards or attached to a wagon or sled to supply or to take away material used in the houses.

It is not convenient to carry fresh scratching material through a long line of pens occupied by fowls nor to remove any considerable amount of the same material when it is no longer useful. It is more convenient to load it into wagons through a window or door.

This is a simple, practical house that should be very satisfactory on large or small plants.

Continuous Brooding and Laying House

Durably Constructed and Planned for Many or Few Breeding or Brooding Pens—Economy of Labor a Consideration—Liberal Floor Spaces, and Provision for Fresh Air, With Ample Protection from Cold

Jacob Abdenholder

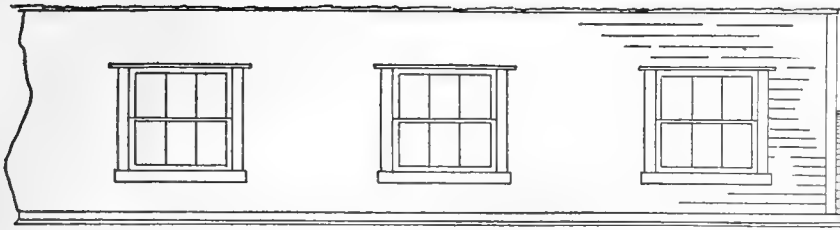
I HAVE designed this poultry house with one object, that of poultry for profit. It is only after several years of experience that I have attempted this and it is a result of hard study, both by day and by night. Any one familiar with plans will at once see that the house is not the cheapest affair that can be built, but will acknowledge that it is to a great extent, labor-saving.

I have made this house to accommodate laying hens in some of the pens and brooders in the others. The brooder pens should be next to the attendant's house so that the hot water which heats them would not have to travel so far.

The laying hens' pens can extend to the other end of the

house. Of course it can be used for either or both purposes named.

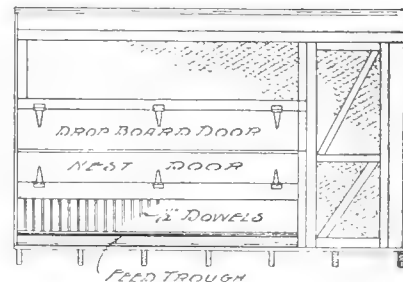
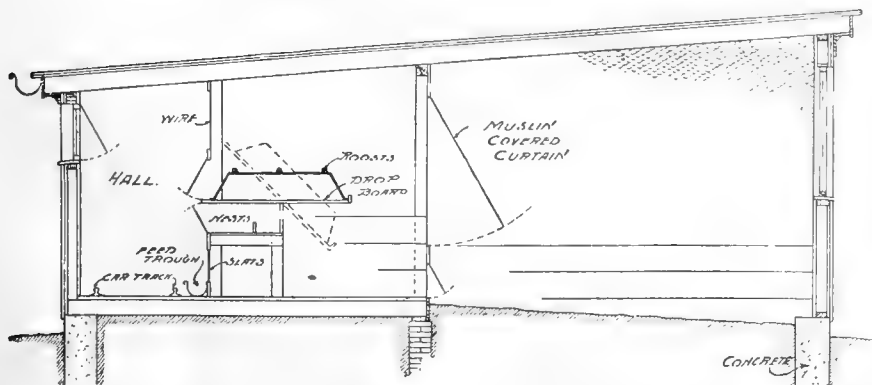
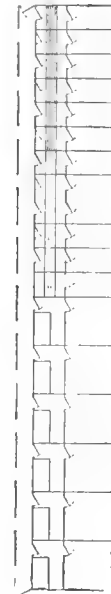
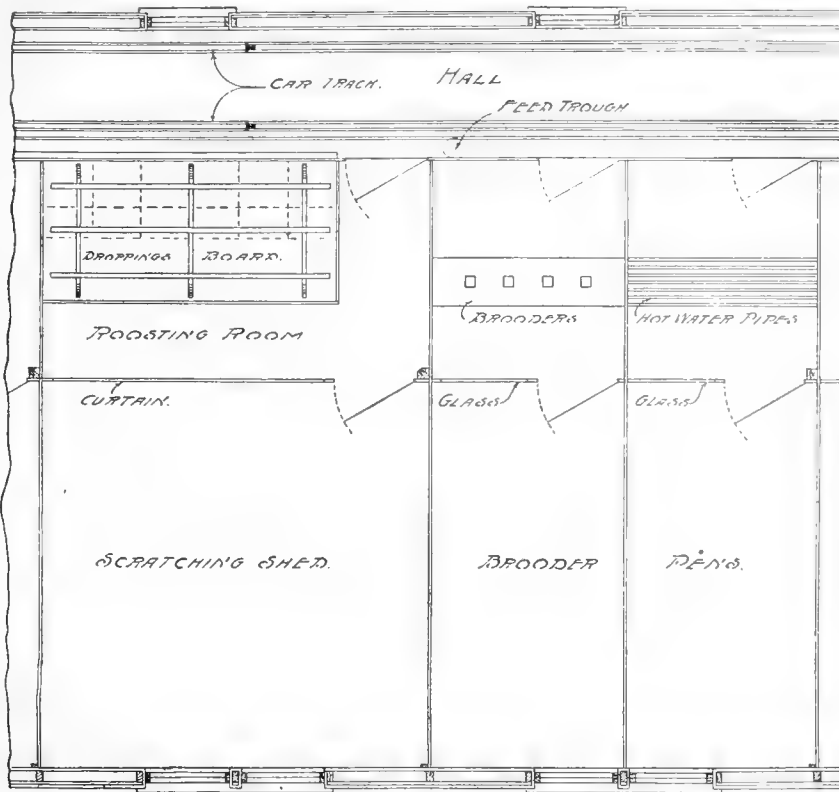
A concrete or brick foundation will last a lifetime, without the usual repairs which are necessary in the temporary buildings that are generally erected. It will also be rat proof and will not rust like wire netting, which is sometimes sunk into the ground as a protection against rats. Wooden floors rot in a short time. For this reason I say if you have the means to begin in the poultry business on a reasonable scale, put up your buildings right at the beginning and then you will have time to attend to the business end, and not be fretting about repairs every year. When the poultry houses



53—FRONT ELEVATION OF POULTRY HOUSE DESIGNED BY FRANK S. HORNER

are going to ruin, poultrymen frequently neglect either the house or the fowls, because they cannot afford to pay for extra help, or do not feel inclined to do so. This entails loss, of course. The house may be made of any length, but the plans I have sent you represent a house 159 feet long, being 144 feet of actual poultry house and 15 feet for the end building, or attendant's room. The entire width is 24 feet. There is an alley on the north side of the building. A trough of heavy galvanized iron should run the entire length and if a

small track for a car be laid in the passageway, the food for any number of fowls can be given in a few minutes without entering the pens. Two feet above the floor and under the droppings boards are the nests. The eggs can be gathered by pulling the nest out like a drawer and putting the eggs in a low box which is carried upon your car. To clean the droppings boards simply open the door which is on hinges, and with a scraper pull the droppings into the car. To facilitate this, I allow the droppings boards to project about 1 inch into the passageway. The droppings boards should be hinged in order to swing them to a vertical position when a thorough cleaning and whitewashing is deemed necessary. A wooden floor is laid 12 feet wide extending from the passage way towards the front. This forms the floor of the house proper. In the brooder pens wooden partitions with large lights are placed



54—CONTINUOUS BROODING AND LAYING HOUSE DESIGNED BY JACOB ABDENHOLDER

at the extremity of this floor to separate the house proper from the scratching pens, which are in front of them. The partitions between the house and the scratching pens for laying hens are formed by curtains, which can be raised and fastened to the roof.

The windows should be made to slide in a horizontal direction, so that a number of them may be attached to a rope and opened or shut at the same time. To facilitate their movements, it might be well to adjust little rollers to the large sashes. Felt strips should be attached to the windows, in order to make them draft proof.

Posts may be used under the partitions, but better still, brick pillars.

To insure a warm laying house without artificial heat, I suggest a double boarded wall for the outside and matched flooring for the inside, thus securing an air space. Between the two layers of boards on the outside, tar paper or building paper should be used. Matched flooring should be used for the ceiling, thereby securing an air space between it and the roof. This will prevent sudden changes in temperature during cold spells.

To form brooding pens out of the laying pens, simply measure 2 feet 6 inches to 3 feet from the alley for feeding space, then from 16 to 18 inches for hovers to cover the hot water system. The wooden partitions we have mentioned take the place of curtains, but there should be plenty of glass.

Of course the hover pipes alone would not be sufficient to heat the entire brooder house, so additional sets of pipes must be laid, and I suggest that 1 set should be placed in the alley, beginning as low as the floor on the lower end, while additional pipes might be put in the partition between pens, if necessary, so that each set of partition pipes will heat 2 pens. These partition pipes, however, may not be necessary in such a well built house. A trial should be made with those in the alley, but the firm which furnishes your furnace and pipes will figure out for you readily how much piping you will need to heat the place if you give the amount of air space in the house and a description of the way it is built.

On the main floor of the attendant's house you may have a shop, a shipping and plucking room, office and feed rooms, while upstairs there will be 3 nice, large rooms for the attendant and family, if he has any. In the basement is space for a small furnace, coal pit and incubator room, with storage room for eggs and vegetables.

Some readers may consider this house too wide, but it is not. I design it to hold 50 fowls per pen.

To gain access to the outside runs, doors may be made in every third or fourth pen. With 50 fowls to the pen, I suggest that the runs be 300 feet long, well planted with trees. I do not favor extensive range for fowls that are kept for profit. We must always have one point in view, and that is to save time. If the yards are properly constructed there will be no worrying as to where the fowls are. Under the conditions I suggest, 1 man could attend to 5,000 fowls, while if the place is in poor shape and poorly laid out, 200 fowls might be too much for him. If you want to go into the poultry business for profit, your motto should be, "profit in everything."

As it requires 26 foot rafters for this building, it might be made 10 or 12 inches wider than I have designated. I hope my plans will not be denounced for making the building too wide, for I have seen in managing poultry plants that it takes considerable space to accommodate 50 to 60 fowls in a pen. I have had as many as 70 fowls in pens about 16 by 13 feet, and tell you in bad weather I always felt sorry for them.

To water your fowls, the best plan and the cheapest, so far as labor is concerned, is to have a tank if a windmill is

at hand, or even if you have to pump the water yourself. Place it a few feet above the ground and from that run a pipe system into the poultry house where you can put up a fountain in every second partition. There should be drainage from each fountain to a waste pipe, then you can let the water run slowly all day and so keep it fresh, but it should be shut off at night.

Bill of Material

The following is a bill of material required for the poultry building, the attendant's room to be figured separately. It will be well to paint the building and it will then last a lifetime and there is no time lost for repair.

Foundation

Concrete or brick.
Walls, if 2 feet deep and 9 inches wide, 504 cubic feet.
Walls, if 2 feet 6 inches deep and 9 inches wide, 630 cubic feet.
Walls, if 2 feet deep and 12 inches wide, 672 cubic feet.
Walls, if 2 feet 6 inches deep and 12 inches wide, 840 cubic feet.
23 piers 12 by 12 inches by 2 feet 6 inches deep, 57½ cubic feet.
Posts 6 by 6, 4 feet long, could be substituted for piers, though less durable.

Exterior

Sills, 40 pieces 2x6-12 feet long.
Joists, 49 pieces 2x6-12 feet, 3 feet on centers.
Plates, 28 pieces 2x6-12 feet.
Rafters, 49 pieces 2x6-26 feet.
Studs, 3 feet centers.
North side, 49 pieces 2x6, 6 feet 8 inches.
South side, 37 pieces 2x6, 8 feet 5 inches.
South side, 12 pieces 2x6, 4 feet over and under windows.
East and west sides, 16 pieces 2x6 average 7 feet 6 inches.
For these it will require:
37 pieces 2x6-16 feet long, cutting one stud for both north and south sides out of one of these pieces.
8 pieces 2x6-16 feet long, for east and west ends.
3 pieces 2x6-16 feet long under and over windows.
12 pieces 2x6-14 feet long for balance of north side.
2,400 feet 1-inch rough boards 12 feet long for siding.
400 feet drop siding or weather boards.
2,400 feet of matched flooring for inside of studs.
3,500 feet of matched flooring for ceiling
1,650 feet matched flooring for hall and roosting room.
3,800 feet sheathing for roof.
3,800 feet tarred roofing paper.
146 feet 6 inches gutter with hangers.
4 pieces 4 inch down spout 6 feet long.
12 double windows, sash 4 light, 14x10, 2 inch stud to form mullion, opening 70x48 inches, for south side.
6 windows, 2 light, 14x14, opening 34x20, for north side.

Interior

Hall partition and laying compartment;
6 pieces 2x4-12 feet long below slats.
6 pieces 2x4-12 feet long above slats, below drop boards.
300 pieces ½ inch round slats for feed rack, 21 inches long.
12 pieces 1x3-10 feet long above and below nest doors.
6 pieces 1x6-10 feet long nest doors.
12 pieces 1x12-10 feet long drop board doors.
6 pieces 1x3-10 feet long top nailing pieces for netting.

6 pieces 1x3-18 feet long framing for netting doors.
 18 pieces 2x4-7 feet 5 inches, studs.
 72 feet 18 inch wire top of partition.
 36 feet 24 inch wire for doors.
 Brooder compartment;
 6 pieces 1x3-18 feet long frames for netting doors.
 12 pieces 1x3-12 feet long top and bottom nailing pieces
 for netting.
 18 pieces 2x4-7 feet 5 inches long for studs.
 72 feet 10 inch galvanized iron gutter for feed troughs.
 90 feet 48 inch wire for partitions, 1 inch mesh.
 72 feet 24 inch wire for doors, 1 inch mesh.
 Partition between roosting room and scratching shed.

Laying Compartment

6 pieces 1x10, bottom.
 12 pieces 1x12, boards under netting.
 12 pieces 1x3, 12 feet long, frames for netting tops and
 bottom.
 12 pieces 1x3-5 feet long, for frames for netting, ends.
 72 feet 60 inch netting, or cloth.
 36 feet 24 inch netting, or cloth, for doors.

Brooding Compartment

12 windows, 4x3 feet.
 350 feet matched boards for tight partition, doors to be
 made of and included in this.
 23 pieces 4x4-7 feet 5 inch posts.
 12 pieces 4x4-12 feet long plates.

Droppings Boards

270 feet matched flooring, 10 feet long.
 6 pieces 2x4-10 feet long center supports.
 18 pieces 2x2-10 feet long roosting poles.
 18 pieces 1/2x1 inch 1x5 feet iron to support roosting
 poles, as shown in drawing.

Nest Boxes

120 feet matched flooring, 10 feet long for bottom.
 6 pieces 1x6, 10 feet long end pieces.
 6 pieces 1x4, 10 feet long center pieces.
 10 pieces 1x4, 6 feet long legs under nest platform.

Cross Partitions

51 pieces 1x10, 8 feet long under netting roosting room.
 51 pieces 1x10, 12 feet long under netting scratching
 sheds.
 210 feet 60 inch netting in scratching shed.
 130 feet 48 inch netting in roosting room.
 18 pairs of hinges for nest box and drop board doors.

18 pairs hinges for partition doors.
 1 pair hinges for exterior door.
 12 pairs hinges for brooding house partition windows.
 12 pairs hinges for small exits between roosting room and
 scratching shed.
 12 pulleys and cord for raising windows in brooding
 house partition.

Note.—Building could be 9 feet on south side and 7 feet
 on north side with slight additional expense, since 16 foot
 stuff must be used for both dimension lumber and boards.
 Extra cost would be only for added siding on exterior of
 building, and wire netting partitions inside.

Architect's Comment

For one having the means and desiring to erect a large
 poultry house containing all conveniences, this is the build-
 ing to erect. The designer of same has evidently given, as
 he says, considerable time to the study of the wants of at-
 tendant and fowl. It can be built any desired length and
 retain all the advantages shown, whether containing 5 or 50
 pens. All the attendant's work is done from the passageway.
 He need never enter the pens except for cleaning the
 floors, replacing litter and gaining access to the fowls.

With a car on the track suggested for long buildings, one
 man could attend to a great number of fowls with very little
 labor and so reduce expenses considerably.

Construction as recommended is first-class. A building
 erected according to these specifications will last a lifetime
 if reasonable care is taken of it.

The principal advantages of this plan are: The passage-
 way, containing feed troughs, nest drawers, and doors for
 cleaning droppings boards, the partitions between the roost-
 ing rooms and scratching sheds containing sash, or muslin
 covered frames hinged on top, to be raised during warm
 weather and lowered when cold or stormy; the windows in
 the south front being connected by a rope, allowing them to
 be closed simultaneously from one point, in the work room;
 the work shop, shipping room, office and dwelling at end of
 poultry house, giving attendant opportunity for doing all
 work, cooking food, etc., without leaving the building, and
 in case of a very long house, locating it in the middle; the
 foundation of concrete would last practically without repairs,
 and would be rat proof; the general construction of the build-
 ing having air space between all walls and between ceiling
 and roof and gives a very warm, well built house.

While this would be an expensive building, considering
 first cost, it would be durable and possibly as cheap in the
 end as any; and considering durability, annual expense ac-
 count and convenience, the saving would equal interest on
 the investment.



Scratching Shed Houses



The Scratching Shed Poultry House

After Years of Practical Experience with Open and Closed Poultry Houses, Mr. Hunter Tells Why the Continuous Curtained Shed Poultry House is the Best, and Furnishes Detailed Instructions that will Enable Even a Novice to Build It

A. F. Hunter

“ARE hens pampered too much?” asks a writer, and then he goes on to discuss a low cost poultry house, which is covered with a single thickness of boards only. There are grave objections to a house constructed like that, a most important one being that the board walls will open up cracks in one season’s exposure to sun and rain, and then there would be the pernicious drafts and currents of air that must be avoided. The writer says: “The great fault with most poultry houses is lack of thorough ventilation. The moisture excreted from 20 to 25 fowls every 24 hours is a heavy drain upon the ventilating resources of most houses, and it is the keynote to the failure of nearly all of them.” And the editorial comment upon the same article is: “One of the surest preventives of dampness—moisture in a poultry house—is perfect ventilation. Many poultrymen have requested information upon the question of damp houses, and have been advised to ventilate by frequent opening of doors and windows.” In a certain sense the house plan mentioned is like the curtained front house plan of the Maine Station poultry house; one difference being that he rolls up his curtain hung in front of roost platform. We believe the swinging curtain tacked to a simple frame is superior to having the curtain rolled. Experience with curtains has demonstrated that.

On the two following pages we give plans for a continuous poultry house with alternating pens and sheds, the sheds having curtained fronts and all the space within the house being utilized; many years’ study of poultry house problems has convinced us that this alternating shed and pen plan is the best—all things considered. No house plan is perfect; we have to balance advantages against disadvantages and should choose the plan which combines the greatest number of advantages with fewest disadvantages, and so firmly are we convinced of the general excellences of this pen and shed plan that if we were erecting a poultry plant

for 200 or 300, or 2,000 or 3,000 head of fowls this is the plan we would use. Many modifications and adaptations of this plan have been made since we first published it, and quite a few improvements have been suggested by observation and experience, and the net result of these modifications and improvements is given in these pages. Each combined pen and shed is 18 by 10 feet, the curtained front shed being 10 by 10 and the closed roosting pen being 8 by 10, room sufficient for 25 fowls of the American or 30 of the Mediterranean varieties; no walk is required because the walk is through gates and doors, from shed to pen and pen to shed, and so on to the end of the house, and out the other end.

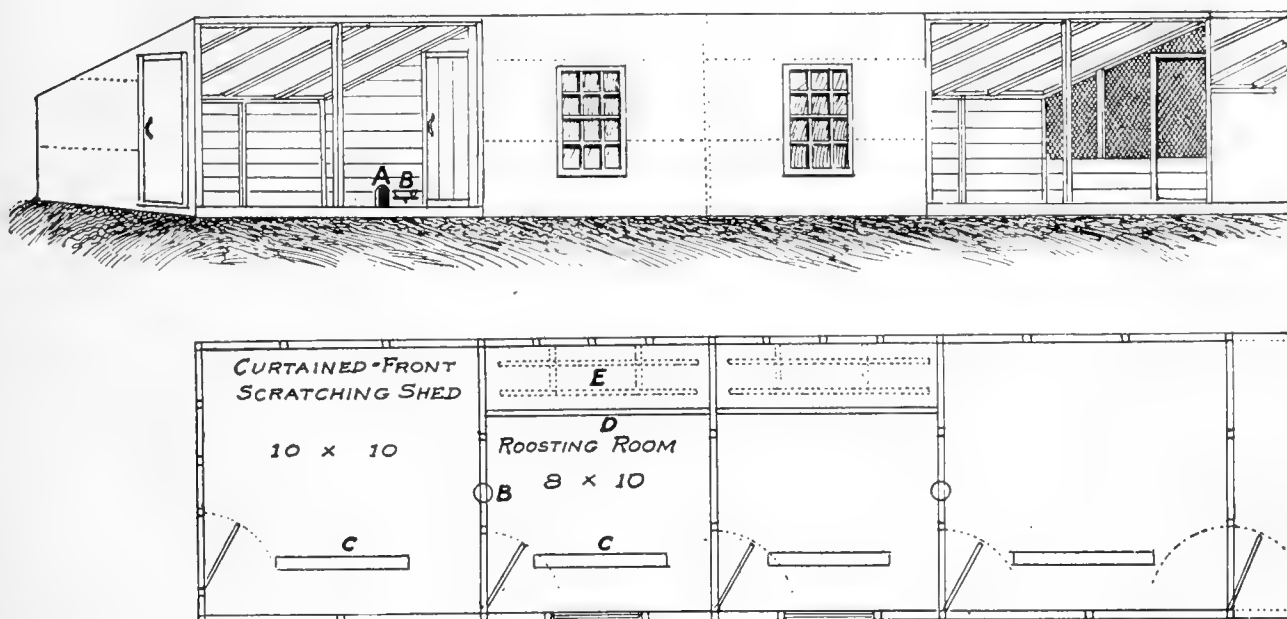
We have seen this plan with a roosting pen at the end, then 2 sheds and 2 pens, etc. Don’t do that! By bringing the closed roosting pens together in pairs they contribute to warm each other, and every pen has the protection of the shed beyond; the end department should be a shed always. The ventilation (so much desired) is very varied, and can be adapted to the different seasons in half a dozen different ways. In summer the doors and windows are all wide open and the curtains all hooked up against the roof out of the way. (It is understood that the doors between 2 pens are never left open, they are always kept closed except when opened for the attendant to pass through from one pen to another.) When the nights begin to be real frosty in the fall close the windows in front of pens, but leave shed curtains hooked up and doors between sheds and pens open. When it begins to freeze nights close the curtains in fronts of sheds, but still leave doors between pens and sheds open. These doors (including slide door A) are never closed excepting on nights of solid cold, say 5 to 20 degrees above zero; and for zero nights (5 degrees above to away below), close the curtains in front of roosts and all doors and windows are closed. An additional protection against cold in extremely cold latitudes would be to double wall the roost pen from

the sill up to plate and then up the roof 4 feet, packing the spaces with straw or swale hay, then have a hinged curtain to drop down to within 6 inches of front of roost platform and going 1 foot below it; this curtain we would close only on the most severe nights.

Construction

Sills and plates are all of 2 by 4 scantling, halved and nailed together at joints. The rafters, the corner studs and studs at center of fronts of sheds are all 2 by 4; the intermediate studs are 2 by 3. Set the sills on stone foundation or on posts set into the ground below the usual frost line, the posts being set 5 feet apart excepting in front of pens, where they would come 4 feet apart, there being a post at corners of each pen and shed and one between; the rafters should be 2 feet apart. The sills we would set 1 foot above average ground level, put 1 foot wide hemlock (or some hardwood) board from bottom half of sill down to ground,

and best. Some of the good ones are Ruberoid, Paroid, Flintkote, Swan's Felt, Neponset Red Rope, etc. These roofings come in rolls with nails and tin-heads inside each roll, or with cement, etc., where such is used; the prices at which they are sold cover everything of that kind. As a general rule these roofings should be applied lengthwise of roofs and walls, and where doors and windows are set in walls bring the covering material out over top of door or window frames. A 12 light window of 8 by 10 glass is set in front of each pen, and all doors and gates are 2 feet 6 inches wide by 6 feet high. Have plenty of hooks and screw eyes to secure doors and gates back against the walls and curtains up against the roofs; each large curtain in front of shed needs 2 hooks and screw eyes, 1 at each lower corner, to prevent it twisting. All windows should be protected by having 2-inch mesh wire netting tacked to inside of frame, to keep fowls from dashing against it if startled and keep rodents out when window is left open at night. To keep the fowls enclosed when curtains are raised cover the front



55—MR. HUNTER'S SCRATCHING SHED POULTRY HOUSE: A—FOWL ENTRANCE, B—WATER PANS, C—FEED TROUGH, E—ROOSTS

nauling it securely to sill and foundation posts, then fill up inside to bottom of sills and slope up the ground outside to same height. Toe-nail studs to sills, firmly, also plates to studs, and rafters to plates. Make front studs 7 feet (or at least 6 feet 6 inches) in the clear and back studs 5 feet (or 4 feet 6 inches) in the clear; of course studs in front of pens will be set at right space to take window frames or the window sash if no frames are used, and in partitions the studs will be set to take the 2 feet 6 inches wide doors. All of this framing is as simple as can be, and any man who can saw a board or joist reasonably square and drive nails can build such a house; the slight bevel at each end of rafters is practically quite as simple. All boarding is lengthwise, the boards being firmly nailed, and close joints made everywhere. Cover the boarding, both roof and walls, with a good sheathing paper (or sheathing quilt) and then put on the outside covering of some good roofing material. Of this there are several kinds and in selecting a roofing material keep in mind the fact that it is a physical impossibility for a cheap article to be as good and as durable as those costing more; avoid the material that it is claimed is cheapest

of shed with wire netting, having one section of it made a gate to open and let the birds out into yards; this large gate we found very convenient when we wanted to bring in coops of birds from the wheelbarrow (pullets brought in from coops in the fields), or if cooping up a number of birds to send away. The frames for the curtains were made of good, sound 1 by 3 inch furring, halved and securely nailed at corners, and by brace set diagonally across back of frame to firm it. Care must be taken that gates between sheds do not come in conflict with these curtains when they are hooked up; as they are left up 7 or 8 months in the year and only down nights and stormy days 4 or 5 months, a little pains must be taken to have the gates swing clear. The doors from sheds to pens swing into the pens and are, of course, out of the way of the curtains. Some poultrymen have found a difficulty in getting oiled muslin for these curtains, but most seedsmen in the United States keep it for sale, it being the same as used by gardeners for covering cold frames. In talking of this with Prof. Robertson, Canadian Commissioner of Agriculture, he said he had never heard of such oiled muslin being used in Canada, and inquiry

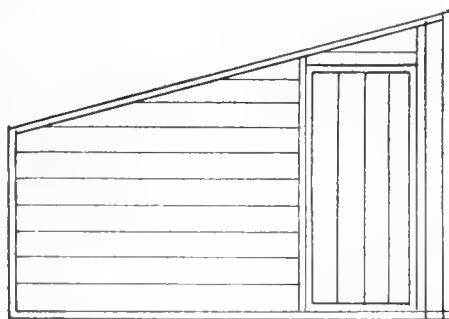
POULTRY HOUSES AND FIXTURES

at the two leading seed stores in Ottawa disclosed that they did not keep it. Another point to be considered is carrying off the drip from these curtains in case of a driving rain from the south. As there is usually (in winter) 6 inches of scratching material in the sheds the curtains should not come down to the sills, and a board 8 or 10 inches wide should be set slightly slanting in from the sill to just inside the bottom of the curtain frame, and that drip board secures the scratching material within the shed and conveys the drip outside the sill. One poultryman of my acquaintance has a section of board 10 inches wide and between two studs at back of scratching shed so arranged that he can slip it out and shovel the sand out (and in) there at annual house cleaning time; this he finds a decided convenience, as he can set his cart just beneath it and shovel directly into the cart through that opening. The roost platform should be 3 feet

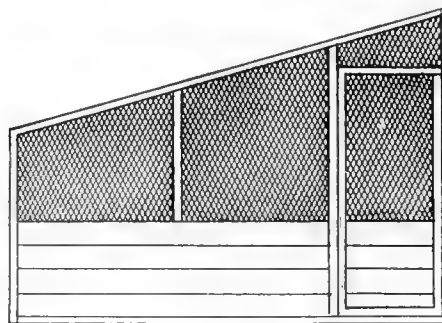
to wall at back 8 inches above platform and terminate with legs 8 inches long leading to platform; the roofs are swung up and hooked against the wall for cleaning off droppings.

A correspondent writes as follows: "Having compared the two styles, I find that better health, greater egg production and better fertility are the results where the fowls are kept in the open scratching shed house. The advantages we gain in such a house are that the roosting room can be much smaller than it could be if the scratching and roosting rooms were combined. Being so small, the natural heat from the fowls keeps it warm and there is no necessity for artificial heat.

"Then the hen loves freedom which allows her to move around at will and work as she pleases. In a small closed pen she soon gets tired, squats down in some corner, be-



PARTITION BETWEEN PENS



PARTITION BETWEEN SHEDS

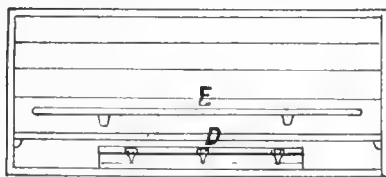


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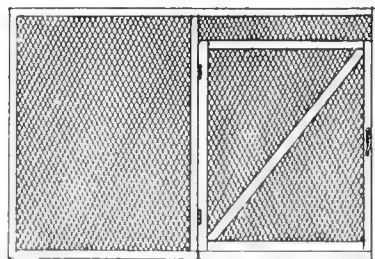


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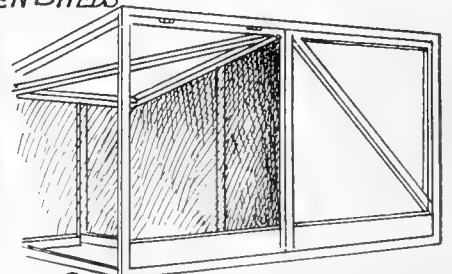
ENDS OF RAFTERS



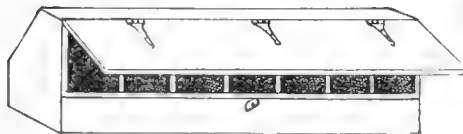
BACK OF ROOSTING ROOM



FRONT OF SCRATCHING SHED



SHOWING CURTAINS, ONE DOWN, ONE HOOKED UP TO ROOF



NEST BOXES, ENTRANCE IN REAR



FEED TROUGH

56—DETAILS OF CONSTRUCTION AND INTERIOR FIXTURES OF MR. HUNTER'S HOUSE

wide and the full length of roosting pen, excepting that it should be short enough to lift out easily for house cleaning; strong cleats should be nailed to each end wall to support it and the platform should be 2 feet above sill level. Make the platform of matched boards, secured by 2 cleats across bottom. An "edge" of 2½ inches wide furring is a decided improvement, keeping the droppings enclosed; for convenience a space 12 inches in length can be cut out of middle of front edge, through which to scrape the droppings. The two roosts are made of 2 by 3 scantlings, slightly rounded on top, and cut 8 inches shorter than platform so ends of roosts come 4 inches within the platform. Set roosts 14 inches apart, which will bring them 8 inches within the platform back and front. Two cross arms are hinged

comes fat and lazy, loses her appetite and is only an expense to her owner till nature forces her to lay. In an open scratching shed she can work in the open air going in and out as she pleases, and she is always ready to eat or work; therefore she is strong and healthy, her egg yield is large and the eggs are strongly fertile."

Doesn't that fully cover the ground? What do we keep fowls for that is not grouped in that intelligently expressed argument in favor of the scratching shed house? Better health, better egg yield, fowls busier and (hence) happier; it is all comprised in these words. Some people have been frightened at the term "open front," and I have substituted "curtained front" in this article, and those words are more accurate in describing the type of house.

Poultry House and Scratching Shed

An Original Plan by Which it is Proposed to Retain the Advantages of Modern Scratching Sheds and Roosting Rooms, while Improving Them With Regards to Economy, Sunlight and Protection from Wind

Henry P. J. Earnshaw

WHEN scratching shed houses first came into use a number of years ago they were generally accepted as all that could be desired in the way of a perfect house for a northern climate. Like all other things, the longer they were in use the more their disadvantages became apparent. In recent years a number of changes have been made in the original plan with the idea of perfecting it.

That scratching sheds in this climate are highly desirable is evidenced by the number of houses of various patterns that possess this addition.

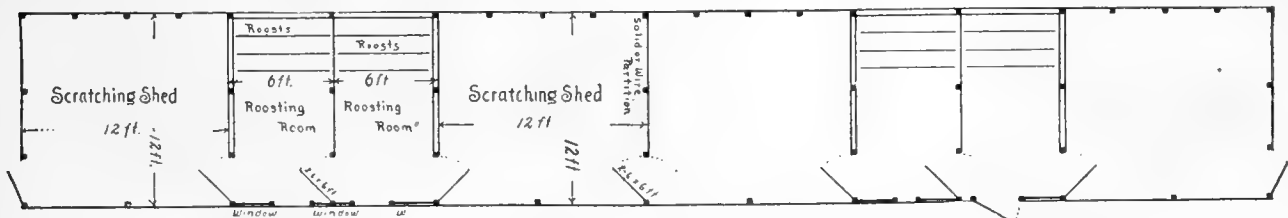
The writer has visited many plants in various parts of the country, and having discussed with proprietors the faults generally found in these houses, the matter has been carefully considered with the idea of perfecting a plan, and the outcome of the attempt is here given. I have settled upon these plans as having more advantages and fewer faults than any of the various modifications of the scratching shed house that have come to my notice.

The objections most frequently raised are: Cost of construction, time wasted in taking care of the flocks, havoc created in the scratching shed by the wind, and the time required in removing snow on certain days in winter. By using

from drafts. During very cold weather a curtain of burlap can be hung from the ceiling to a level with the droppings board. This will retain the heat and yet give all the ventilation necessary. In such case the fowls are protected by their own warmth from the outside temperature and do not warm up any more space than is absolutely necessary, and as soon as it is light they make their way to the front of the roosting room and get such exercise as they desire until the attendant comes and feeds them and opens the door.

After a long cold night it is desirable to get the first morning sun. For this reason the windows are arranged respectively on the extreme east and west ends of adjoining roosting rooms and one between the two rooms, giving light to both. By this arrangement the sun, as soon as it rises, throws its light on almost one-fourth of the floor space of both roosting rooms. The late afternoon sun does the same. It increases the sun in the house one-half hour in the morning and one-half hour in the afternoon, or an hour in all, which makes a great difference on a cold winter day. During the shortest day in winter every part of the house catches the sun at some time during the day.

Windows in roosting room should be opened on all sunny days as soon as the sun is well up and closed 2 or 3 hours



57—SHOWING GROUND PLAN OF DAMP PROOF ROOSTING ROOMS AND SCRATCHING SHEDS

curtains this latter trouble has been overcome; but a curtain shuts out the sun, which of course is a great disadvantage. By adopting a sloping roof in front, strong drafts and wind in the scratching shed are overcome. In my plan the distance from floor to peak is 7 feet 6 inches. The opening in front of scratching shed is 4 feet 9 inches. As the wind approaches this opening the air already in the shed forms a cushion strengthened by the resistance of the sloping front roof and the front boarding along the bottom. This prevents the entrance of strong gusts of wind. It was suggested to me some time ago while driving in a Goddard buggy against a very stiff wind. The smoke from my cigar remained within the hood, or top, with very little motion until it worked outside, when it went away with a rush.

As to cost. All that is necessary in a house for grown fowls is protection from the wind, rain and snow in the day time, and a warm roosting room at night.

The roosting room (or that part of it that contains the roosts) is the only part of the house which necessarily should be snugly and well constructed. This should be double boarded and lined with waterproof felt both inside and outside. As the roosts are placed at the rear of the house, they are away from doors and windows and are therefore free

before it goes down.

The minor details of the house can be arranged in any way that is agreeable to the user. If it is desirable to have an enclosed scratching shed it will be best to increase the height of the house to 8 feet at peak and 6 feet 6 inches at the front. This enables one to fold the front shutters back to the roof, which is so high that they will not interfere with the swinging of the doors. I do not consider it advisable to alter the height of the back wall unless the attendant is more than the average height, in which case it might be inconvenient to do the work.

The house should be built on ground with sufficient slope to carry away surface water. Face it a little to the east of south. If it faces this way you will get the greatest possible amount of sun and will not catch raking winds from either the east or the west. House should be situated on naturally dry land.

Exterior Construction

For the foundation place flat stones under the sills in place of posts, or posts can be sunk in the ground and cut off 8 inches above the surface. If posts are used they should be at least 6 inches in diameter. By stripping off the bark and

charring the part to be placed in the ground, or by covering it with a heavy coating of tar, the life of a post can be greatly prolonged.

The frame should consist of not less than 3 by 4 inch studding, and where there is liability of heavy snow storms it is as well to use 2 by 6 inch stuff for the roofing timbers, as this will not sag. Be careful to use sound timbers where there is much strain, such as on plates on front of scratching shed, using knotty pieces for uprights in framing back wall.

Use any kind of boards for the walls, provided they are of an even thickness, for covering in, with the exception of the back part of the roosting room. This boarding should be of matched stuff and should be laid as close together as possible.

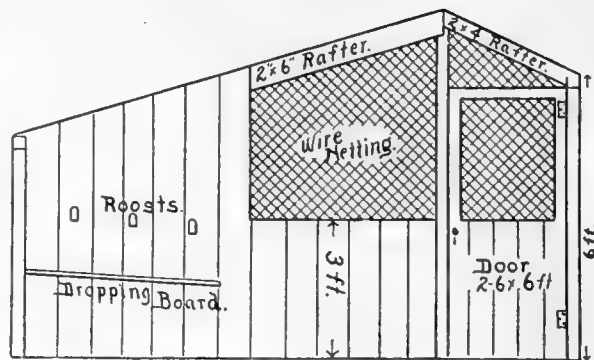
There is a variety of roofings to choose from, and as they all have merit, and none of them are perfect, I will discuss them in a general way and let you make your own selection.

Iron roofing is usually too expensive for this use and is really not suitable for the purpose, as it is very cold in winter and draws the heat in summer. If it is used it should be painted on the under side with a good iron oxide paint before laying and should be coated at least once every 2 years on the weather side with similar material. With the best of care it will not be permanent, but will rust from underneath.

Shingles make a very good and permanent roof and require little care until they begin to wear, when it is best to tear them off and replace with new ones. If shingles are to be used, it is well to lay resin sized building paper under them to keep the wind out. Never paint shingles on a roof after they are laid, as it shortens their life. The moisture works down between the cracks and under the shingles and if painted it remains there for a long time drying out slowly, with the result that they decay quickly. If a shingle is to be painted or stained the best way is to dip it before putting it on. If this is done, there is no unprotected side for the water to soak into.

Felt roofings are the cheapest usually in first cost, but require coating every two or three years. They usually cost more in the long run than shingles and are never as satisfactory.

Paper roofings are usually all right, provided they are battened down to keep the wind from tearing them and by keeping them well painted. Never use a paint on a paper or felt roof unless you know its ingredients. Certain chemicals are used in roofing paints that do not always work well with the chemicals in the paper, so it is well to write the manufacturer and find out what paint or coating he advises used



59—SHOWING PARTITION BETWEEN ROOSTING ROOMS AND POSITION OF ROOSTS

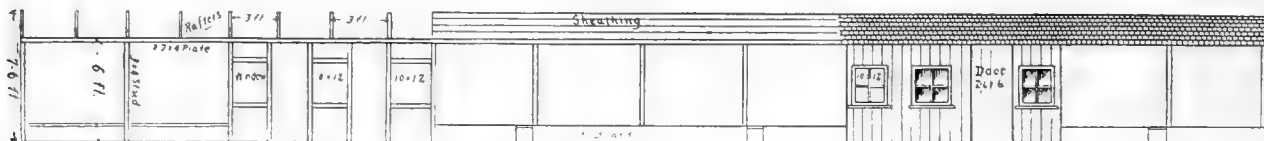
Where ready roofing is used for covering the sides it is not necessary to lay paper under it, but it is well to batten it well, being sure to paint under the battens to prevent rotting.

A good way to lay a ready roofing is to continue the siding over the eaves. This makes a perfectly tight joint at the eaves and prevents any drafts from striking through.

Interior Construction

Board up the inside of roosting room, the whole width of the rear wall, and about 4 feet 6 inches of the partitions, with matched stuff, and fit strips of board in at the end of boarding and roof, making a tight air space. This is necessary to keep moisture out of the space and from working into the boarding. When this is done line the interior of the roosting compartment with a water proof felt or paper, being careful to make all joints tight. This is the most important part of all in making it frost proof. It is necessary to keep this water proof as well as the roof, for reasons stated below. If an extra warm house is wanted it is well to use Cabot's sheathing quilt under the water proof lining of this roosting compartment. This is the best cheap non-conductor that I know of. Do not fill the air space with anything that will be a harbor for rats. Sawdust, if it is absolutely dry, is all right, but if it is damp it will rot out the boarding. There is nothing that I know of suitable for this purpose that can be had at a price that would warrant its use.

The curtain for use in front of fowls can be made of bur-lap tacked onto two strips of board or anything handy. One by one inch is large enough. When the curtain is put up in the fall simply put a nail in either end and drive it into the



58—SHOWING FRONT ELEVATION. PART OF WHICH IS SHOWN COMPLETE, THE REMAINDER SHOWING MODE OF FRAMING

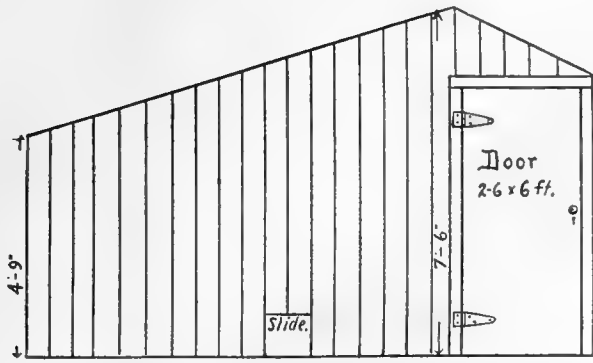
on his particular roof. All ready roofings, like incubators, should be used according to instructions. The manufacturers know more about them than you do. Many a roofing has been abused because some paint or coating had been used on it that rotted it out. In laying shingles it is not advisable to use wire nails, as they do not last, but rust off. Neither should tarred paper be laid under shingles, as it rusts the nails and shingles fall off.

Whatever roofing you use it is well to lay a layer of resin sized sheathing under it so that the expansion and contraction of the boards will not wear directly on the roofing sel

ceiling half way. It will then be an easy matter to remove the spring to be stored for further use. The strip on the bottom will make it hang flat. A string can be tied through the center of this bottom strip to attach to the under side of roof with which to raise it out of the way in the day time.

Windows are intended to be hung the same as those in general use on street cars. That is, lifting slightly, pulling

Note.—The letters of illustrations 61 and 62 show: A—Window sill B—Strip nailed on sill to prevent sash from pulling off, and to hold sash tight to outside wall. C—Block nailed on studding on each side of window to hold top of sash F when in place. D—Spare below sill into which sash drops when open. E—Sash F—Sash G—Seven-eighths inch strip nailed to inside of stud lining, and projecting over the edge from top of sill to sash when opening and closing window. H—Outside boxing projecting three-fourths in below studding to hold sash in when window is closed.



60—SHOWING SOLID PARTITION BETWEEN ROOSTING ROOM AND SCRATCHING SHED

towards you and sliding down. If the front of house is made 6 feet 6 inches high, they can be hinged at the top and swung to the roof, so as not to interfere with the doors. In this case the middle window will have to be permanent.

By leaving a space for water vessels in the solid part of the partition between the roosting rooms one water vessel will serve for two flocks.

The reason for lining roosting compartments with water proof paper is to prevent condensation on the boards. There is probably nothing in connection with a poultry house that has bothered poultrymen to the extent that dripping walls and ceilings have, and at the same time there is nothing so little understood. I will try to give the cause in as few words as possible and you will readily see how it can be prevented:

All air contains moisture. The warmer the air the more moisture it can hold. Moisture is a good conductor of cold. The moisture contained in the fowl's breath is absorbed by the air in the room. This air is in constant circulation, caused by the different temperature within the room and the air leaking in from the outside. As the fowls keep on breathing the air becomes more charged with moisture. Now this air coming in contact with the colder surfaces condenses, leaving its moisture. If this surface is not water-proof, the moisture will penetrate and, being a good conductor of cold, will allow the cold to penetrate the walls much more quickly than when dry.

The minimum temperature at which air contains the greatest amount of moisture is called the dew point. As air can contain more moisture at a high temperature than at low, it will be seen that the dew point will be reached

much sooner on a cold than a warm night and that by water-proofing the roosting compartment of the house, should the dew point be reached on a few occasions, the moisture cannot penetrate the boarding and thus injure the efficiency of the partitions. To have my house warm in winter, I would prefer to water-proof the inside walls than the outside if I could not afford to do both.

HOUSE FOR SOUTHERN BREEDERS

A Poultry Building that Can be Opened and Closed According to the Weather

Wm. E. Spencer

AM sending you photographs of a tier of my poultry houses. I am convinced that they are the cheapest and best houses for the south, and the same idea, with warmer construction, would undoubtedly prove equally satisfactory in the north.

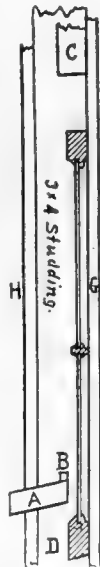
When the summer is at its height I find that my poultry keep comfortable and cool in the houses. Not any of them has yet shown a disposition to leave the houses for outside roosting places. This indicates pretty accurately that they find it quite pleasant. My experience on February 12 last, when the temperature went 18 degrees below (the coldest by 13 degrees ever known in Arkansas, demonstrated that they are comfortable in winter, for not a comb was even as much as frosted.

Such houses are easily built and are no more expensive than any other kind. The one shown in the cuts is 32 feet long and 8 feet wide, 8 feet high in front and 6 feet in the rear. It is divided into a feed room, 6 by 8 feet, two roosting houses, 8 by 8, and two scratching sheds, 5 by 8. The cost to me for material and carpenter's work was between \$45 and \$50, the carpenter charging \$10 for his work. The photographs will show how the houses are built, so that any person with a "mechanical turn of mind" will understand.

[Southern breeders need a house that is built upon somewhat different principles to that in use in the north and Mr. Spencer appears to have provided the wished-for plan. The house as photographed, with its doors open, and the fence at the back exposed to view through the open window, gives that airy appearance which is so inviting in hot weather and provides a comfortable scratching place free from the sun's glare, yet open to the welcome breeze which tempers the extreme heat. We believe, however, we would reverse the sizes of the roosting rooms and scratching sheds, making the rooms each 5 by 8 and the sheds each 8 by 8 feet. Most of the fowls will be in the sheds during the day and on the roost at night, so that it is in the sheds where the most space is needed. The space occupied by roosts and nests is comparatively small, and so far as house room goes it is unnecessary to provide only for an odd day in the 365 when the fowls are confined to the house. We have found 3 square feet per fowl sufficient, where, without the shed, at least 6 would be required.—Ed.]



61—WINDOW WITH SASH IN PLACE



62—WINDOW WITH SASH IN THE ACT OF DROPPING INTO SPACE D

Scratching Shed Colony House

A Practical, Economical House Designed for One Pen of Fowls--Detailed Instructions Regarding the Exterior and Interior Construction, and Material Needed

"For Poultry Keepers on a Small Scale this House is Hard to Beat"

James M. Stocking

THIS house is set on 6 posts set 3 feet in the ground, one at each corner of the house and one midway on each side. The post set at the highest corner is sawed off square 1 foot from the ground and the other 5 are cut to the same level.

The sills are 4 by 4 and halved together at the corners. After the sills are squared and spiked to the posts, measure off on the outside of the back sill 3 feet 8 inches from the end, and on the front sill 5 feet 8 inches from the same end. With a straight edge placed at these two points mark where it crosses the sills. Then place a 2 by 4 flush with the end and outer edge of each sill and square up the outer edges of the 2 by 4 where they cross the mark on the sills. Place straight edges on these marks on the 2 by 4 and mark across the 4 inch surface of them. This gives angle and length to cut the corner posts.

Before removing these 2 by 4's from the place where they lay for marking, note if they are the same width as the sills. If so remove them and lay another 2 by 4 across the sills in the same position as the straight edge was to mark them. Then mark across this 2 by 4 parallel with and flush with the inside of the sills. This gives the angle and length to cut the end rafters.

The posts are set 4 inches side to the end and rafter toe-nailed between them. The other end is done the same way. Then cut two 2 by 4's each 15 feet 8 inches long. These are toe-nailed to the corner posts and form the front and back plates. Then cut a stud the proper length to reach between the back sill and plate. Place this in position, 7 feet from the outer edge of the east end to its west face; place a stud midway between this and the east end. This should be placed thin way into the house so as to be less in the way when the droppings board is put in later on. This leaves a 9 foot space, which should have 2 studs, dividing it into 3 equal spaces.

Then place a stud on the south side the same distance (7 feet) from the east end. Put a rafter between plates at this point and a 2 by 4 across between the sills. Run a 2 by 4 on edge lengthways of the middle of the roof between rafters and toe-nail it to the rafters.

The partition is boarded on the scratching shed inside of the studding, leaving the house proper 7 feet in the clear.

Now place a stud on the south side 6 inches from east end and another just 24 inches west of it. Then put in a 2 by 4 10 inches up from the sill across between these, and another 2 by 4 12 inches down from the top. This makes the door frame.

Between door and scratching shed and a proper distance apart to admit a sash of 6 lights, 8 by 12 inches place 2 studs, one each side of the window. So place them as to bring the sash in the middle of this space. Then place a 2 by 4 between these for the window sill 2 feet from sill, and another one over the top of the sash. This makes the window frame.

Next place a stud 6 inches west of partition and another 6 inches east from west end of the house. Place a 2 by 4 between them running parallel with and 10 inches above the sill; another running parallel with this 12 inches down from the roof. It is now ready for boarding.

Barn boards are used, or if in a locality where $\frac{5}{8}$ inch box boards can be had they may be used at much less cost and with good results. If barn boards are used use 16 foot lengths on the back and run them lengthways. On the roof, ends, front and partition run them up and down.

Around the window and door let the boarding project



63--POULTRY HOUSE FOR SOUTHERN BREEDERS--OPEN

about $\frac{3}{4}$ inch over the openings. This will make sufficient casing for them. The door may be made of barn boards and hinged on the right hand side to swing in. An old-fashioned thumb latch is used on it.

Wire netting is tacked over the front of window. The window is opened and held in place by means of a leather strap with several holes in it attached to the center of the top of the frame, and hooking over a pin in the center of the inside of the top of the sash. Ventilation may be regulated by lowering the window more or less.

In the front of the scratching shed and 2 feet from the east side of the opening place a 2 by 4 upright. Over the space west of this tack wire netting. This 2 foot opening is closed by a screen door made of $\frac{7}{8}$ by 2 inch stuff hinged at the left side to swing out, and is fastened with an iron button.

Make a frame of $\frac{7}{8}$ by 2 inch stuff large enough to lap against the inside of the frame work around the entire opening of the shed. This is covered with heavy unbleached cotton cloth. After this is tacked in place on the outside of the frame it is given a thorough coat of linseed oil. This makes it durable and waterproof.

The frame is then hinged to the inside of the top of the opening, and is opened and shut by means of a cord attached to the center of the button of the curtain frame. From here it runs through a pulley in the back plate, then through a hole in the front of shed over the center of the frame. In the outer end of this rope a loop is made. This is drawn along the front of the building a sufficient distance to raise the curtain and is then hooked over a pin to hold the curtain up. A hook and screw-eye in the center and outside of the frame is an economical way of fastening down the curtain during cold nights and stormy weather.

An opening to let birds from the house to the shed is made 8 inches above the sill, 8 inches wide and 10 inches in height. This is closed by means of a slide, which pushes sideways instead of sliding up and down, as it will stay where it is put without fastening. The birds are admitted to the yard through a similar opening in the west end of the shed.

A droppings board 27 inches wide is placed along the north side of the house 2 feet from the sill. It is placed on cleats and is not attached in any way to the house, making it easy to clean the house and destroy the vermin. Two

can be taken out at any time and carried out of doors.

During the hot summer months a perch is placed in the shed and birds are shut from the house for a night or two to get them in the habit of roosting there. This is much more comfortable and healthful for the birds.

The outside of the house is covered with a prepared roofing.

The ends and sides of the house are covered and then a 4-inch frieze is nailed all the way around over the top of the paper. Then the roof is covered and a 4-inch ridge-board nailed on top along the front edge. On the ends and back the paper laps over the edge about 1 inch and is nailed down with tin buttons. The house is filled with about 4 inches of stone to admit of perfect drainage. Then 4 inches of gravel dirt, or some convenient material, with a 4-inch layer of coarse sand or fine gravel on top. This allows any water which may be spilled on it to pass off quickly and also supplies the fowls with plenty of grit. Two 4-inch boards 3 feet long are nailed together at right angles and are then nailed to the sills in the southwest corner of the house, making a frame 3 feet square. This is filled with fine dusting material for dust baths. The building being raised up well from the ground can be banked so as to throw all water away from it.

A board 6 inches square is nailed to the top of the sill in the east end of the house. A 2-quart galvanized iron drinking fountain is placed on this board. Here also, on the sills, is placed a box 4 inches deep and 4 inches wide. This is kept filled with gravel and grit if needed.

A feed trough is made out of $\frac{7}{8}$ by 6 inch lumber 4 feet long. Across each end on the under side a piece of 2 by 3 is nailed. Along the side a lath is nailed, coming flush with the bottom and extended above the board about $\frac{1}{2}$ inch. The ends are nailed on and are $6\frac{1}{2}$ inches from the bottom up as high as the lath. From here they taper to $1\frac{1}{2}$ inches wide 5 inches above the board. From end to end on top a strip 7 by $1\frac{1}{2}$ inches is nailed, which keeps the birds off the trough and is convenient in handling.

In the center of the space in front of droppings board a string with a slip-knot is suspended. It is of sufficient length so that when a cabbage is hung in it by the roots the birds cannot reach the head without jumping for it.

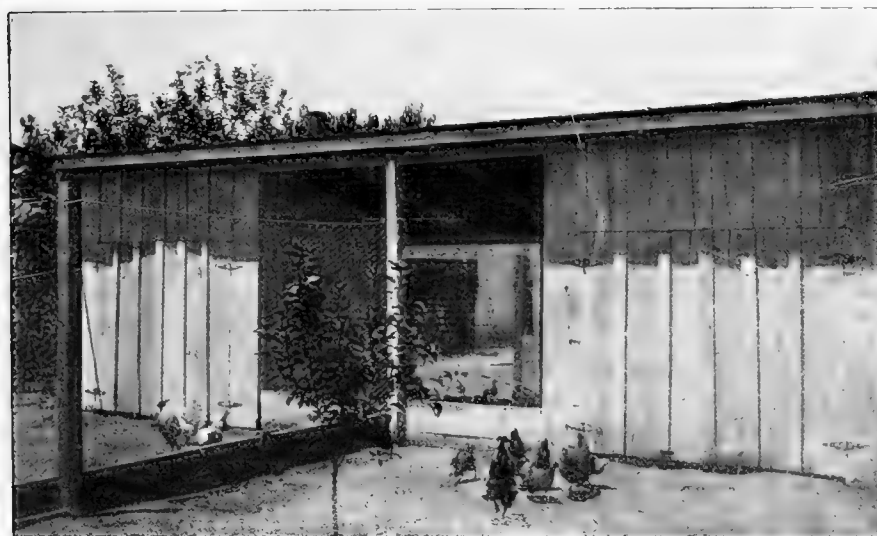
Litter is placed in the shed to a depth of from 6 to 8 inches and all the cracked grain is fed in this. Various materials may be used in here, as cheap hay, etc. One of the best is oak leaves.

The yards run to the rear of the house, the front end coming flush with the front of the house.

A house of this description gives the birds plenty of fresh air and lots of exercise, and the owner a large number of fertile eggs that will hatch strong, healthy chicks. It will accommodate 15 females and one male. It is desirable to shift males every other day or so.

Material Needed

350 square feet lumber.
45 feet $\frac{7}{8}$ by 2 inch.
166 feet 2 by 4.



64—POULTRY HOUSE FOR SOUTHERN BREEDERS—CLOSED

planed 2 by 3's, laid flat, with the upper corners rounded, are used for perches and are 6 inches above the droppings board, 2 in each house, placed on oil cup brackets.

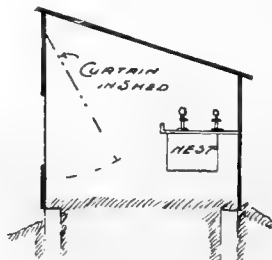
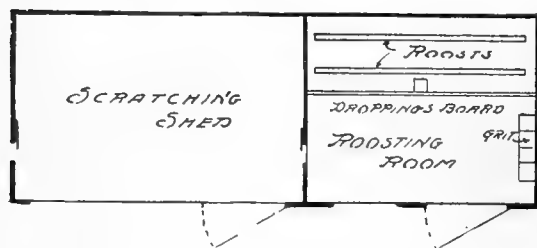
Along the front edge of the droppings board a $\frac{7}{8}$ by 2 inch strip is nailed. In the center of the front of board a hole 5 inches square is cut to place pail under for convenience in cleaning.

Under this board are placed two drawers; one at each end. Each drawer contains two nests, each 15 inches square and 18 inches high. All but 4 inches along the bottom of the back is open to admit the hen. The top is all open for convenience of the attendant. The ends run back a foot beyond the 15 inches to support it when the drawer is pulled out. This gives the hens a dark place to lay in, off the floor, and a convenient place from which to collect the eggs. These drawers are in no way attached to the droppings board and

44 feet 4 by 4.
 1 iron button.
 3 pairs 5-inch T-hinges.
 15 feet strong cord.
 1 pulley.
 4 china eggs.
 2 cupboard door catches.
 1 door latch.
 20 pounds 8d cut nails.
 1 sash, 6 lights, 8 by 12 inch.
 6 feet of 5-foot poultry netting.
 2½ feet of 30-inch poultry netting.
 4 feet of 24-inch poultry netting.
 4 perch brackets.
 1 drinking fountain.
 250 sq. feet of Asphalt Ready Roofing,
 sand surface, or 350 square feet of Rubber-
 oid Roofing Paper, ½ ply.

Architect's Comment

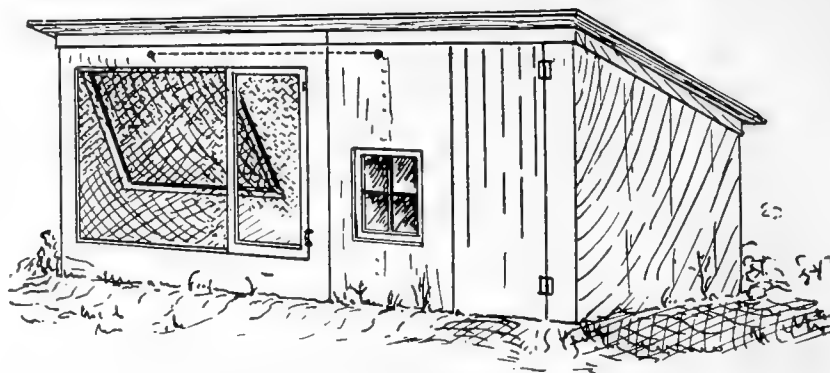
For poultry keepers on a small scale this house is hard to beat. The plan is very simple and economical, and the house may be used as a colony house. There is nothing superfluous to incur uncalled for expense, still it is very substantially and conveniently constructed, with sufficient room for the number of fowls stated.



65--PLAN OF SCRATCHING SHED COLONY HOUSE, DESIGNED BY J. M. STOCKING

The foundation posts are deep enough to be below frost line and far enough above ground to insure a dry building for fowls. An especially good and inexpensive feature is the floor, which is made of coarse stone; above that gravel and then sand above the gravel. This will keep the floor dry.

The floor is not encumbered either in the roosting room or scratching shed, as all fixtures, etc., are raised. The walls are boarded and tar papered on the outside. This would be better if papered inside also. We would not advise using ¾



66--SCRATCHING SHED COLONY HOUSE, DESIGNED BY JAMES M. STOCKING

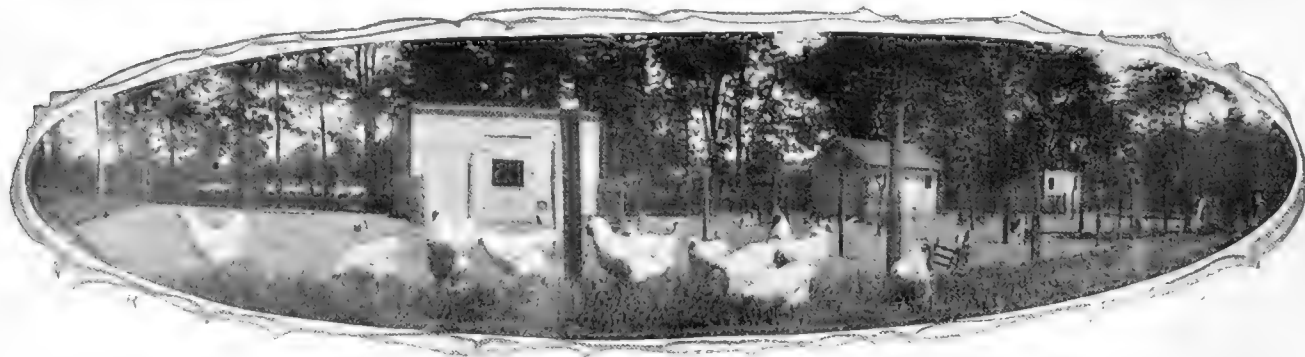
inch boards for the wall, for they will certainly warp and crack in a short time, and the difference in price would not warrant using them. All boards outside should be nailed on up and down; they will last much longer, since water does not remain between joints of boards as they would if put on crossways.

A window sliding sideways would be preferable to one hinged on top, for it could be opened and closed from either out or inside, and there would be no danger of breaking glass, which might occur with the sash fastened as shown.

Windows in scratching shed are not absolutely necessary. Their absence would diminish cost of construction. The sash is used only in very cold weather and therefore unnecessary most of the time. The question whether increased egg production will offset the additional cost of sash must be decided by practical test.

All fixtures, such as droppings board, roosts, water and feed troughs, grit boxes, etc., are removable in this house. There is no need of a hole in the droppings board; it would be the cause of soiling the floor underneath. If the small piece of strip in front of board were omitted, it would be as well for cleaning. This would also allow a nest drawer to be made in one in place of two sections, thereby saving time.

A good feature is suggested, namely, that the fowls are to roost in scratching shed during summer weather. This is more to their liking and conducive to their health.



Roosting Room and Scratching Shed

Full Description of a Well-Built Poultry House, and Manner of Building It—Bill of Lumber and Other Material Used in Its Construction

Otto O. Wild

THIS HOUSE fronts south. Owing to the way peach trees are set the west end stands at an angle N. E. S. W. This makes the front measure 18 feet. By frontage an advantage is gained in securing the last rays of winter's evening sun.

As no one would build thus under other conditions, we will assume the dimensions are as follows: Ten feet wide and 14 feet long. The roosting room is floored with white pine flooring and the partition is made of the same material, lined with tarred paper and located 7 feet from the east end, making a room 7 by 10 feet. Front of building is 6 feet 6 inches in height under eaves; the back 4 feet 6 inches under eaves. All framing material is of 2 by 4 scantling and all siding, flooring and the door in partition is white pine flooring 6 inches wide, tongued and grooved. Inside walls are lined with tarred paper put on to studding before siding up, and later tacked at lap to inside of siding. The droppings board is placed back of the roosting room. It is 2 feet 6 inches wide by 6 feet 10 inches long, 20 inches above the floor.

Sliding nests (made like drawers) are underneath. Front of nest faces window and is partially covered with a hood. The nest is a box 12 by 12 by 18 inches without a top. It is suspended from the droppings board by a 1 by 4 inch strip placed edgewise. Space them 14 inches apart and nail a cleat 1 by 2 inches to the underside of each. This leaves a projection on each side of strip. Now nail a 1 by 1 inch square to nest box on each side at upper edge and you have a drawer to slide into the grooves on droppings board. Nail a 1 by 6 inch strip to cleats above box to shut out light and at the same time form a guard for droppings above. In front end of box I cut a round hole 8 inches in diameter for the hen to enter and cover top of same with a hood.

The nest as arranged is 4 inches from the floor at bottom. The hood shuts out the view of interior. If any old timer tries egg eating, turn the boxes end for end and let them enter from behind. Drinking, grit and mash troughs are made of galvanized iron guttering, the ends closed by a tinner, and are hung by the hangers that are sold with them. The grit trough is placed in the roosting room and the mash and water troughs on side and back walls of scratching shed. They are hung on nails (heads taken off) and can be readily removed to clean, thaw out or hang up out of reach.

Roosts are 2 by 4 scantling, having edges rounded, and placed on 2 by 6 rests above droppings board, not nailed, and easily removed. There is a door at south end of partition between roosting room and scratching shed 2 feet 4 inches wide and 5 feet 8 inches high, hinged towards center of building. It is furnished with latch, hasp and lock. A small side door is located just back of the larger one, but out of the way, when the large door is open.

The roosting room has two windows, one of double sash 8 lights 10 by 14 glass in front, put in just as in any house except that the studding answers for side of frame.

The east end of the building has a single 4 light sash of same sized glass, hinged at side and hooked to corner studding on the inside. This window catches the early sun and can be open for ventilation. The front of scratching shed is closed with heavy cotton cloth tacked on frames, one of which is hinged to an upright scantling and can be more readily opened and closed in going in and out. The sheathing of roof is laid close together, covered with tarred paper and then shingled.

Lumber Specifications

Sills are made of 2 by 4 scantling spiked together and laid down edgewise. Joists are broken at corners.

2 pieces 2x4x9 feet 8 inches, 2 pieces 2x4x9 feet 10 inches, 2 pieces 2x4x13 feet 8 inches, 2 pieces 2x4x13 feet 10 inches, outside sills.

2 pieces 2x4x9 feet 4 inches, partition sills.

3 pieces 2x4x9 feet 4 inches, roosting room joists.

Spike partition sill and joists in from inner frame of sill and put outside sill on last. Then spike all together.



67—POULTRY HOUSE DESIGNED AND BUILT BY OTTO O. WILD

6 pieces 2x4x6 feet front.

9 pieces 2x4x4 feet back.

3 pieces 2x2x4 feet 6 $\frac{3}{4}$ inches, 3 pieces 2x4x5 feet, 5 $\frac{1}{4}$ inches, 3 pieces 2x4x6 feet 1 $\frac{3}{4}$ inches, 3 pieces 2x4x6 feet 8 $\frac{1}{2}$ inches, ends and partitions.

Set studs on partition ends and back flat and 2 feet apart in clear except at door, which set 2 feet 2 inches. Set front studs edgewise.

Plates

2 pieces 2x4x14 feet.

Rafters

8 pieces 2x4x2 feet 8 $\frac{1}{4}$ inches, short span.

8 pieces 2x4x8 feet $\frac{1}{2}$ inch long span.

Siding (600 feet)

40 pieces 1x6x10 feet, ends and floor roosting room.

17 pieces 1x6x12 feet, 19 pieces 2x6x14 feet, gable front, each side window and to make door back and front of house and droppings board.

6 pieces 2x6x16 feet, partition.

Sheathing (190 feet)

2 pieces 1x12x16 feet

14 pieces 1x8x16 feet.

Let sheathing project 3 inches all around and drop shingles 2 inches below this.

460 square feet tarred paper.

1 3/4 thousand shingles.

2 pieces 1x4x16 feet, caps over shingles at peak of roof.



70—FRONT AND END ELEVATION OF HOUSE DESIGNED BY OTTO O. WILD

Windows

1 8-light double sash 10x14 glass.

1 4-light single sash 10x14 glass.

Door

2 feet 4 inches by 5 feet 8 inches, figures in flooring bill.

8 pieces 1x4x12 feet, easings and facings.

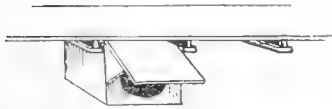
Hinges

1 pair 4 inch straps for partition doors.

2 pair 3 inch strap for east window and cloth door to scratch shed, 1 common door latch, partition door.

1 hasp, 2 staples, 1 padlock.

2 hooks and screw eyes for east window and cloth door for scratch shed.



68—NEST AND DROPPINGS BOARD IN O. O. WILD'S POULTRY HOUSE

Miscellaneous

2 pieces 2 by 4 by 10 inch scantlings for roost and to support droppings board.

2 pieces 2 by 6 by 3 feet, 3 pieces 1 by 4 by 16 feet, to make frames for door and open front of scratching shed.

These frames are 2 feet 4 inches by 5 feet 2 inches and 4 feet 6 inches by 5 feet 2 inches.

2 1/2 yards (double yard width) cotton cloth to cover same.

1 galvanized trough 4 inch guttering 18 inches long, grit.

1 galvanized trough 4 inch guttering 3 feet long, water.

1 galvanized trough 4 inch guttering, 6 feet 8 inches long, mash.

HOUSE FOR TWO FLOCKS

How It Is Constructed — The Bill of Material Required

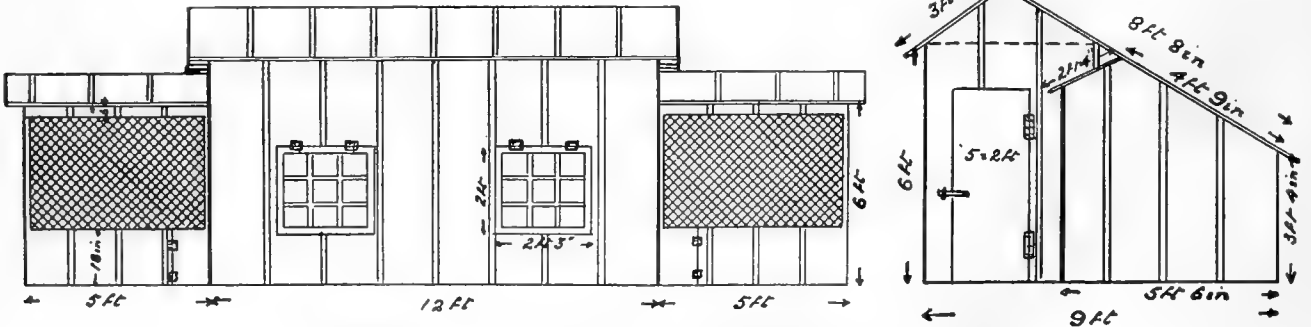
R. Crusins

THE general appearance of my poultry house is well illustrated by the accompanying cuts. The main building is 9 by 12 feet, 6 feet high in front and 3 feet 4 inches high in the back. It is covered with matched hemlock boards, which are not planed. The roof is covered with 3 ply tar paper and the sides with 1 ply tar paper, battened with lath. Two windows, hinged at the top to swing outward, furnish sufficient light. The window spaces are covered with wire netting on the inside to prevent the fowl, escaping when the windows are open.

This house may be divided crosswise in the middle, making 2 pens. There is a door at each end near the fronts 5 feet high and 2 feet wide, through which the house is entered.

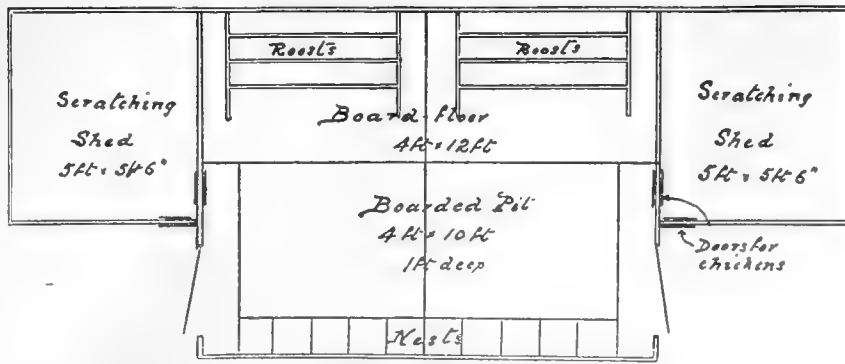
The roosts are hinged to the back wall of the house, 3 feet from the floor, and may be turned up and hooked to the rafters to be out of the way when the house is cleaned. Under these roosts is a board floor, 4 feet wide, which serves as both floor and roost platform. In front of this floor is a boarded pit, 4 by 10 feet, one foot deep. In this pit are placed the straw and leaves in which the hard grain is fed. The nests are placed in front of this pit close to the front wall of the house, under the windows.

On each end of this house is a scratching shed 5 by 5 feet 6 inches, 5 feet high in front and 3 feet 4 inches high at the back. Excepting a space 18 inches high at the bottom, the fronts of these sheds are made of wire netting.



69—FRONT AND END VIEW OF HOUSE DESCRIBED BY R. CRUSINS

Over the pit in the main building is a loft, floored by placing narrow boards upon 2 by 4s nailed to the rafters, with sufficient spaces between the boards to allow the air to circulate freely between them. On these boards is placed a thick bed of hay or straw to absorb any moisture that may be in the house.



71—PLAN OF HOUSE DESCRIBED BY R. CRUSINS

sheds are not lined. The bill of material required to build this house is as follows:
 230 feet 2 by 4 scantling.
 2 sash, 2 feet by 2 feet 3 inches.
 2 rolls 3 ply tar paper.
 2 rolls 1 ply tar paper.
 2 bunches lath.
 600 feet matched hemlock boards

This house is not expensive, nor difficult to construct, and it has given me excellent satisfaction ever since I built it.

HOUSE AND SCRATCHING SHED

Single Walls Covered with Building Paper Make a Comfortable Poultry House in Indiana

Elwain H. Kidd

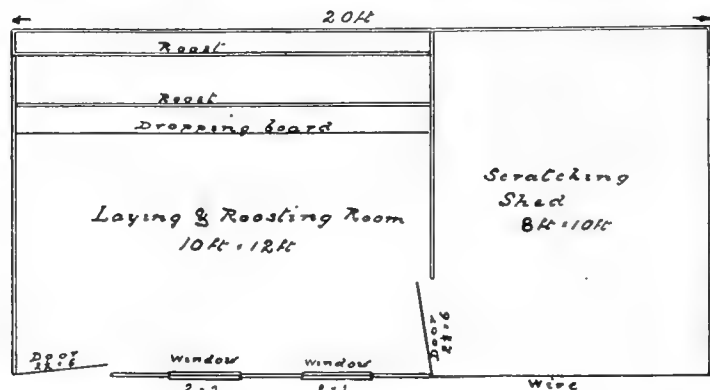
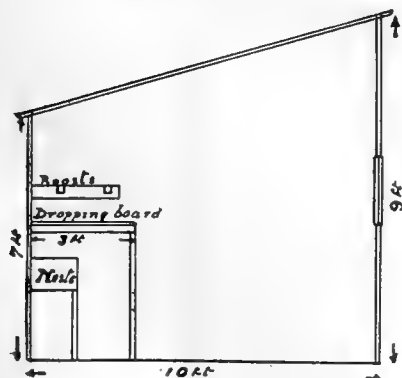
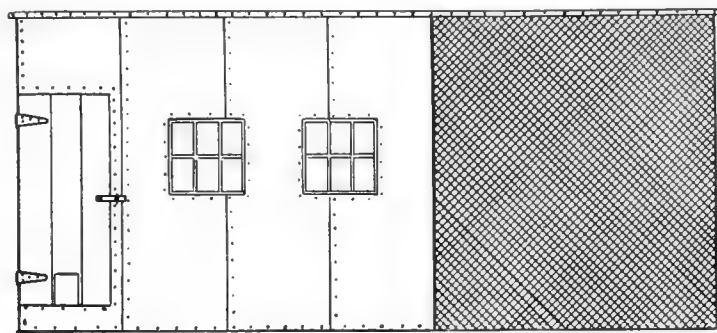
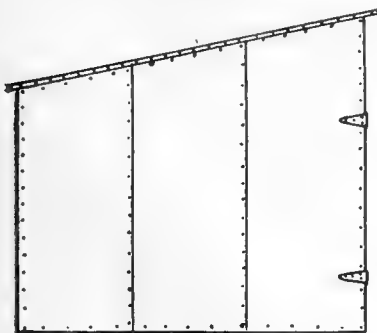
I WILL send you a plan of a single pen house which will afford ample room for 30 hens. It is built on the scratching shed plan having the shed at one end. It contains a laying room 10 by 12 feet and scratching shed 10 by 8 feet. The height in front is 9 feet, in rear it is 7 feet.

The following is the lumber required to construct it:
 60 feet of 2 by 6 scantling.
 300 feet of 2 by 4 scantling.

100 feet of 2 by 2.
 900 feet of 1 inch pine siding (matched) or shiplap.
 485 square feet of roofing, not covering shed, or 635 square feet if the shed is covered.
 75 square feet of wire netting.
 2 glazed sashes 2 by 2.
 3 pairs of large hinges and clasps.

Description of House

This house is built of inch matched lumber or shiplap covered with P. & B. rubberoid or some other good paper and set on bricks or stone piers. The roof is also made of matched boards and rubberoid. Unless desired, the scratching shed part need not be covered with roofing. This house is plenty warm enough for this section of the country, although if built in a colder climate it might be necessary to



72—POULTRY HOUSE AND SCRATCHING SHED, DESIGNED BY ELWAIN H. KIDD

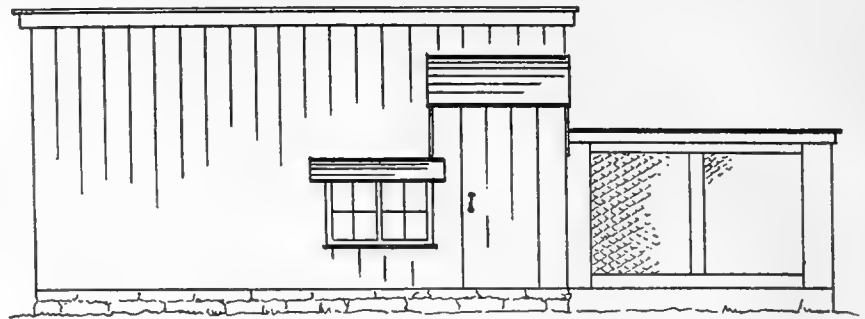
have double walls. If this plan is found too expensive, the cost of construction could be cheapened by using rough lumber. In the laying room there is a floor of matched boards raised 1 foot above the ground. In the scratching shed there is no floor, but 6 or 8 inches of gravel should be put in to insure against dampness. The windows are 2 feet by 2 feet, 6 panes of glass each, and placed four feet from the ground on the south side (the house should face the south). The roost platform is placed 3 feet and 3 inches or 4 feet from the floor and is movable, sliding out when you wish to give it a thorough cleaning. It accommodates 2 roosts which are 10 or 12 inches above the platform. Nests are underneath and raised at least 2 feet from the floor. They should be 12 inches wide, 16 inches long and 10 inches deep, this size being very convenient.

For drinking vessels I use a 2 quart fountain.

For feed troughs make a V-shaped trough 3 feet long with a strap or hook or something to hang to the wall when not in use, having the sides in the shape of a triangle, extending 4 to 6 inches above the top of the trough. Between the tops of the two sides nail a strip, which prevents the birds soiling the food.

There is no reason why hens kept in it should not lay all winter if properly cared for. There is never any dampness in this house and it is good and warm. In summer the scratching shed may be used as a roosting room.

Wire should be placed over the windows to prevent fowls flying out, and wire doors in summer are a great comfort to the fowls. A small door may be cut in the large one for the hen to enter. A canvas curtain must be provided to let down in front of the

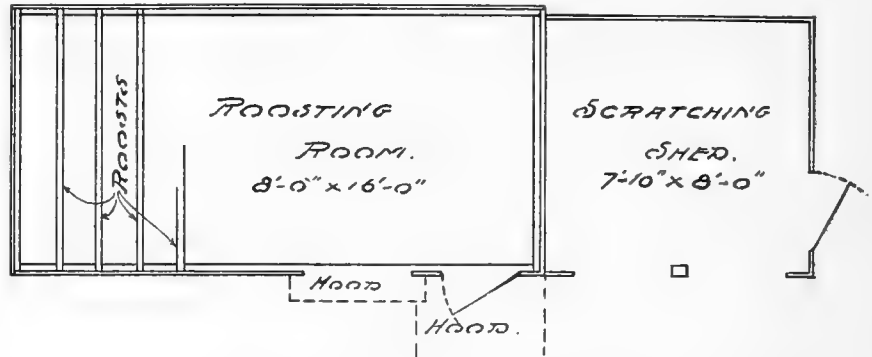


73—FRONT VIEW—MR. SKINNER'S POULTRY HOUSE

scratching shed during severe or stormy weather. A burlap curtain may be arranged to let down from the roof during very cold weather. It will keep the poultry much warmer.

Nests, roosts, etc., should be made so that they may be easily removed and cleaned.

Hens kept in this house will always be healthy and lay an abundance of eggs from which a large percentage of healthy, vigorous chicks, will hatch. Try this plan, and you will find it a good one.



74—PLAN, SHOWING LOCATION OF ROOSTS, ETC.—MR. SKINNER'S POULTRY HOUSE

HOUSE FOR ONE FLOCK

A Poultry House with Scratching Shed Attached to Accommodate One Pen

O. E. Skinner

THOSE about to build for the first time, or those intending to increase the capacity of their plants, will find this plan as practical as can be found, especially when cost of construction is considered.

It is best to lay a stone wall for the foundation, building it at least 12 inches higher than the surface of the ground, so that when it is filled in with earth, or sand, the top will be thoroughly dry.

The house is 8 by 16 feet on the ground. It is framed with scantling and covered with shiplap or tongued and grooved barn boards. The boards for the north side are cut 3 feet 6 inches long, and for the south or front wall of the house, 8 feet long.

The door is in the south side near the southeast corner and is 5 feet 6 inches high. The window has two sashes, each containing four lights of 8 by 10 inch glass.

Stringers of 2 by 4 scantling extend clear around the house inside the boarding, except across the space occupied by the door. These stringers are 16 inches above the tops of the sills. The window slides upon a slanting window sill nailed to the top of stringer, near the door. At the top of the window is another stringer, extending across the front of the house inside, which serves the double purpose of strengthening the wall and providing a runway for the window, which slides to one side when opened.

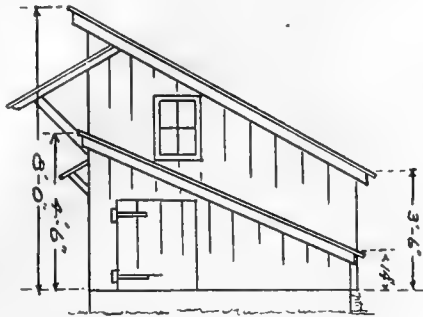
The roosts rest upon these stringers and extend across the house near the west end. They are not attached to the stringers, and can be easily removed when the house is to be cleaned.

A slanting board is nailed over the window, as shown in the illustration, and another over the door to form a hood to keep rain from driving in over the top of the door and through the joints of the window.

I use a heavy screen door in place of the solid one during the hot weather. This screen door has vertical bars placed so near together that a man cannot get through. The cleats on this door extend a little over at one side to fit into the place made by opening the solid door. This screen door can be locked the same as the solid one, if it has a hasp opposite to the staple to which the solid door locks when closed.

When cutting rafters for the roof allow for a 4 or 5 inch projection over the plate at the front of the house and about 7 inches at the back. When nailing on the lumber which covers the roof let it project over each end of the building about 5 inches; then when the facing strip is put on and the shingles project $\frac{3}{4}$ of an inch over that, it makes a projection of $6\frac{1}{2}$ or 7 inches, which is sufficient. I covered the roof with 16 inch shingles, laid 5 inches to the weather, doubling the lower course.

After finishing the house proper, I built a scratching shed at the east end, nearly the full width of the house and 8 feet long. For building this shed I used the same material as for building the house. The boards for the north side are 14 inches long. Cut one for the west side and one for the east side of the front 4 feet 6 inches long.



75—EAST END VIEW—MR. SKINNER'S POULTRY HOUSE

A door for the fowls to pass between the house and shed is made by cutting off one strip of the boarding on the east end of the house one foot from the sill. This opening has a slide to cover it. It is well to make a door in the east end of the shed large enough for a person to go through when necessary. The front is covered with poultry netting. After building the shed, I cut a space for a window in the east end of the house, above the roof of the shed, to let in the sun in the morning.

To build this house will require about the following bill: 2,000 shingles; thirteen pieces 2 by 4 16 feet long; seven pieces 2 by 4 20 feet long; 325 feet shiplap, or barn boards, 16 feet long; 66 feet shiplap or barn boards 14 feet long; three sashes of four 8 by 10 lights each; three pieces 1 by 4 14 feet long, planed on one side; 2,000 feet of sheathing 6 inches wide, $\frac{2}{3}$ of which should be 12 feet long and $\frac{1}{3}$ 16 feet long; one pair of 4 inch strap hinges; one pair of 6 inch strap hinges; ten pounds 8 penny nails; ten pounds 4 penny shingle nails; four yards 22 inch window screen, to go inside windows and on screen door; 8 feet of 4 foot poultry netting on front of shed, 6 feet 2-foot poultry netting to use on screen door over the fine screen, to keep out dogs and other animals.

There is a 2 inch space over the plate under the rafters. I fill this space with paper or sacks in the winter, but remove this material in the summer to secure better ventilation. I also line the house inside with tarred paper.

A SCRATCHING SHED HOUSE

A Poultry House, with Scratching Shed and Walk, that Can be Extended to any Length

H. S. Nicholson

I AM glad to present to the readers a description and plans of a poultry house which I designed for my own use that has given me good satisfaction. It is 18 feet long by 11 feet wide, and can be built to any convenient height. It has a walk 3 feet wide, extending the entire length of the house next the north wall with a door opening outward at each end. A roosting room 7 by 8 feet occupies the east end of the house in front of the walk, leaving a space 11 by 8 feet for a scratching shed. The shed has a wire front with a curtain to keep out the storm and a door near the west end opening into the yard, which extends in front of the house. One window on the south side of the roosting room admits sunlight and air to dry out any moisture that accumulates from the breath of the fowls. A four-light window in the north wall lights the walk. A door near the west end of the longitudinal partition opening into the walk, admits the attendant to the scratching shed, from which he enters the roosting room through the door in the solid partition shown in the accompanying illustration.

The roost platform is 3 feet wide and two roosts are placed above it.

The partition between the walk and the scratching shed is made of wire netting, except the lower part of the door

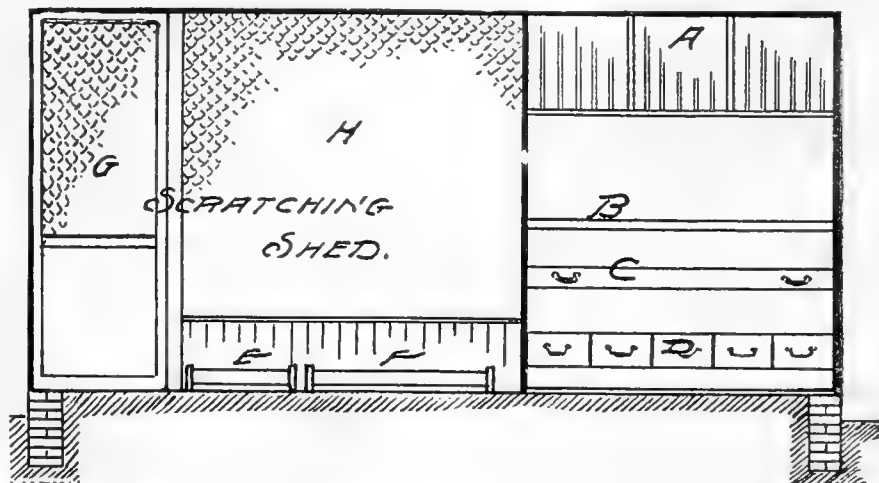
and a base board 18 inches high. The bottom of this base board is cut away to admit water and food troughs (E and F. See longitudinal section), which are filled and pushed through from the walk. The food troughs may be drawn back into the walk after the fowls have eaten.

Over the roost are three pens (A), for cooping broody hens, which are not to be used as sitters.

The roost platform (C) slides upon cleats and can be pulled back into the walk to be cleaned. Under the platform, raised a little above the floor, are the nests, each built separate from the others and capable of being pulled back into the walk to remove the eggs.

The partition between the walk and roosting room is made tight to keep out drafts and cold from the roosting apartments.

The house may be set upon a brick foundation, extend-



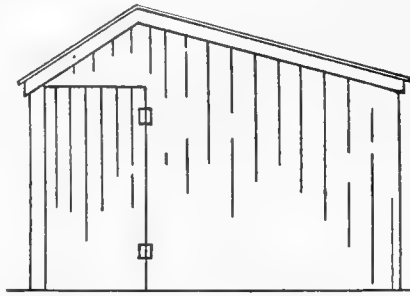
76—LONGITUDINAL SECTION SHOWING THE POSITION OF FIXTURES IN PARTITION IN FRONT OF WALLS—H. S. NICHOLSON'S POULTRY HOUSE

ing to below the frost line and standing 6 inches above the surface of the ground. The floor is cheapest and best when made of earth filled in level with the top of the bricks.

The studding is of 2 by 4 stuff and the structure is covered with tongued and grooved boards.

The roof may be covered with some of the water proof papers made for the purpose, or with shingles. If the fabric is also placed on the walls it will protect the boarding and make the building wind proof.

Although this house was intended for my small flock, there is no reason why it should not be extended to any reasonable length, putting roosting rooms and scratching sheds in pairs.



77—END VIEW—H. S. NICHOLSON'S POULTRY HOUSE

SCRATCH SHED AND BROODING HOUSE

A Poultry House Designed for a Small Flock, Built Economically and with Due Regard to the Comfort of the Fowls

Frank L. Harris

THE advantages I claim for my poultry house are Sliding sash, doing away with the old style of open fronts in bad weather, also with drop curtain, which on cold, dark days only make it still darker. In having the sash sliding instead of hinged, you run no risk of the wind blowing them open or shut and so breaking the glass.

A small window in the roosting room faces east and so catches the first rays of the sun in the morning, which is what we want; also being in the east it does not heat up your roosting room so as to cause too great a difference in day and night temperature.

The roosting room being plastered, there are no drafts and one can keep it cleaner. It is easy to keep lice down with your roosts in oil cups. Having a 4 inch dead air space keeps the roosting room much drier and is about as cheap in the long run.

The ventilator being within 6 inches of the floor and extending 3 feet above the roof, draws all the foul air off; also any dampness would pass through it. I use the ventilator bottom as grit box, having a flange on it turned up at the edge. This house makes an ideal brooder house in the winter, as well. Once used it finds a friend for a long time, as it is ideal for early hatched chicks.

I have tried many poultry buildings, but so far have found that this one is the best for broods. As for the layers, I get eggs in any kind of weather.

While it costs more than it would if the roosting room walls were single, I am well paid for it in healthy poultry and numerous eggs.

Architect's Comment

The chief points of merit in this house are its economical construction and the thought displayed in its arrangement. The east window small; admitting enough light and little cold; the double boarded roosting room; the sliding glass front to scratching shed wired inside; the entrance through the scratching shed to the roosting room insuring the admittance of no direct draught or cold air; it seems an ideal house for the small poultry keeper. Probably the scratching shed might be enlarged and the roosts increased in number and the house so made to accommodate more fowls. The small poultry keeper will be able to get second-hand sash suited for the front of the scratching shed, while on a large plant the cost of sash would be an obstacle.

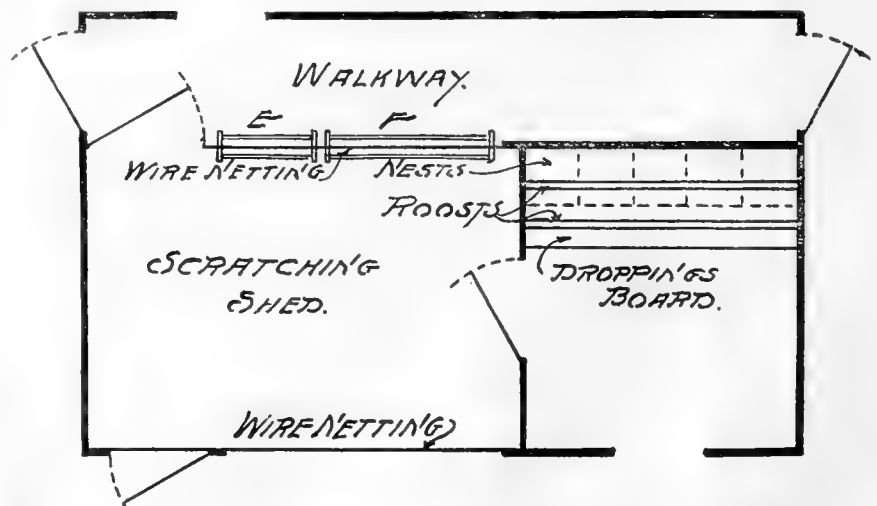
A very well built house, arranged conveniently for attendant and fowl. No space wasted, except that occupied by the ventilator. It is well built, the walls being double; plastered inside of roosting room and weather-boarded outside. This insures a perfectly tight room for fowls at night. The single board walls in scratching shed are good enough for this purpose, since fowls only occupy it in daytime. The sliding sashes in scratching shed are very desirable for ease in controlling amount of air to be admitted. They ought to be removable, however, so as to allow them to be taken out entirely in summer. The entrance being on the west side of shed, leaves the entire south front for light and ventilation. The ventilator is unnecessary, since ample air can be obtained by means of door and windows. It also encumbers the floor and is in the way of fowls.

A TENNESSEE POULTRY HOUSE

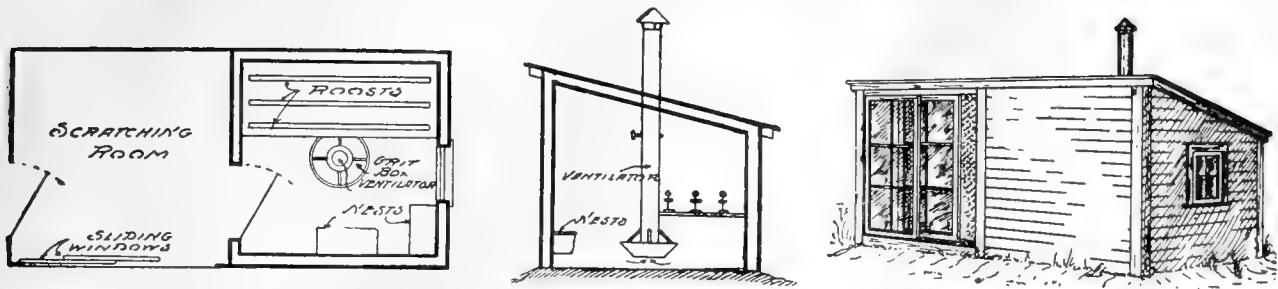
An Adaptation of the Scratching Shed Plan—Recommended for Use in Southern Climates

C. F. Green

HAVE an up-to-date poultry house, which I designed myself. It may be built of tongued and grooved stuff, or of rough lumber, as preferred. It has floor space on the ground 10 by 10 feet in size and is 6 feet high in front and 6 feet at the back. It slopes to the front



78—PLAN SHOWING LOCATION OF DOORS AND INTERIOR FIXTURES—H. S. NICHOLSON'S POULTRY HOUSE



79—PLAN, SECTION AND PERSPECTIVE OF MR. HARRIS' SCRATCH SHED POULTRY AND BROODING HOUSE

and is a modification of the open front scratching shed plan. The front should be inclosed with wire netting and in cold weather covered by curtains. The floor of the roosting and laying room is built 3 feet above the floor proper and the apartment occupies 6 feet next the back wall, leaving a space 4 feet wide in front. The roost platform is 3 feet from floor of the roosting room, is 3 feet wide and extends the length of the building. The roosts are of scantling 2 inches square. There is an inclined platform, which can be removed when the house is to be cleaned, running from the roost platform to a box, which is built on top of the nest box. This box is to catch the droppings as they are swept forward, and extends from one end of the house to the other.

From the center of this box a good sized pipe extends down through the nest box and floor into the scratching shed, where a bucket is placed under it.

The entire front of the roosting and laying room is hinged at the top and has a rope attached at the bottom. This rope passes over a pulley and its other end is attached to a weight

to balance the weight of the front and assist in raising and lowering it. When you wish to clean the roost platform, or the floor of the roosting room, you simply raise the entire front and sweep all material from the platform down the incline into the box, from which it is swept into the pipe and falls into the bucket.

The nest box is 1 foot shorter at each end than the box above it, so that the birds can go under the roost platform and enter the nests from the rear. The nest box may be opened at the front and the eggs gathered by reaching through the hinged panels and window shown in the cut.

The fowls reach the roosting room by ladders at both ends of the house. In the drawing the house is shown with the end boards knocked off to show the interior arrangement. By this plan we secure a floor space 10 by 10 feet in size for the fowls to work in.

This plan has given us excellent satisfaction and we believe it is particularly adapted for use in this climate.

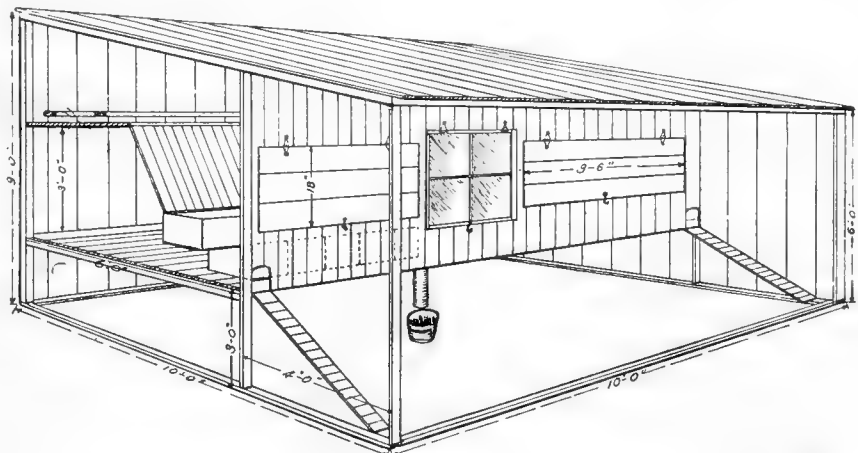
HOUSE FOR A VILLAGE FLOCK

A Warmly Built House with Glass Front Scratching Shed—Method of Ventilating and Bill of Material Required

F. Clark

THIS poultry house should face the south so as to get all the sun possible. A house for as many fowls as the average person wants to keep may be 10 feet by 8 feet for the roosting coop and 10 feet by 12 feet for the scratching shed. This will accommodate 30 Leg-horns. A house for a cold climate like we have in Chicago should be double boarded. The 2 by 4 studding should be put up and good building paper tacked on both sides of it. Then 1 inch pine flooring 5 or 6 inches wide should be nailed on the inside of the studding in the roosting coop and on both sides of the studding between the scratching shed and the roosting coop. One inch drop siding 8 inches wide should be nailed on the outside of the studding of the roosting coop and scratching shed. The roof of the roosting room should also be double boarded with building paper on both sides of the 2 by 4 rafters to prevent cold from striking through and

to keep the heat in the house. The roof may be built as a separate structure and put on when the other part of the house is finished; in fact, if the house will have to be moved, as it sometimes will when the owner does not own the land, it may be built in sections to be held together by hooks. The scratching shed, which joins the east side of the roosting coop, should be made 2 inches lower so its roof will fit underneath the roof of the coop, which overlaps it 4 inches. The scratching shed must fit tight up to the coop. The front of the scratching shed should be boarded to the height of 1 foot from the bottom to keep the straw from being scratched out. The door is 3 feet wide and reaches from the foot sill to



80—PLAN. SHOWING EXTERIOR AND INTERIOR OF A TENNESSEE HOUSE BY C. F. GREEN

POULTRY HOUSES AND FIXTURES

the roof. This leaves a space in the front of the scratching shed 5 feet 10 inches by 9 feet, which in this climate, for Leghorns, should be filled with sash, although if a curtained scratching shed is preferred a muslin curtain could easily be substituted for the sash. With the glass, on stormy days it is light and comfortable and on the coldest days when the sun is shining the door can be left open (there is a wire door to keep the fowls in) and the entire building will be well ventilated. The doors between the scratching shed and the roosting coop are left open all the time except at night, as well as the window in the roosting room. These should be about 3 feet by 4 feet and hinged at the bottom, to be opened by means of a transom lifter fastened near the top. You can then open the window as much or as little as desired at the top, regulating it by the transom lifter. I prefer to ventilate it from the top, as this allows the draft to pass over the fowls that are on the floor, and the moisture which accumulates near the roof will escape.

There are two doors between the scratching shed and roosting room. The doors are 2 feet 6 inches wide and will close back close to the wall and be out of the way. The two doors when closed make the room double boarded, with a 4 inch air space over all.

The roof of the scratching shed may be made one board thick. Both roofs should be covered with two or three ply tarred felt and given a coat of pitch, which will make them last for years. The building should be set on stones or posts 6 or 8 inches from the ground; then a board should be nailed all around on the inside and the house filled to the sills with sand. This answers three purposes—it keeps the coop dry, prevents the bottom edges of the coop from rotting and gives the fowls the chance for a good dust bath. There is no wood floor in the coop under which rats can live. The sun warms the sand and the fowls enjoy themselves in it.

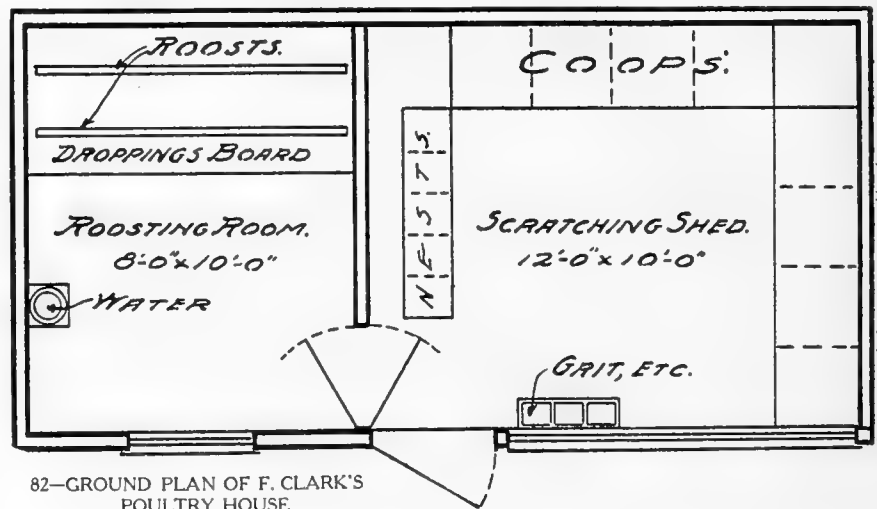
The coop should contain a droppings board placed about 2 feet 4 inches from the ground and hooked to cleats with hooks and eyes to keep it in place or allow it to be easily taken out. It should be about 3 feet 6 inches wide. There should be two roosts made of 2 by 4 stuff, with the corners rounded, about 8 inches above the droppings board, laid on cleats so that they can be taken out when cleaning. There should be a curtain hung from the roof, which can be hooked up or let down in front of the roosts on the coldest nights to keep in the heat. As the fowls roost only about 2 feet from the roof, this heat amounts to a good deal on a cold night.



81—FRONT OF F. CLARK'S POULTRY HOUSE

A bracket may be put on the west wall between the droppings board and the window, about 8 inches from the ground, to hold the water fountain. It is better to put it in the roosting room, as there is less dust there, and it does not get full of litter when the birds are scratching.

The furnishings of the scratching shed consist of a shelf about 2 feet wide and about 2 feet from the ground and running along the west side and back, and along the east side if desired. The shelf on the west side, after allowance is made for the door into the roosting room, will accommodate five nests each 11 by 14 inches, leaving an 8-inch passageway back of the nests for the hens to use when they go to lay. The nests and passageway are covered by boards slanting from the front of the nests to the wall. This darkens the nests and prevents egg eating and also prevents the hens from being disturbed when anyone enters the scratching shed. This cover should be hinged so it can be raised to collect the eggs. The back and east side shelves are to place



coops on in which to keep spare males. A curtain should be hung in front of the coops which can be thrown back on top of them in the daytime and let down at night. The shelves should be laid on cleats. This space will accommodate eight coops each 2 by 2 feet by 2 feet 6 inches high. Everything can be taken out without trouble. No bottom is required in the nests, the shelf acting as a bottom. The only other thing necessary in the scratching shed is a box with three compartments; one for oyster shells, one for grit and one for charcoal. This box is to be placed near the door and 6 inches from the ground. The fowls will scratch the straw on the floor to one side when they want a dust bath, so no dust box is necessary.

The material required for the coop is 800 sq. feet of 5-inch flooring, 150 square feet of it being 8 feet long, 250 square feet 10 feet long and 400 square feet 12 feet long. Also 400 square feet drop siding, 100 square feet 12 feet long, 140 square feet 8 feet long, 160 square feet 10 feet long and 500 feet of 2 by 4's in 8 feet, 10 feet and 12 feet lengths, 200 square feet of two or three ply tarred felt, four gallons of pitch, five pairs of hinges, three pairs of catches and staples, two locks, one for each door, one-half dozen hooks and eyes and some two-penny nails.

Maine Experiment Station Curtain Front House

The Plan of Construction of a Curtain Front House Erected at the Maine Experiment Station—The Fowls were Kept in Perfect Health and Gave Satisfactory Results in Egg Production

A. F. Hunter

WE recently became interested in a poultry house possessing features that have not been generally accepted as practical, and which plan was being tried at the Maine Experiment Station. Later we heard of the unqualified success of the plan. Continued use of this curtained front house with a curtained front roosting room has resulted in some slight changes in the plan, but the central idea remains the same, namely, a house with a considerable section of the south front closed by a curtain only, the birds being shut in a curtained front roosting room at night when the weather was very cold.

We commented upon the house then being tried as follows: "The chief point of this poultry house is that only two cloth curtains are between the birds at night and all outdoors. It's cold weather up in Maine, the mercury oftentimes going away below zero; is it strange that Prof. Gowell shivered when he thought of those fifty Plymouth Rock pullets in that house with only a curtain front and another curtain in front of the roost pen? Another remarkable feature of this house is that the birds were confined within the small roost pen on decidedly cold nights, with only about four cubic feet of air space for each bird. Prof. Gowell told me that when the weather got well below freezing and they began dropping the roost curtain, he hurried into his clothes in the morning, went to the poultry house and opened the end of the curtain to see how many pullets had been smothered in the night. This he did several times before he could feel sure the birds were getting on all right. He reported the air within the closed roosting pen as smelling 'henny' and somewhat close, but there was little evidence of exhaustion

front house with its curtained front roosting room have fallen off but little in their egg yield, and both the house and scratching material on the floor are perfectly dry. There is no white frost on the walls and there will be no dampness when the weather moderates and a thaw comes. There could hardly be a stronger indorsement of fresh, pure air in a poultry house and good ventilation without draughts. If such good results can be obtained in cold Maine they should be attained anywhere in the United States."

The success of this house makes it a most interesting study, and its continued manifestation of good points has led to the building of a long house on the same general plan. This house is fully illustrated and described in a bulletin and we print the description of the house, and give an illustration made from photographs kindly furnished us by Prof. Gowell.

In a personal letter Prof. Gowell writes: "I wish I had delayed writing the bulletin till now, for we have just gotten through the coldest weather ever known in this section, and the cloth front roosting closet house has proved itself equal to the demands made upon it. The 300 pullets were not put into it, from the colony coops that you saw them in out on the range, until December 6th (all the carpenters were taken off to work on the hospital, hence the delay), but by the last of that month they had gotten under way and increased every week regularly in egg production all through January and February, and have laid from 160 to 180 eggs every day this month. They come out of the warm closet every morning with evidence of having had comfortable dreams and they engaged in digging a breakfast out of the



83--EXTERIOR OF BREEDING HOUSE, POULTRY DEPARTMENT, MAINE STATE COLLEGE

of the oxygen, and the splendid condition of the birds throughout the winter, together with their highly satisfactory egg yield, proved that the curtained front house and roost pen are all right."

"A letter received from Prof. Gowell speaks of the continued good work done by that house, and says: 'This is the ninth day of weather all the way from zero to 25 degrees below, still the fifty pullets in the 10 by 25 feet curtained

straw litter in a way that showed that life was worth living—to them. Every head was blood red and there has not been even a snuffle seen or heard in that house!'"

Here is certainly ample proof of the "quality" of the curtained-front, curtained-roosting closet house. If this winter hasn't been severe enough and long enough to try a poultry house we don't know of one that would. And the house has kept perfectly dry, the birds have kept in high



64—INTERIOR OF BREEDING HOUSE IN USE IN THE MAINE STATE COLLEGE

health and increased in egg yield every week, right through it all. Could anything more be desired? We want eggs in winter if we want the best profit from our flocks, and we want the birds to come out of the winter in good health if their eggs are to give us the good strong-bodied chicks that live and grow. If we make the conditions right we will get these things, and the new idea poultry house seems to make the housing conditions just right.

The following is taken from the bulletin referred to:

The Curtain Front House for Hens

"This building was erected in 1903 and is 14 feet wide and 150 feet long. The back wall is 5 feet 6 inches high from floor to top of plate inside, and the front wall is 6 feet 9 inches high. The roof is of unequal span, the ridge being 4 feet in from the front wall. The height of the ridge above the floor is 9 feet. The sills are 4 by 6 inches in size and rest on a rough stone wall laid on the surface of the ground. A central sill gives support to the floor which at times is quite heavily loaded with sand. The floor timbers are 2 by 8 inches in size and are placed 2 feet apart. The floor is two thicknesses of hemlock boards. All of the rest of the frame is of 2 by 4 inch stuff. The building is boarded, papered and shingled, on roof and walls. The rear wall and 4 feet of the lower part of the rear roof are ceiled on the inside of the studding and plates, and are packed, very hard, with dry sawdust. In order to make the sawdust packing continuous between the wall and roof, the wall ceiling is carried up to within 6 inches of the plate, then follows up inclining pieces of studding to the rafters. The short pieces of studding are nailed to the studs and rafters. By this arrangement there are no slack places around the plate to admit cold air. The end walls are packed in the same way. The house is divided by close board partitions into seven 20 foot sections, and one 10 foot section is reserved at the lower end for a feed storage room.

"Each of the 20 foot sections has two 12 light, outside windows screwed onto the front and the space between the windows, which is 8 feet long and 3 feet wide, down from the plate, is covered during rough winter storms and cold nights, by a light frame, covered with 10 ounce duck, closely tacked on. This door, or curtain, is hinged at top and swings in and up to the roof when open.

"A door 2 feet 6 inches wide is in front of each section,

The roost platform is at the rear side of each room and extends the whole 20 feet. The platform is 3 feet 6 inches wide and is 3 feet above the floor. The roosts are 2 by 3 inch stuff placed on edge and are 10 inches above the platform. The back one is 11 inches out from the wall and the space between the two is 16 inches, leaving 15 inches between the front roost and the duck curtain, which is sufficient to prevent the curtain being soiled by the birds on the roost. The two curtains in front of the roost are similar to the one in front of the house. They are each 10 feet long and 30 inches wide, hinged at the top, and open out into the room and fasten up when not in use. Great care was exercised in constructing the roosting closets, to have them as near air tight as possible, excepting what may be admitted through the cloth curtain.

"Single pulleys are hung at the rafters, and with half inch rope fastened to the lower edge of the curtain frames they are easily raised or lowered and kept in place. At one end of the roosts a space of 3 feet is reserved for a cage for broody hens. This being behind the curtain, the birds have the same night temperature when they are transferred from the roosts to the cage.

"Six trap nests are placed at one end of each room, and four at the other. They are put near the front so that the lights may be good for reading and recording the number on the leg bands of the birds. Several shelves are put on the walls, 1 foot 6 inches above the floor, for shell, grit, bone, etc. The doors which admit from one room to another, throughout the building, are frames covered with 10 ounce duck, so as to make them light. They are hung with double acting spring hinges. The advantages of having all doors push from a person are very great, as they then hinder the passage of the attendant, with baskets and pails, very little. Strips of old rubber belting are nailed around the studs which the doors rub against as they swing to, so as to just catch and hold them from opening too easily by the wind. Tight board partitions were used between the pens instead of wire, so as to prevent draughts. A platform 3 feet wide extends across both ends and the entire front of the building outside.

"The house is well made of good material and should prove to be durable. It costs about \$850. A rougher building with plain instead of trap nests, with roof and walls covered with some of the prepared materials, instead of shingles, could be built for less money, and would probably furnish as comfortable quarters for the birds for a time as this building will.

"This house accommodates 350 hens—50 in each 20 foot section. It was not ready for occupancy until the 6th of December. Since then there has been some very severe weather, considerably below zero at night and about zero during the day, with a good deal of high wind. During this rough weather the bedding on the floor has kept perfectly dry; and the voidings on the platforms, as found when the curtains were raised in the mornings, have been but slightly frozen. The yield of eggs during this severe weather and the week immediately following it was not below those immediately preceeding it. It should be borne in mind that

had the weather been mild during that time the hens would probably have increased in production rather than have remained stationary. They were doubtless affected by the severe weather, but not seriously, as they began to increase in production very soon after the weather became as usual or midwinter.

Plan of the Yards

The yards to most poultry houses are at the south, or sheltered side of the buildings, to afford protection during late fall and early spring when cold winds are common. The north house has yards on both north and south sides, with convenient gates. The south yards are used until the cold winds in spring are over, when they will go to the north yards, which are well set in grass sod. With the new curtain front house the yards are to be on the north side only. The birds will be kept in the building until the weather is suitable for opening the small doors in the rear wall. The necessity for getting them out from the open front house where they are really subject to most of the out of door conditions during the day time, is not so great as when they are confined in close houses, with walls and glass windows. The use of the rear yards only may not prove satisfactory. If, however, as good yields of eggs and health of birds result, many decided advantages will be obtained by dispensing with front yards. The clear open front of the house allows teams to pass close to the open door of the pens for cleaning out worn material, and delivering new bedding, and also in allowing attendants to enter and leave all pens from the outside walk, and reach the feed room without passing through intervening pens.

A CURTAIN FRONT POULTRY HOUSE

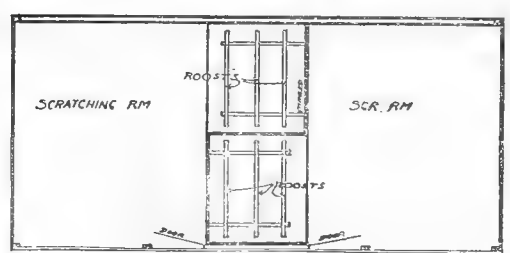
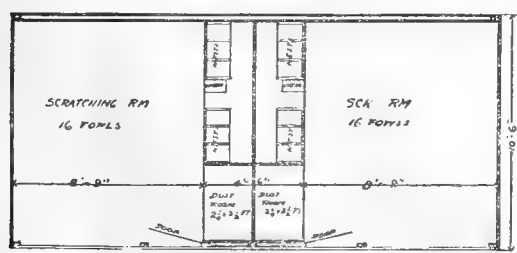
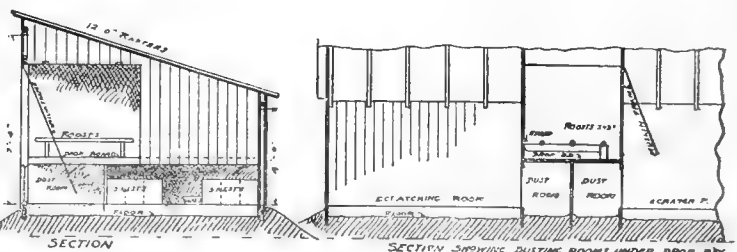
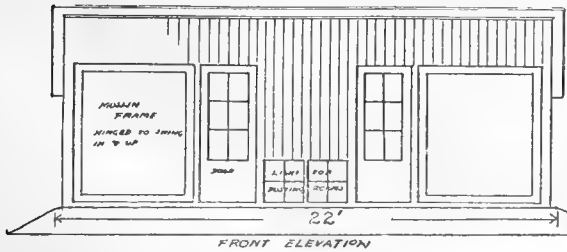
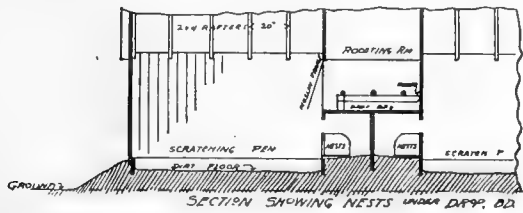
Economizes Space, Using the Floor as a Droppings Board, Placing Nest and Dust Boxes Beneath

John A. Rogers

HEREWITH is shown a drawing of a poultry house possessing closed roosting rooms and open scratching shed with cotton curtains. It makes the most economical house that can be built, as the system of roosting rooms with nests and dusting boxes underneath, cuts off at least 8 feet from the usual plan, and in addition gets the dust box out of the way. The ground plates should be 2 by 8 inches; studs 2 by 4; rafters 2 by 4, with 20 inch centers; building paper should be used, but the roof should be shingled.

Comment

The plans (Ill. 85) accompanying this description were so full of details that further description appeared to be unnecessary. It will be seen that they illustrate a two-pen house 22 feet by 10 feet 6 inches, divided by a solid partition 2 feet 6 inches high, reaching to the floors of the roosting rooms. These floors serve as droppings boards. The walls are double. It will be noted that underneath the roosting rooms there are two dusting rooms, one for each pen, separated by a solid partition. Each room is 2 feet 6 inches by 4 feet 6 inches, and is provided with a four-light window. In rear of these dusting rooms are apartments intended to be used as laying rooms. Each apartment contains two nest boxes of three nests each and the water fountain is located between these boxes. The apartments are separated from the dusting rooms by a partition. Each roosting room is provided with a cloth curtain tacked to ordinary frame furring. The doors to the building are in front, one to each pen, and each possesses a six-light window. There are two curtains, one in front of the scratching shed and one in front of the roosting room.



85—INTERIOR AND EXTERIOR VIEWS OF CURTAIN FRONT HOUSE DESIGNED BY JOHN A. ROGERS

THE FARM POULTRY HOUSE

Seven Hundred Feet of Inch Boards and 200 Feet of 2x4 Studding Builds a House Complete for 30 Fowls at a Cost of About \$30

T. E. Orr

THE time to build a house for either man or poultry is in the spring; let it dry and season all summer and begin to occupy it in the fall. The next best time is summer, and if you use seasoned lumber the month of September will dry it out pretty well.

Will not the old house do? As a rule—no. The old house is a harbor for lice of a half dozen kinds. It has the partial droppings of past years in its corners. It has disease germs under its splinters and in its cracks, and the worst of all, it has too much air space to be warmed.

How large shall I build a house for thirty pullets?

Just 12 by 16 feet, no larger. That gives every hen an area of 6 square feet in which to live and move, and have her being—and scratch. I would not have it larger if it was given me free.

Any scratching shed in addition?

No. It's all scratching shed now. I want you to see that each hen scratches thoroughly over her 6 square feet of space or its equivalent every morning for her breakfast. If she does this she does enough. She doesn't need to exhaust all her energies scratching either in the outside world or in a semi-outside scratching shed. I have no prejudice against the scratching shed except that I do not need it, and my hens do not need it. It costs money; it takes room.

How high shall the house be?

Now listen carefully. If you are a dwarf—a little sawed-off man—make it 1 foot high at the back and 2 feet high in front. But if you are "not a dwarf" you must have it higher. Well, have your own way, but compromise with me for the sake of the hen; and make it only 4 feet high at the back and 6 feet at the front.

How tight must the house be?

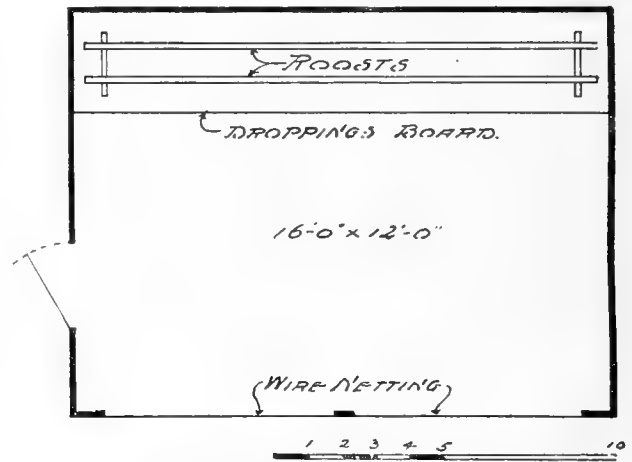
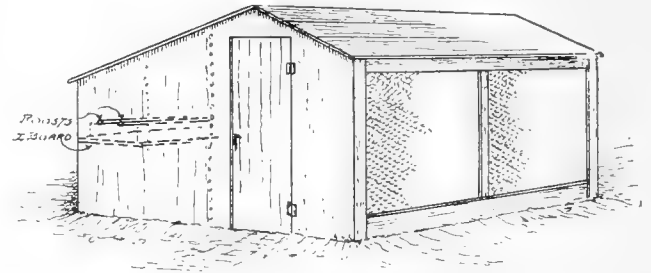
Absolutely air-tight everywhere except in front. Your hens at night will be as far from the front as possible on their perches at the rear of the house. "Ventilation" is made to "cover a multitude of sins"—and cracks. You may have your entire front open wire-work from May 1 to November 1 if you wish, but you must have the back absolutely tight so there can be no drafts of air on the backs of the hens or under them.

How expensive need this house be?

The lumber required is 700 feet of inch boards and 200 feet of 2 by 4 studding. This will build your house complete, including roof, floor, and a droppings board the entire length of the house. In most places this lumber can be bought for twenty dollars. I should prefer to have the front boards planed so as to be painted. I insist on the droppings boards being the smoothest of flooring so they can be made both smooth and tight. All other siding may be of hemlock

boards, and generally they cost no more if surfaced on one side. Put the smooth side in, it looks better, for you must cover the roof, ends and back with three-ply tarred paper. This must be carefully put on. Coat it with tar twice the first year, once every year after that, and it will be good and air tight for ten years. If you are handy with hatchet and saw the entire cost of your house, including windows and doors, need not exceed thirty dollars, or one dollar per hen.

Herewith I give an illustration of the house we use. Ours are all 12 feet square, connected four, six or ten under one roof. In each compartment of 12 by 12 we keep twenty-four hens. We have over thirty of these compartments now



86—PLAN, AND PERSPECTIVE VIEW OF T. E. ORR'S FARM POULTRY HOUSE

on Beaver Hill Farm and are building more. Although our roof is a little more expensive than the shed roof we describe for you, our cost is about the same—one dollar per hen.

Please notice that at night our hens are all on their perches at the rear of the house; the roof, siding and droppings board being absolutely tight. They have no drafts of air and they have but a small volume of air about them to be heated by their bodies. If I were breeding Leghorns I should have a muslin drop curtain to be let down from the roof to the front edge of the droppings board on very cold nights. With Wyandottes we do not need this. We have never lost a comb or wattle in these houses, and we have no artificial heat.

CURTAIN FRONT POULTRY HOUSE

Cloth-Filled Frames take the Place of Glass Windows
—A Practical House at Little Expense

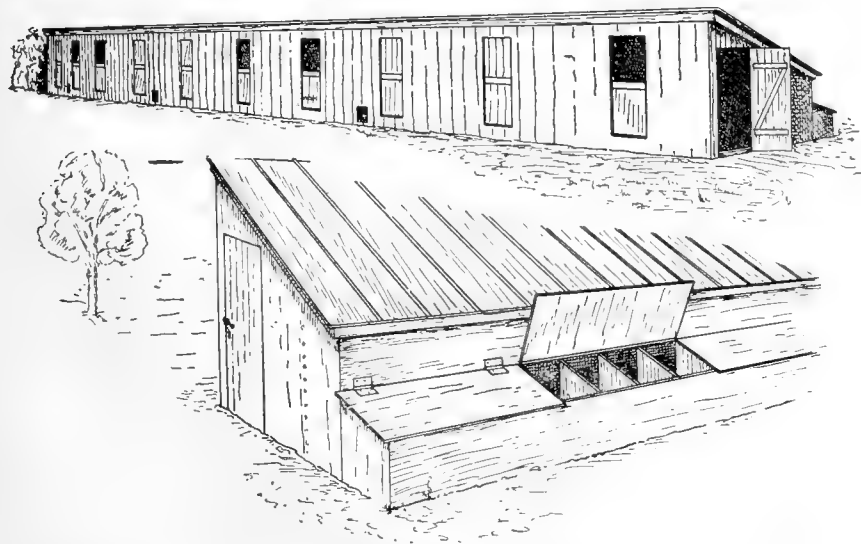
C. C. Grace

SO MUCH has been said in regard to cheap and good poultry houses that there seems little more that can be said. We are trying to get the best with the least possible expense, and I think I have this fully embodied in my laying house, which I will describe as nearly as possible.

My house is 105 feet long, 8 feet wide and 6 feet 6 inches high on the south side and 3 feet 6 inches on the north. It is covered with shiplap and Neponset paper. Eighteen inches from the floor is a platform 3 feet wide the entire length of the house. On this I place 2 by 4's crosswise and on them rest sassafras roosting poles. I use sassafras because chicken lice will not stay on this wood. These roosts are easily removed for cleaning off the droppings. Under the platform there are holes in the wall every 8 inches, through which the hens go to the nests, which are built on the outside of the house. These nests are 24 inches wide, 18 inches high on the low side and 24 inches high next the house, with a partition at each nest. They are covered by lids hinged to the house, each lid being 10 feet long and covered with roofing paper. This arrangement of nests I find very convenient, not having to disturb the hens in the house to gather the eggs. I am never troubled with the hens eating the eggs, as the nests are dark, and as the hen enters the nest she cuts off all the light with her body. I have never lost an egg in this manner since adopting this plan for nests.

For light and ventilation I have 10 windows, each 30 inches wide and 5 feet high. Two frames are made for each and covered with sheeting muslin. The top one is hinged at the top so it can be quickly raised and fastened to the roof with a hook. Every day in winter when not too stormy I raise the windows, thus giving the house a thorough ventilation. I have never had a sick bird in this house, nor a frozen comb, and my fowls have pure fresh air at all times.

I have an earth floor covered with 2 or 3 inches of coal slack. Nest boxes have a similar floor. I have yet to find the first hen louse in this place.



89 -PERSPECTIVE DRAWING AND NEST DETAILS OF CURTAIN FRONT HOUSE, DESIGNED BY C. C. GRACE

This house will accommodate from 250 to 300 hens. The material for the house cost me less than \$60.

For a drinking fountain I use an old jug with a small hole in the side as large as a lead pencil, about 1/2 inch from the bottom. Set in a pan 1 1/2 inches deep and don't forget to cork the jug.

THE CURTAIN FRONT IN MARYLAND

A Single Boarded Poultry House with Almost the Entire Front of Cloth

In Which Single Comb Leghorns Prospered When the Mercury Stood at Zero

R. B. Pusey

I HAVE read with interest the articles on houses that have appeared during the past few years, and am tempted to describe my plan of housing Single Comb White Leghorns in this climate. The houses are built on the continuous curtain front plan. The pens are 14 feet long by 12 feet wide, 6 feet 6 inches high in front and 4 feet 6 inches at the back.

Each pen has solid board partitions with a door in each partition. The side walls and back are of 3/4 inch boards with battens over the cracks. The roof is covered with two-ply felt.

A platform to catch the droppings extends the entire length of the house at the back and two roosts are hung from rafters 15 inches above platform, 12 inches apart and 12 inches from back wall.

The nest boxes are placed on the front sill and extend outside with the entrances facing into the house. Except on very cold days and when the ground is covered with snow, the birds are fed their mash, water and grit outside, and I have the entire floor space for scratching. The floor is covered deeply with straw, which is renewed when completely broken up. In the winter care must be taken to put in the fresh straw when it is thoroughly dry, as a lot of damp, frozen stuff may cause trouble in your flock.

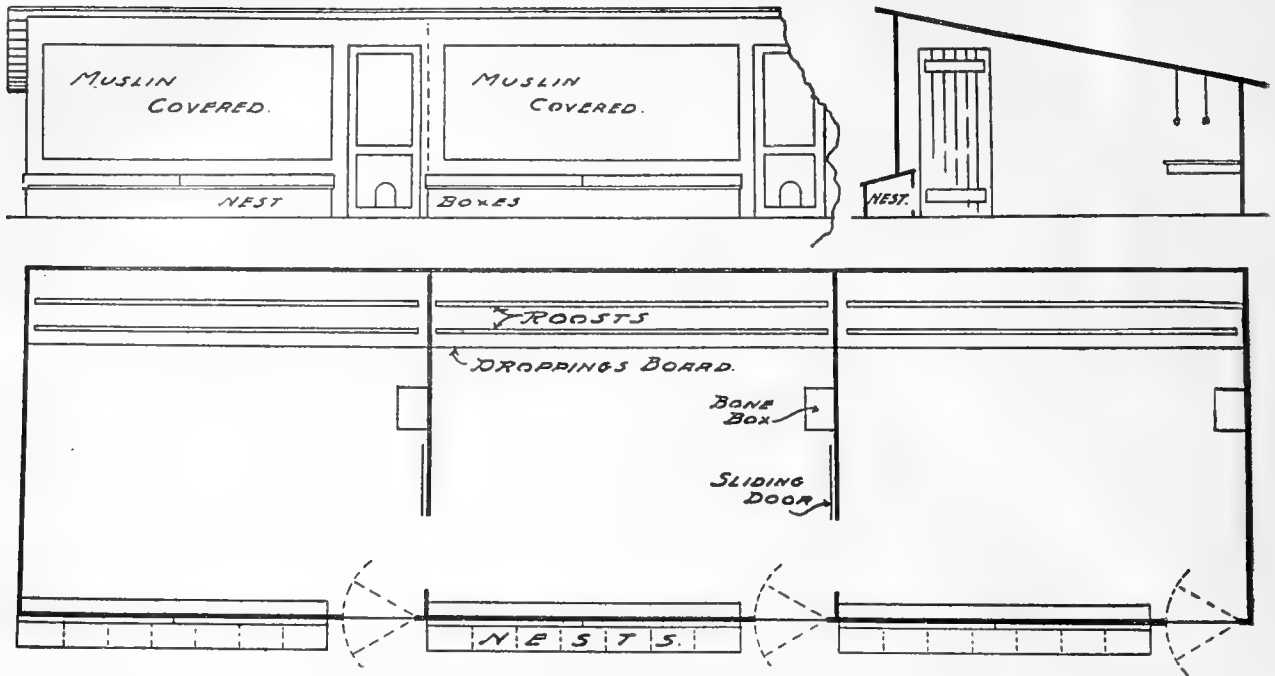
The nest boxes are built with shed top, which turns the rain away from the house.

There is a 4 foot space from the top of the nests to the boarding under eaves. The space is fitted with netting, and in the fall is covered with cotton sheeting.

The door in front of each pen is made of 2 by 4 inch framing and is also covered with cotton cloth. These doors are hung to swing either way and on extra warm, open days are pushed in against the partitions, giving each house a good sunning and airing.

The space in front of the house is also covered with straw and some grain is fed during the day in this. At night after the birds are settled on the roost, a light feed of wheat, oats or corn is buried in the straw in the houses, and this gives the birds something to hustle for next morning as soon as it is light. Their mash is fed warm about 8 o'clock in the morning, and finds the birds already warmed up and ready for business.

POULTRY HOUSES AND FIXTURES



90—PLAN, FRONT ELEVATION AND SECTIONAL VIEW SHOWING INTERIOR FIXTURES OF R. B. PUSEY'S HOUSE

I have had perfectly satisfactory results from this house during the three years I have used it. During each of the three winters we have had periods of really cold weather, with the mercury around zero, and I have never had a frosted comb on either male or female. I find the extra heavy bedding of straw on floor makes the houses much more comfortable.

Each pen contains about 168 square feet of clear floor space and will accommodate 40 to 50 hens. During the past season I have carried 200 hens in three of these pens and have got an average egg yield of a little more than 110 per day.

I neglected to state that a sliding door was fixed in each front door to allow birds exit on days when this door must be kept closed. A self-feeding bone box is placed on division sill in each pen and kept supplied with meat meal. The birds are very fond of this, and it costs less, is more easily handled, and gives as good results as green cut bone.

When spring and summer come these low shed houses are very close and hot, but I remove the cotton cloth when all frost is out of the ground and have an open shed.

The birds find these satisfactory. They give me no trouble by roosting in trees or on fences, etc., as they are apt to do when confined to the ordinary closed front house, which gets insufferably hot in the hot months.

As the season of cooler weather approaches, roosts should be placed in the roosting coops and fronts of burlap should be put in place on cold and stormy nights. Sitting upon the damp ground or in drafty coops predisposes the chicks to colds and rheumatism and often affects the health and productiveness of the birds during the following winter.

(By having the curtains stretched on light wood frames, hinged at the top to turn up against the rafters or capable of being easily removed, the house could be better ventilated on warm days during the winter season.)

CURTAIN FRONT HOUSE

A Poultry House with the Entire Front of Cloth and a Curtained Roosting Apartment

F. E. De Muth

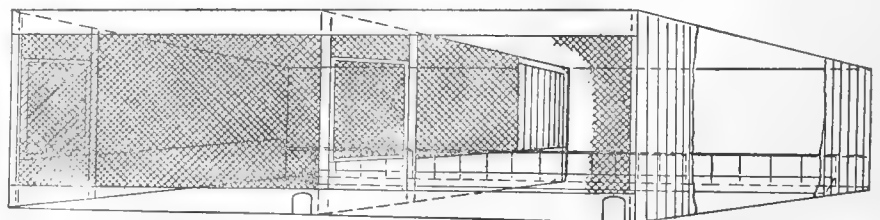
THIS is a modified scratching shed roosting coop plan for a house 8 feet high in front and 6 at rear, with pens 12 by 12 feet. The sills are 2 by 4 inch rough pine. The sheathing is second quality hemlock planed on one side, free from knot holes. This is to be used for the ends, back and 2 feet of the front—1 foot at the bottom and 1 foot at the top.

The rear wall, supposed to be on the north, is lined with tongued and grooved flooring, above the droppings board, which is of the same material. The ceiling over the droppings

board is also lined with flooring and the roosts can be enclosed on cold nights by a drop curtain of oiled cloth.

The roof, back and ends are to be covered with two-ply asphalt roofing, cemented at the laps. This makes an absolutely wind proof building. This roofing requires painting every five years. I would paint it a light color, using a "cold water" paint.

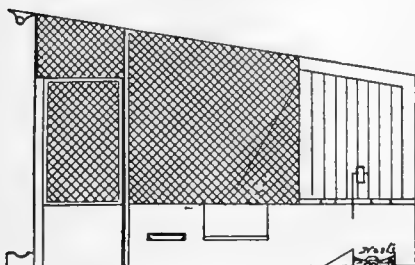
The front of wire netting, with 1 inch mesh and a protecting curtain, is hung from under the roof outside of wire arranged to be raised and lowered like the curtain on the



91—CONSTRUCTION OF PARTITIONS IN F. E. DE MUTH'S POULTRY HOUSE

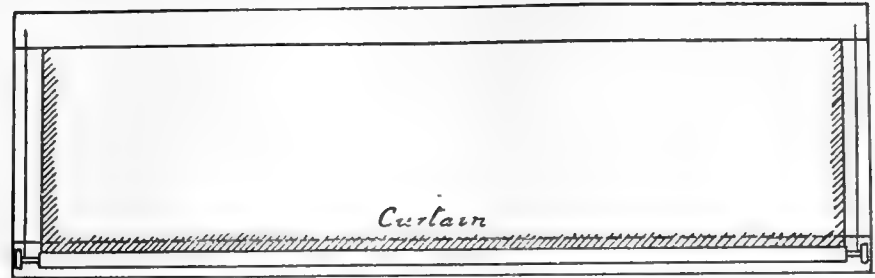
stage in a theater. The droppings board is tongued and grooved stuff placed like a shelf (easily removable) 2 feet above the ground on floor. Under it are the nest boxes, loose and movable. The hens enter the nests from the rear of each nest. Eggs can be gathered from front by swinging a board hung on leather hinges. The roosting apartment is, as will be seen, double walled with a 4 inch dead air space between and the during winter is completely enclosed by curtains.

The heat from 10 to 20 hens in this apartment at night will prevent freezing of combs and the chilliness harmful to laying hens. The partition between the roosting places is solid; balance of partition between the pens is wire, above a baseboard 2 feet high, though I should prefer, in a long continuous house, to have one solid partition in every four. In every second partition I have a large pan, say 15 inches in diameter and 5 inches deep, for water for two pens. Flooring is



92-SECTIONAL VIEW OF F. E. DE MUTH'S POULTRY HOUSE

not considered, but is left to individual opinion as to which sort of floor is best. Doors between pens are hung on spring hinges and are wide enough so that a wheelbarrow or garden cart can be wheeled from pen to pen. Doors between the pens and the yards can be built if desired.



94-DETAIL OF CURTAIN IN THE FRONT OF HOUSE DESIGNED BY F. E. DE MUTH

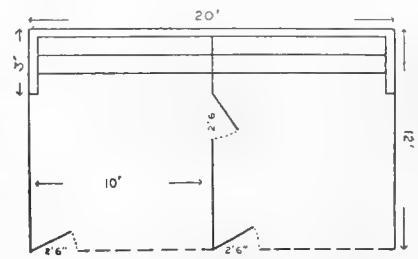
drafts and let in the most sunlight.

Two doors, each 2 feet wide, occupy the middle part of the front and two windows each containing four lights of glass are placed one on each side of the doors.

The doors contain openings of considerable size filled with wire netting, through which the air passes freely in warm weather. In cold weather these openings are covered with heavy cotton cloth. They may be filled with glass, but then the ventilating effect of the curtained front would be lost.

The roost platforms and roosts, instead of being placed against the back of the pen, are built against the front, just under the windows, on each side of the doors.

On that account the windows are placed high up, near the roof. As the birds roost near the glass, they should be protected from the cold that gets through it at night by shutters which fit



95-PLAN OF POULTRY HOUSE DESIGNED BY A. E. SEWELL

closely over the windows on the outside or by heavy curtains which completely cover the glass on the inside.

The birds may be thoroughly protected when on the roost by curtains which hang from the under side of the roof boards to just below the roost platforms; but the curtains should be raised when the birds are off the roosts to allow the sunlight to enter the house.

The sun dries and in a measure disinfects the roosting apparatus every morning and its rays reach the extreme back of the pen, where the birds are kept busy scratching for grain.

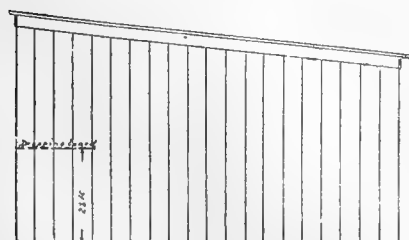
The nests may be located under the platform or hung upon the sides of the pen.

A VILLAGE POULTRY HOUSE

A House with Curtained Doors and Rooms Located at Front—Cost of Material \$15

Adolph Stuth

MY POULTRY building, which is something like the cloth front house at the Maine Experiment Station, is 10 by 12 feet, 6 feet high in front and 5 at the rear. The frame is built of small scantling and covered with 1 inch flooring. It required about 500 feet of lumber to build and equip this house with roost platforms, etc., making the total cost for material, including roofing felt to cover the roof, about \$15.



93-END ELEVATION OF ADOLPH STUTH'S HOUSE SHOWING LOCATION OF ROOST PLATFORM

This house can be divided through the center by a partition, to accommodate two small flocks if desired.

All windows and doors are placed in the front side, which should face south, to avoid

A CHEAP POULTRY HOUSE

It is Suggested for Use on a Small Lot Where the Birds Cannot be Turned Out

A. E. Sewell

THE poultry house illustrated herewith has the advantage of being warm in winter and cool in summer. It can be built cheaply, as only a small part need be double boarded. In the plan the double lines show where the house is to be double boarded and the single lines indicate that a single wall only is necessary. The long

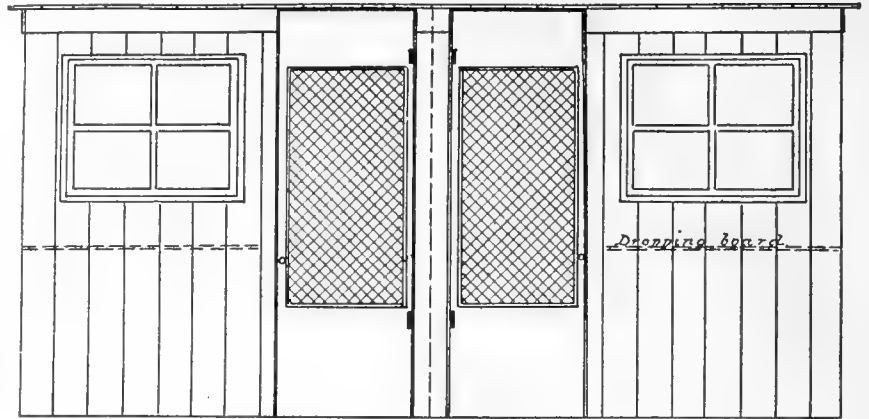
dash lines indicate where wire can be used.

The principal part of this house is the scratching shed, which occupies practically all the floor space. The roosting room is merely a kind of closet or cupboard with the droppings board as a floor. A horizontal swinging door hinged to the ceiling comes down flush with the front edge of the droppings board. This you will note, makes a very snug little roosting place 2 feet from the floor and 2 feet wide. It has one roost, which will accommodate 10 or 12 hens of the American class, which is the number the house is intended to hold per pen. The door between the pens, shown in Ill. 96, should not be made so high that it will interfere with the horizontal door when the latter is hooked to the ceiling. It will be better to have a solid partition between the roosting rooms and it should extend out 3 feet. The bottom of the partition between the two scratching sheds should be solid and the upper part may be made of wire.

The space underneath the droppings board need not be double boarded, although it would be better if it were. A ventilator should be placed on the horizontal door. This is made on the principle of the draft of a stove.

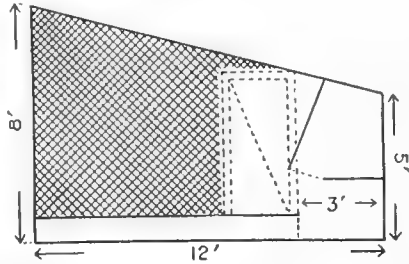
The nest may be placed under the droppings board with the open side next to the rear wall and with a hinged back that can be let down to gather the eggs.

Frames with canvas tacked on should be hung on the



98—FRONT ELEVATION OF POULTRY HOUSE DESIGNED BY ADOLPH STUTH

inside of the house in winter and outside in summer. When on the outside they can be fixed as awnings to keep the sun out, but to let in the air. In this house the temperature can be regulated according to the weather. On a fall night when it is too cold to let the house be wide open, the canvass curtains can be let down and the swinging door left wholly or partly up. This house is as cool as any shed in the summer time.



96—VIEW SHOWING CONSTRUCTION OF PARTITION, ROOST, PLATFORM AND CURTAIN IN A. E. SEWELL'S HOUSE

A NEW "ROOSTING-COOP" HOUSE

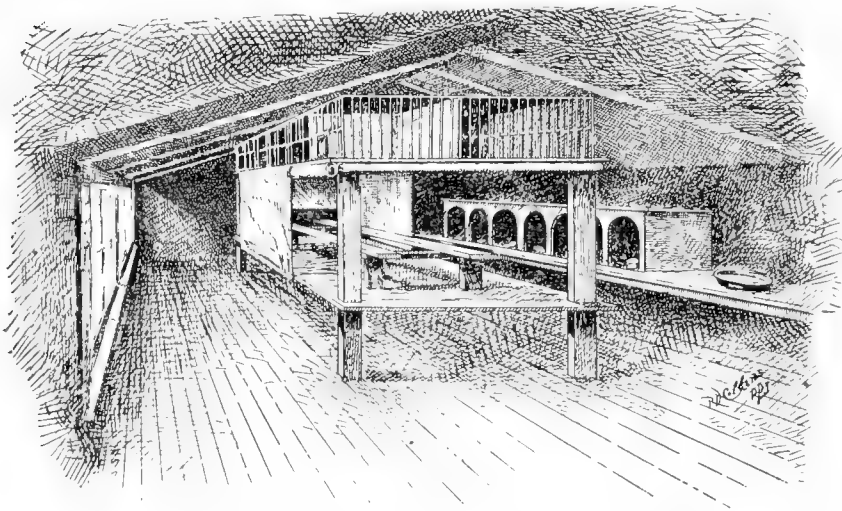
A Poultry House With the Roosting Pen in the Center, and Nests, Feed Boxes and Water Along the Rear Wall

Harris B. Waite

MY new sanitary roosting coop house contains the following arrangements, which may not be new, but as I have never seen them in print or in use, will describe them. It is an ordinary double roof, house built in 20 foot sections. The width is 15 feet, the height at plates, 6 feet and the height at ridge board, 8 feet 6 inches. The roosting box runs parallel to the ridge board and directly under it. This box is 2 feet 6 inches wide and 4 feet high; it is 2 feet above the ground. The double line of roosts is one foot above the bottom of the box. Two feet 6 inch spaces are left at the ends to pass around it.

The ends and sides are provided with curtains, (burlap) which in summer are not used, but one or more may be let down in the winter according to the severity of the weather. Only on the very coldest nights, however, are all the curtains lowered. On top of the box are pens partitioned off with wire netting, used for sitting hens, extra cock birds, etc.

The advantages of this arrangement are three-fold. First: more comfortable in summer, by having a circulation of air all around both lines of roosts. Second: warmer in winter, because the fowls are away from the cold north



97—INTERIOR OF MR WAITE'S ROOSTING COOP HOUSE.

Showing the roosting pen in center and the nests, feed boxes and water fountain on a platform at the rear wall

wall. Third: easier to clean and keep free from vermin.

The nests, water fountains, grit, shell and ground grain hoppers are on a platform, running along the north wall. This platform is 2 feet wide and 2 feet from the ground. This gives all the floor space for scratching ground.

The south wall of the house is principally doors and windows. In the summer these doors may be lifted off the hinges and the windows opened, resulting in an almost open

shed. In winter the doors are hung, and may be battened down if desired. The windows remain open except at night and during storms. The roof, sides and ends are covered with good quality of matched boards. The ends and north side are lined on the inside with heavy building paper, well battened down. The roof is covered with flintkote, dressed with three coats of paint.

The house is well planed and is successful.

Don't Fear Fresh Air

Thorough Ventilation of Poultry Houses Necessary at All Times and Particularly Desirable in Cold Weather—Does Your Poultry House “Sweat?”—Then It Needs Airing or It is Overcrowded

P. T. Woods, M. D.

HOW shall I ventilate my poultry building? What is the best kind of ventilation for a poultry house? These are questions that are, in one form or another, asked many hundreds of times during the year. The answer is plain enough and so simple that it is a wonder that it did not appear to the interrogator.

Ventilate your poultry house in the same manner that you would your bed room, i. e.—by opening the doors and windows. Don't use special ventilating devices; they are dangerous.

Ventilating devices are dangerous because they are liable to create draughts, because they are usually open when they should be closed and vice versa. All ventilating devices admit a draught or thin stream of cold air. This thin stream of cold air flows through the warmer air of the house just as a muddy stream of water flows into a pond. The distance it travels all depends on the force of the current and it often travels a long distance before becoming blended or diffused. With a stream of cold air, a draught, flowing into a comfortably warm house, this means disaster to the occupants wherever it strikes. It is less dangerous by day when the fowls are busy than at night when the birds are quiet on the roosts, but at all times a draught in the poultry house may result in serious colds, laying the foundation for roup and other serious ailments. No, so-called, ventilating device, other than a door or window, has been invented to date that will not create a draught, a disease-promoting, thin stream of cold air.

No such danger need be feared from the admittance of a volume of fresh outdoor air to the poultry house by means of an open door or window, provided these openings are so situated that a direct cold air current does not sweep through the house. Common sense must be used, even in admitting a volume of fresh air, since to create an artificial wind-storm inside the house is to invite disaster.

Windows Should Face South

The windows of the poultry house, and all ventilating doors should be located in the south front of the poultry house. All windows should be made to open at the top and bottom or so arranged on hinges that the entire window can be thrown open at will.

Don't be afraid of fresh air when supplied in large volume with freedom from direct draughts. With the openings all in the south front and the fowls protected on three sides by tight walls,—both sides, back and a tight roof—there is no

danger. Such windows and doors can be opened wide for a large part of every day throughout the year and with most gratifying results. Make your poultry houses reasonably tight—as tight as you can on the east, west and north sides,—and then depend on your south windows and doors for ventilation. From May until October in nearly all sections of the country the windows in such a house should be kept wide open both day and night. When cold weather comes keep these south windows open for a part of every day.

On cold, windy, cloudy or stormy days, keeping the windows open for half an hour to an hour twice a day while the fowls are feeding may answer well enough in some locations but the writer prefers to keep the windows open as long as it is convenient to do so. On sunny winter days the windows should remain wide open as long as the sun shines in them.

As to ventilation of a close house at night during cold weather much depends upon the building. Ordinarily enough air will find its way in around the windows and doors to answer all purposes if the house is well aired during the day. In houses more than 20 feet long and 12 feet or less in width it will be advisable to keep the windows closed at night unless built on the hip roof plan with low open fronts. In houses that are 14 to 16 feet wide with the roosts in the rear of house or provided with sheltered roosts it is often a wise plan to leave the window in the front of the pen open just a little way up at the top. In every case it will be necessary for the poultryman to use good judgement. Fowls can't close the windows. Conditions that would be safe during the day or night when you leave the fowls might easily change suddenly during the night and expose your roosting birds to discomfort. Therefore, unless the houses are specially constructed with open fronts it will usually be well to close the windows tightly at night in winter weather.

A Practical Test

During one exceptionally severe winter in eastern Massachusetts there were not more than two or three days that the south windows of my poultry buildings did not remain wide open from daylight until dark. I never had a sick bird during the entire winter and the egg yield was excellent, better than the majority of breeders in the same section were able to obtain, while the exceptional fertility and fine hatches obtained were most gratifying.

Two pens of breeders were housed in an ordinary poultry house with windows to the south. The windows of this

house were seldom closed, all winter, until after dark and were always thrown wide open at daylight each morning.

Two other pens were kept in small portable houses of the shed-roof type, 6 by 8 feet, and with water-proofed muslin fronts. No glass in these portable houses, just an entire front, 6 by 7 feet, of muslin broken only by the thin wooden strips used for door frames. The walls of these buildings are $\frac{3}{8}$ inch matched pine, painted, but not covered with a sheathing material. The roof is $\frac{3}{8}$ inch pine covered with a roofing fabric. The floor is gravel raised a few inches above ground level and covered with straw.

Water will freeze in these houses any day when the temperature falls below 20 degrees above zero outside. The fowls roost on perches placed over a droppings board 2 feet 6 inches from the floor and the front roost is but a little more than five feet back from the muslin front of the house. An average of 15 birds were kept in

These portable houses were located in one of the most windy places in eastern Massachusetts, and the temperature last winter varied from 60 degrees above to 20 degrees below zero, often going the full range in forty-eight hours and from dead calm to high wind in the same time.

During January and February eggs from the birds in these small, practically open portable houses, averaged from 90 to 95 per cent strongly fertile and gave most excellent hatches of strong, sturdy, healthy chicks. Most of these chicks were reared out of doors in February and March with no other protection than that afforded by an individual outdoor brooder and made a highly satisfactory record.

Use Fresh Air Sensibly

Some persons who witnessed this experiment,—for the test was made with a view to seeing just what the result of such treatment would be—asked me why I did not return to the old method of letting the fowls roost in the trees if fresh air was what was desired. Such a question is scarcely worth an answer because it shows that the one who asks speaks without first giving thought to the subject.

There is a wide difference between fowls roosting in the open, on trees and fences, and those protected by a roof and surrounded by tight walls on three sides. It is just the difference between discomfort and comfort. You can't get good results from uncomfortable fowls. The birds are well protected with a heavy coat of feathers and if given reasonable protection from the weather and plenty of fresh air, to supply the life giving oxygen needed for heat production within their bodies, they will be comfortable. Fowls roosting in the trees in the winter are often miserable and objects of pity, but some of the most miserable specimens I have ever seen have been those cooped up in tight houses (never aired except as the attendant goes in and out of the door), that

are sweat boxes when the sun shines and reservoirs of cold, damp, deathly chilling foul air at night or on cloudy days. Such quarters will breed sickness and losses greater than any ever experienced by the farmer who lets his birds range and roost where they will.

What "House Sweating" Means

When a poultry house "sweats," when dampness condenses on the walls and forms as frost or drips down upon the occupants, it is a sure sign that the house is not aired often enough or that you have over-rated the capacity of the building and have too many fowls in it.

You can keep more birds with safety in a well-aired building than in one that is kept tightly closed. For this reason, from a standpoint of economy of house room, if for no other reason, the necessity of thoroughly airing the poultry buildings should appeal to everyone.

A plentiful supply of fresh air is necessary to health. A damp, ill-ventilated building means disease, debility,



99—WOODS' OPEN-AIR POULTRY HOUSE

Experimental building in actual use on a Massachusetts farm. Illustration shows east side and south front. The litter in the house did not become damp and required renewal less often than in any other types used. This photograph was taken immediately after a heavy snow storm. It will be noted that very little snow remained on the south slope of the roof, and that is beginning to melt away in front of the windows. For description see page 67.

each of these 6 by 8 portable houses all of last winter. The muslin door was thrown open every day for as long a time as possible, the front being protected by poultry wire only. The door was only closed during the day when it stormed hard and blew directly into the front of the house. At night with the door closed the air could work in through the entire muslin front. The birds appeared to be comfortable at all times, were seldom out of the house during the entire winter as they were only allowed out on bare ground, and during the most of the time the house was surrounded by deep snow.

Egg Yield and Fertility Good

From these birds, all White Wyandottes, bred for health, the egg yield was exceptionally good and never, from November 1st, until March 1st, dropped below 50 per cent, in spite of extremely cold and variable weather.

and often that scourge, contagious catarrh, familiarly known as roup.

Do You Take Time to Think?

At one of the meetings of the poultry associator last winter the subject of fresh air came up for discussion. Several members who use closed houses that are seldom opened up were asked,—

“What do you do when birds get colds and catarrh?”

The answer was practically the same in each case and in substance was:—

“It doesn't pay to bother to doctor them; if they get colds or roup we just chuck them out in an open shack or shed and let them shift for themselves. Just feed and water them and let them go.”

Q. “Do many die?” was asked.

A. “No, most of them get well and go back to the pens in a few weeks.”

Q. Then why don't you open up the houses and let in the fresh air to prevent disease, if it cures the sick birds?”

A. “Never thought of it in that way.”

Now that is just what is the matter with a great many poultry keepers. They have “never thought of it that way.” If every man who keeps hens and reads a poultry paper would absorb what he reads, think a little, and try to reason logically from what he reads about the experience of others, there would be a lot less work for those who conduct “questions and answers departments” to do, and the results obtained from the poultry would show a decided improvement. Read, think and reason; just use good, sound common sense. If you want healthy, vigorous birds that will produce strong-germed eggs you must not neglect them. They need a variety of wholesome food, pure water, comfortable quarters and plenty of fresh air and sunlight.

Don't fear fresh air. Thorough ventilation of poultry houses is necessary at all times. You can have it all the time during the warm season by taking out the windows and leaving them out. In cold weather you should not neglect this important matter; keep the houses well aired and air them daily.



100—TOLMAN'S FRESH-AIR POULTRY HOUSE

LEFT—An early type of house used by Mr. Tolman. RIGHT—The same house in process of remodeling into the Fresh-Air House

Fresh-Air Housing for Poultry

THE TWENTIETH CENTURY FRESH-AIR HOUSE

A House that is Run Wide Open Summer and Winter, Storm or Sunshine—Cool in Summer, Warm in Winter—No Dampness—Prevents Disease—Promotes Health, Vigor and a Good Egg Yield
Fertility Increased—Specifications with an Estimate of the Probable Cost

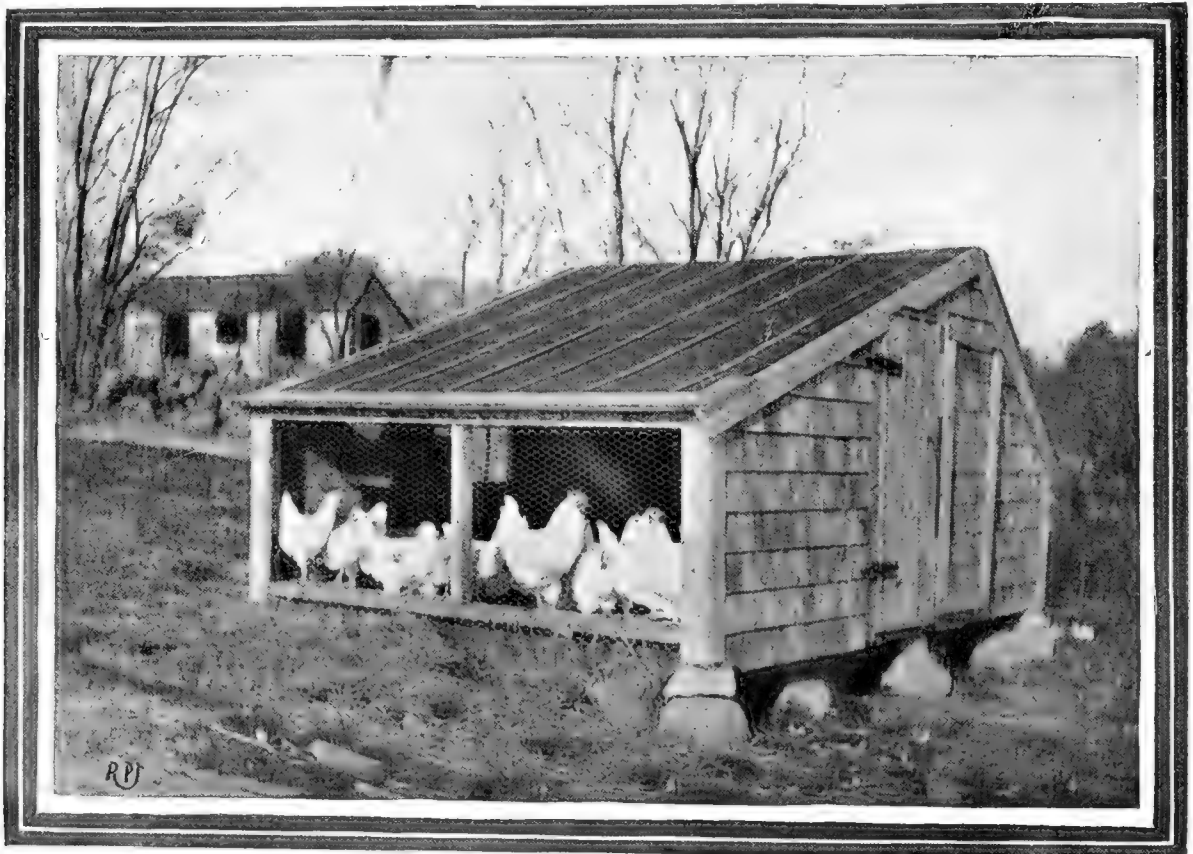
Joseph Tolman

HAVING given the proper housing of poultry deep thought for many years, it led me to building what I call my Twentieth Century Fresh-Air Poultry House which is fully illustrated herewith.

The fresh-air house is a very simple one to construct as will be seen by noting the photographic views and plans. It is a plain hip-roofed building with a long pitch of the roof to the front or south. The roof and closed sides are one-inch boards shingled, making a tight roof and east, west and

is where it differs from other fresh air plans. The house is run wide open in front both night and day, storm or shine, all the year round. A gate is provided in this wire front to give the birds access to the yard.

Every now and then I read with much interest what different writers have to say about what and how you should feed your poultry and how to cure roup, tuberculosis and various other contagious diseases. If they would only build fresh air houses or remodel their old ones as I am doing, I



101—WHITE PLYMOUTH ROCK BREEDERS IN THE FRESH-AIR HOUSE

north walls. The eaves are about 4 feet from the ground and the peak of the roof is a little over 7 feet. The house is 8 feet wide by 14 feet long, and has a window in the center of the west side and a door in the center of the east side directly opposite the window. In operating this house in summer both the door and window are removed and replaced with wire netting. The south front is always open, being closed in by 1-inch wire mesh netting only. This part of the house

can earnestly say that I believe they would never have contagious diseases and their fowls would be hardy, strong and healthy, capable of supplying strong fertile eggs the year round and plenty of them. The first of last September I was offered \$400 for 200 Light Brahma pullets, utility stock. I feel that this is a good indorsement for the fresh air housing which they have had.

Don't think because you live in Canada or in any other

cold place where the temperature is way below zero that you cannot adopt this system. These are just the places where it is most needed. Also, where the climate has a tendency to be damp and foggy, because an open house is always dry. The fresh air keeps the birds warm and it is a place where dampness can never gather.

For those who are using the Tolman House in exceptionally bleak, cold locations, I recommend the use of a coarse, unbleached muslin curtain immediately in front of the roosts. The location of the roosts in my improved houses gives an excellent opportunity to place this curtain in front of same so that it can be operated conveniently, and thus insuring the best results in the coldest climate in America. The muslin curtain should be loosely tacked upon a light wooden frame, the frame being hung with hinges from the front roof directly in front of the ends of the two side roosts and should extend no lower than the droppings board. During the day when not in use, the curtain can be fastened up to the roof out of the way by means of a wooden button conveniently placed. If, on the last visit to the house at night, the attendant thinks that the temperature is going to be many degrees below zero, the curtain may be dropped. My advice is never to use the curtain except in the most extreme cold weather when the temperature is zero or below. I prefer to place the curtain in front of the roosts rather than in the front part of the house, for if used as I advise it more animal heat is retained and practically the same amount of fresh air reaches the birds, owing to the arrangement of the roosts and dropboards and the position of the curtain or muslin screen.

I believe that those who built the house in cold climates, from the dimensions 8 by 12 feet that were first published, and were dissatisfied with the results obtained, would now find that they will get entirely satisfactory results by adapting the building to the improved type and using the muslin curtain. If the house is to be located in a very bleak, windy place on the side of a mountain, I should advise using one-half or one-quarter-inch mesh wire netting in place of one-inch mesh, as much less snow will blow into the building. In the large-sized practical Tolman House it will be necessary to make the curtain in two parts.

Specifications and Probable Cost of House

The plans given herewith are for the "Tolman Twentieth Century Fresh-Air Poultry House" for either chicks or laying hens, dimensions 8 by 14 feet. The approximate cost of material for same would be \$20.00.

300 sq. ft. hemlock boarding No. 1 at \$22.00 per M.	\$ 6.60
40 running ft. 2x4 joist; 157 running feet 2x3 joist	
105 feet, at \$28.00 per M.	2.94
One window, 7x995
Window frame for same70
1¼ M. \$3.00 grade shingles to be laid 5 in. for roof.	3.75
1½ M. \$2.50 grade shingles laid 6 in. for sides.	3.95
<hr/>	
Total	\$18.89
Extras	1.11
<hr/>	
	\$20.00

With this material you can build a first class house, nothing cheap about it. The same, when finished, will accommodate thirty-five to forty Light Brahma layers with three males. At least this is the number I am housing. When you consider the cost, you must stop to think that a house of this style will accommodate at least twice as many as the closed style or burlap front would.

Larger House on Same Plan Recommended

From observations I have made I am sure that the most practical and economical house will be one about half as large again, or I would have my dimensions 14 feet wide by 21 feet deep with 6 feet posts on the north end, 4 feet 6 inch posts on the south end and a large window in the west side. The highest part of the roof would be about 10 feet from the ground. You would then have a house, ideal for all kinds of weather and locations, that would accommodate from 65 to 80 layers, according to the breed, and from four to five males, at a very small cost over the figures given for the 8 by 14 feet house; thus bringing the cost of my house much lower than the average house of today.

With the larger house I would suggest placing directly in the center, running north and south, a board partition 2 feet 6 inches high. This will induce extra exercise by the birds hopping over the partition. This partition divides the flock, thus helping the fertility through preventing interference of the males.

A great many poultrymen with whom I have talked, admit that the colony system of housing breeders is the best; yet, they argue, that it is much easier to take care of the continuous house system; therefore they prefer it. This is where they make their mistake. Let me explain. Suppose we have a 100 foot building, 14 feet wide, with ten partings. Under the old system each parting will accommodate not over 20 fowls and you have ten partings to water and feed every day in order to care for 200 birds. Now we will see what we can do with the fresh-air housing of poultry on the colony system. It will take three houses 14 by 21 feet to accommodate the flock of 20 hens, thus you would have only three houses to water and feed.

We must all admit that much better yards can be had with the fresh-air colony system than with the continuous house, and you will find with my system you will need these yards in winter almost as much as in summer. Always keep the snow shoveled from a small place in front of the house as you will find this will help the fertility of the eggs. The fowls enjoy being out doors.

Furthermore I believe all sides but the south should be made warm and tight, and this should be left entirely open with no curtain in front of birds on roosts. Then you will have what I call a warm fresh-air house.

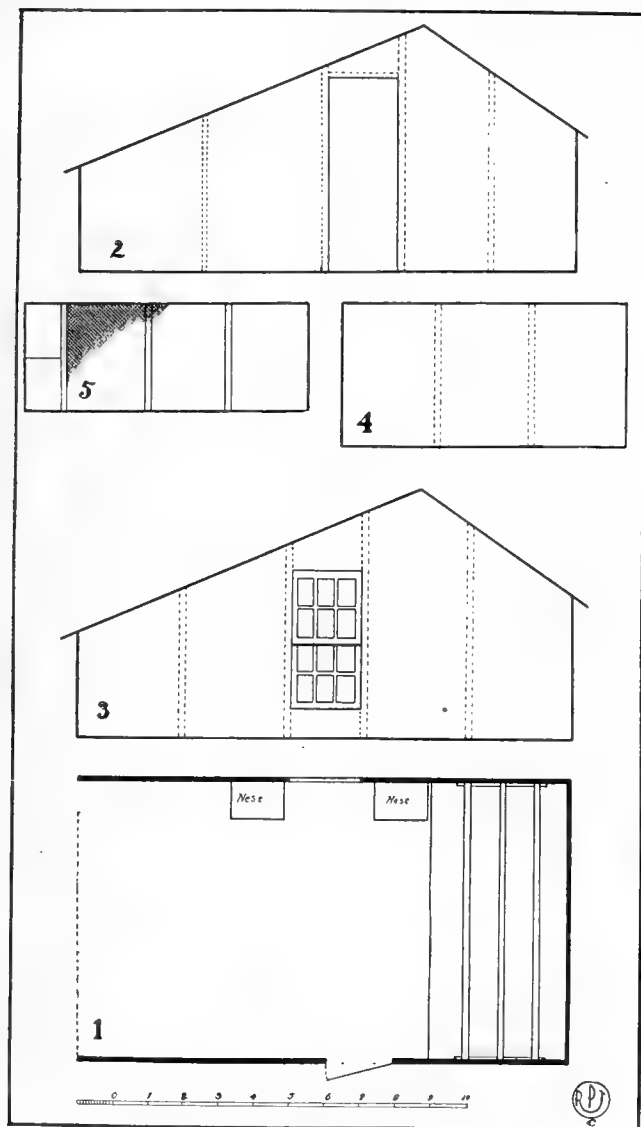
Stronger, Hardier Fowls—Better Fertility

Some writers have claimed that they could not perceive any difference in the quantity of food consumed whether the fowls were kept in open or closed houses. I must admit I can see quite a little difference. Why? The fowls are in the best of physical condition all the time, breathing a larger amount of oxygen, thus creating a better circulation of blood; therefore burning up more fuel in the line of food stuff. What we get in return is a much larger egg yield with better fertility. There is no better indorsement for the fertility of fresh-air eggs than to state that a leading poultry supply house in Boston practically handled the entire amount of my output last season and have engaged them for the present season. What better indorsement do we want for the radical fresh-air system?

Is it not better to have a house so constructed that it can be left open all the time? I have never yet seen the closed house that man could regulate with any safety. He is either having the window opened or closed at the wrong time. When I leave my fowls at night I never have to think whether my house is opened or closed too much. I know that it is just the same all the time.

125 To 150 Chickens Housed In One Flock

You will notice the photo of my house with chickens. This house accommodates from 125 to 150 chickens destined for the fancy South Shore roasting trade which begins in March and lasts until July. These chickens were placed in the houses the 1st of November, which houses will be run entirely open all winter. In the spring when they are matured they will be much heavier and better in quality than if they had been kept in closed houses. Practically they will be immune from all contagious diseases and in justice to the



103—TOLMAN'S FRESH-AIR POULTRY HOUSE

- 1—Plan, location of roost platform, also nests clearly shown.
- 2—East end showing location of door and studs.
- 3—West end, showing location of window and studs.
- 4—North, or rear wall—location of studs.
- 5—Drawing of the front, enclosed with 1-inch mesh wire netting, small fowl entrance and location of studs.

producer these chickens should bring from 2 to 4 cents per lb. more than the ordinary fancy chickens because they are much better in quality. I believe we should all aim for quality, not quantity.

The house will receive chicks from the brooder at any time through the winter by using a board to close up all but about 6 inches of the front the first few nights they are put

in. Then if the weather is mild, take it away and run the entire south end open. You will be surprised to find how warm this house is when you step inside on a cold day.

What the Open House has Done

I will now tell you what the open house has done for the vitality of my poultry. Believing that improper housing has had a great deal to do with weakening the vitality, the most important element, is what practically led me to the development of my open front system. Four years ago I noticed a weakness among the chickens hatched. They seemed to be lacking in vitality and I decided the best thing to do was to give my breeders more air. This I proceeded at once to do. The results were phenomenal. I had much better fertility, the chickens when hatched were strong and vigorous and my flock of breeders had lots of vigor and vitality. This good work has kept right on improving for the last three years. I have no difficulty in getting a fertility of 80 to 90 per cent in Light Brahma eggs which are now testing 88 per cent. White Plymouth Rocks are testing from 90 to 96 per cent fertile.

Fresh Air Facts and Pointers

Open your window and door after the first of May, or earlier, according to the weather. Close them after the first of November.

Never place a screen or any other protection in front of roost, as this defeats the purpose of the open front.

When the snow blows the hardest, go home at night feeling easy. Make up your mind that whenever the storm clears you will be able to shovel the snow out in a few minutes and when the sun comes out it will shine directly into the house, drying the scratching litter readily. I hope you will all gain confidence from my experience. I feel sure snow is a good tonic for poultry kept in open houses.

Keep plenty of good scratching litter in the house all the time.

For forty hens two fair-sized grocery boxes make good nests, large enough for two or three hens to lay in at once, thus being less exposed to chilling.

Keep the eggs gathered at short intervals in the cold days if they are to be used for incubation. There is no place in the poultry business for a lazy man.

Don't try to make a fresh-air house, as I have seen some do, out of a shed roof house. You will lose what you want most and retain that which you least want. I mean by this, the warmth radiated by your poultry, rising, escapes through the opening above. The carbonic acid gas, leaving the birds as they breathe, falls to the floor, forming a most deadly gas. In my house this gas is easily diffused and carried away and the warmth is retained.

I am positive that it is the 14 by 21 foot house that should be used in certain localities where the snow blows and blizzards are frequent.

Don't worry if the water freezes. I am no believer in warmed water for poultry. I consider this merely a fad. Use galvanized iron pails; then you can easily break out the ice.

This is the only right house for the fancier as his birds are always in the best of physical condition with a very clean and glossy plumage at all times.

I believe it is the only house that can be used on heavy and wet land with success as the moisture rising from the land has no chance to gather in the building.

In closing let me say to all who adopt this system that I hope it will give to them as it has to me "better poultry and more of it".

WOODS' OPEN-AIR POULTRY HOUSE

Practical Semi-Monitor-Top Open-Front Building
for Cold Climates

P. T. Woods, M. D.

THIS house we believe combines all the essentials of an open-air house. The front is open night and day. Sunlight reaches all parts of it on sunny days and there is sufficient sun in the rear of the house to keep the droppings board quite dry. Litter in this house does not become damp. In severe weather water does not freeze as quickly as in a closed building of same dimensions and with same size flock. There is no dampness or frost and the house is always comfortable. It is comfortably warm in winter

The plans given herewith are for an open-air house ten feet wide by fourteen feet deep to cost about \$35.00 complete at present prices of lumber in the East. This cost estimate does not include expense of a board or cement floor if such is desired. A 10x14 ft. house will accommodate 35 layers and may be used satisfactorily for smaller flocks of from 12 to 25 breeders. The plans are for a colony house but same may be considered as first section of a continuous house if desired, but if built for a continuous house will be more desirable if made 16 feet deep instead of 14. Partitions in continuous house should be solid from floor to roof boards. In making the deeper house the depth should be given to the rear section.

Building Instructions—Plate I.

The house should be located on dry, well-drained land, and should face south or a little east of south. Twelve

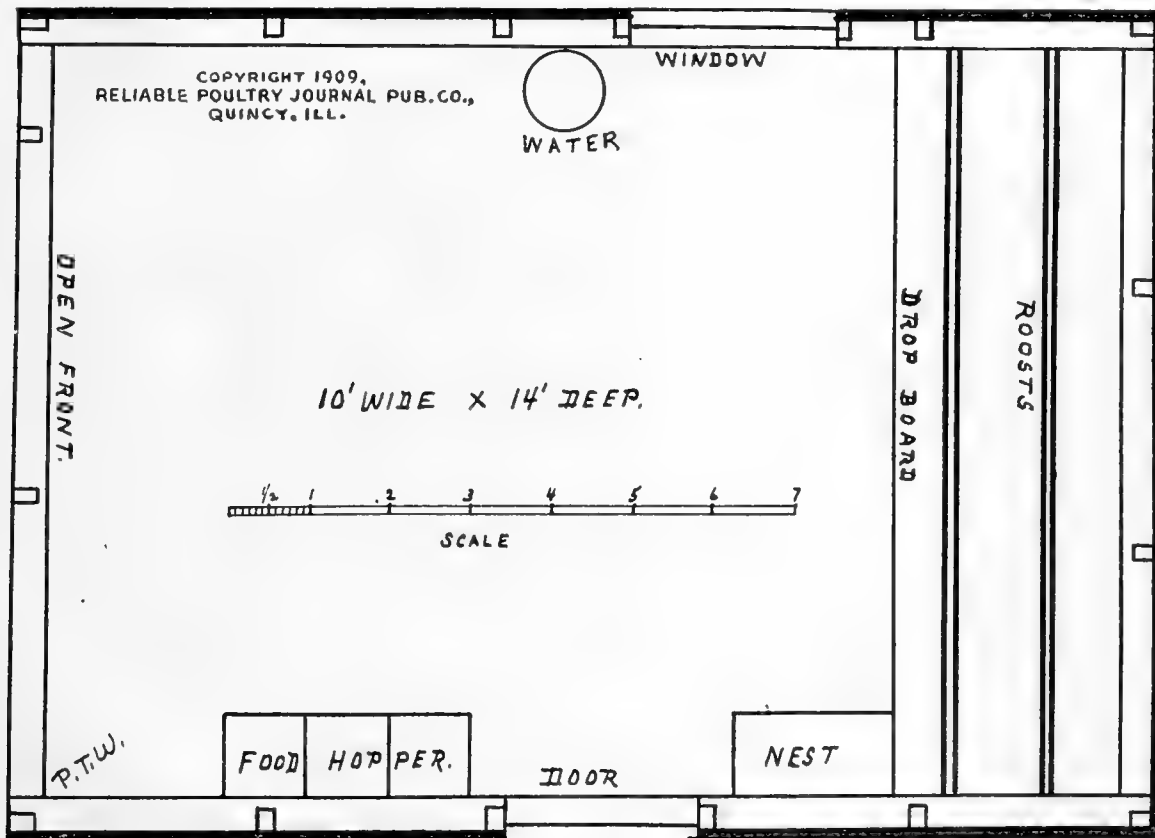


PLATE I—GROUND OR FLOOR PLAN, WOODS' OPEN-AIR POULTRY HOUSE
Showing Plan of Furnishing, Position of Sills, Studs, Roosts and Drop Boards.

and with windows open is cool in summer. It supplies fresh open air all the time and the fowls are always comfortable. No curtains are ever used. The open front is closed only by a screen of one-quarter inch square mesh galvanized wire netting such as is used for cellar windows and to cover factory windows. This wire screen breaks drafts and will keep out snow in all ordinary locations. Never use curtains to keep out snow. If the location is one where blizzards are common and hard driving wind storms prevail, use a finer mesh screen of heavy wire. Keep the wire free from dust or wet packed snow by brushing with a broom. This house is intended for northern climates where winters are severe and for use in all sections where freezing or zero weather is common in winter.

posts are needed, five for each side and one in center of each end. Post holes should be made three feet and posts should be well tamped to make them firm. Sills of 4x4 in. stock are laid level on top of posts and spiked to them. Ends are halved to match sill joints.

Plate I shows ground or floor plan drawn to scale. To determine dimensions of any part of drawings lay a strip of cardboard on scale and mark to correspond. This card rule laid on plan will give dimensions in feet. Floor plan shows position of sills, studs, window and door. Location and size of droppings board and roosts are also shown. Nest is placed with entrance at drop board level (2 ft. above top of sill). Food hopper and water pail are at convenient height for fowls. We prefer to place them high and to make a slatted platform

in front of each for fowls to fly up to. This keeps food and water up out of litter and dirt. It also leaves more free floor space as floor beneath platform is open and available. If rear section is made two feet deeper, making whole house 16 ft. deep it will give room for one more roost and give a capacity of 40 layers for winter or 30 for summer, fowls confined to house or with only small yard. Nest is single box 12x24 in. inside measure, is open at north end only and has shed-roof hinged cover. With more than 25 fowls a second nest should be supplied. (To make a large colony house of this type make floor dimensions 14 ft. wide by 20 ft. deep. Highest point of roof should be 10 ft. and rear section should be 12 feet deep. Make front section 8 ft. deep and same

section use clean oat straw litter. This house may be made with sand or gravel floor only, filled in to top of sill. We would prefer a cement or concrete floor (rat proof) to bottom of sill and then filled in with sand and litter to top of sill. Sand and litter to be renewed as often as needed.

After sills are laid studs should be placed in position and nailed to sills. Plates are spiked to top of studs after making sure to have them plumb. Rafters are lightly notched to engage plate as shown in plan (Plate II). Side boards should be put on in horizontal position and should be covered with good roofing fabric. Roof boards lay east and west. Joints of sides with roof should be flush and smooth. Roofing fabric for sides

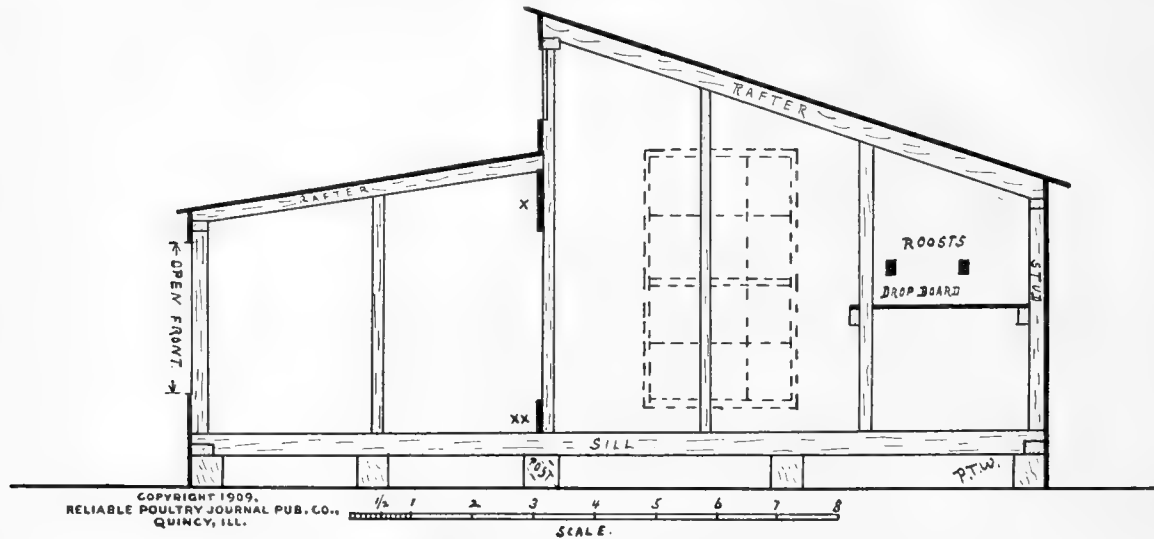


PLATE II—SIDE SECTION VIEW, WOODS' OPEN-AIR POULTRY HOUSE

Shows Posts, Sills, Studs, Plates and Rafters with Boarding. Dotted lines indicate West Window.

height as small house. Capacity 75 to 80 layers. Instead of small windows in monitor top of this large house use regular 6 light half window sash, two to each house.)

Building Instructions—Plate II.

Plate II shows side (sectional) elevation. Position of posts, studs, plates and rafters is clearly shown. Dotted lines show position of window in west wall. Door placed between two highest studs in east wall with bottom just below top of sill to break joint and stop draft. Door opens outward and hinges on north side. A screen door of one inch mesh hexagon netting should be made to open in, just inside solid door. This is useful in summer or at any time when it is desired to have door open. Position of roosts, drop board, plates and windows in top are all shown in plan, and dimensions can be ascertained by marking a cardboard strip to correspond with scale below drawing. It will be noted that the south front is boarded down six inches from the top and up eighteen inches from the bottom. The balance of space is the always open front covered only by one-quarter inch square mesh galvanized wire netting. The actual opening in front is $2\frac{1}{2}$ ft. high by about 10 ft. wide. It is always open. X. is a 12 inch board notched to receive rafters nailed to upright studs to serve the double purpose of support for front rafters and as a stop draft. XX. is litter board from floor level to 4 to 6 in. above sill and used to keep all litter in rear section of house. It should be made removable resting in cleats. Front section should have sand or earth floor only. In rear

should go on up and down and should lap on roof about one foot. This gives a wind proof joint. Eaves at north end of house should be made by a double course of shingles to project three inches. Roof covering should be laid to roll east and west with generous laps and should allow only four inches of shingle course open to weather. Peak should be protected by well painted board. South end of roof should have double shingle course to make eaves in same manner as north end.

Windows for semi-monitor top should be three 3 light common small cellar windows and should be screwed tightly in position to make a wind and storm proof joint. These windows may be removed in hot summer weather but in cold climates should be firmly fixed in place from September 1st until first settled warm weather in June. West window may also be removed in hot summer weather and replaced by wire screen. With windows out in warm weather the house is cool and comfortable even in "dog days."

Front Elevation—Plate III.

Plate III gives a semi-perspective view of the front elevation. Front and rear section are drawn to different scale as shown in plan. As shown, front is boarded up from bottom 18 in. to break floor drafts and is also boarded down 6 in. from top. Balance is one quarter inch wire netting. Position of studs is shown. Door for fowls is only break in wire front, it can be closed by a hinged run board as is shown in plan or may have a

board shutter run in cleats on inside of house and worked by a cord and pulley.

Material Required

- 6 posts 7 ft. long to cut in halves.
- 2 pieces 4x4 in. stock 14 ft. long for side sills.
- 2 pieces 4x4 in. stock 10 ft. long for end sills.
- 4 pieces 2x3 in. stock 3 ft. 8 in. long for back studs.
- 3 pieces 2x3 in. stock 5 ft. long for studs.
- 2 pieces 2x3 in. stock 5 ft. 8 in. long for studs.
- 3 pieces 2x3 in. stock 6 ft. 4 in. long for studs.
- 2 pieces 2x3 in. stock 4 ft. long for studs.
- 4 pieces 2x3 in. stock 3 ft. 4 in. long for studs.
- 3 pieces 2x3 in. stock 10 ft. long for plates.

is boarded down to ground. Height at peak is 8 ft.; at back 5 ft.; at north end of front section 5 ft. 6 in., and at front 4 ft. 6 in. Measurements from ground.

To make the house rat-proof it was built with a double boarded floor and was placed high on posts protected with inverted metal pans. The fowls housed were confined to the house and were not allowed outside of it all winter. The front, as shown in illustration, was closed only by fine, square mesh, heavy galvanized wire netting and was always open. The fowls were healthy and happy all winter although somewhat crowded. The egg yield was exceptionally good. The eggs in the spring ran from 85 per cent to 90 per cent fertile and hatched well. Best of all the chicks lived and thrived.

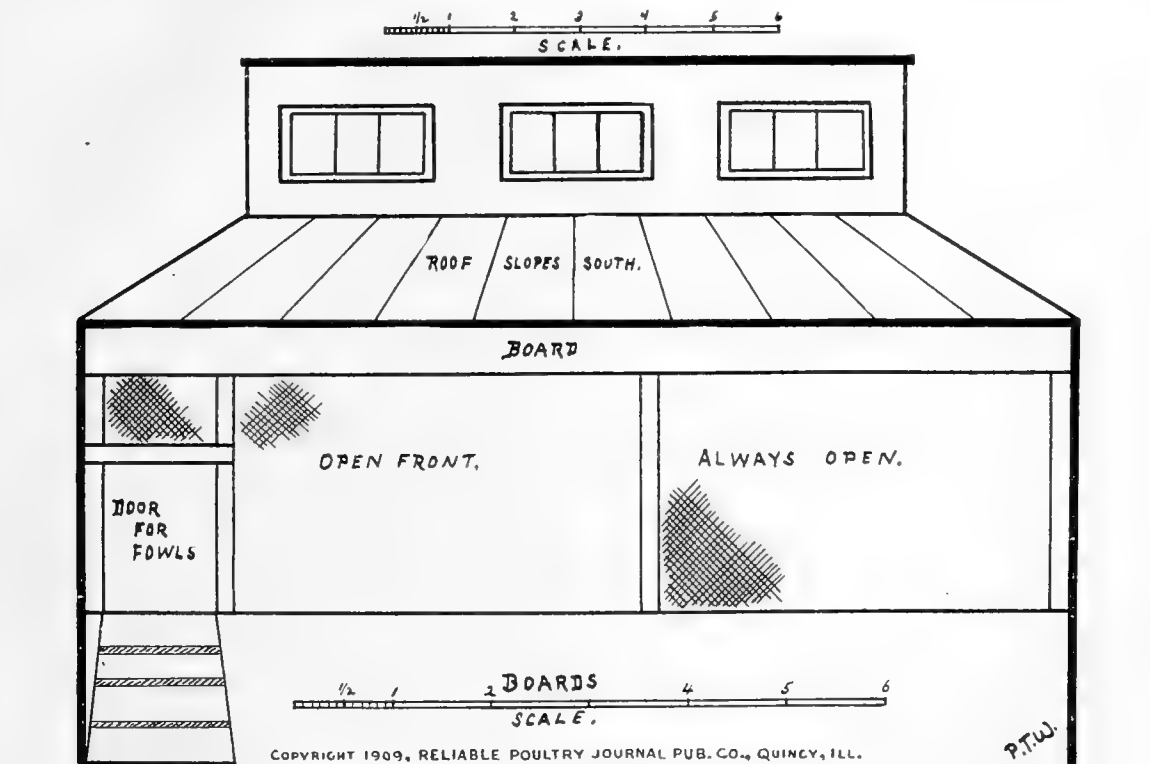


PLATE III—DIAGRAM OF FRONT ELEVATION TO "SCALE PERSPECTIVE" WOODS' OPEN-AIR POULTRY HOUSE

Note difference in Front and Rear Scale Shows Open Front and Semi-Monitor Top with Small Cellar Windows to Sun Rear of House.

- 2 pieces 2x3 in. stock 10 ft. long for drop board supports.
- 2 pieces 2x3 in. stock with rounded edges 10 ft. long for roosts.
- 5 pieces 2x4 in. stock 8 ft. 9 in. long for rear rafters.
- 5 pieces 2x4 in. stock 6 ft. long for front rafters.
- 58 sq. ft. matched boards for droppings board and door.
- 460 sq. ft. common boards for sides and roof.
- 1 full window (2 sash six light) 4 ft. 3 in.x2 ft. 6 in.
- 3 three light cellar window sash for monitor top.
- 10 running feet of 1/4 inch square mesh heavy galvanized wire netting 30 in. high, for open front.
- 500 sq. ft. best roofing fabric with caps and nails.
- Bundle shingles for making eaves on north and south ends.
- Nails, hinges, spikes, screws, etc.
- Where ground is level house sits with bottoms of sills on posts or rock six inches above ground level. It

SOUTHERN OPEN-AIR HOUSE

Open-Front Building Suitable for Warm Climate

P. T. Woods, M. D.

IN THE South, in all warm climates, an open-front poultry building is necessary for best results. The low-roofed, low open-front type of building is not so well suited to such localities as a house with more head room would be. In many parts of the South the days are hot and the nights are cold and damp. Heavy rains and excessive "humidity" are common. The "Southern" house is planned to meet the requirements of the climate, but in some cases it must be modified to suit local conditions. In the far South it will generally be a good plan to make the front third of the east and west sides of slats instead of tight boarding. Use "shingling laths" and leave one and one-half inch openings between the laths.

Southern Open-Air House Described

The Southern Open-Air Poultry House is a partly floored, double-pitch roof building, with an open front, plenty of head room, and a runway beneath the building. It provides a comfortable home for the fowls the year around and the basement runway will prove particularly useful as a cool retreat for the fowls in hot, sunny weather. The house should be located on high, dry, well-drained soil and if placed in a low location the land should be graded to make the ground beneath the building higher than that surrounding it so that surface water will not run or stand beneath the house. In wet land drain around building to carry off water in heavy rains.

The house occupies ground space 10 ft. wide by 14 ft. deep. The main building sits on posts two and one-half feet above the ground. Measuring from the ground it is 9 ft. 6 in. high at peak and 6 ft. 6 in. high at eaves. The house has a board floor extending from the rear to within 2 ft. 8 in. of the front so the floor is 9 ft. 10 in. wide by 11 ft. deep and is made of matched boards with heavy tar paper beneath laid on the floor timbers.

Fig. 1 on next page is scale diagram showing the front and east side of "Southern" house. There are two windows opposite each other in the sides and one win-

dow in the gable of the south front above the door. These windows are single sash (6 light) and are hinged at the top to open up against the roof where they should be fastened with hooks. One-quarter inch square-mesh wire netting should be used to cover the window on the outside of building. The space or runway be-

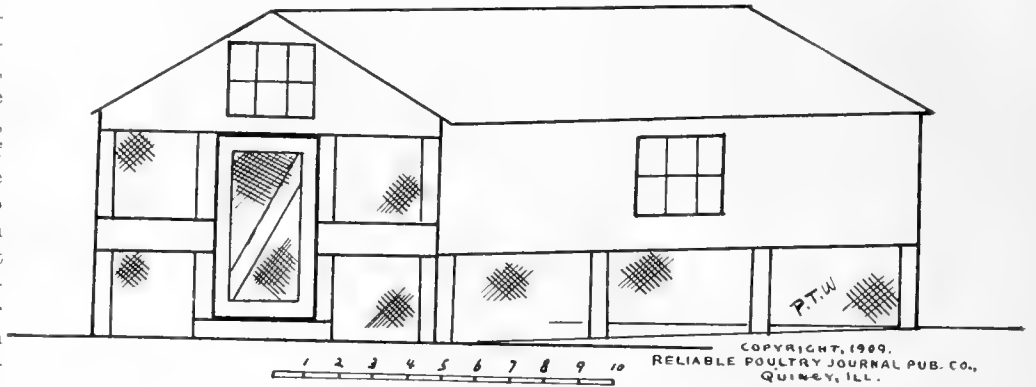


FIG. 1—SCALE DIAGRAM OF ELEVATION SOUTH FRONT AND EAST SIDE OF SOUTHERN OPEN-AIR HOUSE

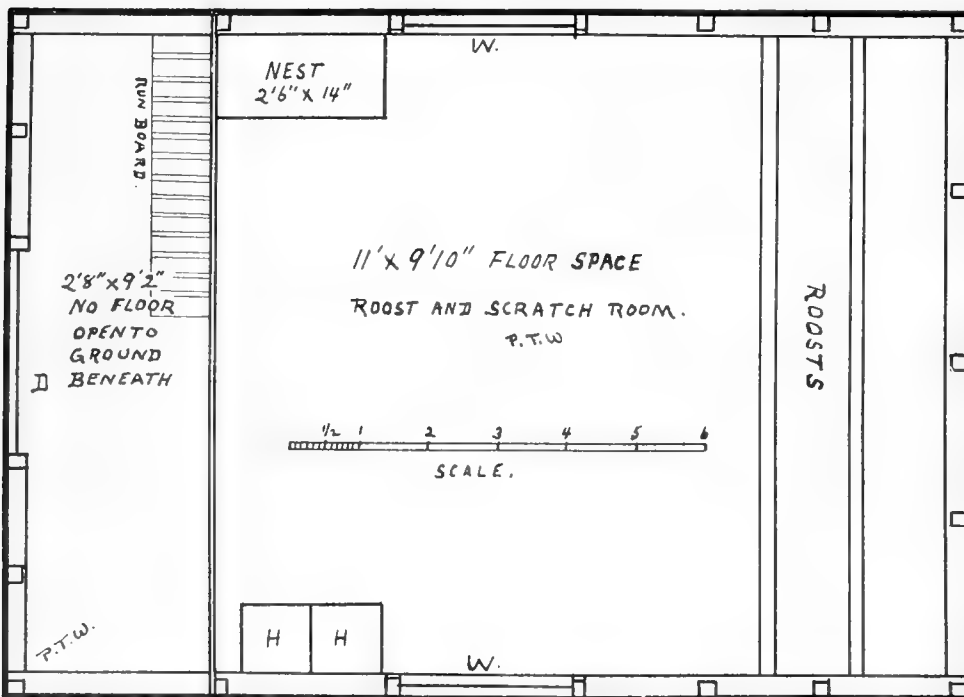
Diagonal crossed lines show spaces covered only by wire netting. South front is always open, no curtains are used.

neath the house is enclosed with one-inch mesh, heavy galvanized hexagon wire netting or with finer mesh. Door and open front of main building should be covered with one-quarter inch square mesh heavy wire netting (galvanized). A board is placed at bottom of main house (post level see Fig. 1) on either side of door to help break floor drafts. A "litter board" is placed at end of floor in front, extending 6 in. above floor level to hold straw litter on floor. Diagonal crossed lines in Fig.

1 indicate parts closed only by wire netting. All drawings are to scale shown in each cut. Mark card to correspond with scale, and it will give dimensions in feet. Use scale given in cut for that drawing only. Make some allowance for slight variation in Fig. 1, and note measurements in flat plans Figs. 2 and 3.

Floor Plan and Furnishings

Figure 2 shows floor plan with location of sills, studs, windows and furnishings. As indicated no droppings boards are used. Roosts are two feet above floor. Fowls will scratch litter from front of house to back and keep droppings covered. The droppings should be removed often and litter renewed. Position of nest and food hopper is indicated. Hopper sits on floor. Nest is placed with bottom 14 in. above floor. The nest is 2 ft. 6 in. long by 14 in. wide, is open only at the north end



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FIG. 2—FLOOR PLAN SOUTHERN OPEN-AIR HOUSE

Shows furnishings and floor limit. WW—Windows. D—Door. HH—Food Hopper. Shows position of studs on sill.

and has a "shed-roof" cover hinged at the top. A water pail may be placed in a convenient corner of the runway beneath the house. Run board is used to give easy access between scratching floor and basement runway. Windows are kept open in warm weather and closed during the cold or stormy season. "W" indicates window. "H" is hopper. "D" is door. House should face south or east of south.

Fig. 3 (this page) shows section view at south front at end of floor. Position of furnishings, posts, floor timbers, sills, studding, plates and rafters is shown in this drawing. Run board should be heavy enough to bear weight of attendant for convenience in entering main house when desired. The house from which this building was adapted had inverted tin pans on tops of posts to keep out rats and no "run board" was used.

In building this house set posts three feet in the ground. Spike sills to posts and lay floor timbers with ends resting on posts where possible to give a firm floor. Detail of timbers, studding, plates and rafters is shown in the plans. Nail plates to top of studs, fit and cut rafters as shown. Board in sides, north end and roof with common boards. Cover roof, north end of building and sides north of windows with good smooth heavy roofing fabric and give a good coat of white paint. A house painted white is cooler in hot weather. In very warm locations it will be well to make front third of east and west sides slatted. For this purpose use heavy "shingling lath" put on "up and down" with one and one-half inch openings between laths. By boarding sides up and down less studding will be needed and building will have a better appearance.

It is estimated that this house can be built at a cost not to exceed \$35.00, using common lumber. With country boards it can be made cheaper. Finished matched stock would add to the cost. It will comfortably house a flock of from 12 to 35 fowls of the American class. With small flocks or fowls kept only for eggs no outdoor run other than the basement runway need be supplied if laying stock is renewed each year and old stock sold to market.

Material Required

Following is carpenter's estimate of material required:

- 14 posts six inches through, 6 ft. long.
- 3 pieces 3x4 in. stock 14 ft. long for sills.
- 1 piece 4x4 in. stock 10 ft. long for rear sill.
- 1 piece 4x4 in. stock 7 ft. long to make two front sills on either side of door.
- 5 pieces 3x4 in. stock 10 ft. long for floor timbers.

FRESH-AIR HOUSE FOR TOWN DWELLERS

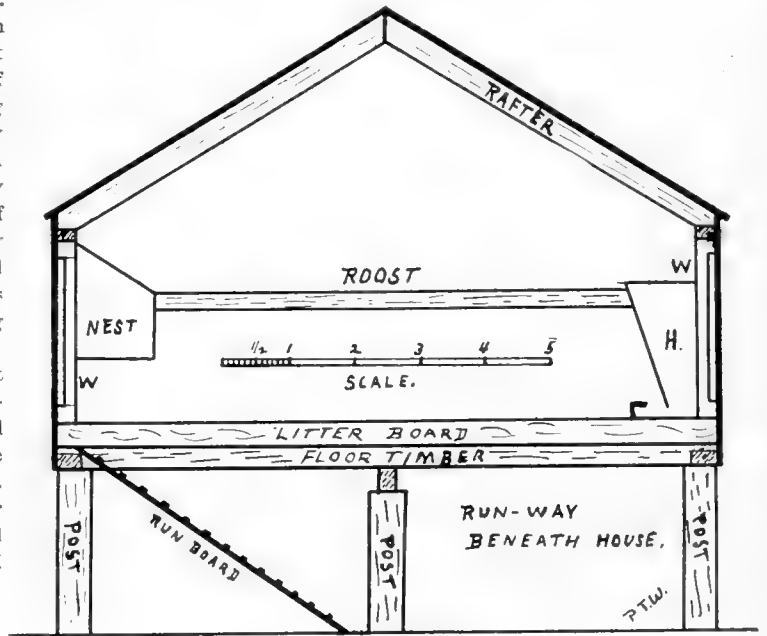
Eighty Birds can be kept in this House

Charles H. Westacott

THE accompanying photographs show a poultry house which I think is a practical, up-to-date, stationary poultry house. By stationary I mean one that can be erected in the back yard of the ordinary suburban residence. I know there are many readers whose "chicken farms" are calculated by the square yard rather than by the acre, hence I am pleased to give this description of my house, feeling that it may be of interest to those whose space is lim-

ited but who want a practical poultry house. The four photographs reproduced here tell the story pretty well, except the dimensions.

The house is fourteen feet long, six feet wide, six feet high in front and four feet in the back and it stands on six posts as shown in the illustrations. The floor is three feet from the ground which gives no place for rats to harbor and this space between the posts furnishes shade in the summer and shelter from storms and cold winds in the winter. In fact, in the winter it is an open-air sun parlor. The house faces south and the angle of the sun being lower in winter, the rays reach nearly to the back of this space. There is a trap door in the floor which the hens use in stormy weather when the house is closed at the ends. Placed in the rear wall of this scratching room (this wall is made by extending the boards of the back of the house down to the ground) are two doors.



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FIG. 3—SECTION VIEW OF SOUTHERN OPEN-AIR HOUSE

Shows furnishings and runway beneath floor. Indicates sills, floor timbers, studs, plates and rafters. WW—Windows. H—Food Hoppers.

On one hangs a dry feed box with four pockets containing shell, grit, etc. This is filled by opening the door. In the winter there is kept in front of the other door a large box of fine ashes in which the birds may dust.

We firmly believe that chickens were designed for outdoor life and that when we begin to shut them up in glass houses we are running against nature and the result will be that the birds in a short time will seem to make it their sole business to catch cold and will have lost all sense of their responsibility to the egg market, paying no attention to the size of the owner's feed bills but spending the principal part of their time in trying to keep out of drafts and practicing to learn which can hold down a stray streak of sunshine the longest without growing tired. Being imbued with these ideas we built a fresh air house that out-Tolmans Tolman.

At each end of the house there are doors four feet wide, extending from the roof to the floor, that are swung open every morning, summer and winter, and which remain that way all day unless there is a driving storm.

The roosts, three in number, extend lengthwise of the house as shown in the cuts, and are supported on cross pieces which are slipped into rests on the posts in the front and back of the house so that the floor is kept clear of all obstructions. The supporting pieces are easily slipped out and when the house is being white-washed these pieces are taken over to the adjoining fence, stood up in a row and pumped full of lime. The floor is kept covered with several inches of sifted ashes so that the cleaning of the house is quickly accomplished by simply raking the surface droppings into a box from either door. This can be done in five minutes.



FIG. 1—HOUSE CLOSED FOR THE NIGHT IN ORDINARY WEATHER



FIG. 2—CURTAINS DRAWN AGAINST STORMS AND EXTREME COLD

There is no necessity to enter the house to clean any part of it as everything is easily reached from the ground.

The Illustrations

Fig. 1 shows the house closed for the night in all ordinary weather. Fig. 2 shows the curtains drawn for protection against driving storms and extreme cold. Some of the largest numbers of eggs were gathered on the days when the ground was covered with snow and the chickens were allowed to run in and out all day. It is clear that the cold feet theory had no effect on them.

Fig. 3 shows the house taking a sun bath. The morning sun floods the house through the door on the

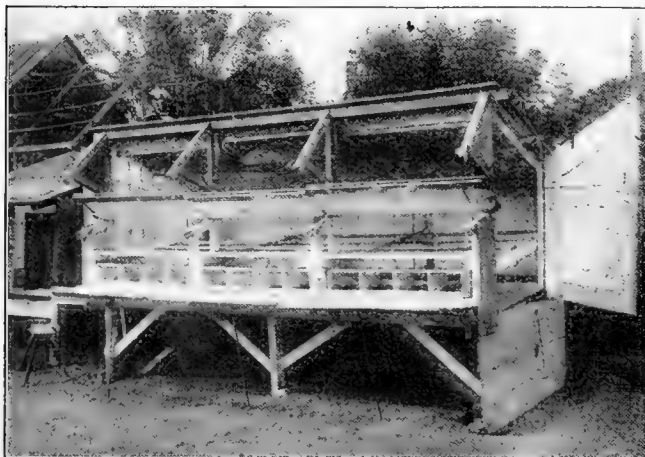


FIG. 3—HOUSE TAKING ITS DAILY SUN BATH.

through laying, about 4 o'clock, the house is opened as shown in Fig. 4, several times a week to purify the nests and it is certainly effective as neither nests nor roosts show signs of vermin of any kind. This picture also shows the ease with which the eggs are gathered. In fact, all necessary work in this style of house is performed without entering it, which will appeal to the women of the family who may be required to take charge of the flock at any time.

Fig. 4 shows how a row of nests is removed in order to clean them. As can be seen these are merely a frame work placed upon the nest shelf to divide it into four equal spaces. There is room for twenty-four nests on the two shelves and the house will accommodate eighty chicks of average size. "What," I can hear my readers exclaim, "pack eighty chicks in a house 14 by 6?" That is just what I mean. This house will keep in perfect health eighty chicks because the sanitary conditions are about perfect for chicks, the house being sweetened by air and sunshine all day long and having a constant circulation of fresh air at night. Under the nests is a four inch air space which is never closed and which allows all carbonic acid gas to fall to the ground to be blown away and thus a constant supply of fresh air is furnished the birds.

Sixty chicks were wintered here last winter and enough of this year's hatching will be placed in the house to bring the number up to eighty or a few more if they can get in. We have never had a bird show the least sign of a cold, though some of the male birds' combs were slightly touched with frost.

The material for this house cost less than thirty dollars. We never saw any house that was erected at so small a cost that could equal this one in stability, looks, general handiness and number of chicks housed.

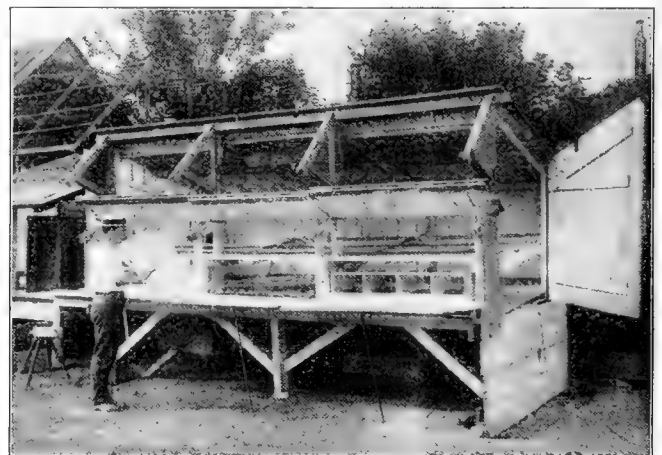


FIG. 4—REMOVING THE NEST BOXES TO CLEAN THEM.

CALIFORNIA FRESH-AIR HOUSE

A Substantial, Well-Built House That Will
Cost About Fifty Cents per Bird for
the First Occupants

J. W. Whitney

THE modern fowl house should include every recognized aid to perfect health. Whether egg production or symmetrical development of its inmates is desired, the most important requisites are pure, fresh air, without drafts, an abundance of light and sunshine, compulsory exercise, absence of dampness, etc.

Imagine yourself sleeping on a ground floor in damp weather, the whole front of your house open! Does it appeal to you? But elevate yourself three or four feet above the ground on a practically air-tight board floor, with the protection of a cloth frame between yourself and the outside air, and the situation resolves itself into one of comfort and healthfulness.

The writer holds to the opinion that a perfectly sanitary house must be so constructed that every available ray of sunshine may enter. It is not sufficient that the floor alone receives this highly disinfecting agent, but it should reach the side walls, yes, even the under side of the roof. As nearly as possible, this sunlight not only solves the moisture question, but the mite or house louse question also, for no mite or louse will breed in sunlight or extremely light surroundings. A fresh air poultry house that does not provide a means of shade, protection from wind and rain, and also compulsory exercise for its occupants, as required, is not down-to-date, as all of the above are essential to perfect health and extremely fertile and strongly hatchable eggs.

The Whitney Fresh-Air House

In "Whitney's improved fresh air poultry house" all these points are looked after, while at the same time careful consideration is given to expense in construction. As we build it, first-class, seasoned lumber is used, 6-inch pine or red-wood ceiling for side walls, and 1x12 inch pine boards, surfaced one side, for roof boards, over which is laid 2-ply flint lock or Congo felt roofing.

The ground floor is made of concrete (gravel and crude oil or asphalt may be used). The sill line at rear and ends is level, but the main floor has a drop of 2½ inches from rear to front, affording good drainage if water becomes necessary for disinfecting or cleaning. A 1x12-inch board held in place by cleats, removable at pleasure, rests upon the concrete at front of scratching shed (see cut), and serves the purpose of confining the scratching material to its place within the building. This board may be re-inforced by an added 6-inch board on top, if it is found to be necessary to retain the scratching material. The cloth frames used as shade or for protection from storms or low temperature, are made interchangeable, and may be used above at night and on the scratching shed by day, fully closed or partially open, as required, or a frame may be placed on each opening at small expense. These frames, as we use them, are held in place by hooks, similar to those used on swinging screen windows—(any hardware merchant can supply them). This permits their quick removal. We never use them except in heavy winds, driv-

ing rains and for shade, nor would we use them in a climate, the temperature of which did not fall below zero at any time, except when we found it absolutely necessary to preserve our fowls' combs, or for their comfort, or as an aid to prolific laying. With a breed like the Leghorn or Minorca, experience has taught us that an excessively low temperature at night, sudden changes from high to low temperature, etc., must be met with intelligent protection by the attendant.

How Space is Economized

The second or roosting room floor is of 6-inch No. 2 pine flooring, laid the narrow way of the building, and is practically air tight. If tongue or groove be freshly painted with white lead before laying it will pay for the time and expense. This floor is four feet above the cement floor. In other words, the scratching shed is four feet high in the clear. Just above this floor, on the front, come the trap doors for cleaning the roosting floor from the outside of the building. The roosting room floor is level for 2½ feet from front to permit of



THE WHITNEY FRESH-AIR POULTRY HOUSE

an alley way from the roosting apartment to the inside partition. There is an outside door to the upper or roosting floor at the right hand end of the building near the front. This door corresponds with the level floor and another door occupying the same position from front to rear is at the opposite end of the building.

The remaining portion of the floor under the roosts is built on an incline, the rear end resting four inches under rear plate of building and it drops to meet the level floor at front. This serves as a dropping board, making cleaning very easy from the outside of the building, also giving six feet of head room at rear of scratching shed. The runway for the fowls to enter the roosting quarters starts from the rear of the scratching shed and meets the upper floor at the point where the rear of the level floor leaves off, giving the fowls plenty of head room in going to and from the roost. This runway is placed against the middle partition of building and takes up little space in the scratching shed. The nest boxes may be made portable or built on to the building, as desired. All the suggestion we have to offer is that

the bottom be of galvanized screen cloth and a little heavier wire be used than common window screen.

The elevation of this building is $6\frac{1}{2}$ by 9 feet; it is 8 by 16 feet on the ground. It will be noted that there is two times as much floor space as in a commonly constructed poultry house, under one-half the amount of roof which is evidence of a saving of one-half in one of the most expensive items of fowl house construction.

Cost of Building

This poultry house built as we describe it costs \$45.00 here in California, just as you see it in the illustration, and it will accommodate 100 fowls nicely. One hundred and twenty-five head of Leghorns will do better in this house than with one-third more floor space in a closed house. I have carried fifty-seven White Leghorns for six months at a time in a space 6 by 6 in one of these houses with fine results. I refer to upper and lower floors 6 by 6.

To any who may try this plan we wish to say, "Use good judgment in the use of the cloth curtains and we will guarantee entire satisfaction with this plan at any point in the United States, Canada or England." We court the fullest criticism from those who think they see weak points in it. It is the result of twenty-five years' practical experience with fowl culture, in several different locations. It is not claimed that it is perfect, but it is believed to be a little in advance of anything offered to date, for actual practical business and beauty combined with limited cost.

The appearance of the building may seem to indicate a too expensive proposition for the every-day, practical poultryman. Actual figures do not reveal this. Fifty cents per bird for a house of unlimited usefulness, built to last a life time, is not prohibitive to any poultryman who appreciates comfort, convenience and practical qualities in the fowl house. The increased profit from prolific egg production and the low per cent of disease and mortality will soon cancel the difference in cost between such a building as this and the apologies for houses in evidence on many so-called poultrymen's places.

A MODIFIED FRESH-AIR HOUSE

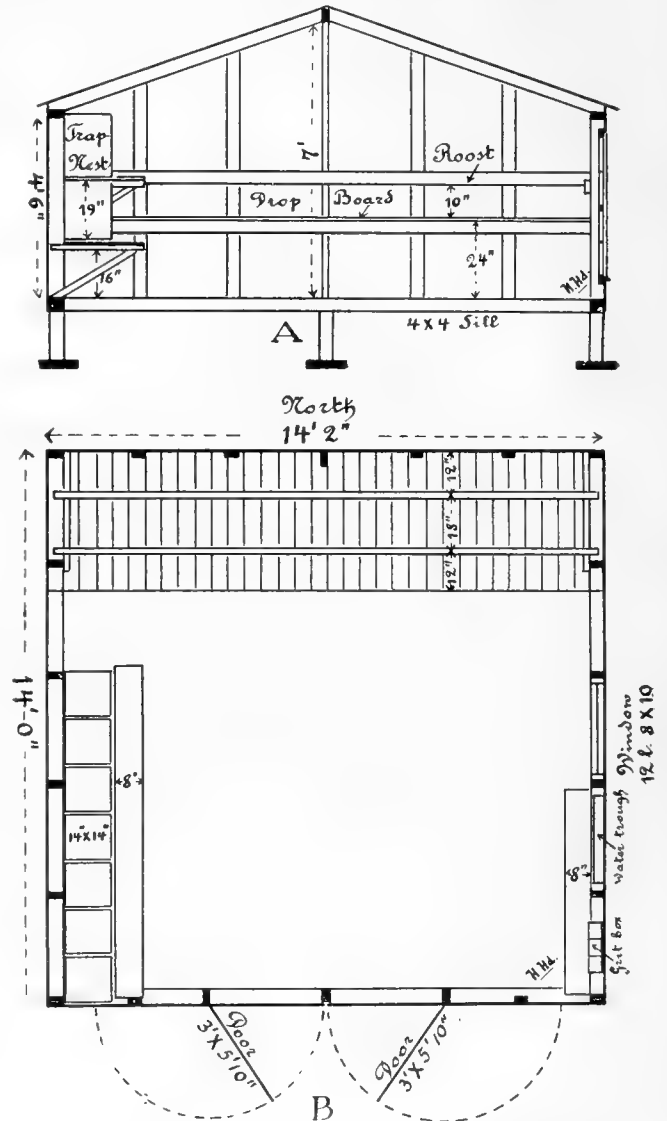
Designed, Used and Recommended for Tall-Combed Varieties in Cold Latitudes

H. Heidenhain

LAST fall when the task was put before us to provide laying houses for about 400 hens, we decided to build first two houses according to Mr. Tolman's Fresh-Air House plan. Mr. Tolman's reasons for the construction of this style of houses seemed to be so sound and the results obtained by him were so excellent that we thought little risk was involved in following his advice to use the same style of house for Leghorns, although his experience was then limited to Brahmans.

The two houses were finished in September and were at once filled with pullets and cockerels of different varieties, among which the Leghorns took a prominent part. The inhabitants of these two houses were healthy and happy and seemed, at first, to stand the great changes of temperature between day and night which is

characteristic of our climate, pretty well. The pullets began to lay in November and the egg yield was steadily increasing. We got in the former part of December in one of these houses 40 pullets, not all of which had reached maturity, on the average of 12 eggs per day. (The other house contained later hatched chickens). Our hopes were swelled that we had hit the right plan and that our egg yield from this flock soon would become still greater.



HEIDENHAIN'S FRESH-AIR POULTRY HOUSE

A—Sectional view showing location of roosts, droppings board and nests.
B—Plan, giving general dimensions and location of interior fixtures.

But here we were disappointed. As soon as the weather became more severe the egg yield did not even keep its own but diminished in an alarming manner. From an average of 12 eggs during the first third of December we rapidly went down, making the average for the second third but eight eggs per day.

The middle of the month had brought us snow and cold nights and we noticed that the combs of the Leghorn pullets got white tips and those of the Leghorn cockerels turned bluish.

It was not necessary to carry the experiment any further at least as far as Leghorns were concerned. As

we were short of quarters for our birds, we had to leave them in these houses, but provided for the fronts muslin doors which could be opened the full width of the front, when closed, which hereafter was done every night. A 3-inch wide strip over the top of these doors was left open to admit fresh air. After these changes were made no more combs got frozen, in fact the color of the combs of the cockerels soon became bright red again and our egg yield increased in spite of the weather becoming still worse. The average yield of the last third of December was 15 eggs per day.

How the Plan for our Fresh-Air Houses was Developed.

During the course of this experiment the question as to the style of laying houses best adapted to our climatic conditions was daily discussed and finally a plan was elaborated which seemed to satisfactorily fulfill all requirements.

It was out of the question to follow in future the Tolman plan, even in the modified form i.e., with muslin frames in front, as, for our purpose at least, the interior arrangement was not practical. In the first place we found the floor space much too small for that number of chickens, which Mr. Tolman recommends to keep in such a house. The area is but 96 square feet, which gives each fowl only $2\frac{1}{2}$ square feet. Not from a theoretical point of view, but from practical observation we had come to the conclusion that not less than 4 square feet should be allowed to each chicken.

There are days on which chickens are better off indoors than outdoors, no matter how necessary fresh air is for their well being. The house, therefore, must have room enough for the chickens to move about and to scratch for their food. In a house which is overfilled, the chickens stand idle. For the phlegmatic Brahmas this may be no hardship; they also keep warm by the mere size of their bodies, but the little Leghorns soon feel chilly if compelled to idleness on a stormy day.

Another feature in Mr. Tolman's plan which did not find our approval is the depth of the droppings boards, caused by the use of the three fold roost. Occasions frequently happen, especially in the fall when the weather turns severe, on which the chickens must be treated individually. The attendant must be enabled by the arrangement of the roosts, to reach any single bird without disturbing the rest of the flock. This cannot be done with three roosts, as the third one is too far away from the front of the droppings boards. To bring the roosts closer together would not do, in fact in Mr. Tolman's plan the roosts are as close together as admissible, perhaps a little too close. Two roosts are all that should be used.

The wire front in Mr. Tolman's plan has proved disastrous to the large combs of Leghorns. The house being of small size the excitable Leghorns fly right towards the front whenever a person enters the house, thereby lacerating their combs. Here again it shows that circumstances change conditions. What is right for the easy going Brahmas will not necessarily suit the nervous Leghorns.

Placing the nests under the droppings boards as is often done, also in Mr. Tolman's plan, we do not find practical. Not alone that it reduces the available floor area, but it also gives dark corners in which the hens are induced to lay, and one has to stoop down and crawl under the droppings boards in search for eggs.

Having observed such defects in the Tolman house

we had to avoid them in our future plan without sacrificing the fresh air feature.

In the first place we had to decide the number of chickens to be housed in one house. All experience seems to point to a limitation of the flock to 50 head. Taking this as a maximum for small breeds, it means about 40 for the largest and 45 for the medium sized breeds. If we figure for the medium sized fowls about $6\frac{1}{4}$ inch and for the largest small breeds like Leghorns about $5\frac{1}{2}$ inch roosting space, for breeds about 7 inch, we arrive in every instance pretty close to the same result, i.e., 28 running feet of roosting space. Using two roosts, the length of each one would then be 14 feet. Therefore, the house must measure in one direction at least 14 feet, if the allowable greatest number of chickens are to be put in a single house, which, of course, is desirable from an economical point of view.

As said before, each chicken should have at least 4 square feet floor space. That makes for 50 head, 200 square feet. If 14 feet is the length of one side of the house, the other side is figured to be a little over 14 feet. There would be no harm in making the house larger either way or both ways, but on a commercial plant like ours, no money can be thrown away for dispensable things.

After discussing and planning the interior for other dimensions, which would give nearly 200 square feet floor area, we finally decided on a 14 by 14 foot house, which allowed the arrangement of all fixtures in an easy and commodious manner and at the same time was the cheapest to build on account of its square shape.

The question of whether single houses or houses with scratching sheds attached should be chosen, was also thoroughly discussed. While the latter are very nice in many ways (we had five of such houses in use) they are not cheap, considering the number of chickens which can be housed therein. The chickens stay either in one or the other compartment. On cold nights and on some cold days the doors must be kept closed. Suppose the shed is in floor space just as large as the house proper, then the chickens have only the benefit of half the building. It costs about as much to build the partition between the house and the shed as to close the front of the shed. Doing this we get a house double the area and double the volume of air, which is a decided advantage on occasion as before mentioned.

Simple and Effective Plan of Ventilation

Now then we had to provide for an abundance of light and fresh air. The solution of this problem seems to us is given in the use of large doors in front of the building, as shown in our plan.

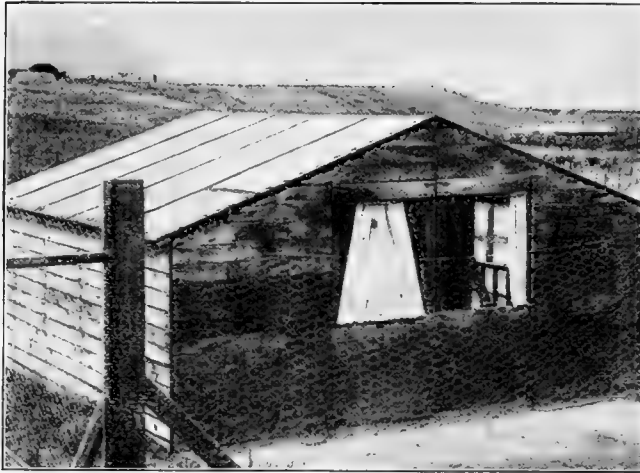
The ventilating device which I adopted consists of a pair of plain sliding curtains similar to those which our good wives use on the lower sashes of windows or on the big glass of the house door. The curtains are made of a rather open, unbleached muslin and have hollow seams on top and bottom. These seams are sliding over rods of galvanized iron, a little thicker than telegraph wire, which are held in place by screw-eyes. Wires and screw-eyes are assembled in the manner shown in the sketch and the curtains are easily put on in the following manner: First, stick the long end of the wire through screw-eye B, then slide the seam over the wire. Put wire through A and finally snap the short end behind C (not through the loop of C).

Such sliding curtains may be put in any position

and will stay where put. They can be pushed entirely aside or drawn together on either the upper or the lower side and so on, thus allowing circulation of air in a great variety of ways. Two of such positions are shown in the photograph.

The curtains are preferably put on the outside of the doors, so as to permit moving them without entering the house. On the inside the openings of the doors are covered with wire netting.

These doors with their sliding curtains we regard as one of the best things we have on our place. With them we are prepared for any kind of weather, hot or



VENTILATING CURTAIN IN POSITION

cold, sunshine, rain or snow. While both doors remain wide open day and night during the mild season we make it a practice to keep them closed over night, during freezing weather and regulate the opening according to the severity of the weather. As the curtains lay only loosely against the door frames and the fabric of the muslin is rather open, there is some exchange of air going on even then, when they are drawn out over the entire width of the openings.

In snowy weather we find it best to keep the chickens indoors with curtains pushed aside. Thus they have dry ground under their feet and all the fresh air and light they need.

The question whether shed roof or hip roof was to be used was decided in favor of the latter, on account of the size of the house and saving of material. By putting the gable side to the south we managed to provide for the large doors in front, which admit all light and air required. Too much light must be avoided in a climate like ours, with almost uninterrupted sunshine for 9 months of the year. In our old scratching sheds, the chickens do not know where to hide from the rays of the sun.

Undoubtedly the chickens like the open sheds and reluctantly they retire to the roosting rooms when the sun gets too strong. Having observed this we took care to provide for shade as well as light in our new plan and made the doors of such size, that at any position of the

sun, the house gives shady corners as well as sunny places. The height of the doors is such that the sun sweeps in the course of the day over the whole floor except in summer when it is not necessary.

The roosts we laid against the north wall being the one most remote from the front and therefore giving the birds best shelter against draft when the doors are left open over night.

We placed the window on the east side rather than the west side as all living beings enjoy the first warming rays of the rising sun.

The space under the droppings boards we left free and placed the nests on shelves in two stories on the west wall. Likewise watering trough and grit box are placed over a shelf, thus leaving the entire floor space available for the chickens' exercise.

It is of little importance of what material the houses are built. Local conditions are deciding in the selection of the proper lumber for walls and the material for the roof. Like Mr. Tolman we made it a point to have our houses tight against any draft. We lined the walls with heavy water-proof building paper on the inside, using shiplap outside, and covered the house with good roofing felt. All fancy or decorative work such as corner strips, molding, etc., have been omitted, our only object being the comfort of the inhabitants.

These houses have been in use since December and have proved equally serviceable with Plymouth Rocks as with Leghorns. We have had no frozen combs, although our nights in January were pretty cold and the air was damp and chilly from the time the chickens were put in until the end of February, only a few single days of sunshine interrupting the monotony of cloudy skies.

Method Stands Severe Test

Last winter was one of the most severe ones ever experienced here in Washington. Snow lay from two to three feet deep on the ground for about three months and it was freezing hard for several weeks without a let-up. Thus our houses and method of ventilation were put to a severe test and we can say that both have proved entirely satisfactory. There was no sickness in these houses or frozen combs with our Leghorns. The egg yield was good all winter from both pullets and hens. The fertility of the eggs was splendid as early as



Illustration showing one of the wires which support the sliding curtain invented by M. Heidenbain

the end of February when we began selling and using eggs for hatching, and the eggs hatched well.

We are satisfied that our poultry houses fulfill the requirements of our climatic conditions, but we hardly think that one plan will answer under all conditions. All we can say is: Study your climate and your breed and then build to suit.

Portable Poultry Houses



A SATISFACTORY MOVABLE COLONY HOUSE

Two views of a movable colony house. At the left the house is seen as it appears in winter with the front closed; the view at right shows the house with front completely open.

The Movable Houses Used in England

The Details of Construction of the Farmers' Fanciers' and Suburban Poultry Keepers' Houses—Methods of Housing Poultry in Small Flocks about the Farm and "Running" them with Cattle and Sheep

Chas. D. Leslie

MUCH of the progress of late years which has marked the poultry industry in this country is due to a better understanding of how to house poultry. It is strange, but true, that poultry keepers generally are just beginning to recognize the two cardinal facts of the housing problem: that poultry may be raised at a profit only where kept in lots not exceeding fifty, and that the fowls need more ventilation in summer than in winter. It is not very long ago that an enterprising "poultry farmer" ran his fowls in lots of three hundred, providing one house for that number, arguing very plausibly that there was a saving of expense in building one large house instead of many smaller ones, and but for the fact that his fowls laid very poorly and a mysterious disease killed them off within a twelvemonth, he might have proved his point.

Poultry houses used always to be built with four wooden sides, some not even having a window, and no ventilation beyond a few holes up at the eaves. Even though built to accommodate fifty fowls, the windows in the houses were only a foot square, and fixed. Writers on poultry topics, when discussing poultry houses, suggested a window as a sort of an extra. It was hardly an extravagance, they pleaded, though they did not venture to call it a necessity. Happily, more enlightened methods prevail today.

"Most Profitable Way of Keeping Poultry Is to Run Them on Grass Land with Cattle or Sheep"

Farmers who are now taking up the breeding of poultry as a minor branch of live stock from which they can make fifty to a hundred pounds (\$250 to \$500) a year, for the most part rely upon movable houses, that is, houses set on wheels and accommodating twenty to fifty fowls. They find that the most profitable way of keeping poultry is to run them on grass land along with cattle or sheep, in numbers of ten or twelve to the acre, instead of allotting a certain portion of the farm entirely to them. The house is moved daily, or every few days, and if the poultry are kept in flocks of such small numbers they do the land no harm, but rather benefit it. By this means the fowls cost nothing beyond their food, and the initial cost of the house, the item of rent—the rock on which the poultry farmer usually comes to grief—being eliminated, for the land carries as much live stock as it did before, plus one, two or three hundred head of fowls.

Differences of Climate

I should like to call attention to two points of difference between poultry keeping in this country and in the United States. We cannot with any degree of safety keep them so thickly on the ground, and this because of the second point of difference, that of temperature. The

open winter is the rule here, the exceptions, especially of late years, being very few. Our winters in the north of England are cold and damp, with frost and snow intermittent, and the climate varies seriously, considering the comparatively small size of our island. The thermometer hovers around freezing point, generally above it. Such weather is, of course, very bad for fowls, when, as in the majority of cases, they have no dry shelter, thaws following frosts so rapidly that the runs cannot



104—AN ENGLISH COLONY HOUSE

The nest boxes and feed troughs being on the outside, the attendant can gather the eggs and feed the fowls without entering the coop.

dry out. As a rule, the land is heavy clay soil, that taints far more quickly than a light gravel soil, which forms only a small proportion of this country, and poultry keepers find it inadvisable to run fowls more thickly than one hundred to the acre.

Twenty-five Fowls in Each Flock are Most Profitable

Supposing grass land is devoted entirely to the poultry, experience teaches that the fowls should be kept in lots not exceeding twenty-five in runs consisting of an eighth of an acre of land, two runs being allotted to each flock, the fowls being transferred from one to the other alternately every six months. One transfer is made about June, when the hay season is on. The grass is cut in an empty run and when the ground is cleared the fowls are put into it. The grass in the run they have quitted is also cut, although it is of no use except for litter. An attempt to make the land carry more fowls has proven disastrous.

The fowls are not indulged with big dry shelters as in the United States. Some have wooden boxes just big enough for them, say a house 5 by 5 feet high, containing 125 cubic feet of space for fifteen to twenty fowls, though the more up-to-date poultry keeper uses the open front pattern, which is a combination of house and dry shelter.

Farmers' Poultry Houses

We have three common patterns of houses; first, that on wheels, like the one in accompanying illustration (104). These are called "farmers' houses," and have a large sale among farmers who run their flocks at liberty. They are far from perfect. The outside nest boxes are strongly

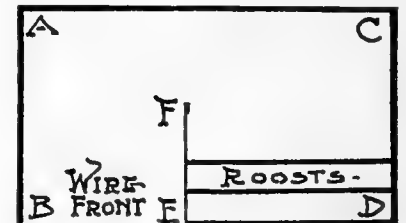
condemned by all good judges. While they save opening the door of the house, which may be kept locked, they are harbors for lice, as they are not easy to clean, in fact, fixed nest boxes are a mistake, and a poultry house door should be opened each day in order to make sure that all is right inside the house. Such a house does not afford enough ventilation as there is but one small window on one side (not shown in the photograph), with ventilation holes up in the eaves. On a hot summer night the fowls do not get sufficient air.

The newer types of this pattern have a big, movable shutter in place of a window, made either of part glass and part wire, or all of wire. In warm weather the shutter is pulled back and a full current of air admitted. Having the house on wheels is useful as by means of a horse and traces attached to the rings in front, it may be easily transferred from one field to another. The most sheltered position will be chosen for the house in winter and throughout the spring and summer it will occupy grass land devoted to sheep or cattle, then in autumn, when the harvest is over, if the farmer grows corn, wheat, barley or oats, the house is moved to the stubble and the fowls glean the land. Many farms, however, are all grass, as we are growing less and less grain, and in this case they are transferred in such a manner that the farmer can obtain as large a cut of hay in June or July as possible.

The open front, or semi-open front, pattern poultry house is now coming into general use, indeed, I venture to prophesy that it will in the future be more popular than any other. All the up-to-date poultry keepers are using it for their breeding pens. One type is illustrated in the photograph in the foreground of which are White Wyandottes.

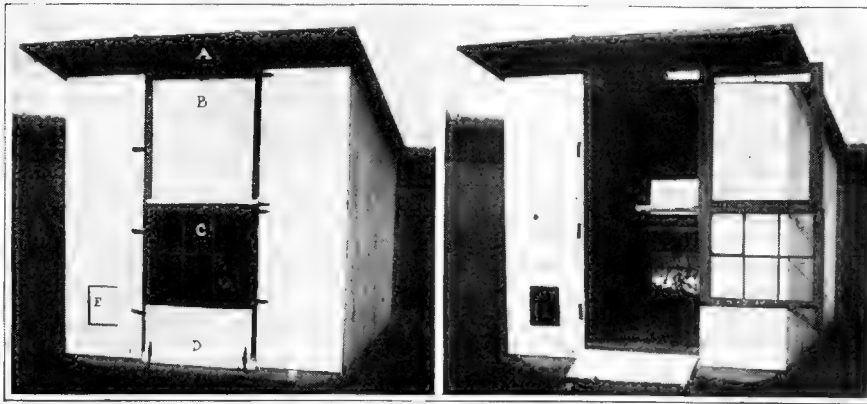
The picture derives its chief interest from the fact that the birds are Miss Tammadge's, the celebrated strain which won first prizes two years in succession in the Utility Poultry Club's laying competitions, so that they may be regarded as the premier British laying strain.

The photograph shows the house so well that no further description is needed, but a somewhat simpler pattern is more popular, being cheaper to make (105). This is a combined house and day shelter or scratching shed. The house and run is partially divided by the line E F, which



105—PLAN OF OPEN-FRONT POULTRY HOUSE IN USE IN GREAT BRITAIN

extends about two-thirds the way from front to rear. Half the front E D is boarded; the other half, B E is wired, and may or may not have a shutter. The roosts are shown. These houses have sloping roofs and are built lightly, but fairly substantial. The fowls escape direct draughts in all weather, while they get plenty of air. Some breeders dispense with the partition E F, but unless in a very sheltered position, this would be too airy in winter. There are old-fashioned poultry keepers who look askance at these open front houses, but it is hardly necessary to say that chicks as well as adult fowls should be reared in open-front, or very well ventilated houses.



COLONY HOUSE ON RUNNERS

At the left is shown the Sled-Runner Colony House built and used by J. W. Parks. In the right view, through the open door, the roosts are seen in place for surplus cockerels.

Sled-Runner Colony House

A Convenient Design that can be Changed from a Summer to a Winter House at a Small Expenditure of Time and Labor

J. W. Parks

WE PRESENT herewith a photograph of one of our latest style colony houses, which for all 'round, every day purposes, is the best we have seen or used so far. In fact, it is a house that has filled a long felt want. We have been for a number of years, working on a colony house that would not only answer the purpose of raising the chicks, but one that we could fix up at a very small cost for winter use. You have all heard that "idleness is the mother of mischief," and it is certainly true that a poultry house fares better if it is in use every day. Furthermore, we wanted a house that we could change from a summer to a winter house with a very small expenditure of time, because when one has a great many houses to care for, things must be pretty convenient, as time is one of the most important considerations. These features our colony houses have.

We have been making our houses 3 feet wide and 7 feet deep, but of course they can be made almost any size to suit your requirements. The shape of the house will depend principally upon the style of brooder you use. Hereafter we expect to make our houses 7 feet wide and only 6 feet deep as that size will be more convenient for caring for the brooders we are now using. Our houses are 4 feet 6 inches high in the back and 6 feet high in front, which may be a little low for some people, but it is well to remember that in cold weather the chickens have to heat the house, hence the importance of making them as small as practical.

When constructing a house, the three sled runners

are cut first, using for them 2 by 6 oak plank. One runner is placed at the back, one at the front and one in the middle. Next we cut 2 by 4s as long as we intend the house to be deep, the runners always being as long as the house is wide. We use a 2 by 4 at each side and one in the middle, notching the runners so that the 2 by 4s



LOW COST PORTABLE COLONY HOUSE

Three of a group of twenty portable colony houses constructed by a farmer at a cost of \$5.00 each. An inexpensive brooder was placed in each house and the chicks were happy and healthy in all weather. Each house is a shelter for 50 to 75 chicks until they are marketed or placed in winter quarters.

can set down level with the top of the runners. In this way we get a level surface on which to lay the first floor, which must be of tight lumber. Over it lay some old pa-

pers and then a second floor, which need not be so tight as the first because the cracks are sure to be filled. We lay these double floors because we use these houses as early as January for little chicks, so it is very important to have the floors as warm as possible.

Next, the top frame is made and the corner boards nailed on and then we finish boarding up, using matched lumber so as to have tight joints. There must be no draughts in those coops.

Such a house can be built with less than 400 feet of matched lumber. We use tar paper for the roofs. By tarring it as soon as laid and once a year afterward, it will last from ten to fifteen years as it gets heavier each year. If first-class material is used one of these houses will cost from \$10 to \$12, but you can use indoor brooders in them instead of buying outdoor brooders and the difference in their cost will cut down the cost of the house, not to mention the avoidance of wet knees from kneeling to attend to the lamp and the annoyance of having a stiff breeze blow out the flame. It is more pleasant to attend to an indoor brooder set in one of these colony houses.

The Illustrations

Letter A shows the projection of the roof. We have it project 18 inches in front and 12 inches in the rear. This not only protects the building and prevents the snow from blowing directly in, but it also makes a place for the chicks as well as the attendant to stand during rough weather.

You will notice that the door is really three doors in one. Letter B shows the top door, which has a muslin curtain that we let down over the wire in the winter time when the weather is rough, or on cold nights. We can open this door independently of the others and it serves nicely for feeding and watering without entering coop.

Letter C shows the middle door made out of a win-

dow sash. This is used to let light in and to keep cold out in the winter. In summer we take out the sash and substitute a frame covered with wire.

Letter D shows the bottom door which we consider is one of the best things about the house. During the winter this door keeps the litter confined to the house so the chickens can scratch as much as they like. In the illustration this door may be seen let down to form a platform for the chicks to run up and down.

Letter E shows a sliding door that we seldom use except when we have a few chicks that we wish to fence in. Then we have the wire fence come between the door D and the opening. In this way we have access to the main coop without bothering the yard and we can reach in and shut the door without entering the yard.

Letter F shows one of the sled runners. Being made of 2 by 6s they throw the house up high enough so that the chicks can run under it out of the hot sun or away from hawks which are quite numerous in our country. This open space under the house will have to be closed up for a time until the chicks learn the way into the house.

We have a sort of baled hay hook that we hook under the house back of the 2 by 4 on the side and then hook the other end to the harness and the horse is ready to move the house to any desired location. We move these houses not less than twice a month even if it is only their own length, as that gives the chicks a new pasture and avoids the danger of killing the grass where the house stood.

Let me again caution any who may build colony houses that the two sides and the back must be tight as your year's work can be spoiled by drafts.

The Occupants

We first place about 50 chicks in an indoor brooder in one of these houses and as soon as they learn to go in and out of the brooder, we cover the colony house floor with chaff and let the chicks have the whole place. Be careful not to leave any little nails lying around. I lost about 40 promising chicks last February as a result of their eating some little lath nails I had left in the coop.

As soon as they are old enough and the weather permits, I remove the brooder and fix a little place in one corner for them. When they are large enough to squat on the roost I place two roosts—4 inch boards—about 6 inches from the floor across the rear end of the house. These roosts will hold about 35 half-grown chicks, and that is about as many as the most of us raise on an average, from 50 chicks.

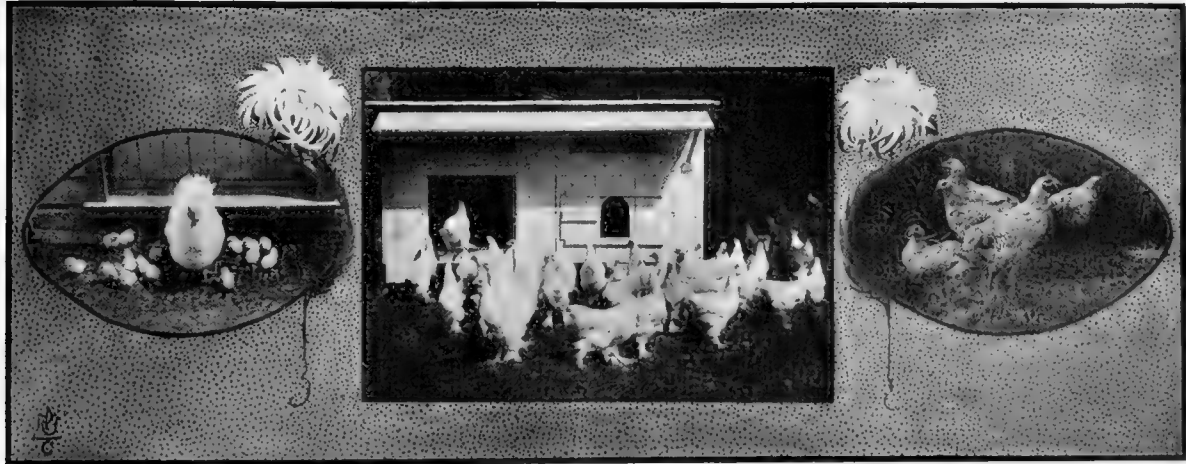
We keep them this way until the cockerels get to bothering the pullets and then we take the pullets to winter pens or move them to some other part of the farm.



PORTABLE HOUSE ON THE MOVE

An English portable house on wheels that can be hauled to any part of the farm.

Exterior and Interior Fixtures



Exterior Fixtures

The Construction of the Most Successful Portable and Stationary Colony Houses, Weaning, Brood and Shipping Coops and Crates for Fattening Chickens

THE ADVANTAGES OF PORTABLE COLONY HOUSES

Where great numbers of chickens are reared it is advisable to place the larger chickens in portable colony houses as soon as they do not require natural or artificial heat. These portable colony houses are located about the farm and as they can be moved readily by a horse the chicks can always have fresh ground over which to roam. It is preferable to confine the fifty or more chicks of each colony house on a grass plot of not less than 1,000 square feet. The fencing around this plot should be of 12 foot portable sections that can be readily moved, or it can be machine made, picket fencing with the pickets not over $1\frac{1}{2}$ inches apart. The advantage of confining the chicks is that it prevents their roaming over and soiling too large a range; by this method as soon as the first plot is soiled, the house and yard can be moved to a new location.

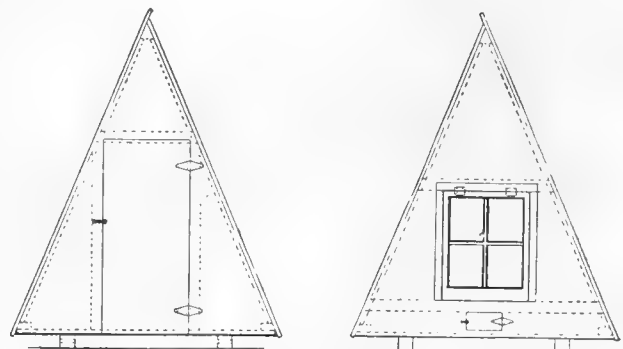
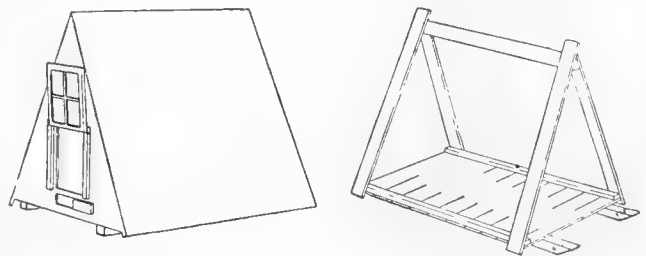
Portable houses can not only be used for housing the larger chickens, but they make admirable shelters for indoor brooders and newly hatched chicks. One brooder is placed in a house 6 by 6 feet and the fifty chicks always have a bright cheerful house. The chicks require little attention in inclement weather when they cannot be allowed outside; clover chaff to the depth of 2 or 3 inches is scattered over the floor and by throwing in a few handfuls of dry chick feed or small grain, the chicks will scratch for hours.

The "A" Type of Portable Colony House

A practical and inexpensive type of portable colony house is the A house. It is 6 feet square on the floor and about 7 feet high to the peak of the roof. These dimensions allow the poultryman to feed and attend the chickens, care for the brooder, etc., inside the house—a feature, the importance of which will be recognized by all poultrymen who have

attended young chicks in brood coops or outdoor brooders during heavy rain storms.

The average cost of the materials and paint for the house is \$7.00. The house will last for years and will be a profitable investment.



106—"A" TYPE OF PORTABLE COLONY HOUSE

Elevation

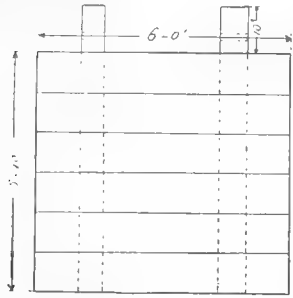
Rear

The sills or runners,
floor and frame for sides

Front

The Construction of the "A" Type Portable Colony House

Two pieces of 4 by 4 inch cedar should be cut 6 feet 10 inches long for the sills or runners; one end of the pieces should be bevelled and ironed, and either rings placed at the ends or one inch holes bored through the sills and a chain and clevis used for hauling. These sills are placed 4 feet apart and on them a 6 by 5 feet 10 inch floor is nailed. The bevelled ends of the sills should project 10 inches beyond the floor. The floor boards should be cut 6 feet long of $\frac{3}{8}$ inch matched lumber planed on one side. At each of the two sides of the floor a 2 by 4 inch scantling should be nailed. These two scantlings require to have their outer edges beveled; they must be well secured to the floor.



107—THE CONSTRUCTION OF THE FLOOR

The slanting sides should be covered with (1) dressed $\frac{7}{8}$ inch lumber with $\frac{7}{8}$ by 2 inch battens over the joints; or (2) matched siding; or (3) half-cut siding or weather boarding. We prefer the third covering on account of its lightness, durability and low cost. The dressed and the matched siding should be laid vertically; the half-cut siding and weather boarding horizontally.

As the length (height) of the slanting sides is 8 feet, when the dressed or matched siding is used the boards should be 8 feet long. The half-cut siding and weather boarding is 6 feet long. Two boards are fastened in position at each end of the house, and the triangular piece at the peak set in. The sides can then be boarded. The upper ends of the boards (or edge of board when the weather boarding is used) on one side of the house are bevelled; the ends of the boards on the other side are nailed to the face of the bevelled ends.

One inch inside each end of the house, four pieces $\frac{7}{8}$ inch thick and 3 inches wide are nailed the full length of the slanting sides. The end boards of the house are nailed up and down to these pieces.

There is a hinged window, 2 feet 6 inches long and 2 feet wide, opening outwards, in the front end of the house; the bottom of the window is 10 inches from the floor. In the rear or north end of the house there is a door 2 feet wide and 4 feet 6 inches high. Above and below the window and on a level with the top of door are $1\frac{1}{2}$ by 3 inch cross pieces. Two 6 inch holes should be sawed in the front and rear ends of the house near the peak for ventilation. In the front of the house there should also be a small chick door.

STATIONARY COLONY HOUSES

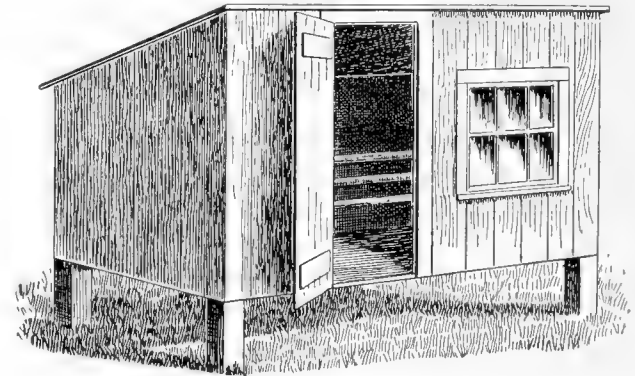
While portable colony houses are preferable to stationary houses because they can be hauled to favorable positions throughout the different seasons, the latter houses placed in good locations are satisfactory for rearing in each house one

brood of 50 to 75 chickens to the market age. If the stationary house is in a moderate size plot (1000 square feet) it is not possible to rear on that plot two or more broods of 50 to 75 chicks during the year—the chicks of the younger broods will be affected by the tainted ground and they will be stunted in growth.

One Type of Colony House

Ill. 109 shows an excellent colony house that can be built of any suitable dimensions. A large size dry goods box covered with roofing paper and with a window and door in the front similarly arranged makes an ideal shelter for a small flock of chicks.

The floor of the house is 12 inches from the ground. In exposed locations it is advisable to board up the back and



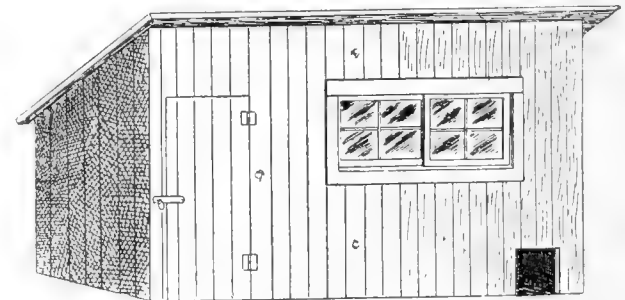
109—AN EXCELLENT COLONY HOUSE

two ends of the space below the house in order to provide a warm day shelter.

The front window should be hinged outside at the top and there should be a $\frac{1}{2}$ inch mesh wire netting frame inside. The frame should be removable. Chickens should be raised in a house or coop that is well ventilated and as cool as possible at night. To secure these conditions the window and door should be open on the warmer summer nights—the window almost constantly throughout the summer.

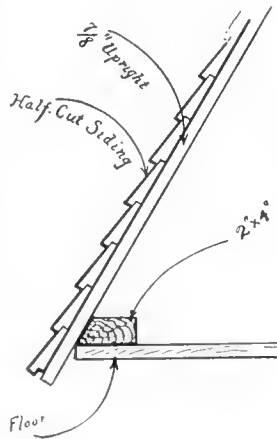
An Eastern Colony House

The colony houses in use at Fishers Island Farm are 5 by 7 feet, floor measurement, 5 feet high in front and 3 feet high in the rear. There is an ordinary door in front and a window with a double glass sash, one sliding each way, also



110—AN EASTERN COLONY HOUSE

a stout wire screen back of this for summer use. The exit is in front, as shown in the Ill. 110, and is closed securely a



108—THE DETAIL OF ONE LOWER CORNER

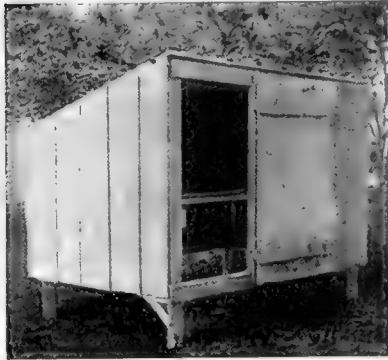
night by use of a sliding door. Fifty chicks are placed in each house and given from a quarter to half an acre of range. Each house is enclosed by a 6-foot wire fence. This fence is built of ordinary 2-inch mesh wire netting simply strung between posts. There are no foot boards nor are any top stringers required.

Southern Colony Houses

Colony houses for the south do not require to be as tightly built as those previously described. Most Southern fanciers prefer a house

without a wooden floor, simply a wooden "shell" a foot or more from the ground.

Mr. Morris states that the most approved plan for a southern colony—and also a regular poultry house is what is called in California a "mushroom house" This house is usually built of redwood stakes, or light, round, thin pieces of lumber, and is raised 10 to 12 inches above ground



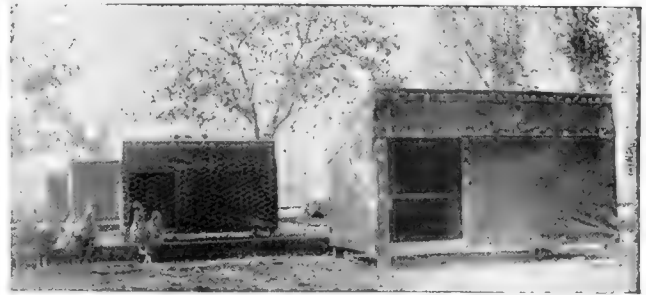
111—INTERIOR OF "MUSHROOM" HOUSE SHOWING ROOSTS AND OPEN SPACE NEAR THE GROUND

by blocking up the four corners. The size varies according to the flock, but small houses are preferred and the usual dimensions are 4 by 5 feet, up to 6 by 10 feet. The roof is covered with Ruberoid or paper, or similar material, and the



112—A POPULAR STYLE OF SOUTHERN COLONY HOUSE

house is made air tight from 1 foot above the ground. This 1 foot of open space around the bottom carries off the obnoxious odors, while the tight roof conserves the heat generated by the fowls' bodies and keeps them warm through the cold nights. The radiation of heat is so great in this clear atmosphere in the fall or winter months, that while it may be quite warm, or even hot at noon, thin particles of ice may form on shallow water at night. During the day the door and windows are both opened and the shell is "aired". The cleaning away of the droppings is so convenient that they



113—ROW OF "MUSHROOM" HOUSES COVERED WITH ROOFING PAPER

are removed frequently and never allowed to accumulate. The nest boxes are all outside. (Ills. 111-113.)—F. C. HARE.

A PRACTICAL COOP AT LOW COST

J. D. Stevens

The maxim, "a penny saved is twopence earned" is nowhere more applicable than on a poultry plant. There is no business that we know of that requires more room, more facilities or more expedients than to properly care for a large number of fowls. Unless one has money to throw to the birds (his birds), he must make use of all the labor, time and money-saving appliances at his command.

Anticipating, this spring, the need of several brood coops for our turkeys, we figured first on the cost of the lumber necessary to build them. A moment's computation showed that it would cost \$2.60 for sufficient lumber to build a coop. We then interviewed an enterprising young fellow in the city who bought and sold all kinds of boxes, and secured from him four large dry-goods boxes of 3/4 inch matched boards, at a cost of 60 cents each. These boxes are 4 feet long, 3 feet 6 inches deep and 2 feet 6 inches wide. By turning them on the side, taking one of the cover boards and ripping it diagonally from corner to corner and nailing one of the pieces across each end we made a shed roof, which we covered with tarred felt. The balance of the cover boards were utilized in making the door and wire frame. The frame swings on hinges and is covered with 1-inch mesh wire. There is also a ventilating door above, which can be opened or closed as desired. Outside the mesh door and hinged to the top, we made a solid door to let down and be fastened by a button at night to keep out rain or night prowlers. This outer door can be raised or lowered to any desired height in the day time and utilized either as a sun shade or awning or to prevent a sudden shower driving into the coop.

"A Saving of Over \$8 In Cash"

Ill. 114 shows how this coop can be adjusted to satisfy different weather conditions and how inexpensive it is. The only expense was the cost of the box and about two square yards of tarred felt. You will note that even the hinges are home-made, being evolved from two pieces of zinc, the bolt of the hinges being a short piece of smooth fence wire.

It took considerably less than two days to build these four coops, which was much less time than would have been consumed had we purchased the lumber; we therefore saved in time, and over \$8 in cash. The turkeys outgrew them in a few weeks, after which they were used and are still in use as colony houses for the growing pullets, temporary perches being placed in them for that purpose. As they are made of matched stuff and snug and tight, they would be satisfactory houses for a few fowls all winter, if desired.

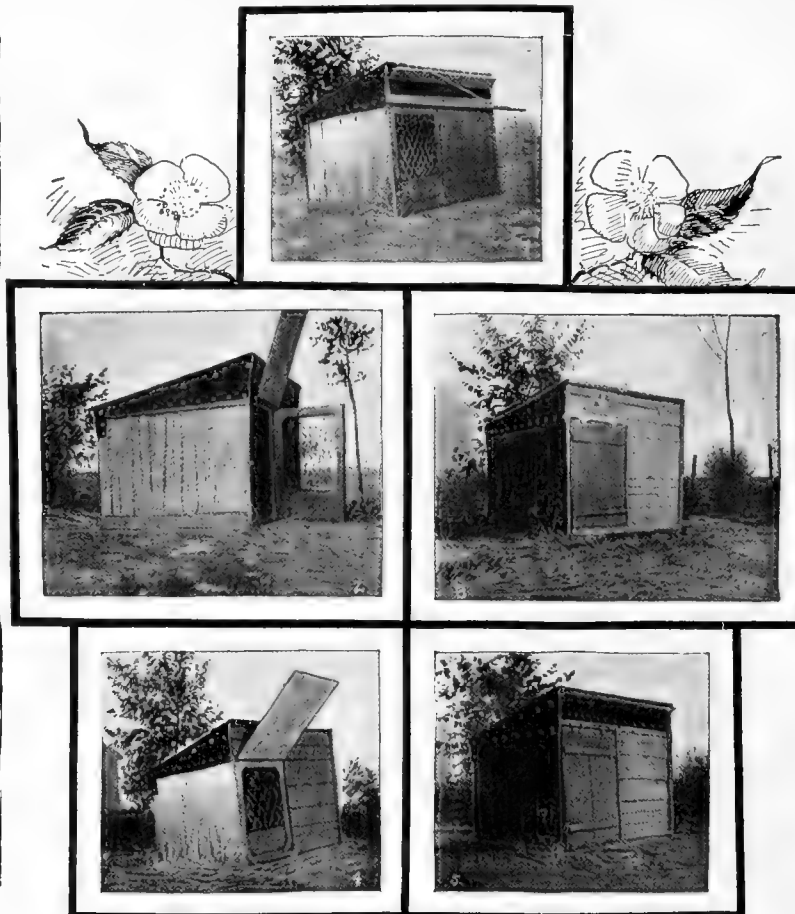
A GOOD ROOST COOP

John J. Yelton

I have a method different from the majority of poultry breeders in the handling of my birds in the fall of the year.

I raise all my young stock in brooders and in small coops, until they are large enough to put into small colony coops, about thirty to forty birds in a coop. This coop is made of 1 inch by 2 inch spruce or hemlock 6 feet 6 inches long by 3 feet 4 inches wide and 3 feet 4 inches high. It is made into a regular frame and covered with rubber canvas cloth the same as carriage makers use on the roofs of carriages. I find I can get this cloth cheap, and a coop of this size costs me less than \$2 by doing the work myself. The bottom of the coop is covered with wire netting, 1 inch mesh, 18 inches high, and on the inside I have two perches 20 inches from the ground. This gives the birds fresh air and prevents them getting wet; at the same it stops all drafts.

I never have a case of roup among my birds when I use this style of coop. I have the coops located in different parts of my orchard, and in November I gradually carry them day by day nearer the house where I intend to winter the cockerels and pullets. I find no trouble with the chickens when the coops are moved, as each flock of chickens will always go into their same coop at night. (Ill. 115.)



114—A PRACTICAL COLONY COOP

- 1—Outer door raised; ventilator open.
 2—Lower doors open.
 3—All doors closed.
 4—Outer door raised; ventilator open.
 5—Lower door closed; ventilator open.

THE DRY GOODS BOX COOP

An Inexpensive Practical Coop for Hens and Chicks Which Can also be used for a Roosting Coop

Miles Grecian

THE main points to be considered in making a brood-coop are convenience, simplicity and economy.

When I say economy is one of the points to be considered I do not mean the cheapest coop that can be made; my idea of economy is to build substantially. I make my coops out of heavy dry goods boxes which cost from

fifteen to twenty-five cents each, according to the disposition of the merchant who sells them.

Illustration 117 shows one of these coops, and is intended to show how all the parts are put together. It will be seen that one end of the box which has the cleats on is sawed off, and the other cleated end is the bottom. I remember when a boy of making a coop out of a dry goods box, but left the top square, with the cleats on. Of course when it rained the top caught water, which ran down into the coop. The next box I turned it down on its side, making the top side slanting. This worked some better, but the water still

got inside by the rain beating against the end of the coop, and running behind the cleats; the bottom came out even with cleat and caught the water. I kept on experimenting until I feel that I have a coop as perfect as can be made for ordinary use. The points in this coop which I wish to call especial attention to are—have the boards forming the floor run toward the front instead of crosswise, as it makes it easier to clean; see that the floor is well nailed to cleats, so that the boards will not warp, and saw the end of box off with a slope of 6 inches to the foot and cover with shingles. Boards will turn water for a while, but shingles will last long enough to pay well for using them. A coop made this way is worth painting and especially should it be painted underneath, as that is the part

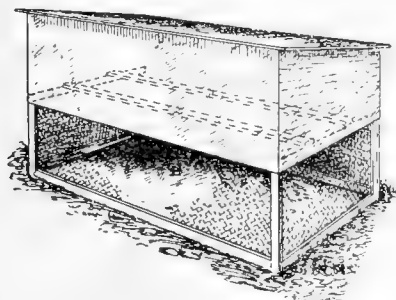
which is apt to decay first, being near the ground.

The second illustration shows the front. A frame is made of 1 inch square strips to fit the front of coop, and covered with screen cloth except an opening 7 by 11 inches, which is provided with two slides, one 2½ inches wide, and the other 4¼ inches wide, leaving room for play. On damp, chilly days the small side is taken out to allow the chicks to run out or in, and on fine days both slats are lifted to allow the hen freedom. These slats are put in place each night, making a rodent proof coop. The front is held in place by one screen door hook on each side. Each coop is also provided with a storm front; made of boards, and large enough to lean in front of coop and shield it from driving rains. The cost of these coops, exclusive of work, is about seventy-five cents.

PIANO BOX WEANING COOP

It takes men and women of intelligence to produce good poultry, and these people, after they have had experience enough to get down to bed-rock, know better than to waste their money on fancy coops. The fact is, they need all this money in order to get well started with the right kind of standard-bred fowls.

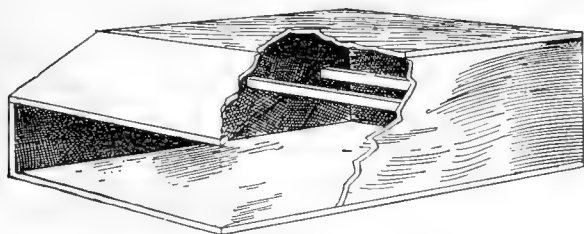
Accompanying these remarks is shown (Ill. 116) the weaning coop used by Mr. Davis. He bought, at fifty cents each, several piano boxes, knocked off the tops, as shown in Ill. 116 tipped them over on the long side, fastened two removable roost poles in each, and his coops, with a capacity of twenty-five to forty chicks each, were complete. Under each corner of each box he placed two bricks



115—A CANVAS COVERED ROOST COOP

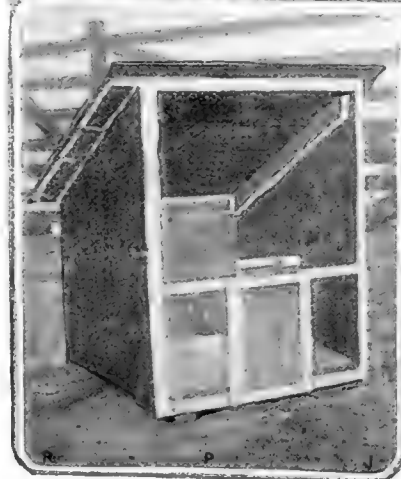
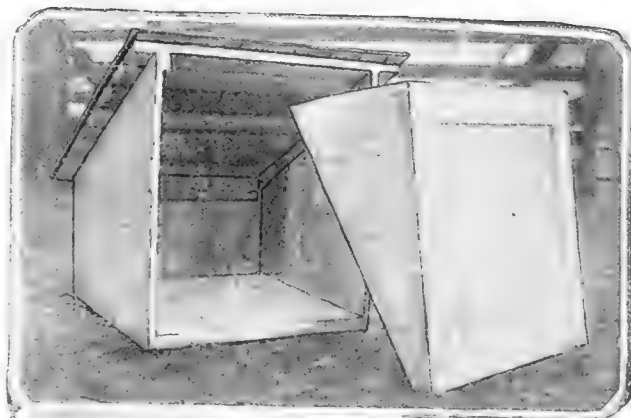
to keep them off the ground out of the wet and allow room enough underneath for his small-sized dog to take care of rats or any other kind of prowlers that might seek to prey on his chicks. A door consisting of a wooden frame covered by poultry netting (1-inch mesh) fits snugly into the opening of each piano box and is buttoned securely for night service. Over the top of the box, to keep out the rain, is tacked red rosin building paper. "No, I don't paint it," said Mr. Davis; "it will last without painting during one season and is so cheap that it is not worth while to paint it. Each season I put on new paper."

These piano box coops are scattered over the eighteen-acre place at a distance of from 200 to 300 feet apart, and the chicks have free range. On Mr. Davis' land there is a



116—PIANO BOX WEANING COOP AS USED BY WILLIAM B. DAVIS

roomy chaparral of elderberry bushes and shrubbery. By July 25th, one hundred and fifty or more of his young stock had graduated from the piano boxes and were roosting at night in the bushes and shrubs. Said Mr. Davis, "That suits me exactly. They will be healthier there and will do better than in any coop I might be able to build. That is my opinion, at least, based on experience. I have never yet caught a chicken with a cold out of that clump of bushes, and they stay there until November 1st or later. It is when we poultrymen, in the fall, put our chicks in houses that are closely built and badly ventilated that they take cold. They get overheated during the night and then if allowed to run out at sun-up in the morning while the air is chilly, and perhaps damp, they take cold in spite of anything we can do, and a cold that is not attended to may develop into roup.



117—A DRY GOODS BOX COOP

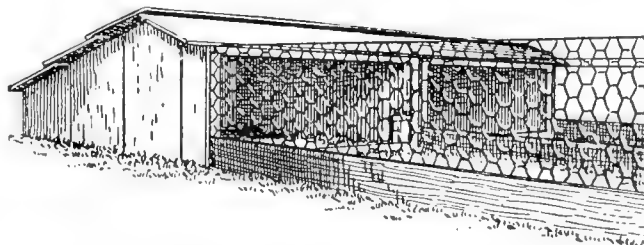
If we will use judgment in cooping our chickens in the fall, in the way of preventing them from overcrowding, and will provide plenty of ventilation without any drafts, and will also make a practice of not letting them out on cold mornings until the sun is well up and they have been exercising in the coop and

have their blood in good circulation, we will have much less trouble with colds, especially in the fall. I have had practically none the last two or three years, simply because I have looked after these matters."

We have shown several styles of weaning or small colony coops and wish to impress on the minds of beginners with poultry the importance of using coops of this kind. It is a common practice among the inexperienced to let the chicks shift for themselves after the hen abandons them, or after they are really too large to be kept in brooders. When chicks are fairly well feathered out, say at ten to twelve weeks old, they should be divided up into lots of twenty-five to forty and placed in weaning coops.

SHELTER FOR WEANED CHICKS

The shelter for weaned chickens, Ill. 118 is 12 feet long, 3 feet 6 inches wide, 2 feet high in front and 12 inches high at



118—SHELTER FOR WEANED CHICKS

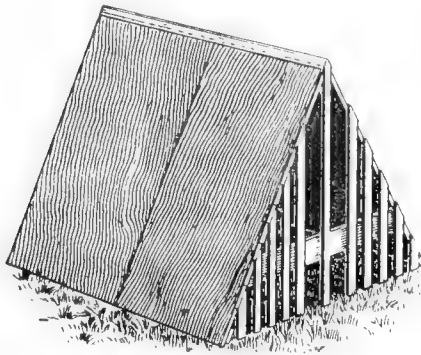
the back. There is required for its construction 7 boards 12

feet long by 1 foot wide; 50 running feet of 2 by 1 inch strips for cleats and front frames, and about 22 square feet of 1-inch mesh wire netting to cover frames. Bottom of shelter should be filled in several inches deep with dry earth, and if desired a couple of footwide boards can be laid down at back for a hovering platform. This shelter will afford protection to 150 to 200 chicks in two flocks. Yards, as indicated in illustration, can be added where necessary, but chicks can be easily trained to go to their own side without the yard.

COOP AND RUN FOR HEN WITH CHICKS

Mrs. S. E. Hurlbut

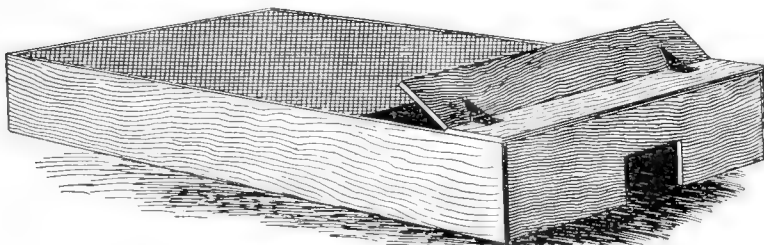
I have seen many sketches of coops, runs, etc., and present herewith one that I have used for the past ten years with good success. Some of my friends have adopted this style of coop, and one man says of it, "It is the only thing with which I can have any success in the village, as cats are so thick that they get all my chicks if they are allowed to run." This coop is proof against hawks and crows as well, or anything that does not dig.



119—A SERVICEABLE COOP

I like the old-fashioned A coop for several reasons. The chicks can get down near the bottom of the coop under the sides, and if the hen scratches they are out of the way. They are cheap and can be readily moved, are water-proof and easy to keep from vermin. I cut the sides 30 inches long, 20 inches wide, using 10-inch wide boards with a batten of tin or wood over the middle joint. Take three pieces of board, 1 by 2 inch, one for the ridge pole, and the other two for battens near the bottom. Nail these to the sides; as shown in shaded places in front of coop. Take a piece, 1 by 3 inch, and put across the front 5 inches from the bottom, as shown in the sketch. Nail a piece 2 feet 6 inches long, in the middle, leaving a space 9 inches wide at each side. Then nail the rest solid. Nail a board of matched stuff lengthwise on the back, or bevel the edges so the water will shed properly if not matched. You can leave a small hole at the top of back for ventilation if necessary. I usually cover the ridge with a strip of tin to make it water-proof. When the chicks get large enough to jump up onto the cross-piece and get out, put a piece of 1-inch wire netting across the upper part of the front.

To make the runs take a 16-foot board 10 inches wide,



120—SAFETY RUNWAY TO BE USED WITH COOP SHOWN IN ILL. 119

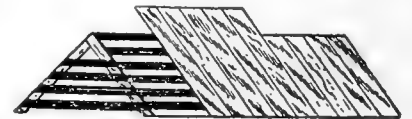
cut in two for the sides, 8 feet long. Then take another board and cut in two pieces 3 feet 10 inches long for the ends, and two pieces 4 feet 2 inches long for the cover and top boards. Take four pieces 10 inches long, 2 by 2, for corner pieces. Nail the 3 feet 10 inch pieces to them, place them between the sides and nail them securely. Take one piece of the 4 feet 2 inch, place it on the end of the run, lay the other piece next to it and nail it securely. Take two straps or T hinges and hang the first board to the one nailed and you have the door by which to feed and water. Cover the balance of the top with 1-inch mesh wire netting 4 feet wide. Saw a hole for the opening in one end 8 inches long and 5 inches wide from the bottom. Move the coop up to it so that the opening will correspond with the end of the run. On cold nights or in rainy weather put a board in front of the coop on top of the run. This is necessary during rain storms, as the rain falling on the boards will spatter into the coop and make it damp unless protected.

In hot weather I put the coop and run in the shade, and move them every few days to fresh ground. These dimensions are not arbitrary, as the runs can be made longer or shorter, or higher, to suit the fancy of the breeder. The cover and board adjoining make a good shelter for the chicks to feed under when it rains and furnish a shade when the sun shines. (Ills. 119-120)

COOPING CHICKENS

A. F. Hunter

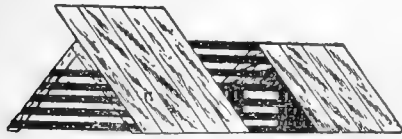
A COOPS for chickens play an important part in chicken raising, and a brief description of them will be instructive. The A coops are 3 feet 6 inches by 2 feet 3 inches on the ground and 2 feet high at the apex of the roof. They are built throughout of $\frac{1}{2}$ inch tongued and grooved pine and well painted. The front is all slats, as shown in Ill. 121, with a slatted gate sliding in grooves to close the front. We originally built these A coops to slope down to the ground, but found it an improvement to have a square base, 4 inches high, with the corners turned at an angle, to prevent the chicks from crowding back under the eaves and smothering one or two at a time. We find it a most decided advantage to have these well built coops always at hand, and as we have coops now in use which were built ten years ago and are as good to-day as when made, the economy of well made coops will be apparent. When we say that the tongues and grooves of the roof pieces are painted before they are put together, the reader will realize that they are thoroughly well built.



121—A SHELTER FROM RAIN

The roosting coop, which is chiefly intended for raising the pullets in, is 6 feet long, 3 feet wide, 2 feet high at the back and 3 feet high in front. The roof, ends and back are all of $\frac{1}{2}$ -inch tongued and grooved pine, the front being all laths, set $3\frac{1}{2}$ inches apart, except the detachable gate that is described later and a 3 inch board at each corner for stiffening the front. Two roosts of 2 by 3 inch scantling, slightly rounded at the top, run the whole length and are a foot apart, being securely nailed to a frame of furring (1 by 3 stuff) 9 inches from the ground. To this frame we nail the ends, back and front corner boards and then fit in at the top a frame of 1 inch

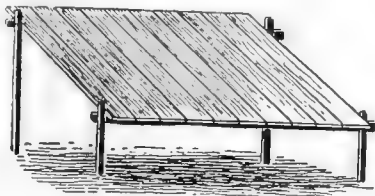
square stuff to nail the roof boards to. A coop like this will comfortably house twenty-five to thirty chickens until they are nearly grown; in fact, we sometimes have pullets begin to lay before they are brought in from these roosting coops. It is quite light and can be easily moved by one man its length or width to fresh ground, or it can



122—A SHELTER FROM THE SUN

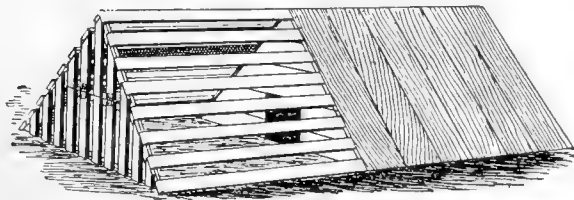
be tipped up and the droppings removed, and it is a perfect summer shelter. If it is to be used in the spring or fall, when the nights are cold, an improvement would be to make a front of 1-inch boards, hinged at top edge, so it could be swung outward and upward and rest upon folding legs hinged at the bottom corners which would become a roof to shelter the birds from rains. One disadvantage of this light coop is, that it may be easily tipped over by a high wind, especially when the chickens are all out of it, as during the day. To prevent it from tipping over a flat stone should be placed on each front corner of the roof.

The gate in front of the coop gives access to the inside when the pullets are to be removed. The gate is made of laths nailed to two strips 1 inch square, the left hand ends of which are long enough to slip in behind the lath front, the right hand side being secured by one or two buttons. If one prefers, these gates can be hinged at one side or the other and secured by a hook or button, but we have found it a convenience to have them wholly detachable, and so make them.



123—A PORTABLE SHELTER

Shelter from rain and sun is of quite as much help as a good coop to sleep in. By experimenting in different ways we learned that it would pay well to have "shelter boards" always ready, just as are the coops, hence we make them of the 1-inch, tongued and grooved pine, taking five strips 3 feet long by 6 inches wide for each shelter board. These strips are securely nailed to pieces of 1 inch square spruce at the top and bottom, and then the weather side is well painted. We make a light frame of the 1-inch square spruce



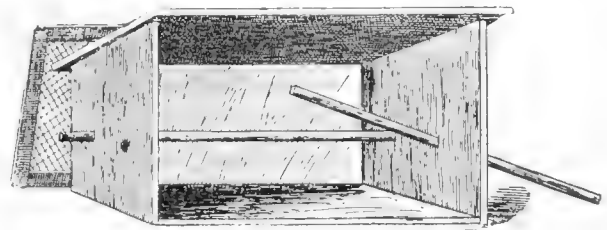
124—BROOD COOP FOR HEN AND CHICKS

strips and laths to fit up to the A coops when we want to put the shelter close to the coop, using one of the 2 feet 6 inch by 3 feet shelter boards as shown in Ill. 121. As the chicks get older we move the frame out a little and put two shelter boards over it side by side, setting it so that it furnishes shade if the sun is shining, or protects from a driving rain, of course adapting it to the direction of the wind.

When we move the pullets out into the field and into the roosting coop we set upon stakes and a strip of furring, a shelving roof 7 feet 6 inches long by 3 feet wide, slightly sloping to the south, about 18 inches high in the front and a foot high at the back. By these devices we more than double the available shelter from rain and sun and correspondingly increase the comfort of the growing chicks. Obviously, if they have to be crowded into their narrow sleeping quarters on a rainy day or to get away from the hot sun, they are not making good growth.

BROOD COOPS—DOOR FASTENER

We illustrate the favorite brood coop for a hen with chicks, in use by Mr. J. H. Thompson, (Ill. 124). This coop provides shelter in which to exercise and allows the chicks free

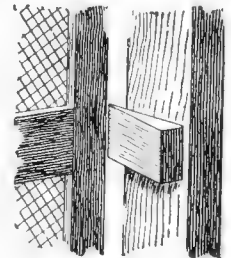


125—CONVENIENT WEANING COOP

range. A slide door of woven wire mesh should be provided for safely locking the hen and chicks in the closed half of the coop during the night. Ill. 125 shows a weaning coop in use by Mr. Thompson. This coop is used for the chicks after they are taken from the hens, thirty to forty being placed in a coop 3 by 6 feet in size, floor measurements. The roost poles extend through the ends of the coop and serve as handles to move the coop from place to place. These poles are removable, as shown in the illustration, for oiling, cleaning, etc. A wire frame that fits snugly into the front of the coop is buttoned securely in place during the night, after the chicks have gone to roost. In some respects this coop is an improvement on any we have seen.

A Wedge Door Fastener

A Yankee device in use on this farm is a simple fastener, Ill. 126, for holding the doors closed that lead into the pens of the breeding house. A wedge-shaped piece of wood was sawed and one flat edge of it covered with leather from an old bootleg, the leather lapping part way around the wedge. This wedge was then nailed to the door post breast high, with the thin part of the edge pointing inward toward the pen. The door swings inward and licks about 1/2 an inch of closing tight against the door jam or post. As the attendant passes into the pen he swings the door to behind him. It strikes the wedge about half way up toward the thick part, binds itself against the leather and is held securely in place until opened with a slight jerk as the attendant passes out. This is one of the neatest and most practical home-made fasteners we have seen.

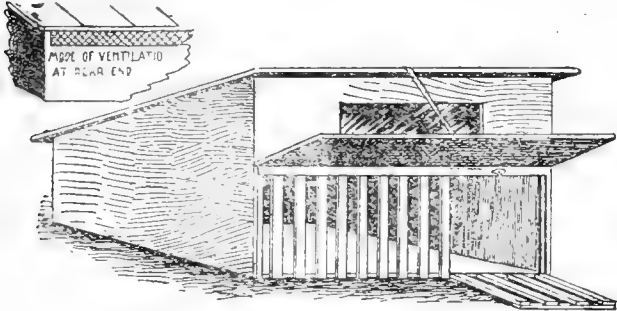


126—DOOR FASTENER

BROOD COOP FOR HENS AND CHICKS

Harmon Bradshaw

The brood coop shown in Ill. 127, has some points of excellence not found in most of the coops in use. It can be made any size, but 2 feet wide and 3 feet long is about right. Lumber from 1/2 inch to 1 inch in thickness should be used, and the coop when completed should be painted

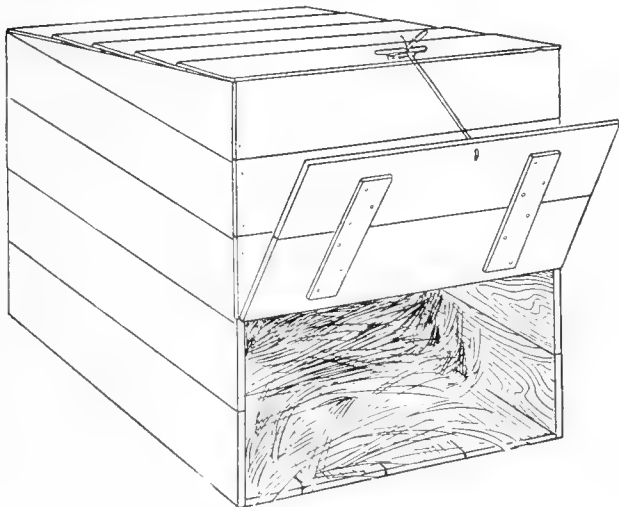


127—BROOD COOP FOR HEN AND CHICKS

white to protect the lumber from the weather. White coops make a pretty contrast with the green sward.

The roof of this coop is made to extend over the ends and sides 3 inches, and the bottom is made separate from the rest of the coop and of a size so that the coop will sit down over it clear around. The coop can then be used with or without the bottom, as desired. During dry weather and warm weather there is no need to use the bottom unless there is danger of rats, weasels or the like burrowing under to get at the chicks. Pains should be taken to guard against these enemies. Where there is danger of rain the bottom should be used; in fact, a brood coop should be carefully located on high ground or on a ridge where there is no danger of the chicks being drowned in a sudden rain storm.

The brood coop is rat proof when shut up for the night. As shown, the inner slat door is let down so that the hen as



128—FRONT OF BROOD COOP SHOWING MANNER OF HOLDING DOOR IN POSITION

well as the chicks can pass in. When it is desired to confine the hen and allow the chicks egress, this slat door is closed. When night comes on and the hen and chicks are in the coop the raised solid wooden door is let down and fastened securely. Above this wooden door is a pane of glass which furnishes light to the interior of the coop when

it is entirely closed up, and under the extended roof in the rear end of the coop is a strip of wire cloth or window screening, which furnishes ample ventilation, but is rat proof. By the use of this coop the hen and chicks can be confined during stormy weather and will still have light and ventilation.

We do not see wherein this coop could be improved. If taken proper care of, a coop of this kind will last several years. It is small and light in weight so that it can be put away in the barn, shed, or a dry cellar when not in use. Cared for in this way it will last a long time. Chicks kept in such a coop will be safe at night and can be controlled as desired during the daytime.

COOP FOR HENS AND CHICKS

Harvey C. Wood

I bought a dry goods box about 30 inches square, also a short board 6 inches wide and several pieces of weatherboarding. I removed the lower boards of one side and cleated them together, then fastened them with a hinge to the box, making a door, as shown in Ill. 129. I arrange



129—REAR OF COOP

this so that I can fasten it up in the day time and lower it at night. In rainy weather I lower it enough so that the rain will run away from the house and at such times the hen and chickens can be fed inside.

Having finished the door, I took a board the length of the house and then ripped it from one corner to the opposite lower corner and place these pieces, the large end to the front, one on each side of the top of the house. Across this I laid the weather boarding, being careful to lap it, so that the rain could not penetrate. To insure ventilation at night, I bored several holes near the top of the rear end and covered the holes with screen.

I made a lath coop 4 feet square and 2 feet high. One side I left open and fitted it close against the coop, then the chicks can be confined in the coop and the old hen can be let out in it for a little exercise and fresh air.

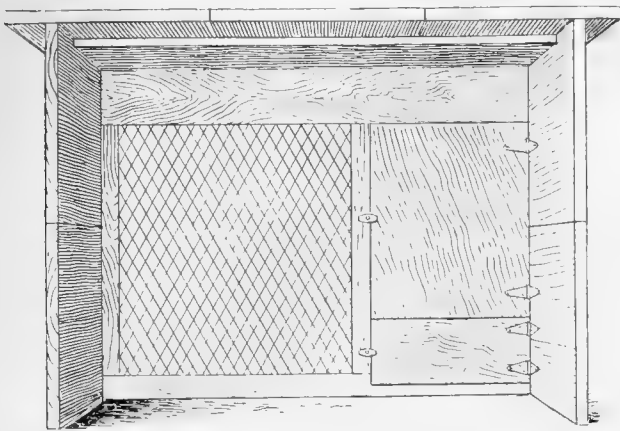
PLAN FOR BROOD COOP WITH HOOD

W. S. Templeton

The roof and sides of the hooded brood coop project 6 inches beyond the front. This hood protects the chicks from cold winds and blowing rains and also the hot mid-day sun. The coop should face the southeast, and the doors should be

on the side shown in the cut, so as to keep the northeasterly winds out as well as to let in the early morning sun through 1-inch mesh wire netting.

The coop is 2 feet 6 inches wide (inside measure), the same in depth, 14 inches high at the rear and 2 feet high in



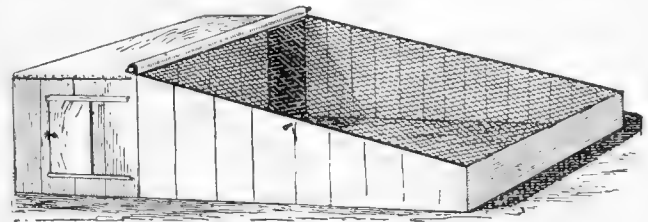
130—THE FRONT OF THE HOODED BROOD COOP

front. The roof is 3 feet square, made by nailing together three boards 3 feet long and 1 foot wide. The hen door may be secured with either one or two hinges, and will confine the hen while the chicks run through the lower door, which is 3 or 3½ inches high and about 12 inches long. I recommend dressed lumber, for mites do not have as good a chance to hide in the cracks. This coop soon pays for itself in the number of chicks saved.

A SAFE BROOD COOP

Herewith is presented an illustration (131) of a chicken

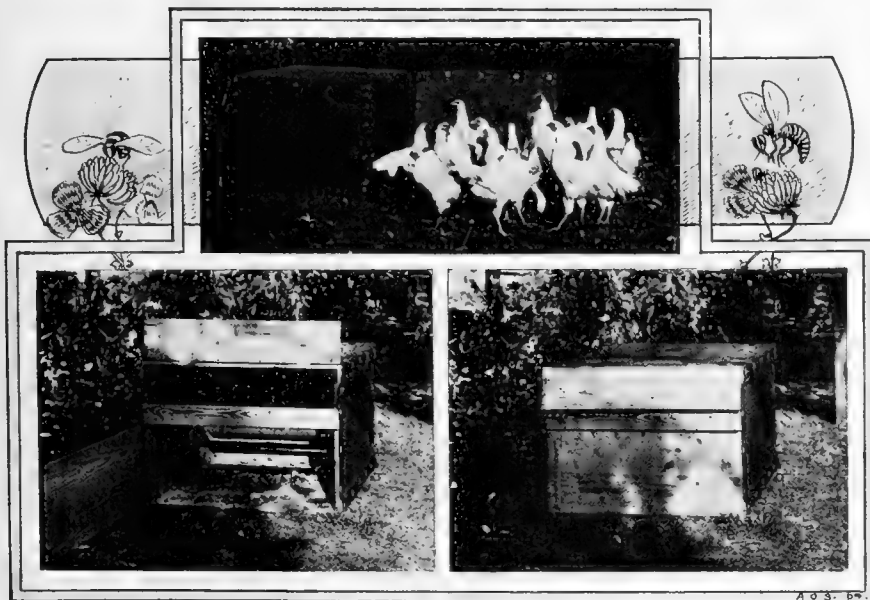
coop which we have taken so much comfort in during two seasons. We used boxes about 18 by 18 inches by 3 feet, building the runs of such scraps as are to be found around a place and that can be manipulated by a woman with a saw and hatchet. The front of the box is boarded up about two-thirds of the way across, the other third being left open for the hen and her chicks to pass in and out. The closed end of the box furnishes a snug, warm corner during the night and bad weather. Over the yard is tacked, first, wire netting, 1-inch mesh, so that rats, cats and other prowlers cannot get in. A strip of common table oilcloth is nailed over the top of the box and hangs down behind the box far enough to prevent the rain from leaking in. The oilcloth is held in place by laths being nailed along the edges. Another strip of oilcloth, large enough to cover the yard, is rolled upon a stick, one end of it being fastened to the top of the coop on the front end of the box. During



131—A SAFE AND HANDY BROOD COOP

stormy weather this can be unrolled downward so that the oilcloth covers the wire netting and thus keeps the ground in the yards dry. After the storm is over this oilcloth is rolled up, as rolling it up prevents it from sticking or cracking or being otherwise ruined if left lying around loose. In the end of the box a slide door is placed.

CARL H. KRIPPENE'S COLONY HOUSE



FRONT OPEN

FRONT CLOSED

132—CARL H. KRIPPENE'S FIFTY-CENT COLONY HOUSE

These houses vary in size, being made from large, heavy dry goods boxes. The top half of the front is first covered with wire screen to keep out rats, etc., at night and then a door is fitted and hinged as shown in illustration. The large, lower door swings open instead of up as shown in the picture and makes a handy contrivance for catching or driving the chicks into the coop. The whole is covered with heavy tar paper and the entire cost is as follows:

Dry-goods box15
Tar paper15
Screen ..	.05
Roosts and fixtures10
Total ..	.50

These houses hold twelve birds until matured enough to be placed in winter quarters.

One of the illustrations shows a coop with front open as it is all day, the other shows the front closed as it is on stormy nights. On clear nights the top door is left open.

UNITED STATES GOVERNMENT WHITEWASH

For years the United States government has been using on its forts and lighthouses, whitewash prepared according to the following formula. It is claimed that, made in this way, the wash will stick better and retain its brilliancy longer than any other, and that it is not easily affected by rain or weather. Of course, it is necessary to strain the material carefully before applying through a pump, else more or less trouble will result from the clogging of the nozzle, but with ordinary care at the start, no inconvenience will be experienced.

Take half a bushel of unslacked lime, slack with warm water and cover it during the process to keep in the steam. Strain the liquid through a fine sieve or strainer; add a peck of salt previously well dissolved in warm water, three pounds of ground rice boiled to a thin paste and stirred in boiling hot, half pound of powdered Spanish whiting and a pound of glue which has been previously dissolved over a slow fire. Add five gallons of hot water to the mixture, stir well and let it stand for a few days, covered well. Strain carefully and apply with a spray pump. It should be put on hot. There is nothing that can compare with it for outside or inside work, and it retains its brilliancy for many years. Coloring matter may be put in to make the wash any shade desired.

PUTTING UP POULTRY NETTING

Don Harrison

Among the methods employed for putting up poultry netting, I have found no way which is so expeditious and in every way satisfactory, as the following.

Nail the boards on which you intend to fasten the bottom of the netting in such a manner as to form a straight line, as netting cannot be nicely put up over a line, one part of which is higher than the rest, without cutting and lapping the netting. Have the posts extend at least 4 feet 4 inches above the top of the boards.

Now drive six-penny nails about $\frac{1}{2}$ inch into the posts, 4 feet from the board. Next loosen the roll of netting, run a slender stick lengthwise through the center. I use a measuring stick, 8 feet long. Have two persons take hold of the ends of the pole and walk as near the posts as possible, thereby causing the netting to unroll. Now your netting lies flat on the ground. Get on the opposite side of the fence with staple and hammer, and staple the selvage strand to the top or edge of the board, pulling the wire just enough to take out the kinks. Do not try to stretch it. Now one edge of the netting is fastened to the base board and the other edge lies about 4 feet from you on the ground. Pick up the free edge and hook it over the nails previously driven in the posts. Fasten the ends of the netting to their respective posts, pulling fairly taut and fastening securely. Make a notch on the end of your pole deep enough to hold the selvage. With this pole push the netting up on the post, having pulled the nail when you attached the pole until the netting is firm and straight. Staple the selvage wire to the post, repeating the operation on each post. After you have done this, staple to the post as much as you think necessary. I use two staples between selvages, making four

to each post, and as for the bottom I staple every 2 feet.

With a boy to help unroll the netting, you can put up a roll in twenty minutes. Our yards are on level ground and we have posts sawed 3 by 3, and 8 feet 4 inches long. We drive them 2 feet into the ground and put two, 12-inch boards at the bottom to prevent the males from fighting.

TEST YOUR FENCING

Ernest C. Bischoff

For some time past there have been complaints as to the lasting qualities of wire fencing. The trouble seems to be that the galvanizing did not wear as well as on wire fence bought in previous years. For the benefit of the readers who buy wire fencing and are compelled to accept the word of the maker as to the quality, I give a test taken from the Western Union Telegraph Co. specifications:

"The wire will be plunged into the saturated solution of sulphate of copper, permitted to remain one minute, and then wiped clean. This process will be performed four times. If the wire appears black after the fourth immersion it shows that the zinc has not been all removed and that the galvanizing is well done; but if it has a copper color the iron is exposed, showing that the zinc is too thin."

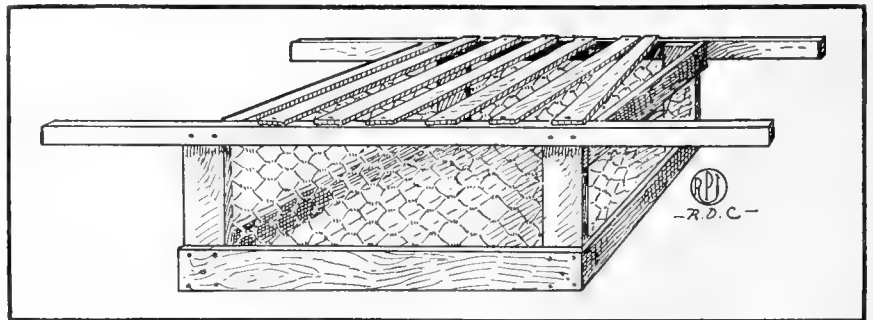
The saturated solution of sulphate of copper (commonly called blue stone) is made by putting as much blue stone in water as will be dissolved. There is no harm if some blue stone remains undissolved.

This test can be made very easily at the time of purchasing the wire fence—by cutting off a piece of wire and dipping it into a small bottle filled with the solution.

It might be well to try some fencing that you have on hand now, and note the difference between that which you have had a long time and fencing recently purchased.

A BOX FOR CARRYING FOWLS

Another useful, in fact almost indispensable article around a poultry yard, is a carrying box or crate. It is necessary, especially where one is somewhat cramped for room, to be continually changing young stock from one yard or house to another; separating pullets from cockerels or doubling up yards, in order to make room for others. Without a



140—A SIMPLE CARRYING CRATE

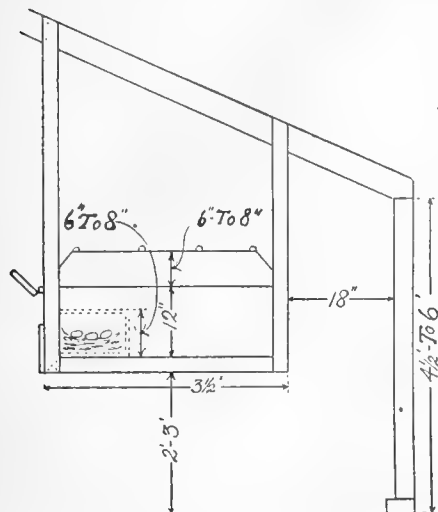
carrying crate you are obliged to carry the fowls by the legs, five or six fowls at a time, which not only tends to make them wild, but you are liable to injure a fine bird by reason of its trying to escape while you have both hands full. With this crate, which has a small door or loose lath in the top, you can catch a dozen or more; put them in it and transfer them wherever you wish, quietly and rapidly and without injury to the birds and with much less labor than carrying them in the usual way.

Interior Fixtures

How to Build Economical Labor-Saving Roosting Quarters, Nests, Automatic Feeders, Water Fountains, Grit and Shell Hoppers

Jas. E. Rice

For the most part interior fixtures should be portable to facilitate the fighting of mites. Generally they should not be allowed to touch the sides of the house. If they do, the walls should be kept tight and vermin proof. Roosts should



141 - FIXTURES SUSPENDED

be on the same level to prevent fowls fighting for the highest place. They should be placed in the warmest spots out of the reach of draughts, and as high as possible without injury to the fowls in descending. They should be close so that fowls can snuggle together and keep each other warm, and enough space should be provided so that they can separate dur-

Hens Prefer Darkened Nests

ing warm weather. Allow 6 to 12 inches for each fowl. The form of perch most to be desired seems to be a piece about 2 by 3 inches with the narrow edge rounded. Under the perches should be a platform to catch the droppings far enough below to permit cleaning without removing perches.

They like to hide their nests, therefore these should be partly dark. They are less apt to eat eggs in dark nests. A good place for the nests is under the droppings board. They should be so placed that the eggs can be gathered without stooping. Hens like to fly up to lay. Nest boxes should generally be about 1 foot square and 8 to 10 inches deep so that the nest material will prevent the eggs from breaking, and the hens cannot roll eggs from one nest to another. The partitions between nests should permit hens to go from one nest to another, otherwise they will fight and break eggs. Fine hay is the best nest material; sawdust stains eggs; excelsior wads up and sticks to hens' toes; straw is too coarse. Provide nest eggs. The hens then feel a sense of security. That is why hens like to lay in the same nest. Ills. 142 and 143 are suggestions for roosting and nesting arrangements which we have been using with great satisfaction. They can be modified to suit conditions.

Water basins should be large enough so that when filled the water will last for 24 hours. Then we will know that the hens will not suffer from lack of water. They should be easily cleaned and should be

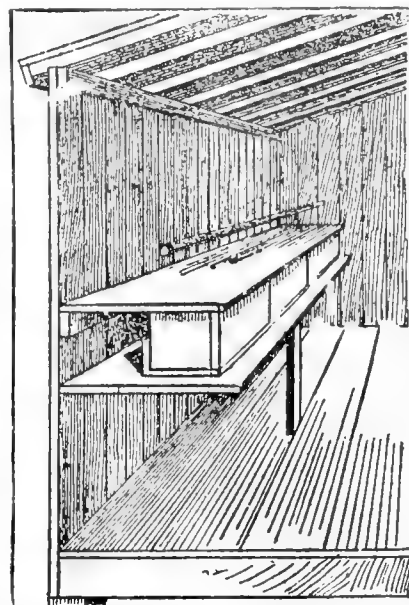
made of such material that they will not break if dropped or frozen. The best water dish is a galvanized iron refrigerator pan with corrugated bottom and with top larger than bottom. It should be placed a little above the floor with a cover to prevent its becoming dirty.

A self-feed grit box should be placed where the hens can have constant access to it and cannot roost upon it. Every pen should be provided with a hanging coop with slat sides and bottom in which to place broody hens or extra males.

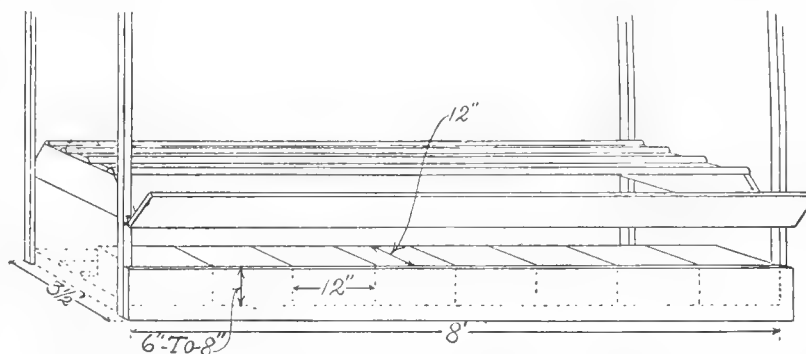
The design of nests is well calculated to prevent hens from getting into the annoying habit of egg eating. Dark, shallow nests are the best and most practical preventative known, and the plan of building such nests as shown in the illustration is a good one.

If intended for Leghorns or medium-sized hens, nests 12 by 12 inches at the base will do; if for Brahmias, Cochins, etc., do not fail to have the nests 15 by 15 inches in size. Be governed also in the height of the nests by the size of the fowls. Seven to 8 inches will do for Leghorns, while for the large breeds they will need to be 10 inches high. Fill in enough nest material so that the hens can only creep on and off the nest, so that they may lay comfortably, and yet not have sufficient room to allow them to stand up in the nests and get at the eggs to eat them.

The rear bottom board of this row of nests should be



142—ROOSTING QUARTERS AND NEST BOXES



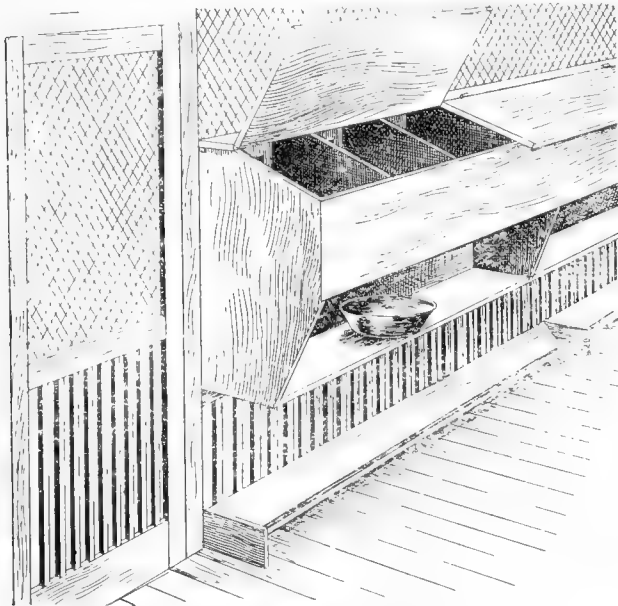
143—A SUCCESSFUL ARRANGEMENT OF ROOSTS AND NESTS

hinged to the wall of the poultry house, so as to open downward, thus rendering it easy to clean them out. The upright which holds the bottom board in position is also on a hinge, attached to the bottom board. To let down the bottom, kick the upright from under it. This bottom board extends 10 or 12 inches all around the box, furnishing a place for the fowls to alight on when going to the nests or to roost. The roost pole (or poles, two can be used) is to be seen above the top of the nests. This top serves as the droppings board and should also be hung on hinges against the wall. It can then be raised to gather eggs from the nests.

During the time of year when the poultry house is closed up it is a good plan to clean away the droppings every day. To do this is a very simple matter where such nests and roosts as this one are used. Save the droppings for use as a fertilizer and have some slacked lime or dry earth (lime preferred) to sift on the droppings board after each cleaning.

A WELL-DESIGNED HALLWAY

In long poultry houses, time and labor can be saved by planning the passageway so that all possible work can be performed in it. Ill. 144 shows a type of hallway



144-A WELL-DESIGNED HALLWAY

from which the fowls can be fed, watered, and their eggs gathered.

The slats in front of the feed trough, are $\frac{5}{8}$ by $1\frac{1}{4}$ inches and 20 inches long; they are spaced $2\frac{1}{2}$ inches apart.

The feed troughs are made of two $\frac{7}{8}$ inch boards 4 and 5 inches wide, and are 6 feet long. They extend the length of the building.

A water dish can be seen on a shelf above the feeding slats. When the food troughs are removed the water dishes are placed on the floor.

On the opposite side of the passageway there is a shelf 12 inches wide, level with the floor of the nests, also a board 10 inches wide nailed upright at the outside of the shelf. The latter board is simply to darken the interior of the nest and to prevent egg-eating. The shelf extends the width of the pen; the upright board is 30 inches shorter than the shelf (leaving a space of 15 inches at each side.) The fowls enter the nests at either side of the pen by jumping on the shelf.

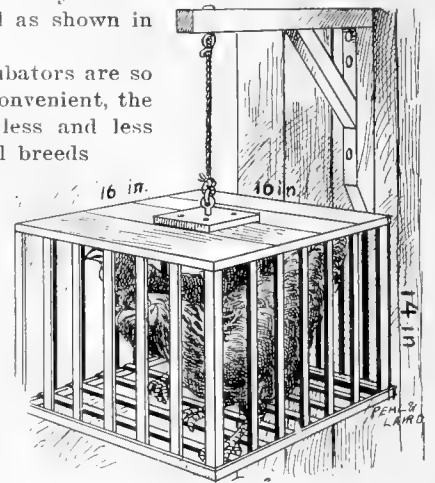
(By placing the droppings board just above the feeding rack and by hinging the board shown between the rack and the floor of the nests, the droppings could also be removed from the passageway. Ed.)

BREAKING UP BROODY HENS

Clark H. Minor

There are many contrivances for breaking up broody hens, but a trial with the coop illustrated (145) will prove it to be successful. The coop can be fastened from the ceiling of the poultry house or can be erected as shown in the illustration.

Now that incubators are so cheap and more convenient, the old hen is used less and less every year. As all breeds have not learned that they are not wanted to hatch their eggs there are more broody hens to be relieved of their desire to sit. Those who breed the non-sitting class of fowls have no use for this coop, but to all who breed the Asiatics or other heavy birds it will be found very useful.



145-COOP FOR BROODY HENS

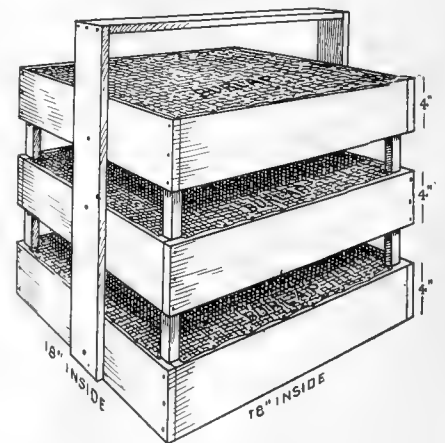
The coop should be made square and fastened up by a chain or rope from the center of the top; then by this plan the hen will have to stand up most all the time, and as every step she takes causes the cage to move, she soon as the larger size does not work as well unless you have it full. It is better to have several small coops than one that is too large.

forgets about her desire to sit.

The coop may be of any size desired. A coop 16 or 18 inches square will easily accommodate three or four medium sized hens. Do not make one over 30 inches square,

CRATE FOR SHIPPING DAY-OLD CHICKS

This shipping crate consists of three wooden boxes each four inches deep, eighteen inches square inside measurements and divided into four compartments. Each box is covered with burlap securely tacked down after the chicks are loaded in while the floor is covered with a layer of alfalfa or bran. The tiers, or boxes, were arranged three inches above one another with four supporting sticks one tacked in each corner of the lower box. A handle is securely nailed along the sides and over the top. The crate will hold about 250 chicks or twenty-one in a compartment.



145-A-CRATE FOR SHIPPING DAY-OLD CHICKS

A Successful Automatic Feeder

Will Feed Grains of Different Degrees of Fineness and Dryness, also Beef Scraps and Dry Mixtures—An Economical, Practical Device which Feeds Uniformly

Dr. H. P. Nottage

A poultryman who has 8000 fowls asked me recently for a design of a satisfactory food box. A man who has a large flock of fowls certainly cannot afford time to be constantly remodeling food boxes in the search for a box that will feed uniformly all varieties of grain, beef scraps and cut clover.

It is with satisfaction that I offer a model feeder which has been developed out of many tribulations with boxes that would not feed or that would spill all the grain on the ground. It represents the most successful device for feeding grains of different conditions of fineness and dryness and which will also feed scraps and dry mixtures.

In the sectional view note slanting (45 degrees) top which prevents the fowls from roosting on the feeder. It is hinged at the lower edge. The bottom also slants parallel with the cover. The trough in front is 5 inches wide and $1\frac{1}{2}$ inches deep. A narrow wooden strip runs the entire length and projects over into the trough about $\frac{3}{4}$ of an inch. This prevents the grain from being thrown out by the hens. The grain banks up under the strip.

The front elevation shows that the openings of the compartments extend to the bottom of the box. The opening for feeding oats is 4 inches square and for the scraps 8 by 10 inches. These openings are covered with cellar window netting $\frac{3}{8}$ -inch mesh. The slit in the corn compartment is about $\frac{3}{8}$ inch in height and clear across. The upper edge is sawed parallel with the bottom of the feeder. This makes the opening higher inside than out. It would be well to have a strip of wood or tin sliding vertically so as to reduce the height of this opening when feeding wheat or other small smooth grain. If it is desired to feed dry mixtures another compartment can be added, built exactly like the one for scraps.

If cracked corn or wheat feed too freely in the regular com-

partment try them in the oat compartment. There they will feed slowly, cracked corn especially; in fact it will feed so slowly that the hens will have to peck at it all day to get a full crop. This is an advantage in some cases. Not so with little chicks on free range, for their habit is to fill up moderately in the morning, then start out and be gone all day. They return in crowds about four o'clock to fill up as quickly as they can before dark.

Again, some beef scraps are fine and dry. The hens will try to pick out the biggest pieces, and shove the finest stuff under the long strip of wood until it begins to come over the top. If this difficulty arises, nail a strip of 1 inch netting across the top of this part of the trough so as to cover it completely. Then the hens will have to reach down through the netting and cannot throw the scraps.



147—A SUCCESSFUL AUTOMATIC FEEDER

A PRACTICAL FEEDING TROUGH

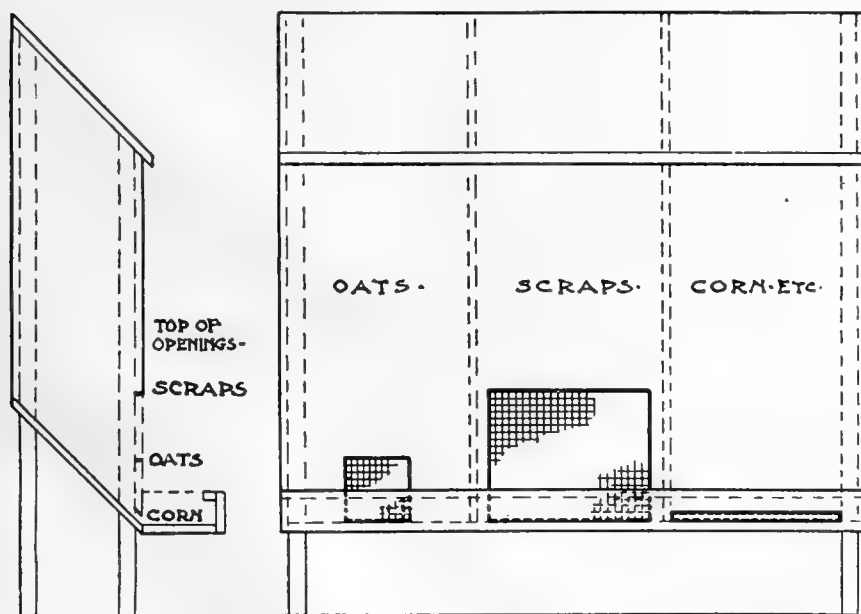
One of the difficult problems for the poultryman is to devise some means for feeding little chicks so that they can consume all of the food without soiling it.

A simple and efficient feeding trough may be made by tacking a piece of tin about $3\frac{1}{2}$ inches wide along the edge of a $\frac{1}{2}$ -inch board so that the tin projects about $1\frac{1}{2}$ inches on either side of the board, bending the tin so as to form a shallow trough, and fastening the boards to blocks which raise it from 1 to 2 inches from the floor.

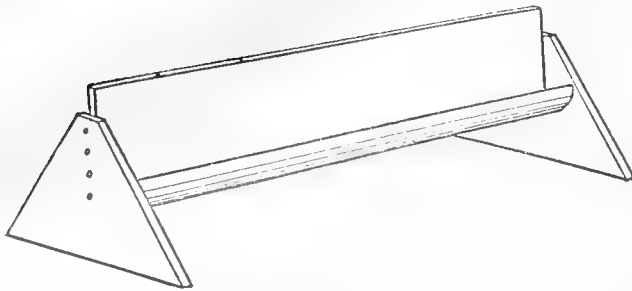
The trough may be from 1 to 3 feet long. It is within easy reach of the chicks and so narrow that they cannot stand upon the edges. Food placed in such feeding troughs can be kept clean until wholly consumed.

Feeding Troughs for Turkeys

Early in the fall I had made two self-feeders, similar to Ill. 147, 18 feet long, 1 foot wide and about 1 foot high, each

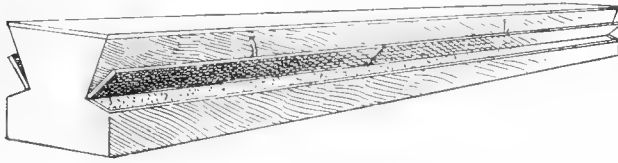


146—SECTION AND FRONT ELEVATION OF A SUCCESSFUL AUTOMATIC FEEDER
Outside dimensions: Height 36 inches; front 28 inches; depth 8 inches; width 38 inches—
each compartment 12 inches.



147—FEEDING TROUGH

holding about 6 bushels of grain. The feeders were opened in the evening at feeding time and closed in the morning after the turkeys had eaten all they wanted. I closed them during the day to keep my fowls from the grain. The feeders were useful and satisfactory and with them I fattened 165 turkeys quite economically

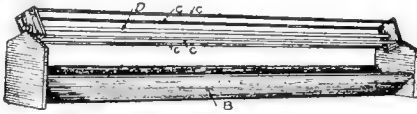


148—FEEDING TROUGH FOR TURKEYS

A TROUGH FOR MASH

I find that the best size trough for feeding mash to the average number of fowls in a pen is 6 feet long and 9½ inches high.

On this sketch "A" is the end board, "B" the V-shaped trough. A wheel is built over this trough to revolve on axle "D" with rods "C" connecting the end blocks.



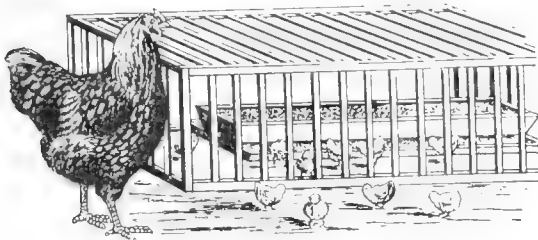
149—TROUGH FOR MASH

The advantage I find in this form of trough is that the fowls cannot get into their food on account of the wheels over it, and they cannot roost on top of it, as every time a fowl jumps on the top rod it revolves, and the birds will soon tire of this performance.

CRATE FOR FEEDING CHICKS

Do you keep chicks in the same yard with adult fowls, or allow both the run of the place, as on the farm? If so, provision should be made to prevent the grown fowls, or the larger and stronger chicks, from consuming most of the food, leaving little or none for the weaker chicks.

Ill. 150 shows a simple lath coop that, almost any person can



150—A CRATE TO EXCLUDE GROWN FOWLS

construct. The feed trough, a self-feeder, can be seen inside the coop. The chicks run in and out freely, but the hen is barred.

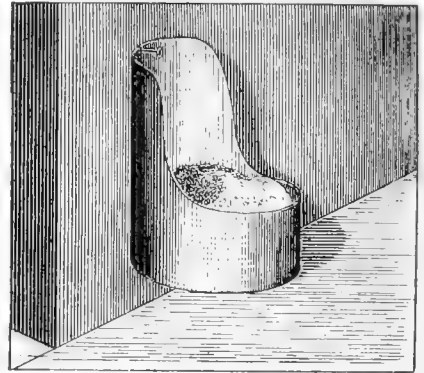
In the feed trough used the chicks do not trample and soil the food, but eat it as it falls through.

Where growing chicks of several sizes are running together it is well to have two or three of these feeding coops with slats at different widths apart; then the chicks about of a size will eat together to their common advantage.

HOME-MADE GRIT BOXES

A money saver that can be easily modeled from a gallon fruit can and used as a grit or oyster shell dish, is shown in Ill.

151. Half the round part of the can is cut away in a sort of compound curve, leaving the style of dish shown in illustration. This is nailed to the wall of the house on the inside and filled with grit and shells. One of these small, inexpensive dishes is used in each breeding pen.



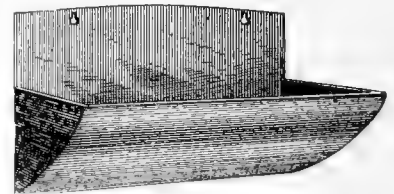
151—GRIT BOX MADE FROM GALLON FRUIT CAN

Ills. 152 and 153 show other types of economical and easily constructed grit and shell boxes.

ECONOMICAL FIXTURES

The arrangement for holding cup for water securely against the slats of coop is made of stiff wire—No. 16 being about the right size. (156.)

The grit box is a common varnish can, which can be procured at any drug store. The point of arrow shows a wire which holds the cut part of the can in place. (155)

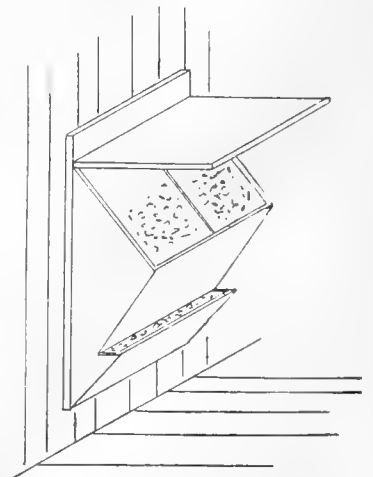


152—ANOTHER STYLE OF GRIT OR SHELL BOX

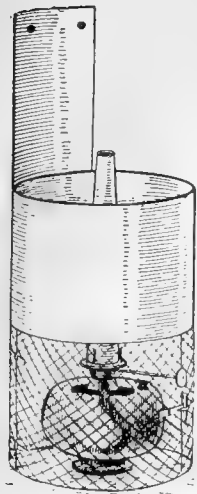
A Winter Fountain

I determined to be prepared and not have the trouble I did last year with the water troughs. I cannot be at home during the day to break the ice in the troughs, so I have contrived a fountain which keeps the water from freezing.

I made a pan 6 inches high and 8 inches in diameter with a chimney 9 inches long running through the center of the pan. The chimney extends 1½ inches above the pan to keep the water from running over into the lamp, and 1½ inches below the pan, to fit on the lamp burner. Below this



153—A HOPPER FOR GRIT AND OYSTER SHELLS



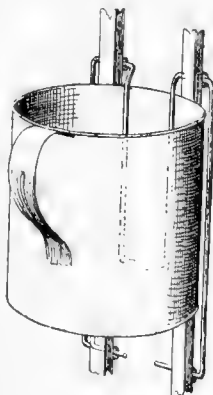
154—A DEVICE FOR HEATING WATER

pan I place a lamp that fits the chimney. I have a No. 2 burner, which will take a chimney 3 inches in diameter at the bottom and 1½ inches at the top. The chimney running through the center of the pan radiates enough heat to keep the water from freezing. Around the lamp I shall put ½ inch wire mesh, to keep the chicks away from the lamp. I have placed my lamp in the poultry house, on the side wall. As shown in the Ill. 154, there is a loop rivited on the pan, so that it can be taken-down and cleaned.

The height of the heater, when finished and hanging on the wall is 12 inches. There should be a box 6 inches high in front of the fountain on which the fowls can stand and drink. Any tinner can make a heater if he sees the plan and reads the directions.

A SELF-DRAINING APPLIANCE FOR WATERING DUCKLINGS

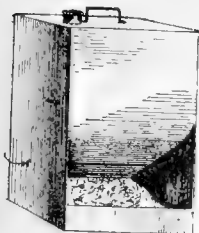
A practical device for watering ducklings in use at Mr. Keith's Pekin duck plant is thus described: A wooden frame about 18 inches square, to which is fastened a piece of ¼ inch mesh galvanized wire cloth, is placed over a hole dug in the earth of each indoor run or pen in the brooder house. The hole is dug about 18 inches to 2 feet deep to insure good drainage. On this wire screen the galvanized iron drinking fountains are placed, so that all water slopped by the ducklings is quickly drained away and the pens are kept dry. One gallon founts are used with pans deep enough to permit the ducklings to immerse their bills above the nostrils—an important matter from a health standpoint. Ills. 157-158.



156—A SIMPLE CUP HOLDER

DRINKING FOUNTAIN FOR CHICKS

A handy drinking fountain for small chicks can be made very easily with but little labor. Take an empty tomato or peach can and with a wire nail or sharp end of a file make a hole through the tin can about ¼ to ½ inch from the open end; fill the can with clean water, place a saucer upside down on the filled can and turn the fountain over. This will leave the can setting upside down in the saucer and the saucer will stand full of water up to the hole in the can. This is the best way to water small chicks. They cannot get into it with their feet or fall down and get wet as in an open vessel.



155—HOME-MADE GRIT BOX

For larger chickens a shallow pan can be used instead of the saucer. In this case the hole in the tomato can is about 1 inch or 1½ inches from the open end, or ½ inch below the level of the top of the shallow pan.

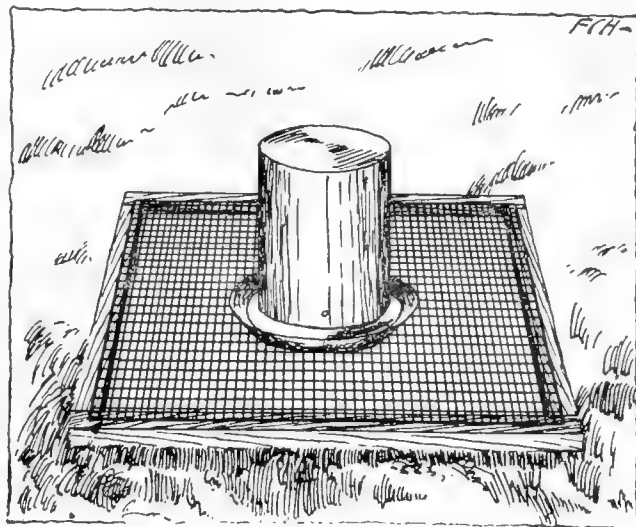
HOME-MADE DRINKING FOUNTAIN

H. A. Turney

I submit my arrangement for a drinking fountain. Of course

the fountain itself is not new to poultrymen, but the holder is that to which I desire to call attention. This makes the fountain serviceable and valuable.

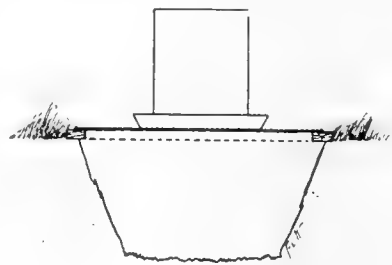
In Ill. 160, the flat bottom is a block of wood 6 by 6 by 1 inch,



157—DEVICE FOR WATERING DUCKLINGS

with a small staple in each end. On this block I place a common deep saucer and invert in it an old quart tomato or fruit can. The top is melted off and a notch is cut in the edge ½ by ¼ inch in size. The handle is a piece of wire (same size as that used for a clothes line), bent like a bucket bale and cut just long enough to reach up over the bottom of the can when it is in the saucer on the block. The ends are to be hooked into the staples in the block. A little practice will enable one to cut this wire the proper length, and the whole affair can be made in five to eight minutes.

Now to operate it: Drop the wire, like a bucket bale. Fill the can with water, cover with the saucer and quickly turn upside down. Set the saucer on the block and bring the wire up over the can. File the smallest of notches in the top of the can so that the wire will snap into them, remaining till you want it off. The saucer now runs full of water and refills as soon as the chicks drink. They have clean, fresh water for several hours and are not likely to turn the fount over.



158—CROSS SECTION OF A DEVICE FOR WATERING DUCKLINGS

SAFETY WATER TROUGH FOR CHICKS

The device for a safety watering trough for little chicks explains itself. A wooden trough is made in the form of a long, shallow box. White lead may be used in making it water tight, or if tightly nailed it will soon swell so as to hold water. Next fit a thin board to go in the top of this trough and float on the water when the trough is filled. In this board bore a half dozen or more 1-inch holes. You now have a safety watering trough for little chicks par excellence.

Index

Automatic Feeder; A Successful	93	House; A New "Roosting Coop"	66
Box for Carrying Fowls; A	90	House; A Satisfactory	19
Brood Coop; A Safe	89	House; A Scratching Shed	49
Brood Coops	87	House; A Simple Practical	31
Brood Coop for Hens and Chicks	88	House; Sled Runner Colony	79
Brood Coop with Hood; Plan for	88	House; A Tennessee Poultry	50
Brooding and Laying House; Continuous	32	House; A Village Poultry	59
Brooding House; Scratch Shed and	50	House; Building a Poultry	5
Broody Hens; Breaking up	92	House; Closed Front	26
Closed Front Houses	14	House; Continuous Brooding and Laying	32
Colony House; Fifty Cent	89	House; Curtain Front	58
Colony House; Scratching Shed	42	House; Curtain Front Poultry	57
Colony Houses; Stationary	82	House; Determining the Type of	3
Construction; Details of	10	House; Double Poultry	16
Continuous House; A	27	House for a City Lot	22
Coop; A Good Roost	84	House for a Village Flock	51
Coop and Run for Hen with Chicks	86	House for Eighty Fowls	30
Coop; A Safe Brood	89	House for Laying Hens	17
Coop at Low Cost; A Practical	83	House for one Flock	48
Coop for Hens and Chicks	88	House for Small Flock; Cheap	25
Coop for Hens and Chicks; Brood	88	House for Southern Breeders	41
Cooping Chickens	86	House for Two Flocks	46
Coop; Piano Box Weaning	85	House; Low Cost Poultry	27
Coops; Brood	87	Houses; Closed Front	14
Coop; The Dry Goods Box	84	Houses; Scratching Shed	36
Coop with Hood; Plan for Brood	88	House; Southern Open-Air	69
Crate for Feeding Chicks	94	Houses; Stationary Colony	82
Crate for Shipping Day-old Chicks	92	House; Successful Southern	28
Curtain Front House	58	House for Town Dwellers; Fresh-Air	71
Curtain Front House; Maine Experiment Station	53	House; The Farm Poultry	56
Curtain Front in Maryland; The	57	House; The Scratching Shed Poultry	36
Curtain Front Poultry House	57	House; Wood's Open-Air	67
Curtain Front Poultry House; A	55	Houses Used in England; The Movable	77
Details of Construction	10	House with Hallway; Poultry	20
Door Fastener; A Wedge	87	Housing for Poultry; Fresh-Air	64
Exterior Fixtures	81	Interior Fixtures	91
Farm Poultry House; The	56	Laying House; A Five-Pen	14
Feeder; A Successful Automatic	93	Maine Experiment Station Curtain Front House	53
Feeder and Fountain; Practical	9	Movable House Used in England; The	77
Feeding Trough; A Practical	93	Netting; Putting up Poultry	90
Fencing; Test Your	90	Piano-Box Poultry House	13
Fixtures; Exterior	81	Portable Poultry Houses	77
Fixtures; Interior	91	Preliminary Considerations	3
Fountain; A Winter	94	Roost Coop; A Good	84
Fountain for Chicks; Drinking	95	Roosting Room and Scratching Shed	45
Fountain; Home-Made Drinking	95	Scratching Shed Colony House	42
Fresh-Air; Don't Fear	61	Scratching Shed House; A	49
Fresh Air Housing for Poultry	64	Scratching Shed; House and	47
Grit Boxes; Home-Made	94	Scratching Shed Houses	36
Hallway; Well Designed	92	Scratching Shed; Poultry House and	39
House; A Business Poultry	29	Scratching Shed Poultry House; The	36
House; California Fresh-Air	73	Scratching Shed; Roosting Room and	45
House; A Cheap Poultry	59	Scratch Shed and Brooding House	50
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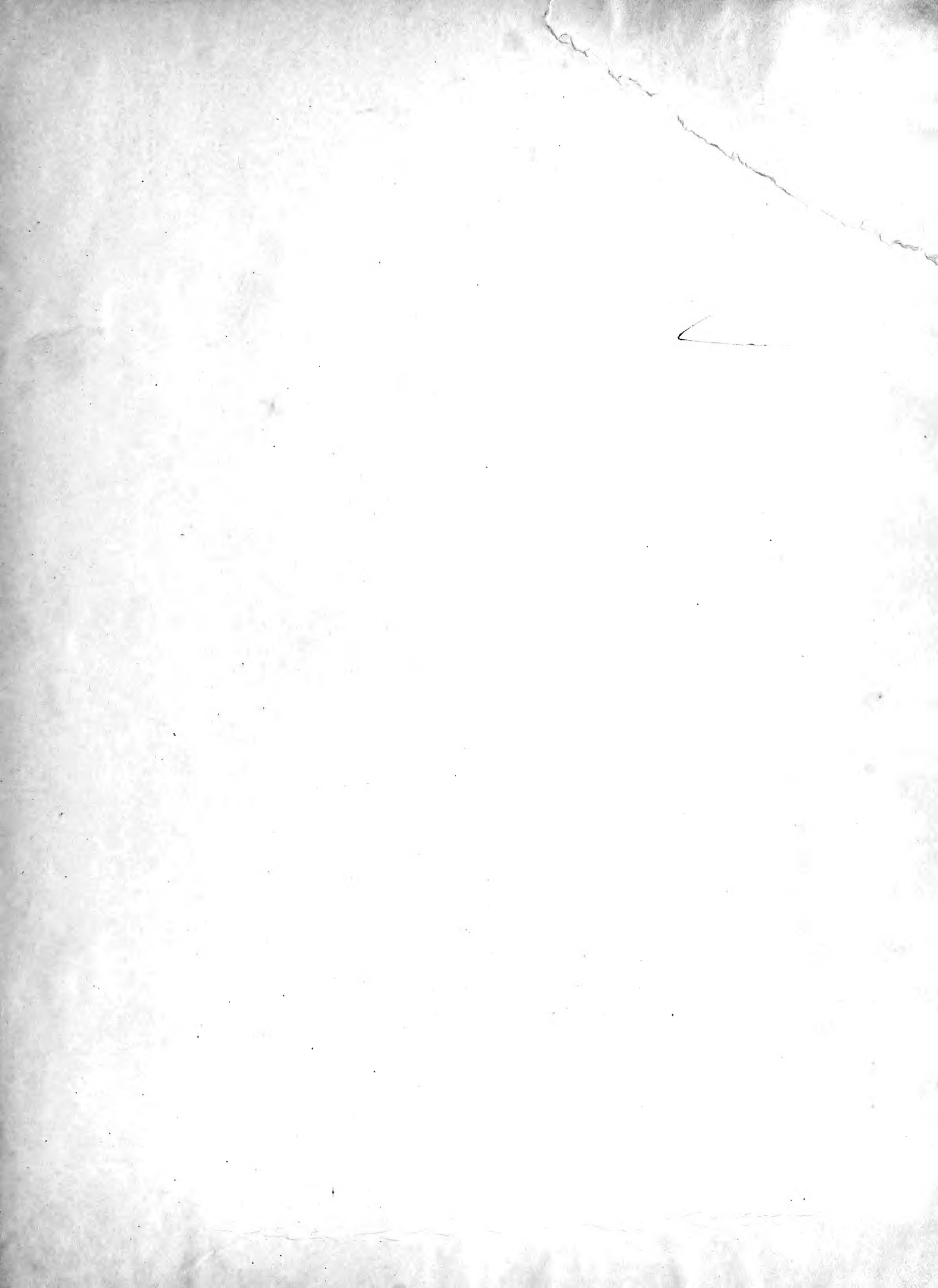
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