HOUSING OF CHICKENS

N LESSON 1 of this Reading-Course it is stated that the greatest problem in poultry-keeping is how to maintain the health and vigor of the fowls. Housing has considerable to do with the health and vigor of the stock. Ages ago, before domestication, chickens roosted in trees, and they still have a little of the wild nature. Did you ever notice when the curfew of the poultry-yard summons the chickens to their roosts that they usually go to bed on the branches of a tree if there is one nearby? Not long ago the writer of this watched a large flock of fine chickens near Corvallis “retire” for the night. The farmer had built good houses for the flock, but near the houses there was a giant oak tree decorated by nature with mistletoe, and one after another the hens flew into this tree, some hopping from one branch to another till
they reached the top-most branches, higher than the highest barn on the farm. It was interesting to see the chickens nestle down under the mistletoe for the night while the roosts in the poultry houses were vacant.

It is the nature of the hen to roost in the tree rather than in a house, and the poultryman should study her nature if he wishes to succeed.

On another occasion I watched a flock of hens "retire for the night" where they had the choice of two houses. One was a sort of shed affair with one side about all open; it was a fresh-air house. The other was a closed house with a few small holes for ventilation. About nine out of every ten of the hens crowded into the open house, though they had originally been equally divided between the two houses. They preferred the fresh-air house. If there had been a tree in the yard they probably would have preferred that to either of the houses.

There are times, of course, in severe storms when chickens prefer the shelter of a roof to roosting in a tree, but the lesson is that fowls prefer the out-door life, or the "simple life," and when we put them in close houses and compel them to live there under the mistaken notion that we are being good to them we are imposing conditions that will result in decreased vitality. Housing is really an artificial condition for chickens and it is a serious mistake in poultry-keeping to follow too closely artificial lines.

It should not be concluded, however, from what has been said above that the best kind of housing for chickens is in the trees. It is not intended either that we should avoid all so-called artificial methods in poultry-keeping. While housing may be an artificial condition for fowls, at the same time good housing is necessary if we wish to get the greatest profit. In a state of nature fowls lay only during the breeding season, and it is necessary in order to get eggs during the winter season to surround the hen with conditions that are more or less artificial. If winter egg production is an artificial condition then we must resort to artificial means to induce the fowls to lay in that season. The danger is that we are liable to forget the nature of the hen and compel her to live under conditions too highly artificial.

**Purpose of Housing Fowls.**—When we build houses for chickens we have in mind their health and comfort. We may be influenced in this by kindness for the fowls but more often by selfishness that
looks for a full egg basket; that is, we usually build houses for chickens to make them lay more eggs. We may say then that the purpose of housing is to increase productiveness. Proper housing will increase the egg yield; poor housing will decrease it.

Location.—1. Soils.—Chickens will thrive on a great variety of soils, but certain kinds are more adapted than others to successful poultry-keeping. If possible, heavy clay soils should be avoided. They are hard to keep clean or sanitary. A rather light porous soil is preferable; this is drier in wet weather and not as hard in dry weather as a heavy clay soil. A wet soil is colder than a dry one. 2. Drainage.—If the ground selected has not good natural drainage provision should be made either by underdrainage or by open ditches for carrying off the surplus water. The water should not be allowed to stand in the yards. Muddy feet mean muddy eggs. Dampness means catarrh, roup, rheumatism, tuberculosis, etc. 3. Air drainage is sometimes as important as soil drainage. Cold moist air seeks the lower levels. It is better to locate the house and yards on higher levels where there is some air movement to carry off the cold damp air or prevent it becoming
stagnant. They should not, however, be exposed to high winds. You will notice that on windy days the fowls mope around in sheltered corners or houses. This is not favorable to high egg production. Sufficient air drainage without interfering with the comfort or activity of the hen is the ideal condition. The houses may be built on the leeward side of an orchard or in the shelter of buildings. A windbreak of trees may be set out where necessary to provide shelter. 4. **Sunshine.**—If possible the houses and yards should be built where they will get the full benefit of the sunshine. Face them south unless the prevailing winds are from that direction. Sunshine is a germ destroyer, and a better egg producer than red pepper or other condimental foods. 5. Other points that should be considered in locating the houses are (a) the convenience of the attendant; nearness to the feed and water supply will save in labor. (b) Building the houses away from other buildings will make it easier to keep the premises free from insect pests, rats, etc. (c) Other things being equal, a location near a city market or a good shipping point should be given the preference.

**Requirements of Good Poultry Houses.**—No one style of poultry house will suit all conditions; besides fowls may be kept successfully in different kinds of houses. There are certain principles, however, that should govern in the building of any kind of poultry house. 1. **Ventilation.**—A good poultry house should be well ventilated. Fowls require considerably more fresh air than farm animals. It has been estimated that a hen in proportion to her weight requires double the weight of oxygen that a man or a horse requires. The amount of air breathed per 1000 pounds live weight of hens is given by King as 8,272 cubic feet in 24 hours; the requirements of a man being 2,833 and of a cow 2,804 cubic feet. Ventilation keeps the house dry. A close, warmly built house with glass windows is always damp, because of the extremes of temperature between day and night. Dampness is overcome by ventilation. Ventilation can best be furnished by leaving one end or one side open or partly open. In cold sections or exposed or windy locations this opening may be covered with burlap or canvass. This will admit the air and add to the comfort of the fowls. In most sections, however, of the Pacific coast the curtain will not be needed. The other three sides of the house should be draft-proof. The idea is to give plenty of ventilation without drafts. 2. **Protection From Cold and Storms.**—A good poultry house
should afford protection from storms and severe weather. A little shelter from the winds and the storms will add to the comfort of the fowls and therefore to the egg yield. A cold wave or a sudden change to colder weather means an immediate demand for increased fuel to keep up the heat of the body. In this case the fuel is the food that the hen eats, and the food that has been going into the making of the eggs will be drawn upon for fuel purposes. It is the food that furnishes the heat of the body as well as the material for eggs. Any shelter therefore that protects fowls from storms or sudden changes in temperature will be an incentive to egg production. Fowls will maintain rugged health roosting in the trees, but sudden and frequent changes in the weather to which they are subjected in the trees interfere with egg production. The house, while affording protection from storms, should also furnish scratching room, for activity is the life of the hen.

3. Space Required per Fowl. Where there is little or no snow, or where the chickens can be out of doors every day in the year, about 2 square feet of floor space per fowl will be sufficient. This would apply to flocks of twenty or more. For smaller flocks a more liberal allowance of space should be made. Where the climate is such that the fowls will seek shelter part of the year rather than go...
outdoors in the yards and fields, more floor space should be provided, say 4 to 5 square feet per fowl. The house should be built high enough for a man to work in without bumping his head. This will allow sufficient air space for the fowls.

4. Floors.—Floors are seldom necessary or desirable in poultry houses. Where the ground is inclined to be damp a floor will be an advantage, but where it is well drained and porous there need be no floor. Fowls prefer to scratch on the ground rather than on a floor. A wooden floor gives protection for rats underneath, and for this reason a cement floor is preferable. On the other hand, cement floors do not permit of moving the house, where this is desired. Where an earth floor is used it should be higher than the ground outside of the house to prevent water running in. It is a good plan to fill the floor with 6 or 8 inches of clean coarse sand, and once a year or oftener scrape off part of this and replace it with clean sand. This will keep the floor comparatively clean and lessen the danger from disease to the flock.

Kind of House to Build.—Poultry houses may be divided into two classes:—1. Portable houses; 2. Stationary houses.

1. The Portable House.—The portable house is used where the colony system prevails. Much of the trouble from diseases comes from keeping the chickens on the same ground year after year. By keeping them on clean ground, which is possible with portable houses, they are under natural and hygienic conditions. Second, this system fits in with a system of crop rotation on the farm. About fifty chickens to the acre will keep the land in high fertility. Third, the chickens will find a considerable portion of their food in the waste grain and weed seeds, grasshoppers and other insects. They often rid the farm of grasshoppers and other injurious insects and save valuable crops. Another important advantage of the colony system is that the fowls are more active when they have the liberty of fresh fields than when confined in yards. Fourth, with the colony system there is no expense for fencing. Where fowls are kept on an extensive scale the colony system is undoubtedly the best.

A good size to build a portable house is from 7x12 to 7x14 feet. A team of horses will pull a house of this size and it will accommodate from 30 to 50 fowls. These houses are built on runners and are moved about once a month. A house 7x12 may be built at a cost for lumber of $15 and about $5 for hardware and paint. Details of its construction may be obtained by writing to the Experi-
ment Station, Corvallis, Oregon, for a copy of Circular No. 4. The same circular describes a trapnest by means of which a record may be kept of the number of eggs laid by each hen in the flock.

2—Stationary Poultry Houses.—Where little land is available for keeping poultry, as on a town lot, stationary houses are used. The portable house, already described, may be used as a stationary house, with this advantage, that it may be moved should the owner change place of residence. For a smaller flock than 40 the house may be smaller. For 25 hens a house 7x10 will be ample. The writer has successfully kept 25 hens in a house 6x8, but would recommend the larger size where practicable. Where more than 50 are kept I recommend a separate house for each flock rather than one long continuous house on account of the advantage in arrangement of yards, which will be discussed later. Whether separate houses or one continuous house be used, they should be built in such a way as to permit of double yards or two yards for each pen, as it is very desirable not to keep chickens on the same ground continuously.

Interior Arrangement—Whether the house be used as a portable or stationary house practically the same arrangement of the interior may be had. All the floor space should be used by the fowls for scratching. If possible all nest boxes, perches, hoppers, etc., should be movable. This will make it easier to clean out the house and to keep it free from lice and mites.

The perches or roost poles are placed at the rear end of the house about three feet from the floor. Three perches will be necessary for the small breeds and four for large breeds. The poles should be placed on a level and made of 2x2 inch stuff with the sharp edges planed off. The perches should be placed about 18 inches apart.
A platform underneath the perches will catch the droppings and keep the floor cleaner. If this is placed at a slope, sloping to the front two or three inches, it will be much easier to clean the droppings board. The platform should be 8 inches below the rear perch and 10 inches below the front one.

The Nests.—Nests for laying hens should be somewhat secluded, for fowls are less liable to acquire the egg-eating habit when the nests are in a darkened place. They should be from 10 to 12 inches to 12 to 14 inches in size and 8 to 10 inches high, the larger breeds requiring the larger size. A cheap and serviceable nest may be made out of a 5-gallon oil can by cutting the end out, leaving about 3 inches at the bottom to keep the nest material in the nest. Such a nest can be easily cleaned either by washing or spraying. The illustration shows top of can taken off; this makes the nest more roomy. Several of these nests may be set on a platform about 2 feet from the floor, turning the entrance to the nest towards the wall and leaving a space of 8 inches between nest and wall for the hens to walk along. The nest platform is about 2 feet from the ground and is nailed to a cleat on the side of the house and braced from top of sill. A sloping top is fitted over the nests which keeps the chickens from standing on the nests and helps to darken them. This top should be built high enough so that the attendant can see into the nests from the rear.

One nest to five or six hens should generally be provided.

Where an empty pen or yard is not available a broody coop
should be provided for broody hens. This may be made from an ordinary box with the floor of slats. At the first symptoms of broodiness the hens should be removed to the broody coop unless they are wanted for hatching. This coop may be hung on the wall inside the house if there is room enough, otherwise it may be hung outdoors on the shady side of the house, or in some other convenient place.

Yards.—If poultry houses are located near a neighbor's fields or gardens it will be necessary to yard the fowls. For other reasons, such as the keeping of more than one variety or strain of fowls, separate fenced enclosures must be maintained.

Keep the Yards Clean.—When chickens are confined throughout the year in yards, care must be taken to keep the yards clean, otherwise there will in time be serious losses from diseases and general loss in vitality. When they are kept year after year on the same ground the yards sooner or later become contaminated with disease-producing germs, and losses through sickness and decrease in vitality will render it unprofitable to keep fowls. Dr. Salmon says: "Accumulations of excrement harbor parasites, vitiate the atmosphere and breed contagion." It may be possible, but it is doubtful, if yards can be kept sufficiently clean by disinfection and other means to prevent troubles of this kind. At any rate, the expense of disinfection and cleaning would render it impracticable.

Size of Yards.—The larger the yards the more exercise the fowls will take. Poultrymen usually figure on so many square feet of yard space per fowl, and the estimates vary from about 20 to 100. In a large yard, however, the fowls will do better than in a small one though the same number of square feet be allowed each fowl, because there is more room for exercise. Each fowl has the use of the whole yard whether it be large or small. The cost of fencing will largely govern the size of the yard. Fencing is expensive, and if the yards are very large the cost may exceed that of the houses. For a pen of 100 fowls a yard 20x100 is a good size. This is 20 square feet per fowl. For small flocks this allowance should be greater. For a pen of 10 fowls, for example, the yard space per fowl should be about double that for 100.

Double Yards.—In order to give the fowls clean ground and prevent "ground poisoning," the best plan is to have double yards; that is, two yards for each pen of fowls. If one long continuous
9—An Oregon poultry farm, showing separate colony houses and the double yard system.
house be used and it is divided into small pens. it will be better to have the yards on each side of the house, rather than two yards on one side, in order to get width enough in the yards for cultivation. Where the yards are too small for horse cultivation, spading will have to be resorted to.

Separate Houses.—A more convenient arrangement than one long house is to use separate houses of the same size as the pens in the continuous house placed in a row 20 feet apart. By this arrangement the yards may all be on one side of the house, and one can walk or drive a team on the other side from one end to the other without opening of gates. Another advantage of this arrangement is this: By having every other yard vacant the trouble from males fighting through the fence is avoided. Another advantage is that there is less danger of contagious diseases spreading from one flock to another than in the continuous house; every flock is practically isolated from the other.

Cultivation of Yards.—The cultivation and cropping of the yards will keep them in good condition. The crops will use up the manure and lesson the danger from spreading of disease. The cultivation also keeps the surface of the soil loose; unless cultivated, from continuous use the soil will become hard and baked if it be of a clayey nature. The expense of building the extra fence for the double yards will be offset by the value of the crops that may be grown on the vacant yards. It will pay to plow the yards two or three times during the year. Cultivation has a double purpose; first, it cleans the yards; second, it gives the fowls more exercise.

Crops to Grow.—Different kinds of crops or vegetables may be grown on the vacant yards. Green food may be grown for the fowls, or vegetables may be grown for the family. The droppings of the fowls will keep the soil in a very productive condition. If it is not desired to use the yards for garden purposes, such crops as vetch, clover, kale, rye, etc., may be grown. Where it grows well, clover may be planted early in the spring, and the chickens turned on it in the fall. Vetch sown in the fall will furnish a great quantity of excellent green food in the spring and summer. In sections where it thrives probably no other forage plant will furnish more green food per acre than the thousand-headed kale. If planted early in the spring it will furnish a great quantity of green food in the fall and following winter. Rye sown in the fall will make considerable green food in the following spring and summer.
The walls may be covered with burlap or muslin curtains, hung so that it may be swung open in warm weather.

16 - A colony house, cheap and hastily built. This house is 8 feet long and 7 wide. The open front
Shade.—Shade is very necessary for fowls in summer. This may be secured from fruit trees or other trees. Two or three fruit trees, such trees as will do best in the particular soil and location, in each yard 20x100, will furnish some revenue as well as shade. Most varieties of fruit do well in poultry yards. Plums, apples and cherries do especially well. The droppings fertilize the trees, and the poultry aid materially in keeping in check certain of the fruit pests. Sour apples should be fed sparingly to fowls. Where it is not desired to plant trees, sunflower or corn may be planted early in the season in a part of the yard fenced off temporarily.

Fences.—The fences are usually made from 5 to 6 feet high. Poultry netting of two inch mesh may be used; for small chicks, 1-inch mesh. Posts should be about 10 feet apart. If there are male birds in adjoining yards it is well to put 2 feet of boards on bottom to prevent fighting.

Chickens on the City Lot.—Chickens may be kept on a city lot at a profit. The waste food from the table of the average family, in addition to a little grain, will feed enough fowls to furnish the needed fresh eggs for the family. Feeding, however, will form the subject of another lesson. With good hens and careful attention to houses and yards a piece of ground 25x50 will accommodate enough hens to produce as many fresh eggs as the average family will consume, besides a considerable number of broilers. It must be understood, however, that the chickens will require daily attention throughout the year. The feeding must be done regularly and intelligently and the premises be kept clean and sanitary. It is not necessary to disfigure the back yard with a chicken yard; a chicken yard may be made a thing of beauty as well as profit on the town lot. It is not necessary to make the chicken yard a nuisance ground or dumping place for old shoes and tomato cans. Chickens do not thrive on such things. The spectacle of a chicken yard made into a dumping ground for rubbish and the chickens treated as scavengers is disgusting and should not be tolerated in any community. A nice flock of chickens properly cared for and housed and yarded in becoming style may become an attractive feature of the vacant lot, and, besides furnishing the daily fresh egg, will afford a mental diversion to some of the older people and a pleasure to the younger members of the family. Young boys and young girls of the town lacking something to do will find in a flock of chickens interest and instruction, and the more ambitious
youngster will find opportunity for a study of problems that are of absorbing interest to all students of plant and animal breeding, for though the chicken is a chicken, it is subject to the same laws of heredity as are plants and live stock in general. Profit therefore may be realized in different ways from chickens on the city lot when given proper care and attention.

A Plan.—We have outlined a plan, (Fig. 11) for keeping on a piece of ground 25x50 feet enough fowls to furnish the eggs needed for an average family. It is not expected that the plan can be followed under all conditions. The details can be modified to suit different conditions, such as size and shape of available ground. The main feature of the plan is that it offers opportunity for keeping the fowls under sanitary conditions. It may be that the required number can be successfully kept on a smaller area, but by decreasing the area it will be more difficult to keep the ground in proper sanitary condition and the fowls in good health.

The house shown in the sketch is 6x8 feet, with a shed roof. The roof is rather flat for shingles and may be covered with roofing paper, such as Paroid, Ruberoid, Neponset, etc. There is a door and a window in the front of the house. The window is hinged to allow it being opened when more ventilation is needed. Except in warm weather sufficient ventilation will come from the end of the house, part of which is shown covered with burlap. Light canvas or muslin may be used instead of burlap. Whatever material is used it must be porous enough to admit the air freely. The burlap
extends from the top of the house to within 2 feet from the bottom. The fowls roost at the opposite end of the house, there being no openings in the walls at the end. This prevents drafts striking on the fowls at night. Usually it will be best to face the house to the south. If the prevailing winds should be from the east the burlap may be put on the other end of the house and the door, window and roosts also changed. For warm summer weather we suggest that a frame of poultry netting be substituted for the burlap.

The plan shows double yards, each 12½ x 50 feet, less space occupied by the house. This means there will be a "rotation of crops." The chickens will "rotate" with a vegetable garden. That is, the chickens will be in one yard this year and in the other yard next year, and the garden will be on the vacant yard. The house and yards are large enough for 10 to 20 fowls, but the smaller number is recommended. The hens should furnish the eggs required for home use, and it will be a mistake to crowd the yards beyond ability to keep them clean. The chicken yard should be spaded frequently. This will prevent accumulations of droppings on the surface and keep the ground in better condition for the chickens to scratch in. It will be better to spade a little at a time instead of doing it all in one day. There is a double purpose in the spading; it is first, to keep the soil in sanitary condition, and second to encourage the fowls to exercise, for the active, busy hen is the producing hen. When the ground is wet of course the spading should not be done.

At each end of the house there is a small enclosure about 6 x 8 feet. This may be used as a place for hatching chicks, where it is desired to hatch and raise them instead of purchasing mature pullets. Enough pullets to renew the flock of layers may be hatched in these enclosures. Methods of hatching and raising the chickens will be treated in another lesson.

Acknowledgment.—Illustrations Nos. 3, 5, 6, 8, and 10 are reproduced by permission from Farmers' Bulletins 141 and 287 of the United States Department of Agriculture.

College Bulletin. Serial No. 32. Entered as second-class matter at the postoffice, Corvallis, Oregon.