

grain." The "fat" with which turnips are credited in analysis is to some degree waxy matter of inferior value to the fat in oilcakes, and neither the proportions of albuminoids nor of carbohydrates in turnips can be considered as of equal value with the same percentages in cake or corn."

ADVANTAGE OF MIXING FOODS.

We certainly recommend a mixture of concentrated foods. Linseed cake alone is too heating, and if the sheep are to be kept in health it ought to be mixed with a proportion of foods poorer in albuminoids. If this precaution is neglected we shall run a chance of sore teats and sore mouths. In the above remarks we were chiefly aiming at arriving at the limits of cost. We now suggest that a mixture should be made on the most economical and scientific grounds possible. The mixture should be readily constructed, and be free from complication. It should be composed of farinaceous and albuminoid constituents in fair proportions. We suggest the following:—

First mixture for ewes or dogs	1	
1 bushel of linseed cake	} 1 to 1 1/2 lb per head.	
1 " cotton cake		
2 " maize crushed		
Second mixture for ewes	1	
1 bushel of bran	} 1 to 1 1/2 lb per head.	
1 " linseed cake		
1 " barley		
1 " maize		
Third mixture for lambs	1	
1 bushel of white peas (2)	} Quantity per head to vary with size.	
1 " linseed cake		
1 " malt culms		
1 " crushed barley		
Fourth mixture for dry sheep	1	
1 bushel of wheat	} 1 to 1 1/2 lb per head.	
1 " barley		
1 " oats		
1 " linseed cake		

JOHN WRIGHTSON.

Poultry.

A Poultry house for the Farmers, and what should be in it

A farmer need not go to any great expense in preparing an habitation for his fowls during the winter season. A comfortable house can quickly and cheaply be made in the corner of a barn, shed, or outbuilding. It may be in the shape of the unpretentious lean-to or the more imposing compartment house. Much of course depends upon the resources and ingenuity of the builder. The writer, some twelve years ago, made his own poultry houses, and although five winters, of more than ordinary severity, followed their construction, yet water did not freeze in them, and no artificial heat of any kind was needed. An old cow stable and carpenter's shop combined and forming a building about 16 x 10, was utilised. The inside was torn out, but the outside boards (doubled) were allowed to remain on the cedar posts which formed the frame of the building. In the inside of these outer boards was placed tarred felt paper kept securely in place by nailed laths. The space was tightly packed, up to the rafters, with dry white pine saw-dust. In order to facilitate the packing process, only two inside boards were nailed on at a time. A ceiling, seven feet from the floor, was made so that it could be removed in the warm summer months and afford greater ventilation. In the fall, the space between the ceiling and the pitch of the roof was filled with hay, straw or dry leaves which were let down as

(1) A lamb when weaned, becomes a *lamb*, and retains the name until it is a *Hog an hogget* mean the same thing as *veg*.
(2) Observe this! No English farmer would mix peas in a ration for lambs.

occasion required during the winter for the fowls to scratch in. The total cost of the saw dust, lumber, tarred felt paper, nails, etc., was \$ This house was divided into two rooms, one being slightly larger than the other, the partition going up to the ceiling. This description is not given as a model, but it may be useful as showing what can be done with a building that would otherwise have been useless.

Where it is difficult, or impossible, to procure saw-dust, an air space, with one or more layers of paper may answer the purpose, but the experience of the writer and one or two of his friends proves the air space a failure as compared with a saw-dust lined house. As has been said, there is no cast iron rule to follow in building a house, as so much depends upon circumstances, but the aim should be to have it so that the temperature will be over the freezing point, rather than under it. The reasons why this is desirable have been given in the article preceding this one.

The house should face the south, so as to receive as much sunlight as the short days of winter will permit. But while plenty of light is absolutely necessary for egg production, the window or window should not be too large, for they are as likely to admit the cold of night. Where double windows are not used, a shutter will answer the purpose, but it must be opened so as to admit early daylight.

THE BEST KIND OF FLOOR.

By all means let the floor of the house be of wood, for it will be found to keep dry better than any other kind and has the advantage that you can put earth, straw, chaff or kindred substances on it and they will keep dry. Earth floors tightly packed, or even those of concrete or tile are likely to be cold, and the tightly packed earth floors have certainly been found to get damp, and damp means disease and death to poultry. A good plan, where it is possible, is to have half of the floor of wood and the other half dry sand and fine gravel to which coal ashes and particles of broken mortar or crockery may be added. The fowls will scratch and roll in the mixture and pick up the lime, grit or gravel as they require, either substance. It will, in fact, answer the double purpose of dustbath and scratching ground. It will also prevent egg eating, feather pulling and the laying of eggs with soft shells. It should be raked over and renewed occasionally to ensure cleanliness and sweetness. More will be said on this subject when the proper winter treatment of laying stock is reached.

WHAT SHOULD BE IN THE HOUSE.

A good roost is made of a 2 x 1 scantling, with the edges very slightly rounded off. A narrow, or a small round roost should not be used, for either will make "crooked breasts" in the young stock and spoil them for market purposes. The roost should be 12 or 18 inches over a platform, the latter about 24 inches wide to catch the droppings and not more than 18 inches from the ground. The heavy breeds, such as Brahmas, Langshans and Cochins, should never be allowed to jump from a greater height than 18 inches, otherwise they are apt from coming heavily on the floor to get a very hard corn on the sole of the foot, very painful and very difficult, if at all possible to cure. This ailment is known as "humble foot." With the lighter breeds, the height of roosting place is not of so much moment, but in the opinion of the writer no laying hen should be allowed to jump from any height.

NESTS.

The nests should be so dark that the hen after laying the egg will have no desire to loiter in it. It is well that she should not see the egg after it is laid, for absence of light is a preventative of egg eating, a practice which once acquired is voraciously prosecuted. Prevention is infinitely easier than cure. The patterns of nests are many. Those in use in the Experimental Farm poultry-houses are fastened to the wall, about 18 or 24 inches from the floor, and are entered by a covered passage way from the front turning sharply into the nest to the left. They have not been long enough in use to permit of a decided opinion being formed of their value. Other nests are made on the floor so that the layers will have to creep into and out of them. Again others are placed high up on the wall, so that the fowls will have to fly up to them, but they are objectionable on account of the impossibility of the heavy breeds reaching them without risk of injury, and the inducement offered to the lighter breeds to roost on them. Patent nests so arranged that the eggs disappear as soon as laid, are sometimes used, but the fowls in many cases prefer to lay on the floor. A nail keg partly filled with straw has been found to make a good nest, for the light breeds.

THE DUST-BATH.

Another important article of furniture is the dust-bath which can be made by dividing off a space 3 x 1, with sides 8 or 10 inches high, in a corner house, where the sun can strike, or by constructing a box of the dimensions named. The dust bath is the means by which the hen keeps herself clear of vermin. In it should be placed road dust, dry sand or earth, coal ashes, &c., &c. A small quantity of sulphur added occasionally will greatly assist in ridding the fowl of any vermin. Of course the dry earth, road dust or sand must be laid in before the fall rains set in. It is imperative that the dust bath should be composed of dry material, or its value will be lost. Where space will permit, the dust bath may be made as large as desired. The foregoing applies to houses where only a board floor is used.

OTHER LITTLE NECESSARIES.

Other small but necessary articles are a narrow trough about 1 1/2 inch wide and about 6 or 8 feet long, to hold the soft morning feed. This should be screwed on, or hung by hooks on to the side of the house. The narrowness of the trough will prevent the fowls from jumping into the feed and dirtying or turning it over, as they will do in the case of a broad shallow dish, placed on the ground. A small tin or wooden pail, or better still, a fountain to hold the drink water is also required. Sometimes a small box is necessary to hold broken mortar, broken oyster shells, grit in the shape of sharp gravel, &c., but where the narrow feeding trough just described is used these essentials can be placed in it. It is a good plan to have a quantity of gritty substances on the floor of the house all the time so that the fowls can pick them up while scratching among the chaff or straw. The inside walls of the house should be whitewashed once or twice a year and the straw litter on the floor occasionally removed and replaced so as to have a sweet and clean. None of the substances or articles named are beyond the reach of the poorest farmer.

THE NEXT SUBJECT.

We have given some consideration to the kind of house to have and what

should be in it. In our next chapter we will treat of the proper fowls to put into the house and their treatment, so as to have eggs in paying quantities in winter, a season when they are at the highest price.

The Montreal Poultry-show.

A very successful exhibition indeed. The whole really included hardly any inferior specimens. Mr. Baker of Côte St. Antoine had several excellent pens of "Silver-laced" *Wyandottes*. The two pens of *Dorkings*, exhibited by Mr. Campbell, refreshed our eyes, for they were absent last year from the show. The hen, however, was but a moderate specimen and the great size of the cock made her look meaner than she really would have appeared if shown in a separate pen. The *Emden* and *Toulouse* geese were very heavy birds. The *build* of the *Aylesbury* ducks, as well as the colour of their bills, distinguished them from their next door neighbours—the *Pekins*, though some people rashly assumed that they were of the same origin. Showy ducks, the latter, but more feather than flesh.

The *turkeys* were not as good as we have seen them, and they look cramped for room, especially the cocks.

The show of pigeons was excellent; the *fantails* were superb. A pullet was labelled, "What is it?" Well, it looked to us like a white hen drawn down a chimney. Such a fowl is bred in Glamorganshire and called a "Sootie". The Welsh trout-fishers give as much for a specimen as 10 s.; the feathers make a queer coloured artificial fly, which, with the "coch about dhu", meaning red above black, are the only two a true Glamorgan man condescends to use, as he would scorn the modern innovation of the "coachman", the "March brown" or "Hoffland's Fancy" though the trout of the Ely, the Gweny, and the Ogmoro are not above being *deluded* by them.

A Scarcity of Eggs.

The experience of the present winter convinces me more fully than ever that it is folly to expect eggs in very cold weather if hens have their liberty. No matter how comfortable they may be at night, or what cosy nests we prepare for them, few eggs can they produce if they run out all day on the frozen ground. Their vitality is simply insufficient to supply heat for their bodies and for egg production too. You can keep them healthy, active and in good condition, but you can't prevail upon them to lay eggs.

To make poultry keeping in winter really profitable we must do more than this, we must provide some means of heating their houses artificially in very severe weather. The average farmer, however, would rather forego eggs altogether than go to this trouble—and expense, I was about to add, but the expense I believe would be fully justified by the increased number of eggs. Still, as it would take a person of far greater persuasive powers than I possess to convince them of this, I shall simply suggest to them the next best thing—to make the hen house fairly comfortable and to put in a few glass windows; then, after covering the floor with cut straw or something of that sort, to keep up the hens on bitter cold days. Of course the flock would be rather restive at first, for fowls dearly love their liberty, but if their natural wants were supplied, a dust bath and box of gravel provided, and dry grain scattered in the straw to keep them scratching, they would soon become reconciled and be much more comfortable,