

are still insoluble. Now the reader will perceive that the solid excrement contains only the insoluble refuse of the food, while the liquid excrement contains ninety-five per cent of all the valuable digestible fertilizing elements in the food. This statement would seem to render it easy to determine which is the more valuable, the liquid or solid excrement; the valuable and digestible part of the food goes into the liquid excrement, and the refuse and least valuable part goes into the solid excrement. We will give illustrations, by some short tables made from the German experiments, upon animals fed on barley meal:

NITROGEN STORED UP AND VOIDED FOR ONE HUNDRED CONSUMED.

Animals.	Stored up as increase.	Voided as solid excrement.	Voided as liquid excrement.	In total excrement.
Sheep.....	4.3	16.7	79.0	95.7
Oxen.....	3.9	22.6	73.5	96.1
Pigs.....	14.7	21.0	64.3	85.3

ASH CONSTITUENTS STORED UP AND VOIDED FOR ONE HUNDRED CONSUMED.

Animals.	Stored up as increase.	Voided in total excrement.
Sheep	3.8	96.2
Oxen	2.3	97.7
Pigs	4.5	95.5

The following table shows the composition of the solid and liquid excrements of sheep fed on good hay:

	Solid excrement.		Urine.	
	Fresh.	Dry.	Fresh.	Dry.
Water.....	66.2	85.7
Organic matter	30.3	89.6	8.7	61.0
Ash	3.5	10.4	5.6	39.0
Nitrogen	0.7	2.0	1.4	9.6

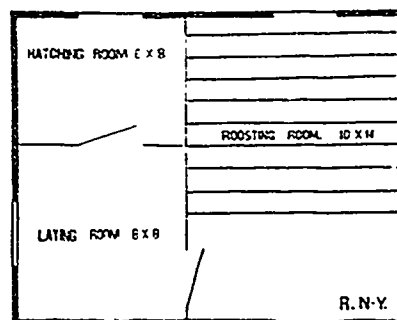
These tables are worthy of study. It will be seen that the soil would lose fertility very slowly if the total excrement were returned to it. Over 95 per cent of the nitrogen and ash constituents are voided by both sheep and oxen. The last table shows that solid and liquid excrements of sheep are rich in both nitrogen and mineral constituents when fed on hay. Two thousand pounds of the solid would contain fourteen pounds, and of the liquid twenty-eight pounds—the liquid containing double; but in feeding barley meal, the liquid contained about four times as much as the solid. When farmers fully consider the value of the liquid excrement of their animals, will they still think they can afford to waste it? Many farmers who give little thought to the loss of this most valuable fertilizing matter on their own farms are liberal purchasers of commercial fertilizers. Our examination shows what a large loss must occur where large stocks are kept, and only the ordinary precaution is taken to save the liquid. It is more frequently thrown out of side windows under the eaves, to be washed away by the rains, but a considerable part of the liquid goes through the stable floor into the earth under. Those who endeavor to save it best, wheel the manure out under a shed. But even here a good deal soaks into the earth. The only certain way to save the liquid excrement completely, is to have it flow into a water-tight receptacle under the stable floor; and the most economical

way is to have liquid and solid fall together into this water-tight gutter, and then both are carried to the field together, and it is no more labor to carry both than the liquid alone. The German farmers who know the great value of the liquid separate the liquid in a reservoir by itself, and pump it into a liquid-manure distributor, with water added, and then distribute over the soil. But this adds to the labor over that of taking both to the field together. The writer uses the manure spreader, which distributes both liquid and solid together evenly over the soil. All the manual labor bestowed upon the manure is to shovel with a scoop the liquid and solid manure into the spreader, and then the team does the spreading much more evenly than it can be spread by hand. The cost of these water tight gutters is but a trifle compared to the value of the fertilizers saved. One hundred millions of dollars expended for commercial fertilizers would go but a short way to replace the fertility wasted in liquid excrement in this country in a single year. This is a matter of so much consequence that our farmers cannot afford to treat it with indifference any longer. The agricultural press is now often calling attention to it, and I trust a few years will bring in a better practice.

DR. HOSKINS.

POULTRY-HOUSE.

At the following Fig. is given the plan of a convenient poultry-house. The laying room is separated from the roosting-room for the sake of greater cleanliness. The perches in the latter may all be the same height from the ground; or the first may be placed about 18 or 20 inches from the ground; the second about six inches higher, and far enough back so that the droppings will not fall on the fowls on the lower



PLAN OF POULTRY-HOUSE.

perch. The third may be six inches higher than the second, and so on. The lower perches are suitable for young fowls. The birds should not be allowed to roost in any other room. The nests in the laying-room may be movable boxes, and when a hen shows a disposition to sit, eggs may be put under her, and then moved, box and all, to the hatching-room, where she should be provided with a box of lime or ashes and plenty of water and food.

Rural N. Y.

SUCCESSION IN MEADOWS.

The indolent farmer likes to let his grass stand until it is ripe. After wheat harvest is over, the timothy stalk has become largely converted into woody fibre and sugar; it can often be cut with safety and hauled in the same day. At the