ting, but more labor is involved and the work of emptying for feeding is rendered doubly difficult. Any strong cutter, with capacity for a large quantity per day, will serve the purpose. Carriers should be attached unless the cutter stands on a level with the top of the silo, which ordinarily is neither practicable nor desirable. Horse-power or engine may be used. Everything in the way of machinery equipment being ready, the filling may be commenced. From six inches to a foot of cut or uncut straw should be placed evenly over the bottom of the silo. Every farmer with a large crop should provide two of the carrying platforms already described. If the cornfield be near the silo, one team will do the hauling. The stalks can be loaded most economically direct from the root. If the crop be as ripe as it should be, wilting will be unnecessary. The person cutting the corn might as well throw it on the low platform as on the ground, and thus avoid the double handling. The teamster might at the same time be loading on the same platform the corn which will have been cut and laid in armfuls on the ground during his absence from the field with the previous load. At the silo the corn can be fed into the cutter from the wagon platform. The horses may be changed from the loaded to the empty wagon. At the cutting box two men will be required. A 2-inch cut is as good as an inch and a half, and both are better than one inch or less. During the filling care should be taken to occasionally level the heavier parts of the stalks out against the sides of the silo. The filling may proceed every day, every second day or every third day as may be found convenient. In either case the contents should be tramped around the sides and in the corners just before the addition of a new layer. When the silo is full, after the lapse of two days the sides and corners should be again thoroughly tramped and afterwards covered with a layer from two to three feet thick of any kind of straw, cut or uncut. It should be laid on close, and for that reason cut straw is rather preferable. It should also be closely tucked around the sides and into the corners. The silage may be thus left to cure and to keep until wanted, be that time four weeks or ten months.

SIZE AND COST OF SILOS.

A silo 10 feet wide by 50 feet long by 16 feet deep, inside measurement, will hold about 125 tons settled corn silage. That is a desirable and convenient shape, and should not have any partitions. Every 100 acre farm should have one of at least that capacity. From the foregoing data the probable cost may be easily calculated, Where lumber is cheap and the farmer does most of the teaming work, the necessary cash outlay need not exceed $1 per ton of capacity. It will vary according to the finish of the building, the quality of lumber used, the price of material, etc. Tar paper can be purchased and put on at an expense of from 2½ to 3 cents per square yard. Fifteen tons of silage per acre may safely be reckoned on. Every two tons of well cured corn silage has a feeding value equal to one ton of ordinary hay for the production of milk or the maintenance of cattle, horses and sheep; and 100 tons of silage can be grown and cured at a total cost for rent, seed, labor, etc, not exceeding $125.—*Extract Bulletin 42.*

Ensiling Clover.

P. G. SHORT, WISCONSIN EXPERIMENTAL STATION.

Too much cannot be said in favor of clover for the silo. There has been considerable hesitation about preserving clover in this way, chiefly, perhaps, on account of the extremely offensive ensilage which resulted from some of the first experiments in siloing clover. As in the case of the first corn ensilage, the clover was put into the silo in a watery and immature condition. The result was a watery ensilage of very offensive odor. By allowing the clover to become more mature, and cutting it when the dew is off, it is found that a bright, sweet, palatable ensilage can be made. One of the silos at the Station was filled in the summer of 1888. The clover was first growth, and owing to the drouth had become rather woody. The only precautions taken were to see that the dew was dried off before cutting, and that in filling, the clover was evenly distributed and well tramped down in the corners and along the sides. The silo was filled rapidly and immediately covered. On opening the silo the contents were found to be well preserved, with a slight aromatic odor, and but a trace of acidity. It was eagerly eaten by the cattle, and formed a valuable addition to their rations.

Profitable farming cannot be carried on without the help of this wonderful plant; we all know how difficult it is to cure into hay and get it just right, but by putting it in the silo the risk and expense of handling the crop is greatly reduced. Sunny days are not essential when putting clover into the silo. The mower can be started as soon as the dew has dried off in the morning, and by noon enough will be cut to keep two men with a team and waggon busy all the afternoon hauling the fresh cut clover and placing it in the silo. It is not necessary in putting clover into the silo to run it through a cutting machine, so that the expense of filling a silo with this crop is very light. To those who appreciate the advantage of having a succulent food in the winter, and are willing to incur the expense of building a silo, but are restrained by the cost of the machinery necessary for reducing and elevating corn, we would say, build a silo and fill it with clover.—*Extract from Bulletin XIX.*

Poultry.

Two methods of feeding chickens were adopted by Mr. A. G. Gilbert, of the Dominion Experimental Farm, and equally good results attained from both. Part were fed with bread and milk from time of leaving the nest up to ten days, and after that with crushed corn, wheat and other grain. Another part were fed with hard-boiled eggs and bread crumbs in the early stages and soft feed afterwards, with a liberal supply of grain. All the chickens were frequently and liberally fed, and had a good grass run, with shade and insects in abundance. The chickens made rapid progress, the Plymouth Rocks showing the earliest and greatest development, weighing the 20th of January 9 lbs. ½ oz., followed by the Wyandottes with a weight of 7 lbs.; Buff Cochins, 7 lbs. 12 oz., and the Houdans, 6 lbs. 1-5 oz. The eggs supplied by Canadian breeders were found to hatch better than those furnished by breeders of the United States. The eggs supplied by the former were wrapped in paper and packed in bran, while those of the latter breeders were tightly packed in sawdust. It is thought that the turpentine contained in pine sawdust lessens the fertility of the eggs.

Common Poultry Foods.

There are three constituents, more or less, in all foods that have fixed and different purposes to perform in the animal economy. The most valuable, owing largely to its scarcity in plants, are the nitrogenous substances. These are of use in supplying material for the growth of muscles, tendons, and are contained largely in the lean meat; and in the case of fowl they are constituents that are present in the egg in large quantities. The fat is another division. The function of this is to keep up the vitality and supply warmth and in performing this office it is aided by the carbohydrates (starch, sugar, etc.) Besides furnishing heat, when this want is supplied, the fat becomes deposited on the body. Carbohydrates have little else to do than supplying the animal with warmth. The ash is a very important constituent in all food that is to be fed to poultry, as it is necessary for the formation of the shell of the egg as well as for the building up of the bone. A good general division easily understood is to call the nitrogenous substances flesh-formers, the fat and carbohydrates, fat and warmth-giving constituents, and the ash, bone-making substances. We shall adopt this in giving analysis.

Oats.—These are the best balanced of all grains, containing on an average about 12 per cent. of flesh-formers, 65 per cent. of fat and warmth-giving constituents, and 3 per cent. of ash. A noticeable feature of oats in comparison with other foods is the large percentage of husk or fibre that they contain—namely, about 10 per cent of the whole. When chopped or ground they make a better food than if fed whole. Oatmeal is far richer in flesh formers and fat and warmth-producing constituents, as it contains but little husk. It is, however, too expensive to feed as a rule, but it makes an excellent food for chickens and also for fattening purposes. Oatmeal consists of 15 per cent. of flesh-formers, 75 per cent. of fat and warmth-giving properties, and 2 per cent. of bone-making substances.

Barley.—This grain is one very extensively used when the price permits of this. It contains 12 per cent. of flesh-formers, 70 per cent. of fat and warmth-giving substances, and 2½ per cent. of bone constituents. Whether whole or ground, a leading poultry authority recommends this grain for rearing or egg-producing purposes. When not too expensive this food can be used to great advantage, and as a change it is to be commended even when selling well.

Corn is used, perhaps, more generally than any other, especially for fattening purposes. Of flesh-formers it contains about 10 per cent., warmth-giving and fat-producing constituents, 75 per cent., and of bone-forming substances, 1¾ per cent. It may be noted that it is not a well-balanced food, as it is rich in fat, containing over 5 per cent. of this alone. It is not commendable to feed it alone, even for fattening purposes, and especially should this be observed when it is desired to produce eggs. It is claimed that the fat from fowl fed with yellow corn is of a yellowish color and hence is objected to. In cold weather it may be fed with advantage, but not in summer, as various disorders caused by internal deposits of fat are very apt to result. It is a good food, and its cheapness is largely in its favor; but it must be fed in combination with others less rich in fat and warmth-giving properties to be used without danger and to give the best results.

Buckwheat.—This grain is undoubtedly the most used in the majority of Canadian poultry yards, and it is beyond question an excellent food for laying hens. It consists of 10 per cent. of flesh-formers, 65 per cent. of warmth and fat-giving, and 2 per cent. of ash constituents. Besides being cheap, analysis and use show it to be a food of value. It is not so rich in fat-producing substances as some of the others, and for this reason is best for the layers. Buckwheat flour is not as good, as the husk, which would prevent the flour from becoming too pasty is, as a rule, removed. The following is an analysis of the flour: flesh-formers, 7 per cent.; warmth-giving and fat-producing, 77 per cent., and ash 1 per cent., while the fibre is only .34 per cent.

Wheat is very seldom used for fowls, chiefly on account of its high price in the market. It contains about 12 per cent. of flesh-formers, 75 per cent. of fat and warmth-producing, and 2 per cent. of bone-making substances. It is a good winter food, but is not useful to any extent for fattening. The wheat-screenings, however, may be profitably used. The smaller grains contain more flesh-formers then the well-developed ones, for the reason that the richest part of the kernel is the outside covering of cells; while the inner cells, which are most numerous in the large grain, consist largely of starch.

Peas and beans are rich in flesh-forming substances containing on an average about 23 per cent. of flesh-formers, about 50 per cent. of fat and warmth-giving substances, and 2½ per cent. of bone-making constituents. Best results are obtained from their use by mixing with other foods, as it will be seen that they are very rich in flesh-forming materials. They will be