

to supply lime for shell the allowance may be doubled. Dr. Twitchell, of Maine, in address. of farmers in Sussex, N. B., in October last, on poultry keeping said, "Sheep heads are always handy and they can be easily broken up with an axe. No bone mill is required to cut them up. They are an excellent form of bone for laying hens." It may be asked if it is possible to get egg production without feeding bone or meat? It is certainly possible to secure eggs in paying quantity in winter by feeding in a warm mash, as given in a previous page for the morning ration with green food and whole grains so long as lime for the shell is supplied. In the matter of rations it seems after all as if the farmers will have to be governed by situation and circumstances.

A farmer who is in the neighbourhood of a town or city with a winter market of prices ranging from 25 to 35 cents per dozen for new laid eggs is favorably situated. He is not only near a market of high prices, but the slaughter houses and butcher shops where green bones can be purchased at cheap cost, or if he likes to arrange for it he can secure the waste of the hotels, etc. On the other hand the farmer who is distant from such markets and who sells to a middleman, must be content with smaller profits, and to him the less costly the ration the more valuable will it be. To him, also should the experimental work going on with the view of discovering more cheaper and more effective rations be more interesting. It might be economy after all in his case if there is difficulty in obtaining bone or meat, to purchase some form of the blood or meat preparations; granulated bone or ground oyster shells for supplying lime. Blood meal is fed in the proportion of one ounce to every ten hens, and costs from \$3.50 to \$3.75 per 100 pound bag. The cost of granulated bone is \$2.25 per 100 pounds, and ground coster shells \$1.25 per 100 pounds. A bag of blood meal of 100 pounds fed at the rate of 5 ounces to 50 hens every day would last 300 days or two winters of nearly five months each. One hundred hens would of course take twice the quantity or consume it in half the time. At our poultry house green bones are delivered at a cost of one to one cent and a half per pound. In early summer a bag of 100 pounds weight of deodorized blood meal was purchased to try its effect on moulting hens as compared with cut bone, and results will be found under subhead "moulting hens."

Green Stuff.—Laying hens require a liberal amount of green stuff, and here is another opportunity to turn waste to good account in the shape of unmarketable vegetables. A market gardener who kept a flock of barred Plymouth Rocks informed the writer that his hens during the winter

did better laying and were more healthy on oats and plenty of cabbage, than on any other ration he fed them. In such a case some kind of grit would have to be supplied with regularity and in liberal quantity, or the continued feeding of oats without it would be very apt to make the hens "crop bound." In the poultry house during last winter lawn clippings, which had been cut and dried during the previous summer and carefully put away, on being cut into small lengths and steamed were very much relished by the hens. It was fed by itself, or, mixed in the morning mash. The clovers preserved and treated in the same way were equally satisfactory. An occasional mash of turnips or carrots mixed with ground grains is a wholesome change. Mangels, carrots or turnips may be fed raw and will be carefully picked by the hens. Speaking of the value of green stuff in the winter production of eggs, Mr. D. J. Lambert, a well known poultry writer, says: "Green foods, as has been often said, are too sparingly given. The majority of poultry-keepers feed too much grain. Less grain and more grass should be the watchword. Cabbage, turnips, cut clover, onions or anything of a vegetable nature, cheapen the cost of feeding, tend to keep the fowls more healthy and that means increased egg production and consequently more profit." This extract is given in report of 1894, but it will bear repetition. In cases where vegetables are scarce, a substitute may be found in oats, barley or wheat boiled and fed, occasionally, in the shape of a warm mash, alone, or mixed with small potatoes.

MINOR REQUISITIES.

Grit wherewith the hen may grind up her food must be supplied in some form. The sharper and harder the grit the better. There are many and cheap kinds of grit on the market. Broken crockery, flint stones, hard limestone, sharp gravel are all to be had in different localities. The old crockery must be broken into pieces, small enough to be swallowed easily. The hen at large supplies herself with what grit she requires, but must be supplied with it in winter quarters.

The dust bath is necessary to allow the hens the means of keeping themselves free from lice. Lice infested hens are not profitable, hence the necessity of keeping them free from these undesirable tenants. Material for the dust bath can be found in the majority of cases in the shape of dry, fine sand, earth or road dust.

A small quantity of sulphur or insect powder mixed with the contents of the dust bath will be found beneficial. Mr. Fred V. Theobald, in *Feathered World*, of London, England, who has given the subject of "Poultry Parasites"