

get a tinsmith to fasten a sort of lip beneath the hole, and at the same time have him seal the mouth of the can with solder so as to make the apparatus air-tight. The tin, after water is put in, may be placed upright, and yet the water always stands at the level of the edge of the lip, because being air-tight the pressure of the atmosphere upon the water in the lip balances the weight of the water in the can. Thus the lip being narrow, while it enables the birds to drink satisfactorily, yet prevents the wattles touching the water.

A very satisfactory method for roosting purposes is to have in one corner a sort of raised coop, having a floor and ceiling of its own, and being more warmly boarded and provided with doors (glass doors if possible) in front. Within this coop, roosts of scantling may be placed. This affords a snug roosting place, which takes up no room from the hens, as being raised from the floor it enables the fowl to work beneath it. The front, being doors, may be closed in winter and opened in summer. The particular advantage of a roosting place of this sort is that if the floor be sprinkled with sawdust or something of that sort it enables the dirt from the hens to be removed every week or so, and thus keep the house cleaner than if the hens roost in various places.

A problem which sometimes perplexes poultry keepers is how to free the hen-house from lice? This is in almost all cases the fault of the proprietor himself. The lice should never have been allowed to get there in the first place, and with ordinary precautions they would not be there. Early in the spring, about the time the housewife is house-cleaning, and when lime is being used for whitening purposes, the farmer should take half an hour (it will not require more) and coat the inside of the hen-house with a nice sweet covering of lime, and while preventing lice he will at the same time be beautifying his hen-house. Then he should also take a little coal oil, and with a brush coat the roosts. These precautions will certainly prevent the breeding of lice among the birds.

The lighting of a hen house is of great importance. Oftentimes we see buildings with so little light that the hens cannot see to pick up their food unless the door be open. Fowls can not be expected to thrive under such conditions as these. The more light that can be admitted to the hen house the better, and the closer the window is to the floor the more benefit the hens will get from the heat of the sun in winter.

A suggestion useful to the farmer is a stationary row of nests. Scarcely a farmer has accommodation of this sort. His hens are allowed to lay all over the building, and by this means he loses a great many eggs, the proceeds of which would soon run up to a considerable sum. A convenient arrangement of stationary nests may be made with the top in the form of a lid, which may be raised or lowered at pleasure. These nests, if always kept supplied with sweet clean hay, and with a china nest egg in the bottom, form an attraction which no hen can resist.

All these suggestions are not beyond

the reach of every farmer. There is no extraordinary cost, and what little there is would be soon balanced by the additional returns of the hens. It seems a hard matter to convince a farmer that hens are worth the trouble of proper care, yet why do they keep them at all? A farmer's wife would as soon think of running her house without a kitchen as to think of having no hens. What is it that constitutes the material for purchasing the following week's supplies? The butter and eggs, and if the farmer were to take the trouble to reckon the return of the "useless hens" he would perhaps be slightly surprised, and if he were to trouble himself a little more about his hens he might have an opportunity of being a little more surprised by the additional return of eggs from his fowls.

The farmer keeps his hens around him year after year, each year hatching more chicks besides those which from time to time come walking out from under the barn or stable after some old hen, which has been secretly depositing her eggs for some weeks. Thus the young ones are added yearly, but the old ones still live until they die themselves of old age or disease. If a disease breaks out among the flock it has splendid opportunities to spread, and very soon terrible havoc is committed, but no thought is wasted on staying the disease until it dies out itself. This reminds me of an example which came under my notice this summer. We stopped at a farm for dinner one day, and on passing through the barnyard I saw a couple of hens moping around as if stricken with some disease. On enquiring what was the matter with them, our host informed us that a disease was raging among his hens which had carried off some fifty of them, and might carry off some fifty more for all he seemed to care. The disease in all probability had arisen from the neglect or the lack of water, of which not a drop was to be seen around the place although the day was very hot.

Thus it seems to me that if the farmer in the winter, or when he has spare time, were to act upon the suggestions I have made and, if doubtful of the success of their application, at least test them, he would not repent of the time so spent, and year by year adding some new improvement to his hen house would introduce a new branch into the farming industry. He has above anyone else, it appears to me, the opportunities for making the poultry industry a success. He has the situation with his roomy barnyard, and the freedom of his great stables and abundance of feed of various kinds, as well as good qualities, and in a short time he would raise this branch to such a state that it would pay him as well as be an adornment to his farm, and amid the names of the chief poultry breeders of our country the farmer would take his place as possessing also the pick of Canadian poultry.

THE SKUNK.

It is not commonly known that these malodorous and greatly despised little animals are, according to eminent authorities, of the greatest possible benefit on the farm, where detrimental insects and sleek-coated rodents are

almost continually at work preying on the crops. Dr. C. Hart Merriam, of Washington, D.C., a gentleman who is universally regarded as one of the most eminent and reliable economic zoologists in America, says: "The benefit that accrues to the farmer from the occupancy of his premises by a family of these useful animals can hardly be overestimated. They are large eaters and subsist almost exclusively upon his greatest enemies, mice and insects." The Hon. N. F. Moore, of Orwell, Pa., a loyal friend, and one of the best and most successful advocates of the agricultural interests in the Pennsylvania Legislature, explains in a very succinct manner the good habits of skunks. He says: "My observation as a practical farmer is that these animals are certainly friends, not enemies, of agriculture, and that the indiscriminate slaughter of them would be prejudicial to the farming interest." The majority of people seem to think that this animal is for many reasons apart from its penetrating sickening odor an unmitigated nuisance and an injury to the farmer, and that, as one writer says, "He reaches the acme of his bliss when he can gain an entrance to a hen coup and devour chickens and eggs; and it matters little how old the latter may be."

EIGHTY-CENT WHEAT.

When the wheat is in the granary,
And the prices reach the sky,
And the roosters are a-crowing,
And the chickens flyin' high;
When the city fellers squabble
For the farmer's views and votes,
And the barn is full of timothy,
And the bins are full of oats;
Oh! it's then that a feller
Is a-feeling at his best,
With the risin' sun to greet him
From a night of glorious rest;
And the babies caper 'round him,
And the colts are kickin' high,
When the wheat is in the granary,
And the prices reach the sky.
There's something kind o' hearty-like
About the sky and field,
With the stubble there a-laughin'
At the thirty-bushel yield,
With the happy birds a-singin',
And the cattle in a doze,
And the hired man a-comin' round
To show his new store clothes.
A feller feels contented,
And at peace with all the world,
When the golden flag of plenty
Like a blessing is unfurled.
Oh! I tell you, Nancy's happy,
And the gals are flyin' high,
With the granary a-bustin'
And the prices in the sky.

—A.C.C., in *The Canadian Gazette*.

BOOKS AND BULLETINS RECEIVED.

The Ontario Agricultural College and Experimental Farm have issued a neatly illustrated pamphlet giving a detailed description of the various departments of the college course in agriculture, and the different branches of work carried on on the farm. The illustrations are apt, and include views of the various departments. The information contained in this pamphlet is valuable, and everyone contemplating attending the college should write to the president of the college for a copy, and also a copy of the circular giving course of study, cost, terms of admission, etc. The college will re-open on October 1st next.

Proceedings of the Nova Scotia Farmers' Association for 1898. Containing a full report of the annual meeting held at Truro in February last.

Report of the Bureau of Mines, Vol. VII. First Part, 1898.

Third Annual Report of the Pennsylvania Department of Agriculture. Part I., 1897.

Annual Report of the Bee-keepers' Association of the Province of Ontario, 1897. Toronto, 1898.

Twenty-Ninth Annual Report of the Fruit Growers' Association of Ontario, 1897. Toronto, 1898.

Annual Report of the Butter and Cheese Associations of the Province of Ontario, 1897. Toronto, 1898.

Historical Sketch of the United States Department of Agriculture: Its Objects and Present Organization. By Charles H. Greathouse. Washington, 1898.

Report upon the Grasses and Foliage Plants of Central Texas. By H. L. Bentley, Special Agent in Charge of Grass Experiments at Abilene, Texas. Washington, 1898.

Dehorning Cattle, Bulletin No. 50. By the New Hampshire College and Agricultural Experiment Station. It is edited by F. Wm. Kane and H. H. Samson, and gives full description of the practice of dehorning.

Some Essentials in Beef Production. By Charles F. Curtiss, Director of the Iowa Agricultural Experimental Station, and published by the United States Department of Agriculture under the caption, Farmer's Bulletin, No. 71.

Report of the Connecticut Board of Agriculture for 1897 contains full proceedings of the board for the year. Among other topics discussed are: forage plants; education in the farm-house; the dairy industry and its economies; trees and shrubs; the farmer's opportunities and kindred subjects.

Year Book of the United States Department of Agriculture for 1897. It contains the report of the Secretary of Agriculture for the same year, together with a specially prepared article from each chief of bureau, division and office under the control of the Department, and prepared with a view of presenting clearly to the average farmer the nature and object of the work carried on by each. In addition it contains a number of miscellaneous papers especially selected because of their value in promoting the interests of higher agriculture. Among the subjects treated are: the popular education of the farmer; every farm an experimental station; the substitution of domestic for foreign-grown fruit; object-lesson roads; hybrids in plant breeding; control of seedling stuffs and agricultural products and prices. It contains over eighty illustrations, the larger number of which are full page plates and text figures of plants, fungi, etc., many of which are beautifully colored. On the whole this work of nearly eight hundred pages is a very valuable one indeed and a credit to agriculture on this continent.

SPRAYING FRUIT TREES.

For five weeks agents of the Ontario Department of Agriculture have been giving instruction in the spraying of fruit trees at thirty orchards in different parts of the province. Reports sent to Mr. Orr, superintendent in charge of this work, have just been received at the Department, to the effect that fungus is now appearing upon apple and pear trees, and threatens to do extensive injury to these crops unless checked at once by spraying. Insect enemies also are more numerous than usual this year. Apples, with the exception of the Spy, have set well, and where properly cared for there is promise of a good crop. In spraying apple trees to check or prevent the spot, use the Bordeaux mixture, made as follows:

BORDEAUX MIXTURE.

Copper sulphate	4 pounds.
Lime (fresh)	4 "
Water	30 gallons.

Suspend the copper sulphate in five gallons of water. This may be done by putting in a bag of coarse material, and hanging it so as to be covered by the water. Slake the lime in about the same quantity of water. Then mix the two and add the remainder of the forty gallons of water.

Warm water will dissolve the copper sulphate more readily than cold water. If the lime is at all dirty, strain the lime solution.