

ing properties, which, when dissolved in about four and one-half times its weight of pure lukewarm water, yields a liquid possessing all the properties prized in fresh milk. If allowed to stand for some time a layer of cream is thrown up which may be made into butter.

That "Cowy" Odor.

What is that "cowy" odor? The wise (?) buttermaker and teacher tell us to let the milk stay uncovered so that the "cowy" odor and animal heat may escape. The animal heat may escape, but the "cowy" odor never will. And the animal or any other heat will escape through the wood or the metal as readily as by the opening or possibly more so.

At first I took it for granted that cow's milk smells bad naturally, but later I questioned it. I filled some bottles and jars and sealed them and put them in cold air. The milk was put in warm, as drawn from the cows, but I knew it was clean and also knew the cows were fed with good food. I tested it frequently for the next forty-eight hours by smelling and tasting. I never could detect a sign of that "cowy" odor.

I now assert that a cow properly fed and kept clean gives milk of a pleasant flavor. But if milk is drawn in stables as I have seen them and allowed to stand in an open pail or can for quite a while it will acquire a "cow stably" odor; and that is what the buttermaker smells when he sticks his nose in to the can and tells the patron to leave the milk uncovered to let the "cowy" odor escape. Would he tell the patron that unless he cleaned out his stables and kept them clean his milk could not be used he would strike nearer at the root of the matter.—L. W. Lightly, in *American Creamery*.

German Margarine Law.

This law came into operation on October 1st of this year. It does not prohibit the manufacture and sale of these products; but states clearly that the manufacture of artificial butter, cheese, and lard must be subjected to official supervision. Police inspectors may enter the premises at any time during business hours to take samples; any information required by them must be given. The inspectors are bound under oath not to divulge any secrets of the trade. In places where the goods are retailed, notices that such goods are on sale must be conspicuously displayed. Vessels containing them must also bear a visible designation. The mixture of butter or "butter lard" with margarine or other fats is prohibited. The manufacture, storage, package, and sale of artificial fats is prohibited upon premises where butter is manufactured, stored, packed, or sold. The law is not applicable to such artificial fats as are not intended for human consumption. The Federal Council is empowered to prohibit the sale of butter of which the fat constituents do not attain a certain standard.

POULTRY.

Turkeys in Autumn.

Many of those who are engaged in raising turkeys for market believe that the critical period is over when the chickens are a few weeks old. This, however, is not the case. It is true that unless great care is taken with the flock at this time the number will decrease rapidly. After the flock have passed this stage they will not require very much attention until the time comes to prepare them for market. During the summer it is advisable to give the birds plenty of exercise. They can be grown at a very little cost by giving them the run of a pasture lot in the early part of the season. A little soft food, such as milk curd and waste from the table, may be given, with a little ground wheat added. After the grain is harvested they will thrive well on the stubble fields without any extra food whatever.

There is an idea prevalent among growers that from Thanksgiving Day until Christmas is the only season when there is a demand for fowl. If turkey is delicious at this season, why should it not be at any other time? Then the market usually becomes glutted, and the price is certain to decrease. The most successful growers arrange to have a little variety in the age of their flock. They are thus enabled to supply customers at different seasons. Another good plan is to pick out the nicest birds, and have them ready when the supply is greatest. Like all other products, the best brings the highest price. The others may be allowed to grow a larger frame, and can be marketed when competition is not so keen. If a good article is offered out of season a market can easily be created.

To be successful in raising turkeys three things are necessary, namely, a well-developed bird, one that will present an attractive appearance when dressed, and a systematic way of grading and packing the fowl for market. To get the first it is necessary to have a well-managed flock. Those kept for breeding purposes should never be overfed. Many of the failures in the business can be attributed to overfeeding, both those that are kept for breeding purposes and the birds that are selected for fattening. The critical period really extends from the time the grower begins the process of preparing for market until they are in the hands of the consumer. In finishing the fowl for market more solid food will be required than while the turkeys are growing. Too much green food at this

stage is likely to produce diarrhoea. Where corn is grown it can be fed to advantage, as it makes the flesh tender. Many dealers say that old turkeys fattened on corn will produce flesh so tender that it could easily be sold for young stock. However, it is not advisable for any grower to have very much old stock in his flock. Where corn cannot be had wheat or peas make a good substitute; in fact, it is a disputed question as to which of the three make the best food for finishing. It is preferable to feed the grain unground.

A very important part of the business lies in dressing the fowl for market; unless this work is done properly the highest price cannot be obtained. Before the turkeys are killed they should be deprived of food for twelve hours, so that their crops may be empty. Care should be taken that they are not bruised in catching. The proper way is to stab them inside the mouth, and after they are thoroughly bled, dry-pick them without tearing the skin. Only an opening large enough to insert one finger is required for removing the entrails. The gizzard, heart or liver should not be removed. After dressing, hang up until cool, when they are ready to pack for market.

Turkey raising requires considerable skill and thought if profit is to result. Proper places are required to keep them in during cold weather. It is not necessary to have expensive buildings, but as turkeys are very sensitive there should not be too many kept together. They are liable to take sick, and a sick turkey is about as good as a dead one. If turkey raisers would co-operate in shipping their fowl, or have a commission merchant who would take the entire output from each district, better prices would be realized. They should then be properly graded and neatly packed in paper-lined boxes, with the number of fowl and total weight stamped on each box. This system is usually preferable to the growers selling them out retail, as dealers can sell to better advantage, and the growers always know from them what the markets require.

Autumn and Winter Management of Poultry.

As the cold nights approach, the hens will require more comfortable quarters than the tree-tops to roost upon if they are to be kept for the purpose of returning a profit throughout the winter. Occasionally we see places where the old system of hunting the hens off the trees and fences these chilly nights and driving them to a place of shelter, to be let free in the morning, is still the custom. Happily, incidents of this kind are scarce, but it is a well-known fact that the average poultry-raiser practices too much "extravagant economy."

Any person who proposes to close up the hens in some out-of-the-way corner and feed them upon the screenings from the fanning mill during the winter had better begin at once to supply his own table with fowl, and keep on using until he is forced to come to a "full stop" for want of supply. The hens will simply keep themselves alive all winter and begin to lay a few eggs in spring just at a time when the markets are so crowded that you can scarcely give eggs away.

It is not necessary to erect an elaborate poultry house, but it should be situated in a place where there will be sufficient sunlight to make it bright and cheerful. Then it should be warm enough to keep water from freezing in cold weather. This is one of the difficulties that have to be overcome. It is not an easy matter to do this without going to considerable expense when the house is built by itself. If the flock is a large one, and properly managed, it will repay the cost of a good building; but for small flocks kept on the farm a corner of the basement in a bank barn is a more suitable place. It should be arranged in the south-east corner, if possible. Poultry intended for market should be separate from the laying stock, as they require different treatment in feeding.

With a suitable house the expense of feeding will be materially reduced. In order to keep the laying hens healthy they require a variety of foods and plenty of exercise during the day. There is usually more trouble caused by overfeeding than by scanty feeding when one is supplied with all the modern conveniences. It requires considerable judgment to manage a flock of poultry properly. Though there is nothing hens will relish better than a mash of warm food, containing meat scraps, bran, etc., every morning, it is not wise to provide this diet constantly. To be successful in this business one should have on hand a supply of green bone in order to get a properly balanced ration for his poultry. It is not sufficient to place ground dry bone in the house, as it is of very little use except for grit. Green bones (ground) contain sufficient mineral matter and nitrogen to balance a ration of corn meal, wheat middlings, or bran. In giving the morning feed it should be remembered that a hen is supposed to "scratch for a living," and the feeder should never give sufficient food to satisfy their appetite. Afterwards give them the run of a place where the floor is covered with chaff or straw, and shake a few handfuls of grain amongst it to induce them to "scratch." In the afternoon a more liberal supply of grain may be scattered amongst the chaff so that they may repair to the roost in the evening with full crops. Clover hay cut fine or hay seeds spread on the floor is quite often used in place of chaff. It is not necessary to feed so much grain when this is provided. Poultry intended for market require more

grain, and if bulky food, such as finely cut clover hay, is added it will assist digestion.

The production of eggs in winter is much the same as winter dairying. The hens, the same as the cows, have to be kept the year round, and it is essential that they return a greater profit in winter than in summer, as it costs more to keep them. There is no danger of flooding the market with eggs in winter, at present, and no person need be afraid of investing a little money in the way of providing suitable houses and proper appliances for feeding to the best advantage.

ENTOMOLOGY.

Entomological Convention.

ENTOMOLOGY IN SCHOOLS.

The thirty-fifth annual convention of the Ontario Entomological Society met in London, Ont., Oct. 12th and 13th. President John Dearness, I. P. S., London, occupied the chair. Among those who contributed papers were: Rev. Thos. W. Fyles, F. L. S., South Quebec; Mr. J. D. Evans, Trenton, Ont.; Mr. H. H. Lyman, Montreal; Mr. Robt. Elliott, Plover Mills; Dr. Bethune, Port Hope; Dr. James Fletcher, Ottawa; Prof. Webster, Wooster, Ohio; and others. Prof. J. H. Panton, who was expected to have contributed to the programme, was unable to do so because of serious illness.

Secretary W. E. Saunders read report of council, and referred to formation of new branches in Toronto and Quebec. The former was affiliated with the parent Association on January 1st, 1897, and the latter a few months later. They were reported as doing energetic and useful work in their respective fields. The Montreal branch was also reported as flourishing, and it is hoped a new Association in the Maritime Provinces will soon be formed and connected with those above mentioned.

The London Geological Section's report was given by Mr. John Law, London, who said that visits had been made to the gold fields at Rossland, north shore of Lake Superior, Lake of the Woods, and Madoc. He reports finding of coal in the vicinity of Sudbury. A beautiful specimen of carboniferous was exhibited at the meeting. It had been prepared at Niagara, and is used instead of emery for grinding and cutting hard substances.

Locusts of the Bible was the subject of a paper by Rev. Mr. Fyles. He said that Solomon was a naturalist, and Moses paid attention to economic entomology. The locusts of the Bible were a species of grasshopper technically known as *Locusta migratoria*. In ancient times they were far more numerous than we can have any conception by experimental knowledge, as they not infrequently destroyed every vestige of vegetation lying before them.

The report of the Ottawa district was read by Mr. Harrington, who said that the tent caterpillar was this year more numerous on various trees than for a long time. The changeable winter of '96-'97 had much to do in lessening many species of insects this year.

Dr. Bethune reported an unusual scarcity of insects this year in the Port Hope district. Bud moth on plum trees had been troublesome, and tent caterpillars more numerous than usual. He expects an extensive invasion next year. The scarcity of fall webworm was very remarkable, as just two years ago they were numerous. One of the worst insects this year was the aphid on all shrubs, currant bushes, roses, etc. Winged aphides have been very numerous recently. Locust-tree borers have killed most of the locust trees there. Only one or two army-worm moths seen this season. Tussock moth has disappeared from Port Hope. Toronto trees had a few local attacks, but not serious; due likely to destruction of cocoons last winter by the City Council. It would have been well if the parasitized cocoons had been preserved and the parasites allowed to escape in the spring. Grapevine flea beetle had been bad on Virginia creeper. Dr. Fletcher expressed the belief that the disappearance of such insects as tent caterpillar, army worm, etc., was due largely to the work of parasites, which develop more numerous than the worms. He reported a reappearance of the large sawfly. There have been few cutworms this season. Bran, arsenic and sugar spread on ground or around hills of corn, etc., or sown with a wheel cultivator six feet apart each way, will destroy the caterpillars, as they prefer it to green plants. Leaf hopper of the grape has a remedy in kerosene emulsion. Hornfly almost disappeared this year, according to prophesy.

THE PRESIDENT'S ADDRESS.

In his address, President Dearness referred to the insects of the year, speaking of the disappearance of cutworms. In 1895 the moths in prodigious numbers made house-keepers miserable in the evenings. In the following spring the larvae of the same insect did great injury to grain crops. One might expect when the time of the pupation of these larvae had expired to witness a reappearance of the moth in increased numbers. Such expectation was entirely disappointed. No parasite was reported on them, so what became of them? The disappearance of the army worm, which in 1896 devastated the grain fields in many townships of Ontario, was also spoken of by Mr. Dearness. The causes and conditions of the appearance, and the still more curious disappearance, of such insects as the cutworm moth and the army worm challenge and invite investigation.

Continuing, he said if the army worm had its "inning" last year, the San Jose scale has this year had the lion's share of attention. "It is to be hoped," said he, "that