



**Agricultural Department.**

**OUR INSECT FRIENDS**

At a late meeting of the Elmira Farmers Club, Prof. Comstock made the following interesting remarks upon insects, as reported in the *Husbandman*:

Many people forget that some insects are our friends; and only a few persons appreciate how many friends we have among the insects. We meet to talk about noxious insects; we read in agricultural journals accounts of noxious insects; State entomologists are employed to study and report on noxious insects; our sons in agricultural colleges listen to lectures on noxious insects; and are we aware of it, we come to think that the adjective inseparably connected with the noun and speak only of noxious insects. As a result of this, you see in the various agricultural journals plans for the wholesale destruction of insects, plans which, if adopted, would destroy many more friends than foes.

Our insect friends are numerous, and benefit us in many ways. Some furnish us with useful products, as silk, honey, wax and coloring matters. Others perform an important office in fertilization of plants. Many act as scavengers, feeding upon decaying animal and vegetable matter, while a great number feed upon and destroy other insects which are noxious. It is to the latter class only that I wish to call your attention to-night.

This class of insects may be divided into two groups; one group, including those species that are prodigious, and the other group those that are parasitic. Good examples of prodigious insects are the ground-beetles and the lady-bugs. The ground-beetles are the black beetles with the long legs, very common under sticks and stones. They are very active, can run very fast, and destroy many noxious insects. The lady-bugs are the little hemispherical beetles, generally red or yellow with black spots. They are common on all plants and feed on plant lice and the eggs of insects.

Of the parasitic insects the most important are the Ichneumon flies. These insects can usually be recognized by their long, slender bodies, wasp-like wings, and a long organ, the ovipositor, attached to the posterior end of the abdomen. There are many species of them, probably two thousand species living in America. They are parasitic on the young of other insects. The female Ichneumon fly lays her eggs either in or upon the body of the insect upon which her young are to feed. When the eggs hatch, the young grubs begin at once to feed upon their victim. There is a curious fact in connection with the manner in which they do this. They first eat the fatty portions, carefully avoiding the vital organs, so that the caterpillar or other insect, as the case may be, lives on with these creatures inside its body and deriving their nourishment from it. In many cases the caterpillar lives until it has spun its cocoon, and then is killed by the parasites. In these cases the parasitic grubs, when fully grown, spin for themselves cocoons within the cocoon of their victim. In other cases the parasitic grubs get growth before the caterpillar spins a cocoon. They then crawl out from the body of the caterpillar and each spins about its body a cocoon. These cocoons are attached to the body of the caterpillar or to the plant on which it was. They are usually white or yellow. Foolish caterpillars may often be seen crawling about with from fifty to two hundred of these little cocoons attached to their bodies. After remaining in their cocoons for a time, in some species a few days, in other species a few or several months, the Ichneumon flies escape as perfect insects furnished with wings.

These creatures show a wonderful instinct in discovering a proper place in which to lay their eggs. They will not lay them in an insect that is already infested. A large Ichneumon fly will lay only a few eggs, sometimes only one, in each victim, while the smaller species will lay many eggs in a single insect, never so many, however, that the young will want food. These creatures seem to have the power of finding their victims, wherever they may be, hid. Even those species of insects which bore in the trunks of trees are infested with Ichneumon flies. Nearly every group of insects is infested by Ichneumon flies. They usually lay their eggs either in, or upon the larvae of other insects, but some very small species lay their eggs within the eggs of other insects.

Closely allied to the Ichneumon flies are the Chalcids flies. This is a large family of insects, there being in this country probably one thousand species. The species are of small

size, and of bright metallic colors. Habits similar to those of the Ichneumon flies, they being like them parasitic on the young of other insects. They differ, however, from the Ichneumon flies in this particular, the Chalcids flies do not spin a cocoon, i. e. their pupae are naked.

A species of Chalcids flies prey upon the cabbage worm. In a collection of sixty chrysalides of this insect, fifty-seven were infested by Chalcids flies, only three producing butterflies. One can easily see the immense harm that a person would do that collected and destroyed indiscriminately a large number of these chrysalides.

The speaker then drew the following conclusions:

Great care is necessary in the destruction of noxious insects, to avoid those that are beneficial. From this it follows that one should study a species carefully before waging war against it.

Don't destroy caterpillars that have small white or yellow cocoons attached to them. Such caterpillars are harmless, as they are sure to die before arriving at maturity. And each little cocoon contains an Ichneumon fly, which, if undisturbed may destroy many caterpillars.

Collect chrysalides of noxious insects and put them in a box covered with wire gauze; an old straw will answer. If a sieve of wire netting is not at hand, a box can be prepared in a few minutes by driving tacks around its edge, and peeling cords back and forth, thus making a net. The netting should be coarse enough to allow the small Ichneumon and Chalcids fly to escape, but fine enough to retain the butterflies or moth.

The cocoons and chrysalides of many noxious insects may be found under boards and under fences or buildings in the neighborhood of infested plants. He recommended placing boards between the rows in the cabbage patch; the cabbage worms will fasten themselves to the under side of these boards to undergo their transformations. The chrysalides can then be easily collected and placed in boxes as recommended above.

Prof. Laszby says the most satisfactory way to fight insects is to have good strong, healthy plants and make them grow rapidly. Poor stock gets lousy, poor or weak plants become infested with vermin.

Enquiry was made of Prof. Comstock in regard to the enemies of the potato beetle. He claimed that the ravages were in some degrees checked by parasitic insects which might eventually destroy them, but for the present Paris green is the safest treatment for the potato bug.

**STABLE MANAGEMENT.**

Stables should be built on high ground, so that the surface water can be thoroughly drained from the building. Water saturated with the earth and decaying vegetable matter produces a change in atmosphere air, and converts it into a miasma that is pernicious to the health of all animals. Horses will never enjoy good health confined in a damp, filthy stable. It is the source of blindness, farry, glanders, and other fatal disorders that cause the death of many valuable horses. There is another fatal delusion in stable economy, namely, not one-tenth of the stables are ventilated. The animals confined in tight, ill-ventilated stables are compelled to breathe the air over and over, which is pernicious to health. They will lose condition in spite of good grooming, warmth and cleanliness. The air which the horse breathes out is very different from that which he inhales. He inhales pure air and respires a diluted gas that is rank poison to the lungs of all animals. The air, in the process of breathing, diminishes its specific gravity and rises into the lighter atmosphere. It can be conducted out of the barn by shafts or tubes for that purpose. The constant agitation of the elements by the ingress of fresh air—like running water, pumps itself. Port holes can be made at the base of the building to let in fresh air, and shafts can be placed at the head of each horse to conduct the foul air out of the stall as fast as it is breathed in the surrounding atmosphere, or a large shaft can be built in the centre of the barn which will answer the purpose as a general conductor of foul air.

The horse requires to be fed often on good substantial food. The stomach is smaller than that of the bovine race. The equine species digest their food rapidly. It has been found by experiment that the horse digests his food in four hours. The stomach becomes empty in that short space of time, and craves a new supply to restore the exhausted muscles, and replenish the natural waste of the body. In all acts of exertion there is an expenditure of muscle which must be replaced in the fibre and salts contained in the cereals and nutritious grasses which enter in through the blood to restore the exhausted elements of the body. Oats, of all the cereals, are best adapted to diet-footed animals, because they contain

most of bone and muscle. Hay forms the bulk of the food for domesticated animals. It contains sugar and starch, the constituents of fat, and fibrine, with some of the constituents of muscle. Work horses are fed all the hay they will eat, but grain is parceled out according to the work they perform. Water is the primitive agent of condition. It is indispensable to the health of these domestic servants. One-half pailful as often as they do so it is the best measure for anything like fast work. When cool they can be suffered to drink what their appetite craves. Salt is essential to the health of all animals. It should be furnished to the equine and bovine species once a week. The horse should be fed his grain four or five times a day on account of his small stomach. When over-loaded it obstructs his wind and interferes with fast travelling. It has been found in staging that the horse will do better to be driven nine or ten miles an hour for five hours and then fed and rested, than he will to be driven five miles an hour for ten hours on an empty stomach. Even if driven sixty miles in six hours he will be in better condition and do his work more cheerfully the next day than if driven the same distance all day on an empty stomach and without rest. The horse ought to be fed and watered one hour before he is wanted for use. When the stomach is over-loaded with food it obstructs his wind and interferes with his work. —Michigan Farmer.

**NEGLECT OF PASTURES.**

This is the only country in the world, the *Chicago Times* says, where any pretensions are made to good farming that no attention is given to improving pastures. In taking up a new farm, the poorest portion is invariably set apart for the pasture. After the best portions are planted and sown to annual crops, so long as they will pay the cost of cultivation, the land is sowed down to grass. This is cut and cured for hay, till the farmer is ashamed of himself of the small amount he gets from an acre, when he concludes that he will convert the field into a pasture. He seldom seems to think that his pasture is his great source of wealth, that his cows get from it the materials which furnish milk; that the grass it produces makes most of the wool, beef, and mutton he has to sell; and that all his young cattle obtain their living from the pasture about seven months in every year. He seems to forget that he and his teams work all summer chiefly to obtain food which the stock consumes during the winter, while his pastures furnish a supply for a longer period, without any labor being expended upon them.

Land once turned out to pasture is doomed to neglect so long as it is devoted to that purpose. Weeds and bushes are permitted to spring up and spread at will. As the grass in places becomes killed out, the spots are allowed to remain barren. A large proportion of the stock kept in the pasture are fixed at night, and most of their droppings are left, when they are taken to cultivate fields. Even those that fall on the pastures are not broken up and scattered, as they should be. The rank grasses which spring up, but which are not eaten by the stock, are allowed to go to seed, and in this way gradually extend over a large portion of the ground. No Western farmer thinks to apply farm-yard, mineral, or commercial fertilizers to his pasture. If a portion of it happens to become rich by the cattle, sheep, or colts remaining on it during the night, the chances are that he will plow it up and put it in cultivated crops; and turn out another piece of land that is in too poor condition to produce corn, grain, or hay.

In England pastures receive constant attention and increase in productiveness year by year. They are generally in so high a state of fertility that a good crop of hay may be harvested from them, if the stock is taken off, as done occasionally. They are manured like lands which produce annual crops, the fertilizers being applied late in the fall or very early in the spring. They are ordinarily mown at least once every season, so as to keep down the woods and coarse grasses. By cutting them off, short grasses spring up, while the woods and rank grasses that are cut down help to enrich the soil. The turf, once well established, may not be turned during a century; but it is occasionally scarified by a utensil made especially for the purpose, so as to lay bare some fresh soil, on which the seed of more valuable grasses may be sown. A great variety of grasses is produced on English pastures and attention is given to seeding peculiar soils and locations with grasses that are adapted to them. In this country little or no attention is given to this matter, but the grasses are left to establish themselves as best they will. In some localities white clover, redtop, and blue grass, all good pasture grasses, will, by a process of self-seeding or extension of their roots, establish themselves over a considerable amount of ground. Under unfavorable circumstances, however, sorrel, burdock, thistle, and coarse grasses will take possession of the land. —N. Y. Independent.

**DOMESTIC.**

**COLD MEAT DISHES.**

BY MRS. T. B. BARRINGTON.

One excellent way of preparing cold corners beef for the table is to chop several瘦 moderately fine, then peel and slice four or five onions, boil them until tender—of course changing the water in the usual way—then put the beef in the skillet with the onions, and add a piece of butter, and a little pepper and salt. Let it boil up and serve.

Another way is to take thin slices of the beef, lay them in the spider and pour over them a gravy made of one-half tea-cup of water, one-fourth teaspoon of mustard, one tablespoon of catsup, one teaspoon of vinegar, and one sprinkle of cayenne pepper. Let it come to a boil and serve.

Cold roast beef. Take thin slices of the rare parts, lay them in a tin pail, prepare a sauce of one teaspoon currant jelly, one of vinegar, four of catsup, one-fourth teaspoon of pepper sauce, one tablespoon of butter, two cloves, not two teaspoons of cloves—one-half cup boiling water, salt to taste. Pour this over the meat, cover tightly, set in a kettle of boiling water. Let it boil fifteen minutes and serve.

About the best way to serve the parts that are well done is to slice it across the grain very carefully and very thin, and use it for tea with bread and butter; but you can make it palatable by mincing it. Then mince an equal quantity of bread and crumbs, put a layer of the meat in the bottom of a pudding-dish, add salt, pepper and bits of butter, then cover with a layer of the bread crumbs, having wet them first in salted milk, and so on, filling the dish as full as you wish, having meat at the top. Prepare a covering for this made of one cup of milk, one cup of bread-crumbs, one beaten egg, and a little salt. Spread it over the top and put little bits of butter all over it. Bake half an hour. Catsup, or some sour gravy should be eaten with this.

Lamb sandwiches prepared in the following way are very good: Butter thin slices of bread, then take two very thin slices of lamb with currant jelly spread between them, lay these inside the bread.

Cut cold mutton in slices, lay each piece separately on a dish, and spread (being careful to leave no pieces untouched) with catsup, sprinkle a little salt over it, cover, and let it stand in the oven for fifteen minutes, or until heated through; then serve.

Cold meats are often spoiled because they are not carved well. In the country one sees cuts of meat; but very rarely thin slices, and more rarely still, meats cut across the grain. It is useless to touch cold meat, hoping to make it more palatable, unless you are particular about thin slices—if it is sliced—and cutting across the grain. —Evan's Herald.

**PINEAPPLE MARMALADE.**—Select the largest, ripest, and most perfect pineapples that can be found, pare them and cut out all the bluishness, grate them on a large dish, using a coarse grater, and omitting the hard core which goes down to the centre of each, or, in the absence of the grater, cut them in small bits. Add an equal weight of the best double refined sugar (in lumps), put them into a preserving kettle, and mix them well together, set over a moderate and very clear fire, and boil and skim well, stirring it after skimming. After the foam has ceased to appear, stir the marmalade frequently until it is done, which will be in an hour or an hour and a half after it has come to a boil. But if it is not smooth, clear and bright in that time, continue the boiling until it is. This is a delicious preparation of pineapple. —Goodholmes' Domestic Cyclopaedia.

**THE QUEEN OF THE SECOND COURSE.**—Take one dozen large sweet-potatoes, have them roasted, peeled carefully, then well mashed until perfectly smooth. The most important ingredient in this dish is a pound of cold chicken, prepared as if for chicken salad. A teaspoonful of chopped celery is a very good addition, and a cupful of sweet cream is needed. The whole mass must be well worked together, and seasoned to taste with salt and pepper. A large table-spoonful of butter must not be forgotten. Form this into an oblong roll, and put it in a tin vessel to brown in a quick oven. Half a wine-glassful of Worcester sauce improves the dish very much. Of course only the least bit of salt is needed.

**MINNEAPOLIS CAKE.**—One and a half cups granulated sugar, half cup butter stirred to a cream, whites of six eggs or three whole eggs, two teaspoonfuls cream tartar, put into two heaping cups of flour and both sifted together, one teaspoonful soda in half cup sweet milk. Bake the cake in three layers. For filling take a tea-cup of sugar and a little water; boil together until brittle when dropped into cold water; remove from the stove and stir quickly into the well-beaten white of one egg added to this a cup of stoned raisins, chopped fine; or a cup of chopped hickory nut-meats, and place between layers and over the top of the cake.