

Entomology.

THE WHEAT WIRE-WORM.

We proceed to present to the readers of the *Advocate* essays on the insect enemies with which they have to contend. There have appeared in our entomological column articles on the Wheat Midge, the Chinch Bug, and the Army Bug. We now give extracts from an article on the Wheat Wire-Worm by the Rev. C. J. S. Bethune:—

"Curtis, no mean authority, makes the assertion that of all the insect enemies with which the farmer has to contend, there are none which are more fatal in their effects, and more difficult to overcome than the Wire-Worm. Certainly, when we consider the omnivorous character of the members of this family, the number of species belonging to it, and their general diffusion, we may feel inclined to agree with him. They attack every kind of production of the field and garden—fruits, flowers, grain, roots, grass, vegetables; nothing appears to come amiss to them. Over a hundred different species of this family are known to exist in Canada; a large number of them, however, are not especially destructive, but feed upon decaying vegetable matter, and may hence be deemed rather beneficial than otherwise. Still enough remain to give us trouble and depose us of a portion of the crops that we are endeavoring to raise.

"Every one, probably, is familiar with the common species of Wire-Worms that are so frequently turned up with the spade or plough in farm or garden. They are usually of a pale yellowish colour with a darker head; the body is round, smooth, and hard, so as to be well adapted for penetrating the earth. After a long period of existence in the larval or worm state, they turn into beetles that are familiarly known as 'spring-backs,' 'snapping,' or 'click beetles,' from their possession of the singular power of springing up into the air when laid upon their backs, and thus recovering their proper position.

"The Wheat Wire-Worm, with which we are now more immediately concerned, has long been known to farmers from the harm it has frequently wrought in their fields of grain; it is only recently, however, that its natural history has been traced out.

"For the account of its larval and pupal stages we are indebted to an article in the *Canadian Entomologist* by Mr. Pettitt, a very careful and accurate observer."

Mr. Pettitt's article we omit, merely giving an abridgement of his researches and the result of his enquiries:—

Mr. Pettitt was led, from seeing the great amount of damage done to the wheat crops in the vicinity, to endeavor to ascertain to what species the destroyer belonged. He dug out and collected from the roots of the wheat plants a dozen specimens of the insect, and, having put them in a large flower pot, he there supplied them with food. They did not eat in winter, but on the return of warm weather gave evidence that they were still alive, and retained their good appetites unimpaired. The result of his very careful investigation was that the insect that had been so destructive to the wheat plants was a specimen of the Wheat Wire-Worm (*Agriotes Mancus*), and that the larval state does not last longer than three years.

"Westwood states," he says, "respecting the larvae of an allied species which in Europe feeds upon the roots of wheat, rye, oats, barley, and grass, that, according to Bjerghander, a Swedish naturalist, it is five years arriving at the perfect state. Curtis makes a similar statement on the same authority, and adds that those which he had himself been feeding for ten or twelve months scarcely increased in size during the time. Mr. Pettitt is, however, of the opinion that our species is by no means so long lived, but that it attains maturity in three years—a period quite long enough, the agriculturist must think, in which to inflict damage upon the crops.

"Wire-Worms are usually found to be most destructive in freshly broken up pasture lands, and during dry seasons. All sorts of remedies for them have been suggested and tried, but few are satisfactory. When a field is observed to be badly affected with them it ought to be ploughed up and kept in fallow for a season, taking care to keep ploughing it as often as possible and to burn up all rubbish, stubble, &c. This will destroy the eggs and starve out the worms. Lime and soot applied to the soil before sowing any grain are highly recommended by some, but are of doubtful efficiency. Salt on sandy soils is considered to be efficacious, but not on heavier clay lands. In a garden or small field they may be got rid of by strewing about slices of potato, turnip, or apple, and on examining the

under side every morning numbers will generally be found feeding upon the bait. Moles are very useful in destroying them in meadows, and a large number of our small birds devour them with avidity; ducks, turkeys and fowls will pick them up in ploughed fields, and toads are not averse to making a meal upon them.

"Our advice, then, is: break up and fallow the infested fields, ploughing up and burning up the rubbish, and encourage in every way the farmer's best friends, the small birds.—Make it an absolute law of the household that not one of them is to be shot or stoned; get your neighbors to do the same, and believe us, not many years will pass before you will find your insect plagues enormously diminished."

In addition we would merely state the result of our own experience in this matter.—We have tried salt as a remedy for the Cut-worm, and with the very best effect. We never knew that land to be again infested with them, though they had before committed great ravages on it. The soil was sandy, in which, as Mr. B. says, it is likely to be efficacious.

In such matters we, as old farmers, speak from experience. Soot we have also proved to be efficacious, but we have been able to try it only on a small scale in gardening. The advice given by Mr. B. is consistent with common sense and with every-day experience. —Ass't Ed.

Veterinary.

A CURE FOR POLL EVIL.

In reply to a subscriber's query—how to cure poll-evil, Mr. J. W. Wilson, Veterinary Surgeon, to whom we submitted our subscriber's enquiry, advises thus:—Have the sinews well opened up, so as to allow a free discharge; clean twice a day with soap and water; dress the wound with sulph. of zinc or copper. Sometimes it becomes necessary to use strong caustics; but in all aggravated cases, where the tumor is deep seated, it is well to apply to a properly qualified Veterinary Surgeon, who understands the anatomy of the parts, as there is great danger of wounding the ligamentum collis; and also by penetrating too deeply, there is danger of dividing the ligaments which attach the several vertebrae together, thereby letting the head drop. The spinal cord would also suffer, and death be likely to follow. [This advice of Mr. Wilson's came to hand too late for insertion in our last edition.]

RING BONE IN HORSES.

In reply to a correspondent, we must say that a ring bone, when once formed, cannot be cured. Tell him pay no attention to those who tell him otherwise. From the very nature of the disease, he may easily infer that for it there is no thorough cure. Ringbone is not a cartilage or a little bone; it is a morbid enlargement of the bone. All properly qualified veterinarians agree that it cannot be reduced. The growth of the ringbone can, if taken in time, be prevented from becoming larger, and the lameness accompanying it may be cured; but this must be done when the horse is young, and the disease not fully matured, otherwise there is little use in attempting a partial cure. The use of the hot iron—firing as it is generally called—is the only remedy we have seen applied. In this process it is so necessary to act with all due caution, lest by burning too deep, we might make bad worse, that we would advise the calling in of a regular farrier.

FARCY REMEDY.

John McMullin's animal has farcy, and he gives one teaspoonful of copperas once in two days, and uses good care in other respects. It will cure him. If it is of some standing, double the dose. This I have used, and seen used in several cases; and I have worked a beast for years after having the disease cured, and I know it to be sure—at least, it has cured three for me.—A Correspondent of *Moore's Rural New Yorker*.

Poultry.

KEROSENE FOR HENNERIES.

Where lice are troublesome in a hen-nery, the use of kerosene will be found to answer an excellent purpose. If necessary, get a small watering pot and sprinkle it everywhere. We know of its being used in this way, and with complete success. It was also applied to the fowls by rubbing under the wings and among the feathers on the back of the neck, and the pests were effectually "cleaned out," without apparent harm to the fowls. For small chickens rubbed lightly with a feather about the head and on the neck, it is admirable, and it is there where lice can generally be found if they exist anywhere about the flock. One application of this sort will suffice for many weeks.

Careful observers will have noticed that there are several breeds of hen lice to contend against. The species that attack sitting hens in hot weather are very small, very active in their motions, and multitudinous in numbers. They will sometimes drive the hens from their nests, and become so numerous about the hen-nery that visitors cannot enter without carrying off more or less on their persons. Their presence will be indicated by a delicate crawling sensation on the hands, the neck, or the body. Cracks and holes about the building will harbor millions of them at such times. For such a house, kerosene is the remedy. Apply it liberally from top to bottom, and if one application does not completely remove them, apply a second time. In applying to the chickens and fowls, be careful not to get any in the mouth or eyes; it may not prove fatal, but it will do no good. It evidently does not make small chickens feel lively, but it will not harm them seriously if they are well housed, or can get all the warmth they require.

We have not yet tried it in hen's nests, but have no doubt that if sprinkled through the hay or straw of which the nest is formed, it will answer a better purpose than the sulphur, or ashes in the bottom. It will positively kill the vermin harboring in the nests, while it is evident that dry sulphur and ashes are only disagreeable. Of course the effect of a single application will not last always, but one or two applications a year will probably be found to be sufficient, at least in henneries whose owners are not frightfully negligent.

The lice found on the heads and necks of young chickens are very large compared with those infesting the nests of sitting hens; and we do not remember to have seen them except on fowls. The touch of a small amount of kerosene infuses wondrous activity among them, while a good saturation evidently paralyzes. Nothing but their blighted remains will be found one day after a good application of kerosene.—Country Gentleman.

A common hen on ducks' eggs hatchep two. These, after the manner of their kind, coming near a pond, took the water. The foster-mother, after displaying every sign of anxiety and calling in vain, deliberately plunged in and swam across, pressing the little ones before her breast and drove them ashore. Seen by two creditable witnesses, and related by the *London Field*.

A writer in the *Poultry World* says his plan for curing hens of a desire to sit, is to put them in an open yard, where there are no nests or roosting places, and differing as much as possible in appearance from their regular quarters and feed them liberally with soft feed made rather hot with cayenne; give them plenty of cooked meat and all the milk they will drink.

LOW TRAINED FRUIT TREES.

Suel Foster, of Iowa, writes the *Country Gentleman* that western orchardists do not, of late years, recommend as low headed trees as they did ten or twenty years ago. From three to four feet as height of trunk he thinks is now more generally recommended. He says: "It is a good thing to have the top in the way of the plow, not the plow in the way of the tree."

Good Health.

IMPORTANCE OF BREATHING PURE AIR.

The supreme importance of good, pure lung food for all living beings—the tender infant, the delicate daughter, the robust man, and the old, bowed down with years—cannot be too strongly impressed upon the mind. Pure air is not only the best of all blood-purifiers, but it is the best preserver against ill effects from other impurities, and the best of all tonics for weak lungs. The idea, deeply fixed upon the popular mind, that the only way for the weak to gain strength is through eating and drinking, leads to the invention of an endless variety of tempting and over-nutritious dishes, and to the drenching of the stomach with wine and bitters. The practice is a most disastrous one.

Thousands to-day are suffering in this way, or by having their lungs both starved and poisoned, while the stomach is stimulated to its utmost, and gorged with rich aliments day and night. Yet such often remain pale, weak and thin, and quack doctors urge that more stomach bitters be taken to bring them out. They are also usually carefully housed, and directed to keep away from fresh air, from anything like a current, and are not allowed to take out-door exercise, except on the finest days, and then only for an hour or less each day, for fear of taking cold. Besides, the kind of exercise taken is usually unworthy of the name, for it too often consists simply in keeping quiet, in an easy posture in an easy carriage. This mode is quite proper for those debilitated by actual disease, but not for the thin, weak, or delicate, who desire to be made strong and healthy. Little by little, and day by day, should out-door exercise be increased, until the body becomes pure enough and strong enough to take care of itself. If the uniform half-starving of the lungs be long continued, even though the stomach be well supplied, the body gradually becomes weaker and weaker, and paler and paler, in spite of all the stimulants, all the tempting dishes, and all the care which art can devise and affection bestow. And so, in this way, a regular decline in health is established, or consumption developed, all on account of the unfortunate mistake in thinking that colds, weakness and consumption can only be prevented by careful housing and rich feeding.

Such a system is the very one to cherish and bring on such diseases. It develops them among animals which do not have them in a state of nature. It causes men and women to put large quantities of food into the stomach, which, if digested and carried into the blood, does not receive sufficient oxygen and sunlight to develop its strengthening power. It prevents the taking of exercise, to knit into firm fibre and nerve rich elements in the blood. It causes large quantities of nutritious matter to be arrested in its organization, where it must undergo decay, deranging the healthy action of the entire blood current, and producing active disease in some parts of the body, not only from the nutrition, but from the great labor put upon some organ to expel such hurtful matters from the body.

Perhaps the supreme importance of giving the lungs, day and night, an unlimited supply of pure air, cannot be better impressed upon some minds than by stating that after more than twenty years' observation of the causes which produce consumption, and a familiarity with the opinions of the best physicians of the day, I am firmly of the conviction that no one need have any fear of this disease if his lungs are only nourished on good air during every hour of life. The breathing of a pure air a few hours each day will not keep off the terrible destroyer, but the lungs must have this kind of air as often as nature requires it, and this, at the least, is sixteen times every minute.—From Dr. J. R. Black's *Ten Laws of Health*.