

well-sifted coal or turf-ashes; and if lightly moistened with water, or better still, with liquid manure, and the heap turned over, the mass will soon become heated, and when this heat has subsided, it will be in a fit state for being applied either to the raising of turnips or as a top-dressing for pastures. Old grass lands will be found to be much benefited by an application of bone manure, its effects being shown in the more rapid improvement of the stock depastured thereon, and, in the case of dairy stock, in the quantity and quality of the milk produced.

The description of land to which bone manure is best suited, is that of a light and dry nature. On heavy clay soils, it produces little effect; and even on light soils, if wet, it will prove a failure. Some years ago we applied bone-dust, at the rate of 18 bushels an acre, to a field of a light gravelly nature, only partially drained but otherwise well suited for bone manure; the result was (the season being very wet), that the turnip crop of that year was almost a complete failure, but the grain crop of next year, it being a dry summer, was exceedingly luxuriant, and the produce of very superior quality; indeed it is only on thorough-drained land that manure of any sort will prove efficacious.

From the Rochester Daily American.

THE HESSIAN FLY.

(*Cecidomyia destructor*.)

HOW TO PREVENT ITS RAVAGES.—The second generation of this most destructive insect makes its appearance in this latitude during the two last weeks in September. The fly does not live more than ten or twelve days. It sometimes hatches a little earlier, and at others a little later than the time above indicated. If there were no young wheat plants within reach of the perfect insect at the period of its maturity, on which to deposit its eggs, in September or the first week in October, all must perish without providing for the appearance of another generation in the spring. As all summer crops are out of the way in autumn, and winter rye is but little cultivated, and may be sown late even better than wheat, the Hessian fly can be wholly exterminated, by delaying to seed till after the 20th September. Late seeding should be practised by all wheat growers simultaneously, for the 20 acre field of one farmer sown before the 10th September, may sustain larvae enough to come out perfect insects in April, or the first week in May, greatly to injure a thousand acres in the surrounding country. All insects, and especially the *tipula*, increase with wonderful rapidity. If a man should raise ten thousand wolves and let them out to destroy the sheep and cattle of the community, he would hardly do more injury to the public than to sow 50 acres in wheat early, in a town where the Hessian fly is known to exist, and thus raise countless millions of these destroyers of bread.

We are well aware that on many soils, late sown wheat suffers greatly by the heavings of frost, which separates the root of a small plant from the surrounding earth and destroys it. Under-draining and open water courses will obviate this difficulty. Admitting the full force of danger from winter-killing, still the loss from that cause is nothing when compared with that which results from multiplying Hessian flies in a wheat growing county a hundred fold. The frost usually injures only portions of a field; and even when the damage extends over its whole surface, it never spreads like winged insects over every man's grain within ten or twenty miles.

The subject is obviously one of great importance. Those that think of sowing early to avoid injury from frost, and to give their wheat a good start with numerous roots, before winter sets in, should remember that they need only nourish till spring, a few minute worms, to have their grain nearly destroyed in May and June by the vast numbers of the next generation.

Rolling with a heavy roller was tried by a large wheat grower in Whentland last fall to kill the larvae, by crushing them against the stem where they lie, but with little or no good result. This field was on the Genesee bottoms, and sown the first week in September, contrary to our advice. Its crop is now nearly destroyed by insects, and will give to Monroe county far more Hessian flies the coming autumn than is desirable.

It is not a bad practice to sow a land early through a fallow that all the insects in the neighborhood may come and deposit their nits, which should be ploughed deep into the earth where not one will ever come to maturity. After this the field can be seeded in the usual way. No application to the seed sown will have the least effect to keep off the fly. In the spring, it will deposit its ova on the leaves of the oats, barley, and spring wheat, as well as on the winter varieties of the latter plant. Hence it is much more difficult to prevent propagation in spring than in autumn.

Burning the stubble after harvest, has been recommended and practiced to some extent. This can seldom be done without destroying the young clover which the farmer has on the ground. No skillful wheat grower thinks of omitting to seed often with this renovator of the soil, aided, as it should be with a coat of gypsum, lime, ashes and salt. Where the land is not seeded, or the clover has come badly, burning the stubble will be advantageous in more ways than one.

To escape the ravages of the *Cecidomyia destructor*, for it is indeed a destroyer without a parallel among the insect depredators upon the fruits of rural industry, we urge upon the wheat growers of Western New York, the propriety of delaying to seed till after the 20th September.

It is worthy of remark in this connec-

tion, that Providence has provided in this country no fewer than four other insects that prey on the larvae of the imported Hessian fly. The world is much indebted to Mr. Herrick for information on this subject. The following is an abridgement of his remarks on the parasites of the Hessian fly made by Dr. Fitch:

"When its eggs are layed upon the wheat leaves they are visited by an exceedingly minute four winged fly, (a species of *Platygaster*.) which punctures the egg and deposits in it four or six eggs of its own; the Hessian fly worm hatches, grows, and passes into its flax seed state with these internal foes feeding upon it: it now dies, and its destroyers in duo time escape from the flax seed shell. Three other minute four winged flies, or bees as they would be called in common language, destroy the fly when in its flax seed state. The most common of these, by far, is Say's *Ceraphron destructor*. Alighting upon the wheat stalks, instinct informs them precisely where one of these flax seeds lies concealed. They thereupon "sting" through the sheath of the stalk, and into the body of the worm, placing an egg therein, which hatches to a maggot, lives upon and devours the worm. Such are the means which nature has provided for preventing this pest from becoming unduly multiplied. And so efficient and inveterate are these foes, that more than nine-tenths of all the Hessian fly larvae that have come into existence, are probably destroyed by them, Mr. Herrick thinks, and we have strong reasons for believing that his estimate is within the truth."

This we regard as an over estimate of the proportion of the larvae of the Hessian fly destroyed by parasites. That a large number are thus disposed of there can be no doubt; but it will not do to depend on the multiplication of one kind of insects to extirpate another. The farmers' wheat and the mechanics' bread will be the first to fail, unless cultivated intellect shall protect the food of man

ON THE PREPARATION OF COMPOSTS FOR TOP-DRESSING LAND.

DUNE from stables, byres, pig-styes, and other places about a farm-court, I mean all dung made by leasds, and the refuse straw about the farm offices, can be very well managed in the open court-yard, and it is profitably managed, and properly attended to, by the greater number of our best Farmers. There are many farms where the straw is all made into manure on the premises, that it would be a difficult process to rot the straw under cover. Where dung is made in the open air, have all sides of the dung-hill walled in, and the upper surface only exposed. I have never discovered any loss in making dung in this manner; be it kept in mind, that no rubbish of any kind should be admitted