

## Science and Art.

## Destroying Pernicious Insects.

T. Glover, the distinguished entomologist connected with the Agricultural Department of the Patent Office, has lately furnished the National Agricultural Society with a most interesting essay on destructive insects and birds; and he enjoins our farmers to study their habits. He says:—

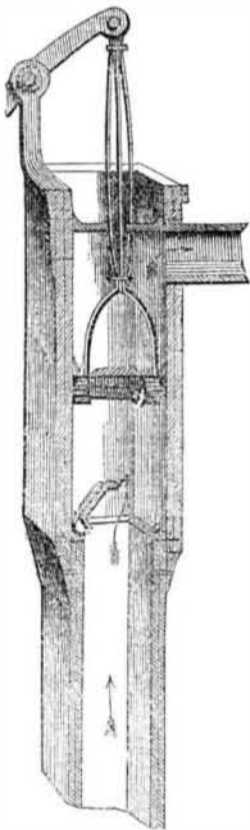
"A close study of the habits and transformations of any one of the pernicious insects (ball worm, wheat midge, caterpillar, &c.) by the practical and intelligent farmer would prove not only a source of great pleasure, as leading him to a keener sense of the beautiful and wonderful works of nature, as exemplified in the singular transformations insects undergo, before they assume the perfect or fly state, but also a source of great profit, as by experimenting upon them in all the stages of their existence he might perchance discover some practical method by which their extermination could be effected. Indeed, it is absolutely necessary that a farmer should be able to recognize the insects that destroy his crops, in all their various and wonderful transformations, before any effectual remedy can be applied; as in one stage of their life they may be suffered to live and enjoy themselves, nay, even sometimes be protected, whilst in another stage we persecute and destroy them by every means in our power. For example, the beautiful butterfly of the *papilio asterias*. Any humane and kind-hearted farmer, unversed in entomology, who should see his children chasing and killing the beautiful black and yellow spotted butterfly that was fitting joyously over his vegetable garden, in the spring or early summer, apparently leading a life of mere harmless pleasure, would, no doubt, prove them for wantonly destroying such a pretty, harmless insect; and yet, if the truth was known, this pretty and much to be pitied insect is the parent of all those nauseous smelling green and black spotted worms that later in the season destroy his parsley, celery, parsnips, and carrots. Yet by merely crushing the parent fly at one blow early in the season, before it has deposited its eggs, he would be spared the vexation of either seeing his plants devoured and seed destroyed, or having the disagreeable task of picking off, one by one, some hundreds of caterpillars later in the season. This fact will be more apparent when I state how incredibly fast some insects multiply, especially in the warmer climate of the South, where there is little frost to destroy vegetable life, and there are several generations in one season. Dr. John Gamble, of Tallahassee, Fla., assisted by myself, dissected a female ball-worm moth or miller (an insect which in the caterpillar state is most destructive to cotton,) and we discovered a mass of eggs, which when counted amounted, at the least calculation, to five hundred, duly hatched, for the first generation, say one half males, the rest females; the second generation, if undisturbed, would amount 125,000, and the third be almost incalculable.

Now, these mother flies are not very numerous early in the season, owing to the birds devouring them, the rigor of winter, and various other accidental causes, and if practical means were found to destroy them as early in the spring as possible, the immense ravages of the second and third generations might be prevented. In one female (ceceticus) case or hangworm, so destructive to the shade trees, I counted nearly eight hundred eggs, although the specimen was but small. Now were all these cases taken from every infected tree in the winter, when they can most easily be seen, owing to the fall of the leaf, and then immediately burned, the trees would be comparatively free the next season; and by following this plan for one or two years more, the work growing gradually less and less, the insect might finally be exterminated, inasmuch as the female never leaves her case, but forms her nest of eggs inside; and yet these noxious pests are suffered year by year to increase, when so little trouble would destroy them.—Other insects, again, have other habits, which, if fully known, would likewise lead to their destruction."

## English Patents.

*Clarkson's Pumps, Masts, and Tents.*—The illustration (figure 1) shows one of the pumps which are formed of two thicknesses of thin planking, with a woven fabric placed between them, the whole being held together by an adhesive substance, thus giving greater strength and tenacity than any other material. The wood being previously subjected to a process—to prevent atmospheric or other action of decay—gives greater durability, and is not subject to corrode, oxydize, or fracture as metal. These pumps can be made of any size, and curved to fit the section of a ship, to work between or above decks, and as a lift or force pumps.

Fig. 1.



In a trial at Portsmouth Dockyard, in January last, one of the patent pumps threw one hundred gallons of water in twenty seconds, whilst the Admiralty's pump required seventy-six seconds to throw the same quantity. It was also admitted that Clarkson's pump was worked with greater ease.

Fig. 2.

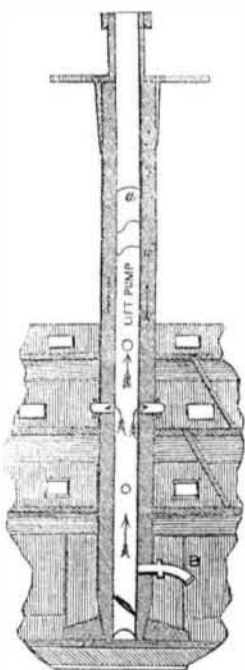


Figure 2 shows a vertical section of a mast and figure 3 a cross section, showing the pump, in the center. The mast can be built of ordinary small timber, or plank, and by being alternately laid with canvas, or prepared animal hide, and united by adhesive materials, gives greater strength and tenacity in a smaller space than wood in its natural state; and completely removes the risk of the mast snapping or becoming decayed: *c* is a hollow square metal frame in the center of the mast and

forming the barrel of the pump; *a* are the flanges of the metal frame, and *b* the pieces of wood with can placed between them.

Fig. 3.

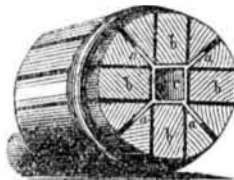
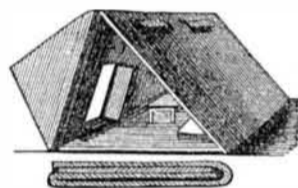


Figure 4 is a perspective view of a military or emigrant's tent, showing one end open; the illustration also shows the form into which it is folded for conveyance. The tents are manufactured of the patented material composed of layers of cork, wood, and canvas. A thick layer of cork is fastened to the flooring forming a bed, which is free from damp and is always warm. The tents also form a raft pontoon, for crossing or sailing up rivers, and applicable for carrying guns in shallow water or they may form a portable breastwork, by being filled with sand or earth, Minie balls or bullets not causing splinters. They are easy of transport, are put up or down in a few seconds; and when folded, they can form the sides, bottom, and top, for wagons, &c., as

Fig. 4.



climate has no effect upon them. The patentee applies the material of which these tents are formed to various purposes, also for fire-buckets, life-buoys, &c., as from its extreme flexibility it is not liable to crack, and possesses great strength with little weight.—[London Engineer.]

## The Value of the Telegraph to Railroad Companies.

A writer in the *Washington Intelligencer* argues that every railroad company ought to have a line of magnetic telegraph, as the greatest security against collisions. Their cost is but a trifle to the valuable lives that are lost yearly on railroads, at a cost to them of all their profits and of reputation, and interminable and vexatious law suits.

A number of our leading railroads, now, have telegraphs owned and managed by themselves—all should have them. Every railroad in England has its telegraph; it was first applied there to railroad business.

On New Year's day, 1850, a catastrophe was averted, on one of the London Railroads, by the aid of the telegraph. A collision had occurred to an empty train at Gravesend, and the driver having leaped from his engine, the latter started at full speed to London. Notice was given by telegraph to London and other stations; and, while the line was kept clear an engine and other arrangements were prepared as a buttress to receive the runaway. The superintendent of the railroad also started down the line on an engine, and, on passing the runaway, and had it transferred at the next crossing to the up line, so as to be in the rear of the fugitive. He then started in chase, and on overtaking the other, ran into it at speed, and the driver of his engine took possession of the fugitive—and all danger was at an end. Twelve stations were passed in safety; it passed Woolwich at fifteen miles an hour; it was within a couple of miles of London before it was arrested. Had its approach been unknown, the mere money value of the damage it would have caused might have equalled the cost of the whole line of telegraph.

## The Wrappings of the Mummies.

A newspaper came to us yesterday from Syracuse, New York, made from rags imported directly from Egypt, and which had once wrapped within their folds the mummified remains of the descendants of Mizraim. They were imported by Mr. G. W. Ryan, paper manufacturer at Marcellus Falls, and he thinks them quite as good as the general run of Eng-

lish and French rags. The paper is certainly of very good quality, rather superior to that generally used in this country for newspaper purposes. What it costs the publisher does not say, but as there are thousands of bodies in Egypt, wrapped up in linen folds, it is quite probable that the rags are as cheaply imported as those from any other country.—[Phila. Sun.]

## Bones Soluble in Water.

The phosphate of lime or bone earth has generally been rendered soluble for agricultural purposes by means of sulphuric acid. If, however, bone-dust is left for some time in contact with water, the liquid, on filtration, is found to hold phosphate of lime in solution. Water deprived of carbonic acid by long-continued boiling gives the same result. As the organic matter of the bones enters into decomposition, the amount of phosphate dissolved increases. Some of our farmers decompose bones by placing them in heaps, covering them with a thin stratum of soil, and keeping them moist during warm weather.

## American Clocks.

The clock business is at pretty low ebb just now. There are only thirteen clock factories now in operation; two years ago there were thirty-two. The largest factories have failed and are stopped. All this resulted through unwise competition. Only 142,000 clocks will be made this year; two years ago there were 600,000 manufactured in one year.

## Signs of the Weather.

It is a common and a very true saying, "all signs of rain fall in a dry time." During the recent dry period in this region, extending for 16 days without a drop of rain, and the thermometer standing for days above 90°, many signs of rain passed away without a shower. During very dry weather, but little evaporation takes place from the parched earth, hence the atmosphere seldom becomes surcharged with moisture which is the source of rain.



## Inventors, and Manufacturers

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