ineffective, and farmers were advised not to lose the use of the land for a season, and the labour necessary to keep it free from vegetation, in the hope that they must starve out the wireworms. The sowing of buckwheat and mustard, supposed to be the special aversion of wireworms, was also tried without any satisfactory results whatever.

In the same series of experiments, kerosene oil solution made of one part of oil to 20 parts of water, was sprayed on soil in a cage containing 25 wireworms. The solution was made to penetrate the soil by frequent sprayings. Though this process was effective to some extent, it could not be profitably applied on a large scale. The cost would be great, as 1,000 gallons of oil would be required per acre, and this would have to be driven into the soil by frequent sprayings.

Bi-sulphide of carbon, as used against the phylloxera, killed wireworms, but as it would require 1,000 lbs. of the liquid per acre, it would only be practicable and profitable to employ this on limited areas and for very valuable crops.

In extremely bad and persistent wireworm infestations of hop land, it might be desirable to try bi-sulphide of carbon, but, owing to its explosive nature, it must be very carefully handled. It could be applied close to the "hills" or plant centres, with the instrument known as the *pal* (1) *Gastine*, resembling a large auger, or borer, which is worked into the earth close to the stocks. In the upper part of this instrument there is a cylindrical case to contain the bi-sulphide of carbon. Upon pressing a spring into this cylinder an exact dose of the insecticide is injected into the hole made by the borer. In the vineyards where this process is employed, the dose varies from one quarter to half an ounce of bi-sulphide of carbon injected in two or three places near each vine-stock.

In order to destroy wireworms with salt, it would seem that it must be applied at the rate of 10 tons per acre, and this would be practically destructive to vegetation. Lime applied to the rate of 200 bushels per acre, and gas lime at the rate of 20,000 lbs, per acre, did not extirpate wireworms in the Cornell experiments referred to above.

Although "traps" were tried at Cornell without very conclusive results, it is to be noted that "traps" of rape cake, mangel-wurzel, potato, carrot, and turnip have been found of great value; in hop land, for instance, where almost the only way to get rid of wireworms is by placing pieces of these roots, or of rape cake, close round the hills or plant-centres.

These traps of mangel, potato, or rape cake should be placed close to the hills or plant-centres about four or five inches below the surface, and examined once or twice a week, and the wireworms taken out and destroyed. The traps should be continued during the spring and summer, and up to the winter in badly infested hop land, as the wireworms only go down deep into the ground when frost comes, and the traps will be more likely to be attractive when the hop plants are not putting forth shoots.

As it is rather difficult to find the "traps," white wooden skewers with points and thick heads might be advantageously used in the case of mangel, potato, turnip, and carrot traps, to show where they are, and to enable them to be pulled easily from the earth.

There is no doubt that wireworms have been encouraged in hop land by the quantities of rape "dust," or ground rape cake, put on for manure, so that in infested fields it would be well not to use rape cake as a manure for some years.

Rape dust sown broadcast on wheat, oats, barley, and other crops infested with wireworms, at the rate of from 5 to 7 cwt. per acre, has frequently been the means of saving the crop, as the wireworms are attracted by the smell of the rape dust and feed upon it in preference to the corn crops, while these grow away from their attacks in the meantime.

When old pasture is converted to hop land it would be well to burn the turf, in order to destroy the wireworms. Ploughing it in deeply will be of no avail whatever, and liming or gas-liming, unless it is done on a very liberal scale, will not be of much use.

Land known to be infested should not be kept down to seeds too long, and sheep should be heavily folded on the land and the herbage kept closely fed off before it is ploughed. When it is ploughed, the land should be pressed in order to make a firm seed bed.

In turnips, mangels, and grass the presence of wireworms is often not apparent, and remains undetected. A winter fallow is desirable after a bad attack in wheat, oat, and barley crops, in which damage is plain and manifest. In this

(1) So in the original; what the words really are is a mystery. Ed.