

REMEDIES.

Oiling and Post Holes.—Should the insects be abundant in a grain field, a strip or swath should be cut around the infested field a week previous to harvesting the crop. If the ground is hard, clear a surface about one foot wide all round the field. An ordinary hoe will be found to be a very suitable tool for the purpose. Then dig post holes twenty-four to thirty inches apart. As soon as cutting commences, a thin line of No. 7 asphalt road oil* should be poured along the cleared surface. An ordinary water-can with the rose removed will do the work well. A thin line of oil should surround the *outside* edge of the post holes. As harvesting proceeds and the bugs are threatened with starvation, they will commence to migrate from all parts of the field. As soon as they encounter the asphalt barrier, they will cease to move any farther, and they will be forced by sheer weight of numbers into the post holes, where they may be promptly destroyed by pouring in a little kerosene, or kerosene emulsion.

Co-operation between adjacent farmers is absolutely necessary, and if such measures are delayed, the young migrating bugs will have developed wings, and the barrier of course will be useless.

Dusty Furrow.—Should the weather be very dry and hot, the dusty furrow may be used to good advantage. A strip of land six to eight feet wide should be deeply ploughed next to the infested field. The ground should be thoroughly pulverized with a disc harrow until it is reduced to dust. Then a weighted log six to eight feet long, sharpened at one end, should be drawn lengthwise, back and forth until a deep furrow has been made across the line of the Chinch Bug path. The dusty sides will prove impassable to the bugs, and if it is so placed that it is directly exposed to the sun, the majority of the bugs will succumb. Should a rain come, and the dusty furrow cannot be renewed, a thin line of asphalt road oil may be poured along the bottom of the furrow, post holes, as described before, having been dug previous to this. Should the bugs have acquired wings, and entered an adjoining corn field, the corn should be sprayed with either nicotine solution, or a ten per cent. kerosene emulsion. The nicotine solution is preferable, and should be used wherever possible. The formula and method of making the nicotine is as follows:—

Soap, 2 ounces.

Water, 1 gallon.

"Black Leaf 40," $\frac{1}{2}$ ounce (40 per cent. nicotine). (See Note 2, page 13.)

Heat the water nearly to the boiling point, thoroughly dissolving the soap, and then add the nicotine solution. If soft water can be obtained, use slightly less soap. As with all sucking insects, thoroughness in spraying is absolutely necessary. An ordinary ten per cent. kerosene emulsion can be used with good results, but unless the plants are vigorous it is not advisable to use this substance. Should the kerosene emulsion be used, a little caution is necessary. Do not pour the solution into the heart of the plant, and spray preferably early in the morning or late in the afternoon, otherwise there is a danger of the foliage being burned. The nicotine solution is so much more efficient and the danger of plant injury so slight that, where it is possible, this substance should be used in preference to all others.

NATURAL CONTROL.

Unlike most of our other insect pests which, for a time, seem to gain the mastery of a tract of country, the Chinch Bug enjoys almost practical immunity from attack by birds, and appears to be attacked by few insect parasites. Very few of our insectivorous birds are known to feed upon the Chinch Bug to any extent; the quail probably feeds upon this bug to a larger extent than any other bird, but, as in the case of many of our beneficial insectivorous birds, it does not receive the measure of protection it justly deserves.

* See Note 1, page 13.