

Cut Worms and Wire Worms

How to Destroy Them

By W. W. WALDRON

Fellow Agricultural Section Incorporated Institute Auctioneers, England, '09

NOTE—England's expert land valuers are chosen from amongst the fellows of the Auctioneer's Institute, and the members of the agricultural section have to value crops and land under varying conditions in all parts of the country.

It is difficult to know just what place such insects as the Cut-worm and Wire-worm take in Nature's original scheme. It is sufficient to know that we do not need them and their destruction is imperative. It naturally follows that with the enormous acreage of one kind of plant, wheat for instance, the insects that live more particularly on that kind of plant increase with the rapidity that the plants increase.

When we think of the peculiar dynamical properties contained in a grain of wheat or oats or flaxseed, we realize that here at least is a force in Nature subservient to our will. The valiant efforts put forth by that grain of wheat to do its best for us right from the time it is placed in the soil, are, in themselves sufficient to show us that our best, in cultivation and the use of scientific insecticides is, after all, only reciprocal. Our apologies to ourselves, our friends, the soil and the crop are therefore futile if we neglect what is due from ourselves.

The Cut Worm is the larvæ form of the Owlet Moth. If one of the moths (brown ones) seen fluttering around the light after the lamp is lighted on a summer's night, is caught, the probability is that on closely inspecting the eyes, tiny electric arc lamps will be noticed, sometimes a dull purple, presently green. It is the imago named Owlet Moth and belonging to the Noctuid class of the Lepidoptera order. The larvæ which hatch from the eggs laid by this moth and give us the Cut Worm, work at night and hide just under the surface of the ground during the day, close to the vegetation which forms their food. They show a preference for the young oat crop. There are many varieties of Cut Worm, but a general description of the full grown larvæ is as follows: Length from one inch to one inch and a half. Color—The color may be made a little more definite by dropping one of the Cut Worms into clear water, but at the best the coloring

is obscure, verging from a pale green to an indefinite brown and the markings follow the former color for the sides whilst the back has a tendency to a brown shade. The different stages which the Cut Worms undergo form a cycle—moth, egg, larvæ, pupæ, moth and so on.

From this cycle it can easily be seen that the moth formed from the pupæ in August may in that month and early September lay its eggs on the plants which the Cut Worm has fed on during the summer and the larvæ which then hatch out are there for the next crop, because they find means of protection during the winter. On the other hand if they are in the quiescent or pupa stage these pupæ gradually advance to maturity and in the spring as soon as the warmer days come the now matured moth leaves its shelter of strong filmy cocoon and after pairing lays her eggs and dies, but the larvæ thus formed are there to continue their depredations.

The Wire Worm

Unlike the Cut Worm the Wire Worm belongs to the Coleoptera or Sheath winged tribe, but like the Lepidoptera they go through the same stages. The larvæ are fleshy grubs, the mouth is furnished with jaws and besides the six legs they often have a pro leg at the end of the tail. Instead of a moth the corresponding stage in the development of this species is that of a beetle and these beetles have biting jaws too. The little ladybird belongs to the Coleoptera tribe but their larvæ feed upon aphids (cabbage fly and turnip fly) and should not be destroyed.

Grasshoppers

This insect often does much damage to crops in this country and belongs to the Orthoptera tribe. Insects belonging to this tribe have four wings and the hind legs are usually formed for leaping, the jaws being made for biting. They have no quiescent pupa stage such as the previous mentioned Lepidoptera and Coleoptera orders. It may be of interest to the reader to know that the grasshopper and the wire worm have one habit similar to each other, they both belong to the group called Mandibulata (gnawing mouths) while the Cut Worm is related to the Hawstellata (sucking mouth) group.

High and Dry Spots

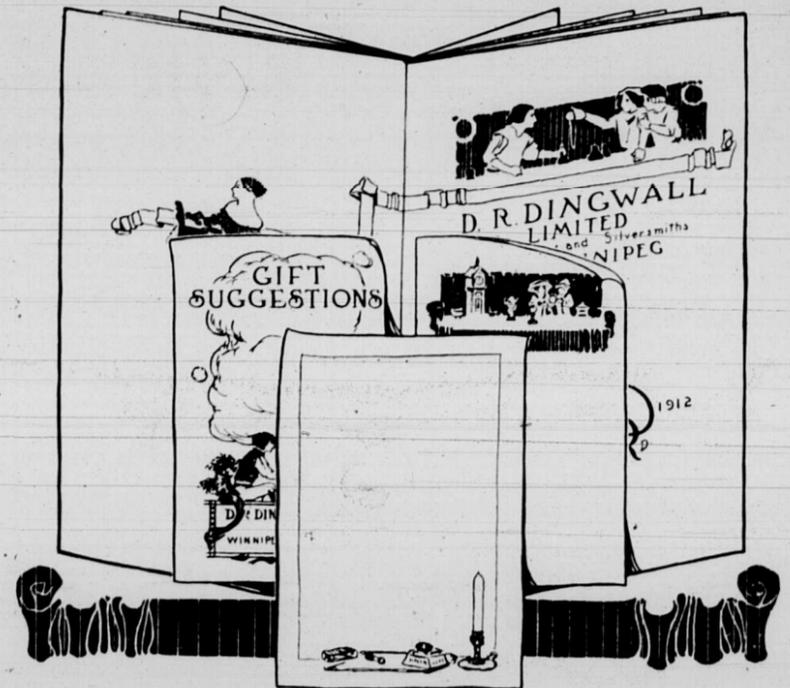
It will have been noticed that the larvæ of the Cut Worm moth do not infest spots which lie low and are subject to extra moisture. It follows therefore, that they are more likely to be found in spots which, lying high and bare, lose the snow and become dry much more quickly than the surrounding land. It is well worth while on such spots when the stubble has been plowed under after the cereal crop has been harvested to throw broadcast some wheat or oats, the plant should grow sufficiently high to catch the snow which will fall later and thus give additional moisture in the spring—the winter would, in the northwest, destroy the life of the wheat or oat plant, but it has done its work.

Mangolds, Swedes, Sugar Beet, Alkali Spots

Where an occasional spot of alkali spoils an otherwise well cultivated piece of land, it is advisable to seed these spots to mangolds as early as possible in the season. The reason is that the mangold being partial to salt absorbs quite a lot of the alkali salts, and planted early every chance is given for the bulb to grow to maturity, thus absorbing as much alkali as possible in the season. This operation should be followed out the following year and the mangal can be helped in its work by constant hoeing, thereby insuring several supplies of nitrogen.

How to Destroy Them

Paris Green is a well known remedy of these pests, but a more modern method of eradicating them is Vaporite which is applied at the rate of about 225 pounds



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per acre, sown broadcast with a drill or manure distributor, before the land is plowed. As the name Vaporite implies, just as soon as it is plowed under a gas, poisonous to the insect life, arises and kills all the pests aforementioned and many others. It is not necessary to treat the same field for three or four years, as one treatment kills all the worms.

MAINE CARRIES PROHIBITION

Portland, Me., Nov. 7.—The following expression on the result of the constitutional prohibition elections in Maine, announced by the Governor and Council last night as 758 against repeal, was received by telegraph to-day from Mrs. L. M. N. Stevens, National President of the W. C. T. U., from the National headquarters in Evanston, Ill. "Despatch regarding Maine prohibition brings rejoicing to multitudes of hearts and homes."

G. T. R. DIRECTORS

Canadian Pacific directors are well-known in the Canadian west, but not so those of the Grand Trunk. If the average westerner were asked to name three

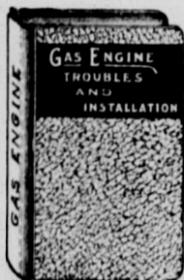
directors of the Grand Trunk he would get as far as Hays and Smithers and then would be stuck. Here is the complete list:

Alfred W. Smithers, Seven Oaks, chairman.
Sir Henry Jackson, Bt., vice-chairman.
Charles Melville Hays, Montreal, president.
George Von Chauvin, Westminster, S. W.
John Alan Clutton-Brock, Weybridge.
Colonel Frederick Firebrace, R. E., Westminster, S. W.
Sir Felix Schuster, Bt., 90 Cannon Street.
Lord Welby, of Arlington, G. C. B., Piccadilly, W.
Sir William White, K.C.B., Putney Heath, S. W.
Sir W. Lawrence Young, Bt., 35 Seymour Street.

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GAS ENGINE TROUBLES AND INSTALLATION



The continuous demand for information on farm engines has led The Guide to search for the cheapest and best book available. We have found it. It is "Gas Engine Troubles and Installation," by J. B. Rathbun, consulting gas engineer and instructor at Chicago Technical college. This book shows you How to Install, How to Operate, How to Make Immediate Repairs, and How to Keep a Gas Engine Running. The book contains 444 pages and is written in plain, non-technical language so that the ordinary farmer will be able to turn to it readily for what information he wants. Particular attention has been paid to the construction and adjustment of the accessory appliances, such as the ignition system and carburetor, as these parts are most liable to derangement and as a rule are the least understood parts of the engine. The illustrations are very numerous and show the parts of the engines as they are actually built. The Trouble Chart makes all the information at once available, whether or not the whole book has been read, and will greatly aid the man whose engine has gone on "strike." There is no better book on the subject on the market. These books are kept in stock in The Guide office and will be sent to any address promptly by return mail. Postpaid \$1.00. Book Department, The Grain Growers' Guide, Winnipeg.