

FERNDALE NOTES.



OX BOT FLY.—ROBERT HAY, MAGNETED.

In our January number of 1888, in *Ferndale School* No. VIII., is a lesson on the Bot-fly, Gad-fly or "Warbles" of the Ox. From the November number of *Insect Life*, published by the United States Department of Agriculture, we note the following estimates of damage done by the fly. Referring to the investigations recently undertaken by the *Farmers' Review* of Chicago, *Insect Life* says:

A host of letters from farmers and stockmen were published, which, as far as they related to the habits and natural history of the fly, were, as a rule, pretty badly mixed, and added little if anything to that already known. Reports were also received from professors of agriculture, entomologists, and veterinarians, which give, as did also those of farmers and stock raisers, valuable data concerning its abundance in various States, the loss in value to hides, effect on quantity and quality of beef and milk, and also the effect of the attacks on the animals themselves.

From the reports received the approximate percentage of grubby cattle and the average loss on grubby hides for the principal stock-raising States of the Mississippi Valley have been estimated as follows (August 7, 1889):

Illinois.—Seventy-three per cent. of the cattle marked in the grubby season are infested with grubs. The average loss on a grubby hide is one-third.

Iowa.—Seventy-one per cent. of the cattle in the majority of counties are grubby in the season specified. Loss on grubby hides one-third.

Indiana.—Forty-eight per cent. of the cattle grubby. Loss on hides one-third.

Wisconsin.—Thirty-three per cent. of cattle grubby. Loss on hides one-third.

Ohio.—Fifty-six per cent. of cattle grubby. Loss on hides one-third.

Missouri.—Fifty-seven per cent. of cattle grubby. Loss on hides one-third.

Kansas.—Sixty per cent. of cattle grubby. Loss on hides one-third.

Kentucky.—Fifty-seven per cent. of cattle grubby. Loss on hides one-third.

In *Michigan* and *Illinois* grubs are practically unknown among cattle.

In *Virginia* they are not very bad where found; twelve counties report an average of forty per cent. The rest heard from are free of the pest. Grubby hides are valued at one-third of their value.

In *Minnesota* 40 per cent. of the cattle are infested with grubs in the southern and middle counties. In the northern counties they are unknown or very scarce. Grubby hides sell for one-third less than sound ones.

The amount of this loss can be better appreciated perhaps by reproducing in condensed form the approximate estimate of the loss on the hides of cattle received at the Union Stock yards of Chicago during the grubby season, which includes the months from January to June. Using the reports by States above given as a basis, it is estimated that fifty per cent. of the cattle received are grubby. The average value of a hide is put at \$100, and while from the report referred to one-third value is the usual deduction for grubby hides in this estimate, but \$1 is deducted, or less than one-third.

The number of cattle received in 1889 for the six months indicated was 1,112,026, giving a loss on the fifty per cent. of grubby animals of \$6,151,130. When to this is added the loss from depreciated value and lessened quantity of the beef, the amount for each infested animal is put at \$5, indicating a total loss on these animals from the attack of the fly of \$5,611,130.

For the life history, and description of form, habits and work of this insect see *EDUCATIONAL REVIEW*, Vol. I., No. 8, January, 1888.)

EDUCATIONAL

Educational and Industrial Drawing.

A primary free-hand manual, with four drawing-books to go with it, by Langdon S. Thompson, A. M., has been recently published by D. C. Heath & Co., Boston. The manual is wonderfully clever and original and is divided into two parts, viz: the introduction and the analysis of the four free-hand books which accompany it. Chapter I. deals ably with *The Study of Form; Analyzing Ideas of Form; Expressing Ideas of Form; Summary*, and ends with the pertinent question: *Is drawing for all?* We give the answer: "Since all must live in space and deal with it constantly, and since through the eye, the hand and the mind, all are put in communication with space, *Drawing*, the universal representative of the space-arts, is adapted to the wants and necessities of all; and the ability to learn to draw will be found to be as general as the faculty for learning any other art or subject." "Can everyone become a great artist? No! Likewise, if it is asked, can everyone become a great orator, a poet, or an author, the answer is still, No! But every ordinary person can learn to talk, to read and to write; and these are the means by which the orator, the poet and the