REMEDIES.

Many remedies are recommended for killing or extracting the grubs. As for the practice of killing the larvæ under the skin by injecting petroleum or applying mixtures to the back, I consider it unscientific, for when the larva dies, its body has to be absorbed. This is likely to take some time, and do the animal harm. The best method, undoubtedly, is to squeeze out the warble as early as possible, softening the skin first, in this way the wound will heal up rapidly. Moussu says that in Denmark the various agricultural societies engage men to go around and squeeze out the warbles early in the year; using a small knife to enlarge the opening when necessary. I do not know how tanners would view this, but should imagine the slight extra injury to the hide would be small, and that the resulting scar tissue would be less than is the case when the larvæ are left to come out by themselves. Of course in a small sea-girt country like Denmark, it is theoretically possible to eradicate the fly in this way, but I am afraid that in Canada, under present conditions, it would be an impossibility. Mixtures applied to prevent the fly laying, are according to all authorities, useless, and many of them are said to be injurious to the hides, and to the animals themselves.

In this country cattle are the favourite hosts of warbles, the only other animals I have seen affected are horses, but rarely so. Railliet records them also for sheep and man, but remarks that they do not seem to be found in any special part of the body, but wander about and do not reach maturity.

In the Southern States where dipping of cattle is extensively practised for the eradication of ticks, it has been found to result in preventing grubby hides, the dip evidently destroying the eggs or the newly hatched larvæ.

SPECIES OF WARBLES FOUND.

All the full grown warble maggots collected at Agassiz, proved to be those of *H. bovis*. Some of these came from cattle which originated in Eastern Ontario, and arrived here last December, so that this species should be found there also. Two larvæ collected at Mount Lehman, B.C., proved to be those of *H. lineata*. The two species are easy to differentiate by the aid of the spiny armature. In *H. bovis*, the segment in front of the tail (at which end are found the spiracles) is unarmed. In *H. lineata* the last segment is fully armed. There are other differences between the two species, which can be found in the various descriptions.

SUMMARY.

The annual loss to hides through warbles in Canada is between 25 and 30%. The percentage is based on the following:—

Percentage of grubby hides in warble season 56·55% (January to July, 6 months). This figure makes an average of 28·27% for the 12 months
The annual percentage of grubby hides is 34·22% .... 34·22%
The percentage of annual damage to hides is..... 19·62%
} = 27·4%

The warble-fly described here, for the first time in Canada, is *Hypoderma bovis* (De Geer.)

The egg is laid close to the skin at the base of the hair, and is cemented on by the ovipositor.

The eggs are laid on the legs.

These facts are of some importance, as for a remedy, some solvent material may be found for the cement, or as a repellant for the fly.