

WARBLE FLIES.

DESCRIPTION OF HYPODERMA LINEATUM

Hypoderma lineatum is a fly 12.7 mm. in length, with distinctive tail colouring of reddish orange. The under surface of the thorax and the anterior part of the abdomen are black, the wing veins nearly black and the alulae uniformly white. The lines on the anterior part of the thorax are bare and prominent, and the legs are rough and hairy. The distance between the eyes is 1.9 mm., the same as in *H. bovis*, which is the larger fly. (Plate I, figs. 1-3.)

SEASONAL PREVALENCE.

H. lineatum can withstand comparatively cold weather and occasionally has been seen ovipositing on cloudy days. In 1915, at Agassiz, the first flies were taken on April 15, and several more on April 22, 23 and 24. The period during which *H. lineatum* was active was eighteen days, and flies were either seen or caught on nine of those days. The only correspondingly early record seen in European literature is by Imms, who examined specimens in the British Museum and says that the specimens in the collection have dates varying from the end of April to the beginning of June. The deficiency, both in Canadian and in European literature, is probably due to the fact that the earlier fly, *H. lineatum*, causes so little annoyance to cattle, that collectors have not looked for it.

OVIPOSITION AND ITS PSYCHIC EFFECT ON ANIMALS.

H. lineatum irritates cattle much less than *H. bovis*; in fact, when gentle animals are being attacked, the disturbance among them is often very slight

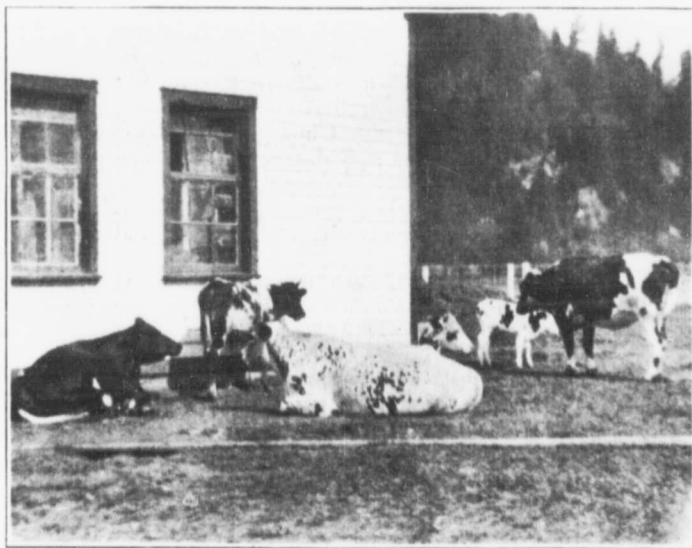


Fig. 4.—*H. lineatum* ovi-positing on the spotted cow in the foreground.
Note contented look of animals.

and may pass unnoticed by the casual observer. On the other hand, wild (range) animals, free to go where they please, exhibit a good deal more annoyance. Among gentle cattle the young ones will sometimes run or gallop, but the older