



## Cattle grubs

*Hypoderma lineatum*, **common cattle grub**;

*H. bovis*, **northern cattle grub**

**Description:** gray grubworms that appear in swellings beneath the skin on the backs of cattle during winter; these are the larvae of heel flies, robust flies that superficially resemble honey bees.

**Domestic animals affected:** cattle, almost exclusively (occasionally, horses and people have successfully hosted cattle grubs).

**Damage caused:** "Gadding" or wild running of cattle spooked by the buzzing and vibration of ovipositing female heel flies can cause injury. If numerous, grubs reduce efficiency and rate of gain. At slaughter, losses include holes in hides and carcass trim to remove grubs and injured tissue around warble sites.

**Development:** complete metamorphosis: egg, three larval (grub) instars, pupa, adult.

**Generational time:** one year

**Oviposition site:** eggs are attached to individual hairs of the host, mostly on the feet and lower parts of the hind legs, as the female fly hovers in flight.

**Larval habitat, feeding:** Newly hatched larvae crawl down the hair, penetrate the skin, and feed on host tissue as they migrate upward following intermuscular fascia. Still quite small, common cattle grubs spend their fifth, sixth, and seventh months in submucosal tissue of the esophagus and the northern species spend the corresponding time in tissues surrounding the spinal cord. Then they migrate to the back, form warbles beneath the skin, cut breathing holes in the skin, molt twice, and grow for one to three months at which time (late winter) the third instar grub emerges through the breathing hole to pupate on the ground.

**Adult habitat, feeding:** Heel flies do not feed, living only a few days to mate and for the females to seek hosts and oviposit their eggs.

**Method of dispersal or infestation:** Dispersal is by flight. Heel flies can fly several miles but are most successful if cattle are near where they emerge from puparia. Dispersal also occurs through host mobility and shipping grub-infested cattle.

**Seasonality:** In Kansas, heel flies oviposit in late March through mid- May; grubs form warbles in the back by December and January and emerge to pupate on the ground between late February and early April.

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