

f trees, and seem
experience. Owing
em, or nearly so,

the ox-fly, which it
and ash-coloured
bots.

with black. The
ipositor, which is

of sheep, in the
mention of by a

er "the sheep feels
appears the flock
shakes its head
same time strikes
en commences to
pass, and looking
of the *Cephalemia*
buried in dusty
their noses nearly
country, they are
r the ground, so

egg which hatches
ologist of Missouri,
it living maggots,
sheep. "On one
one fly, and Mr.
from one fly that
not find suitable
their bodies that
above observations
highly improbable,
to produce living
would be difficult

proceed at once
head is furnished,
irritation in their
branes which line
by their presence.
states that they
illness, or even at
ub in the head"

us to maintain the
e grub is capable
they combats most
inconvenience or
w, weak gait, the
ely secreted as at
d lowering of the
animal as the sheep

is subject? All these symptoms result from grub in the head, and the animal frequently gets too weak to rise, and finally dies. The grubs cannot live in the head of the sheep without causing great irritation by the spines with which the ventral region is covered, and the hooks with which they cling to such a sensitive membrane as that which lines the sinuses. Moreover, when numerous enough to absorb more mucus than the sheep secretes, the grubs will feed on the membrane itself, and (according to the evidence of some practical sheep men) will even enter to the brain, through the natural perforation of the ethmoid bone, through which pass the olfactory nerves; in either of which cases they must cause the most excruciating pain."

When the larva has reached maturity it descends the nostrils of the sheep and falls to the ground, where it finds a place of shelter amongst the roots of grass, or in the earth, and after contracting to half its former size undergoes the transformation into the pupa state. In this condition it is smooth, hard and tapering towards the head, the colour is black. After remaining quiescent from forty to fifty days, according to the climate, the fly pushes open the little lid or cap piece at the head of the cocoon and emerges in the perfect state. It is curious to note that their only instinct is the perpetuation of their species, for the perfect fly has no mouth and cannot therefore take any nourishment. Except when depositing their eggs the flies seem sluggish and inactive. Each female produces several hundreds of young. We may mention as a quaint tradition that the larvæ of bots found in the heads of sheep and goats used to be prescribed as a remedy for the epilepsy. The ancient Delphic oracle advised one Democritus who applied to it, as follows:

"Take a tame goat that hath the greatest head,
Or else a wilde goat in the field that's bred;
And in his forehead a great worm you'll finde,
This cures all diseases of that kinde."

Whether Democritus was cured does not appear, the story shows however that the ancients were aware that these maggots made their way even into the brain of living animals.

The common saying that a whimsical person is *maggoty*, or has got *maggots in his head*, perhaps arose from the freaks the sheep have been observed to exhibit when infested by these bots.

Remedies.

Various methods of prevention have been adopted. Randall says that "some farmers turn up the soil in portions of their pasture, so that the sheep may thrust their noses into the soft ground on the approach of the fly, while others smear their noses with tar or cause them to do so themselves." "But," adds Mr. Riley, "as the fly is very persevering, and generally attains her object, the means to be depended on the most is, the dislodging of the 'grub' or larva and so far lime has been thought to be the most effectual, and should be given them that they may, by sniffing it, cause sneezing, and in many cases dislodge the grub. Some sheep breeders are in the habit of fixing salt logs in their pastures of sufficient length to enable all the sheep to get at them. Into these logs at distances of five or six inches, holes are bored with a two inch augur, and during the fly season a little salt is kept in these holes, while every two or three days tar is smeared around them with a brush. The sheep in obtaining the salt smear their noses with the tar, the odour of which keeps away the flies."

Mr. Verrill states that "when the larvæ have actually entered the nostrils in large numbers, they may be removed to a considerable extent by a feather wet with oil of turpentine, camphor, or a weak solution of carbolic acid or creosote. Salt water or diluted carbolic acid may also be injected into the nose with a syringe. It is doubtful, however, whether any remedies will reach the larvæ which have taken up their abode in the more remote cavities in the bones of the forehead and beneath the basis of the horns; therefore it is better to apply these remedies early and often, if necessary."

NOTE.—The Council of the Entomological Society of Ontario regret to state that the President, the Rev. C. J. S. Bethune, has been prevented, by severe domestic affliction, from completing his portion of the report in time for publication. It will, they trust, be embodied in that for the ensuing year.