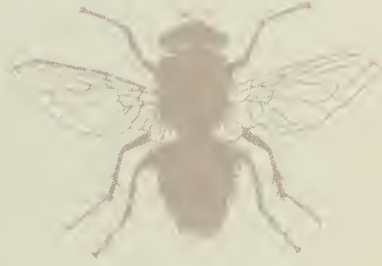
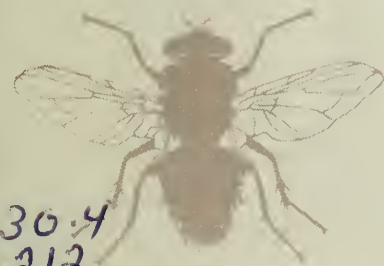
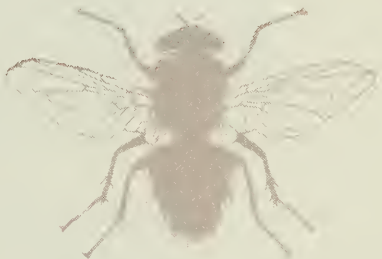
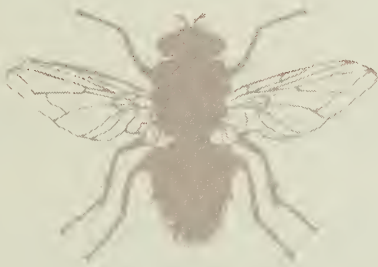


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THE SHEEP BLOWFLY

and its control in Newfoundland

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The sheep blowfly¹ is an insect pest that creates a serious problem for sheep breeders in Newfoundland. Often half the animals in unprotected flocks are struck during severe outbreaks. The blowfly was first reported attacking sheep at Bell Island, Conception Bay, in 1953, and since then it has spread to all sheep-breeding areas in the province. Improved flock management, the development of controlled community pastures, and the more frequent use of insecticides have helped reduce the destructiveness of this pest on sheep in Newfoundland. This pest causes severe economic losses each year in Great Britain, Sweden, Norway, Denmark, and the European low countries. A related species causes similar damage in Australia and New Zealand. The rapid spread in Newfoundland of primary sheep strike indicates that this pest may present a serious problem in other parts of Canada where other species of blowflies are troublesome.

Blowflies belong to a family that is distributed throughout the world. Most species live in dead or decaying matter, but a few species attack living sheep and cause losses amounting to millions of dollars annually.

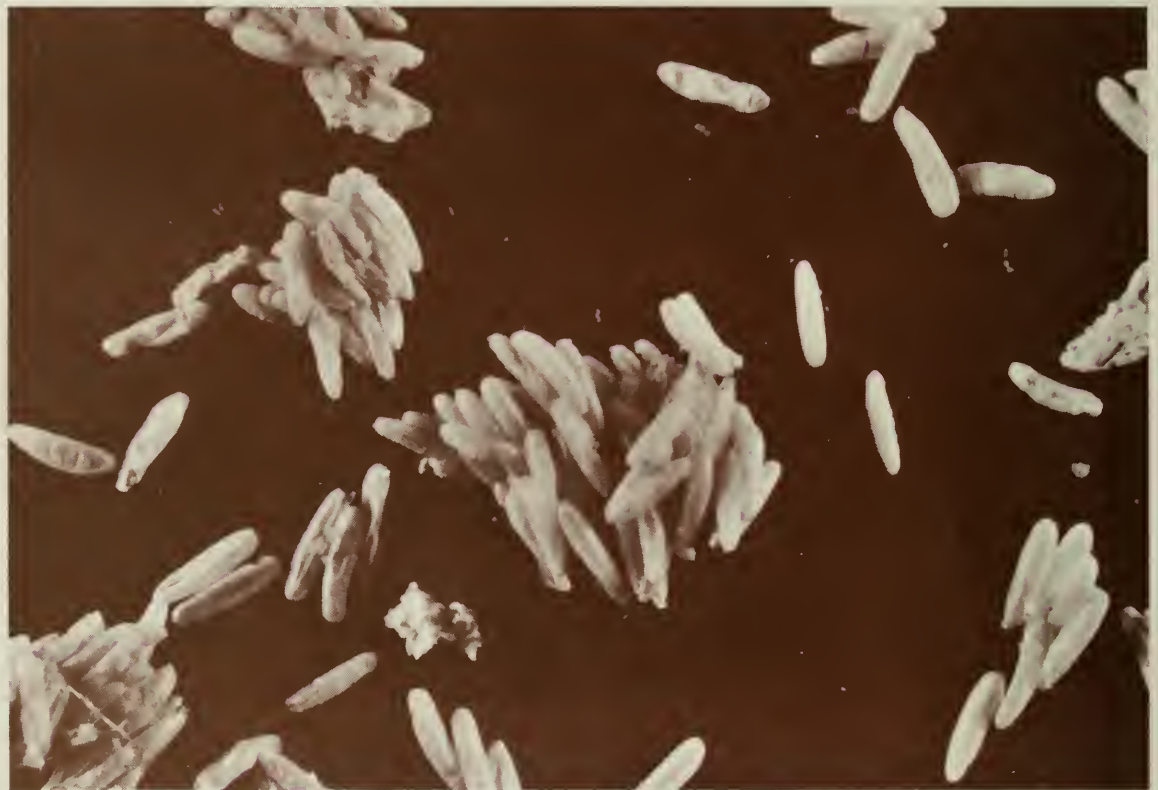
Blowflies are the worst insect pests of sheep in warm countries such as Australia and South Africa. In the United States, losses attributed to blowflies that attack sheep are estimated at five to seven million dollars annually. Losses in Canada are less severe, but they are serious in some areas when conditions for sheep strike are favorable. Attacks usually occur in sunny intervals during prolonged warm, wet, humid, foggy weather. Sheep with tabs of soiled wool are most attractive to the egg-laying female blowfly, but clean healthy sheep are also frequently attacked. Strikes occur most often along the top line of the victim (Fig. 5), but may occur on any part of the animal.

¹*Phaenicia sericata* (Meigen). This species is commonly called the sheep blowfly in Newfoundland. Its official common name is the English sheep fly.



Fig. 1 Adults of the sheep blowfly. *Left*, female; *right*, male.

Fig. 2 Eggs of the sheep blowfly.



DESCRIPTION AND LIFE HISTORY

The sheep blowfly has four developmental stages: the egg, the larva or maggot, the pupa, and the adult or fly. There are four or five generations each year in Newfoundland.

Flies begin to emerge during the last 2 weeks of June, depending on the season, and the adults are active in the field until mid-October. The fly (Fig. 1) is metallic green and slightly larger than a house fly. It is sometimes called the greenbottle fly.

The female prefers to lay her eggs (Fig. 2) in soiled wool or wounds but it may lay them on clean, healthy animals. Each female can produce as many as 500 eggs. They are yellowish white and are deposited in clusters of 20 or more. In warm weather the egg hatches into a maggot in one day, but during cold weather several days may be required. The whitish maggot (Fig. 3) is blunt at the hind end, but tapers sharply to the head, which is provided with a pair of small, black hooks for tearing the flesh. The maggot produces from its mouth a slimy saliva that liquefies the flesh and enables it to obtain nourishment for its rapid development. It becomes full-grown in about 7 days. The maggot then drops to the ground and pupates within a leathery case (Fig. 4). The pupal period may last as long as 3 weeks during the summer months, and then the fly emerges to start the cycle over again. The insect overwinters as a pupa in the soil.

Fig. 3 Full-grown larvae or maggots of the sheep blowfly.





Fig. 4 Pupae of the sheep blowfly.

SYMPTOMS OF STRIKE

The sheep does not react immediately to the female fly laying her eggs in the wool. However, when the eggs hatch and the young maggots begin to crawl over the skin, the animal becomes very irritated. As the maggots develop they severely inflame the skin, causing the wool to hang loosely and eventually fall off. At this stage the animal shows great uneasiness and tries to bite the site of infestation.

Once an animal has been struck it attracts other female blowflies and repeated attacks occur. The maggots cause severe ulceration as they penetrate deep into the flesh of the animal. At this advanced stage of attack, the infested animals refuse to feed and tend to isolate themselves from the flock.

It is difficult to identify the early stage of attack without carefully examining each animal in the flock. Later stages can be identified because the wool around the strike appears moist and darkened before it falls off.

PREVENTIVE MEASURES

Because clean, healthy sheep are less susceptible to attack than dirty ones, be sure to carry out the following safeguards.

- Have sheep clean-shorn by June 30.



Fig. 5 Sheep struck on foreshoulder (after treatment).

Fig. 6 Sheep struck on flank and near tailhead (after treatment).



- Control sheep keds (ticks) and internal parasites.
- Avoid rough handling of sheep, since small cuts and wounds attract blowflies. If possible, dock and castrate lambs before fly time, which is about June 1.
- Clip out the wool from all regions around the tail and down the back legs to the hocks.
- Avoid sudden changes in feed that may cause animals to scour, and keep sheep away from garbage.
- Remove all dirty tabs and soiled or matted wool.
- Dispose of all dead animals by burning or burying to a depth of at least 1.2 m (4 ft). If possible, cover with lime or a lye solution to prevent blowflies from breeding in the carcasses.

CARE AND TREATMENT OF INFESTED SHEEP

Prompt treatment is necessary when animals have become infested with maggots because permanent injury or even death may follow in a short time.

The following procedure is recommended:

1. Remove infested sheep from the flock and enclose them in a small yard near the farm buildings. If infested sheep are running at large, have them impounded.
2. Clip the wool from the outside toward the wound so that you do not move the maggots to a new site.
3. If the wound is moist, dry it with a clean cloth.
4. Apply an antiseptic such as Dettol directly to the wound. This brings the maggots to the surface and kills them. Registered smears containing an insecticide, pine oil, and xylene may be substituted for Dettol in treating struck animals.
5. Dress wounds with an antiseptic dusting powder.

CONTROL

Insecticides are available for the control of blowflies and, if properly used, they provide adequate protection. Contact your nearest agricultural representative, Provincial Department of Forestry and Agriculture, or the Research Station for a copy of the latest edition of the protection guide, *Insect and parasite control in livestock*. Only use the recommended insecticides and carefully follow the instructions listed on the label.

Dipping tanks may be built of concrete (Fig. 7), wood, or galvanized iron. Farmers with small flocks may improvise and use an old bath tub or a large wooden tub. However, for all kinds of tanks, adequate drainage boards must be provided to prevent loss of dip



Fig. 7 Dipping tank and holding pens. Note drainboard in foreground to conserve dip solution.



Fig. 8 Shepherd examining a struck animal in a flock, Bay Roberts Community Pasture.

solution. Plans and specifications for dipping tanks may be obtained from the Provincial Department of Forestry and Agriculture, Confederation Building, St. John's, Newfoundland.

Cautions: In areas where the sheep blowfly has never been a problem, it is best to avoid using an insecticide. But if you do use one, follow all the advice listed on the insecticide label. Wear rubber gloves and protective clothing when dipping sheep. A stated interval is required between the last dipping and the slaughter of treated animals. Keep to this interval to avoid residues that would render the meat unfit for sale. Never empty the contents of dipping tanks in or near ponds or streams.

INQUIRIES

For more information, consult your agricultural representative or write to the Research Station, Agriculture Canada, St. John's West, Newfoundland.

Note: The brand name "Dettol" is mentioned in this publication because the chemical name is difficult for general use, and there is no official common name for the active ingredient.

CONVERSION FACTORS FOR METRIC SYSTEM

Imperial units	Approximate conversion factor	Results in:	
LINEAR			
inch	x 25	millimetre	(mm)
foot	x 30	centimetre	(cm)
yard	x 0.9	metre	(m)
mile	x 1.6	kilometre	(km)
AREA			
square inch	x 6.5	square centimetre	(cm ²)
square foot	x 0.09	square metre	(m ²)
acre	x 0.40	hectare	(ha)
VOLUME			
cubic inch	x 16	cubic centimetre	(cm ³)
cubic foot	x 28	cubic decimetre	(dm ³)
cubic yard	x 0.8	cubic metre	(m ³)
fluid ounce	x 28	millilitre	(ml)
pint	x 0.57	litre	(ℓ)
quart	x 1.1	litre	(ℓ)
gallon	x 4.5	litre	(ℓ)
bushel	x 0.36	hectolitre	(hl)
WEIGHT			
ounce	x 28	gram	(g)
pound	x 0.45	kilogram	(kg)
short ton (2000 lb)	x 0.9	tonne	(t)
TEMPERATURE			
degrees Fahrenheit	(° F-32) x 0.56 or (° F-32) x 5/9	degrees Celsius	(° C)
PRESSURE			
pounds per square inch	x 6.9	kilopascal	(kPa)
POWER			
horsepower	x 746	watt	(W)
	x 0.75	kilowatt	(kW)
SPEED			
feet per second	x 0.30	metres per second	(m/s)
miles per hour	x 1.6	kilometres per hour	(km/h)
AGRICULTURE			
gallons per acre	x 11.23	litres per hectare	(ℓ/ha)
quarts per acre	x 2.8	litres per hectare	(ℓ/ha)
pints per acre	x 1.4	litres per hectare	(ℓ/ha)
fluid ounces per acre	x 70	millilitres per hectare	(ml/ha)
tons per acre	x 2.24	tonnes per hectare	(t/ha)
pounds per acre	x 1.12	kilograms per hectare	(kg/ha)
ounces per acre	x 70	grams per hectare	(g/ha)
plants per acre	x 2.47	plants per hectare	(plants/ha)

Examples: 2 miles x 1.6 = 3.2 km; 15 bu/ac x 0.90 = 13.5 hl/ha

