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THE SCREW-WORM FLY

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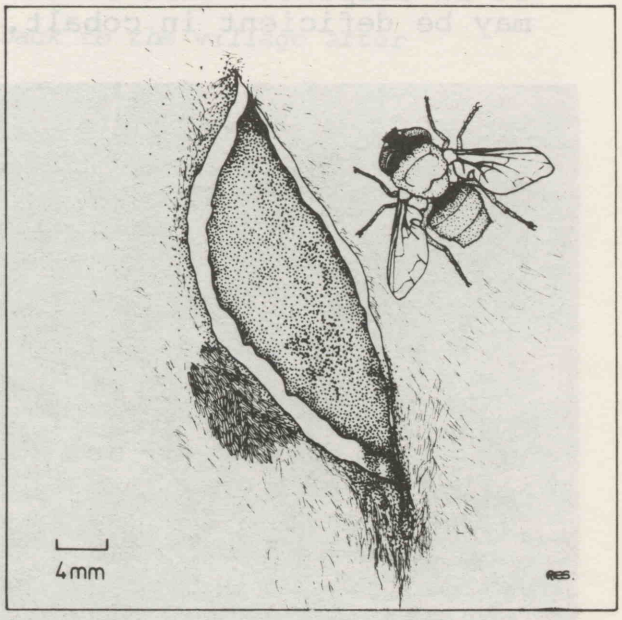
INTRODUCTION

The screw-worm fly (*Chrysomya bezziana*) is one of the most important pests of livestock in Papua New Guinea but it also attacks household pets such as cats and dogs, wildlife, such as wallabies and deer, and man. Damage to the host animal is caused by the larvae or maggots (young stages) of the fly which feed on living flesh, producing large holes with a resulting loss of muscle and blood. Affected animals lose condition and may be maimed, made infertile or die.



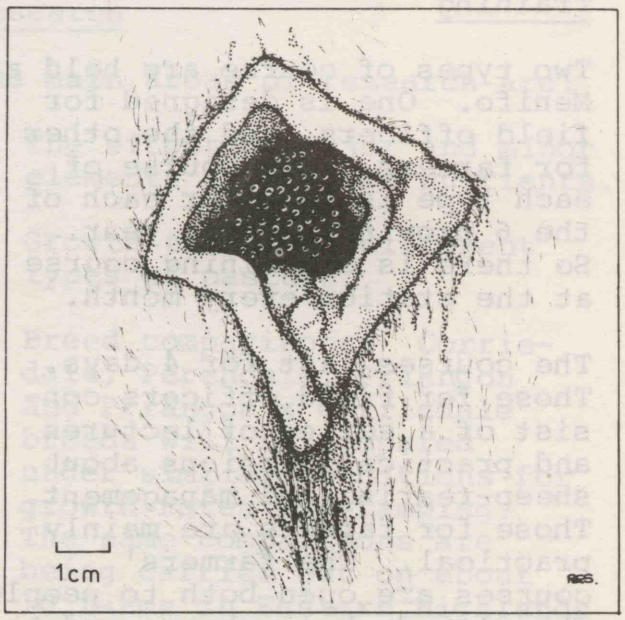
The screw-worm fly lays eggs on the outer edges of wounds.

DESCRIPTION AND LIFE CYCLE

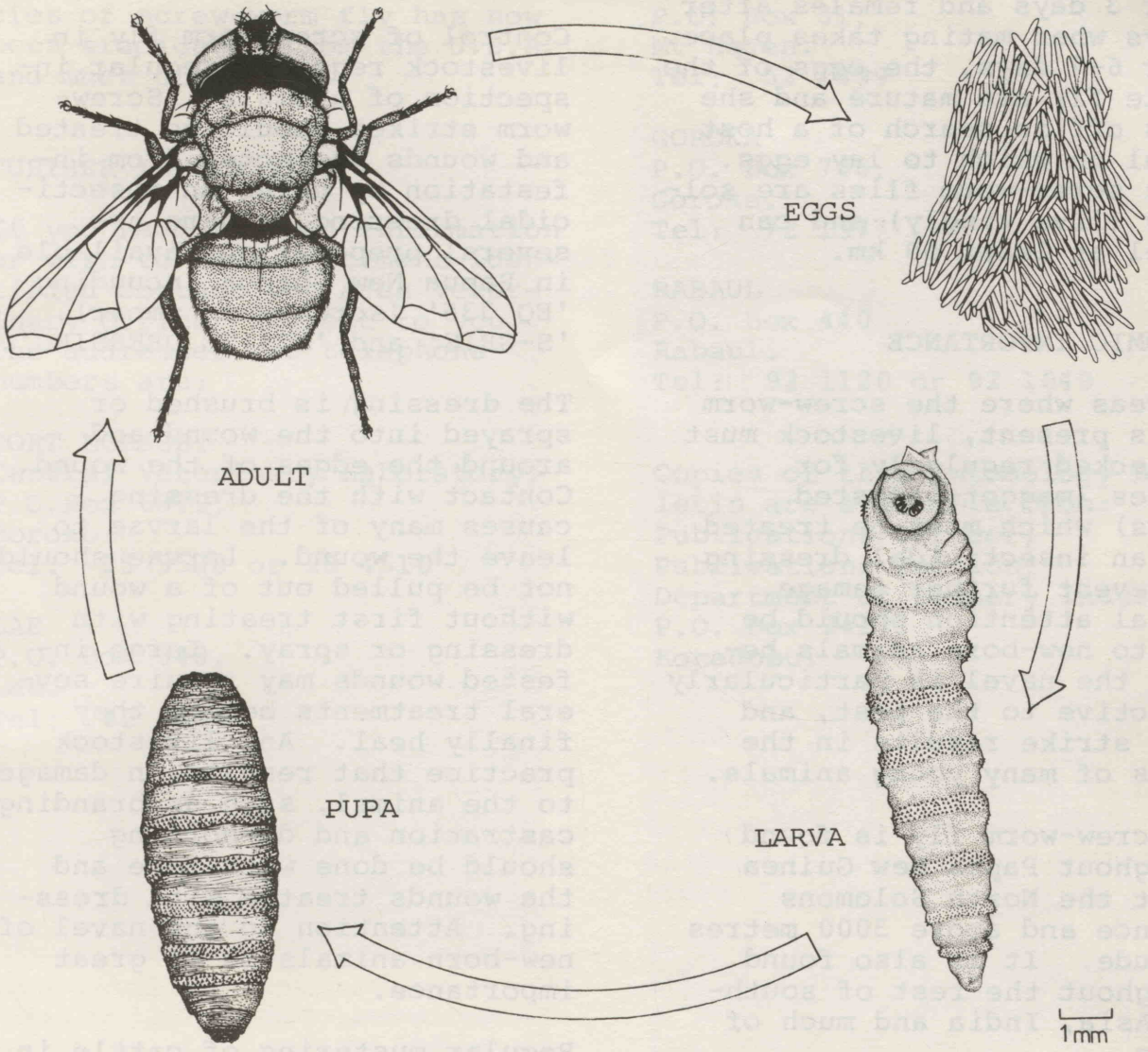
The adult fly is about 8 mm long with a shiny blue body and orange eyes. The adults are difficult to distinguish from related flies which live on dead animals.

Female screw-worm flies lay 150 -200 eggs on the dry edges of wounds or body openings. They are laid only on living animals. The mass of eggs is white, with the eggs glued to each other and to the host's body. The eggs hatch in 10-14 hours and the small larvae move to the wound and begin feeding in groups on the blood and other fluids.

As they grow, the larvae burrow into the flesh with their heads



A group of screw-worm fly larvae feeding inside a wound.



Stages in the life cycle of the screw-worm fly

(pointed end) deep in the wound and their tails (blunt end) at the surface so that they can breathe. The larvae have rows of thorn-like spines on their bodies which give them the appearance of a screw - hence their name. These spines help the larvae dig into the wound and prevent them from being pulled out. The larvae are white in colour, becoming pink after 6-8 days of feeding on the animal. The wound has a distinctive smell, like 'vegemite' and urine.

The mature larvae wriggle out of the wounds, drop to the ground and burrow into the soil where they change into puparia (resting stage). The puparium is a dark brown case formed from the larval skin. Within the puparium, the larva changes into the adult after 7-10 days. Adult flies emerge mainly at dawn, or during the early

morning. Male flies mature after 3 days and females after 4 days when mating takes place. After 6-7 days, the eggs of the female fly are mature and she flies off in search of a host animal on which to lay eggs. Adult screw-worm flies are solitary (live singly) and can travel at least 50 km.

ECONOMIC IMPORTANCE

In areas where the screw-worm fly is present, livestock must be checked regularly for strikes (maggot-infested wounds) which must be treated with an insecticidal dressing to prevent further damage. Special attention should be paid to new-born animals because the navel is particularly attractive to the pest, and navel strike results in the deaths of many young animals.

The screw-worm fly is found throughout Papua New Guinea except the North Solomons Province and above 3000 metres altitude. It is also found throughout the rest of south-east Asia, India and much of Africa.

The pest does not occur in Australia, although known infestations in the Western Province are only 195 km across the Torres Strait from mainland Australia.

There is a threat of screw-worm fly getting into Australia and causing damage to the livestock industry there. Because of this, C.S.I.R.O., the Australian Government research organisation, has been studying the screw-worm fly since 1973 at its laboratories in Port Moresby. The aim is to find ways of controlling the pest. These could be applied immediately in Papua New Guinea where this insect is a major pest.

CONTROL

Control of screw-worm fly in livestock requires regular inspection of animals. Screw-worm strikes should be treated and wounds protected from infestation by using an insecticidal dressing. There are several preparations available in Papua New Guinea incuuding 'EQ 335' (screw-worm smear), 'S-GRIS' and 'STRIKE DRESSING'.

The dressing is brushed or sprayed into the wound and around the edges of the wound. Contact with the dressing causes many of the larvae to leave the wound. Larvae should not be pulled out of a wound without first treating with dressing or spray. Large infested wounds may require several treatments before they finally heal. Any livestock practice that results in damage to the animal, such as branding, castration and de-horning should be done with care and the wounds treated with dressing. Attention to the navel of new-born animals is of great importance.

Regular mustering of cattle in well constructed yards results in quieter animals which do not damage themselves and can be inspected properly and treated more efficiently.

The C.S.I.R.O. Division of Entomology is now developing a method for eradicating the screw-worm fly. The method is called the Sterile Insect Release Method (SIRM). It involves rearing large numbers of flies artificially, making them sterile (unable to produce young) by exposure to radiation and releasing them from aircraft over infested areas. The sterile males mate with wild females which then lay eggs which fail to hatch. The method was first developed in

the U.S.A. The American species of screw-worm fly has now been eradicated from the U.S.A. and much of Mexico.

FURTHER INFORMATION

If you need further information or wish to have specimens identified contact the Area Veterinary Officer nearest to you. The addresses and telephone numbers are:

PORT MORESBY
Central Veterinary Laboratory,
P.O.Box 6372,
Boroko.
Tel: 25 3588 or 25 4510

LAE
P.O. Box 348,
Lae.
Tel: 42 3844

MT HAGEN
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Mt Hagen.
Tel: 52 1899

GOROKA
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Goroka.
Tel: 72 1977

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