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BUFFALO FLY

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INTRODUCTION

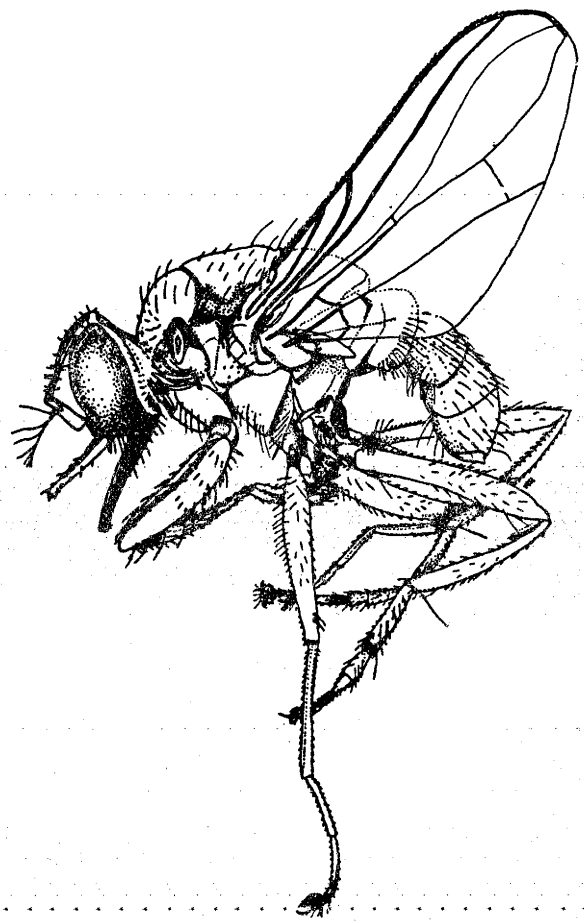
The buffalo fly, *Haematobia irritans exiqua*, is a parasite of cattle, buffalo and horses in some parts of Papua New Guinea. A parasite is an organism which lives by feeding on another live animal. The animal on which the parasite lives is called the host.

Buffalo flies are always found in close contact with their hosts. They feed on the blood of the hosts.

The buffalo fly was introduced with cattle into a few parts of Papua New Guinea, about 40 years ago. It has recently spread into other parts of the country as new roads have been opened.

DESCRIPTION

The buffalo fly is small (about 3 mm long), grey or brown, with clear wings which are usually held at an angle to the body when the fly is at rest. It has long mouthparts which it uses to pierce the skin of its host and to suck up blood.



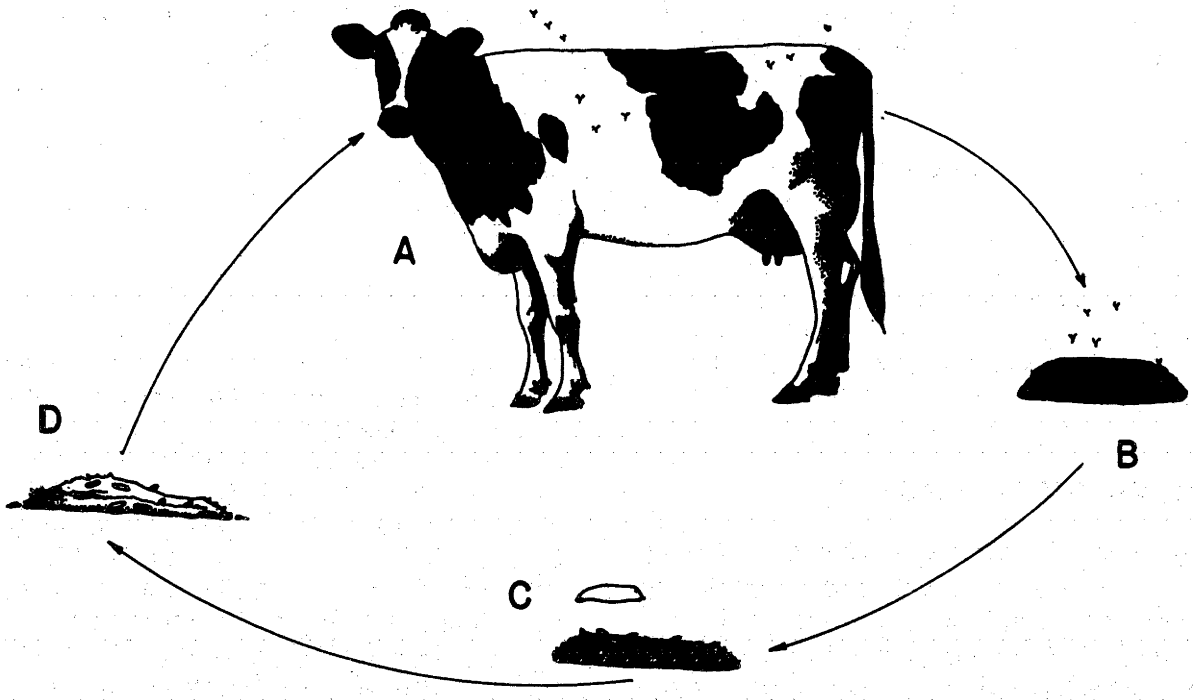
Adult buffalo fly, about 20 times actual size.

BIOLOGY

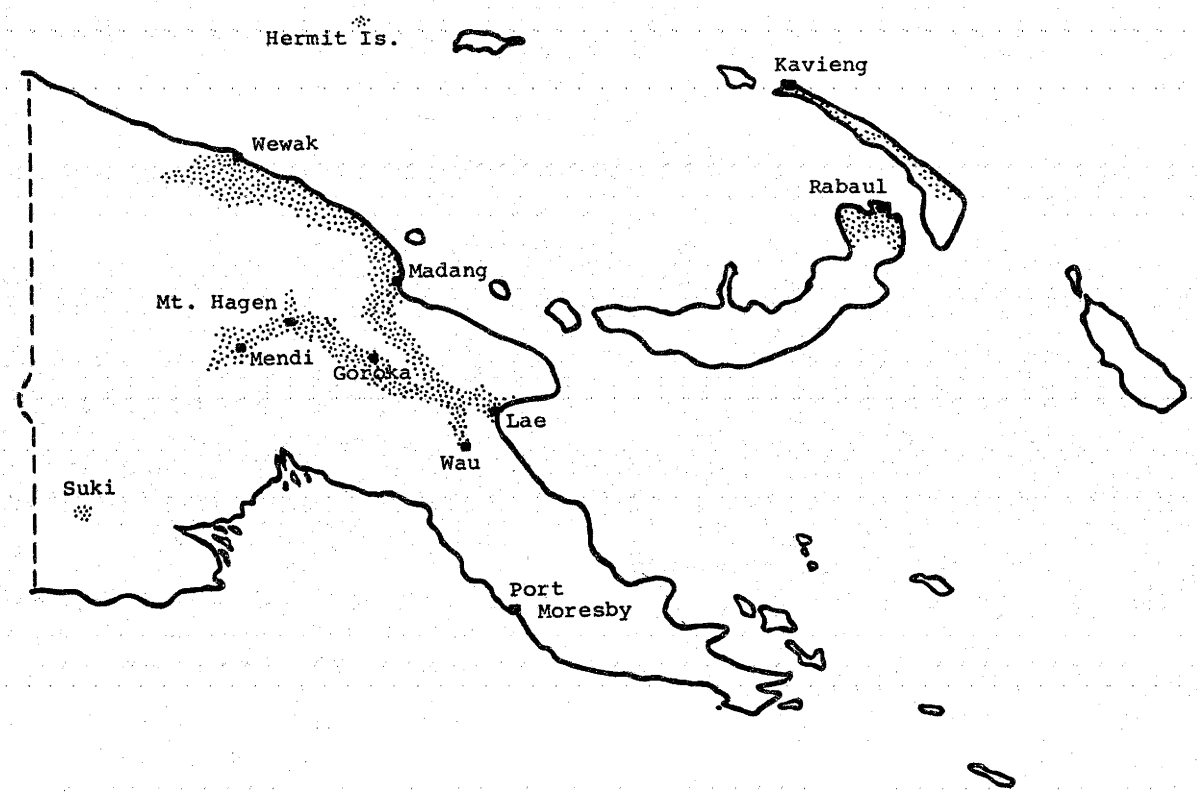
The adult female fly must feed on blood before it can lay eggs. The eggs are laid only on the fresh dung of cattle or buffalo. Larvae hatch from the eggs after about 24 hours. The larvae feed on the dung until they are mature. This takes 4 days. It may take longer in the cooler highlands.

The mature larvae leave the dung and burrow into the soil. Here they pupariate (enter the resting stage).

The puparium (resting stage) becomes an adult fly in 4 days to 3 weeks. The time depends on the weather. The adult fly lives for no more than a few weeks, but cannot live for more than 1 day away from cattle.



The life cycle of the buffalo fly. A. Adult flies on cow. B. Eggs are laid on fresh cow dung. C. Larvae (early stages) develop in the dung. D. Larvae pupariate (enter the resting stage) under or near the cow manure. When the flies emerge, they move onto the cow.



The shaded areas show the places where buffalo fly is found in Papua New Guinea.

In warm, damp conditions the life cycle from egg to adult can take only 7-11 days. In cool or dry conditions the life cycle can take much longer.

The adult buffalo flies do not often leave the host animal, except to move to another part of the body for feeding, or to lay eggs on cattle dung. If disturbed they fly up, then settle back on the animal in a few seconds. They are found in the largest numbers on the shoulders, back and sides of cattle.

ECONOMIC IMPORTANCE

The buffalo fly is important because it sucks the blood of cattle and often large numbers are found on individual animals. When very large numbers are present, they cause great irritation. The cattle spend their time trying to get rid of them by shaking their heads, flicking their tails and walking through bushes. This means that less time is spent in grazing. Over a long time this causes a slowing down in the rate of fattening.

Cattle that have buffalo fly often rub themselves against hard objects to ease the irritation. The rubbing can lead to sores which attract more buffalo flies. The sores can also lead to attack by the screw-worm fly (see Entomology Bulletin No. 12). Bulls and sick cattle are more attractive to buffalo fly than other types of cattle. Also, dark coloured individuals seem to have more flies than light ones. Brahman cattle seem to be less affected than British breeds.

The buffalo fly is usually a parasite of cattle and buffalo, but it can also be found on horses. Sometimes buffalo flies try to feed on man, sheep, pigs and dogs. There is no accurate information about losses caused by buffalo fly in the cattle industry.

CONTROL

Biological control

A method of biological control has been tried in Papua New Guinea and Australia. The method uses several kinds of dung beetles. These beetles bury dung in the soil, and make the dung unsuitable for the buffalo fly to live in. D.P.I. entomologists have introduced dung beetles into many parts of Papua New Guinea. If there are none in your area, contact the nearest D.P.I. entomologist to arrange a shipment.

Chemical control

Although dung beetles help to reduce the number of buffalo flies, better control is given by using chemicals. Several chemical sprays are used to control buffalo fly in Papua New Guinea. Anyone who wants to have cattle sprayed against buffalo fly should contact their nearest Veterinary Officer or Provincial Livestock Officer for further advice. Addresses of Area Veterinary Officers are given below.

Another method of chemical control is to use special eartags which have insecticide in them. These work well in controlling buffalo fly. However, they are rather expensive and they work for only about 4 months.

Preventing the spread of buffalo fly

If cattle are moved from one area to another, they should be sprayed. This makes sure that buffalo flies are not carried with them. One reason why buffalo fly has spread to various parts of Papua New Guinea is that cattle with buffalo fly have been carried on trucks by road without first being sprayed correctly.

REMEMBER:

1. If you wish to move livestock, you must have a permit. A stock inspector will make sure that the animals are sprayed properly against buffalo fly before a movement permit is issued.

2. A copy of the permit must go with the animals and is given to the stock inspector when they arrive.

3. Trucks that have carried livestock should be cleaned out with water, to remove all dung, before the truck returns.

If you are not sure whether buffalo fly is

present in your area, then collect the flies found on cattle. The easiest way to do this is to use an insect net in several sweeping actions over the backs of the cattle.

Put any insects caught in a small bottle, with some formalin, if you have any. Send the insects to:

The National Veterinary Laboratory
D.P.I. Kila Kila
P.O. Box 6372
BOROKO
Tel: 217931

FURTHER INFORMATION

For further information on buffalo fly and other insect pests of cattle, you should contact your nearest D.P.I. entomologist, or Area Veterinary Officer, or the National Veterinary Laboratory. Entomologists are based at:

PORT MORESBY
D.P.I., P.O.Box 417, KONEDOBU
Tel: 214699 Ext. 255

LAE
Bubia Agriculture Research Centre
P.O. Box 1639, LAE
Tel: 451058

MOUNT HAGEN
Kuk Agricultural Research Station
P.O. Box 339, MOUNT HAGEN
Tel: 551377

KIMBE
Dami Oil Palm Research Station
P.O. Box 165, KIMBE, W.N.B.P.
Tel: 935204

RABAUL
Lowlands Agricultural Experiment Station
P.O. Keravat, E.N.B.P.
Tel: 926251

Area Veterinary Officers are based at:

D.P.I. Kila Kila
P.O. Box 6372, BOROKO
Tel: 217141

D.P.I. 3 Mile
P.O. Box 73, LAE
Tel: 423844

D.P.I.
P.O. Box 766, GOROKA
Tel: 721977

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(Illustrations p. 78, p. 79 (life cycle): Michelle Kelly)