ANIMAL HEALTH NOTES: NO 1.

THE CATTLE TICK

By I.L. Owen, National Veterinary Laboratory, Kila Kila

INTRODUCTION

The cattle tick, *Boophilus microplus*, is a parasite which lives on the skin of cattle or deer. It is also sometimes found on horses, sheep and dogs. It lives by sucking the blood of its host. An organism which lives by feeding off a living animal is called a parasite. The animal on which the parasite lives is called the host.

Cattle ticks can cause two kinds of problems for their cattle hosts.

1. Large numbers of ticks on an animal can cause the animal to lose weight and be in poor health.

2. Cattle ticks can pass on diseases to their hosts. These diseases are called 'tick fevers'. They are similar to malaria in man. As a result of 'tick fevers' animals can become anaemic (not enough red cells in the blood), very sick and often die.

A beast heavily infested with cattle ticks

DESCRIPTION AND BIOLOGY

Cattle ticks are most often seen when they are full of blood in the adult stage. The adult female tick, when fully fed is about the same size as the nail of your small finger. It is grey brown, with 4 pairs of short legs, and a small head.

The male is much smaller than the female, and is more active.

Life cycle

When the female tick is fully fed with blood, it falls off its host. On the ground, it lays many eggs (more than 2000) and then dies. Tiny, reddish-brown larvae hatch after 4-5 weeks. The larvae climb up blades of grass or other plants. Here, they wait for a warm-blooded animal to touch them. The larvae can very easily feel the heat of an animal's body and quickly attach themselves. If the animal is a cow or deer, the larvae pierce the skin and start feeding by sucking blood. If the animal is not a suitable host, e.g. man, pigs, birds, the larvae will die.

Larvae can live for up to 6 months without feeding, in cool, sheltered places, e.g. at Sogeri. In drier areas like Port Moresby they can live for up to 3 months only.

After feeding for 6 days, the larvae moult (sheds their outer skin). They are now called nymphs. The nymphs are the same size as the larva at first. When a cow has many larvae and nymphs on it, its skin feels rough like sandpaper.

The nymphs feed for 6-8 days, then moult again to become adult male or female

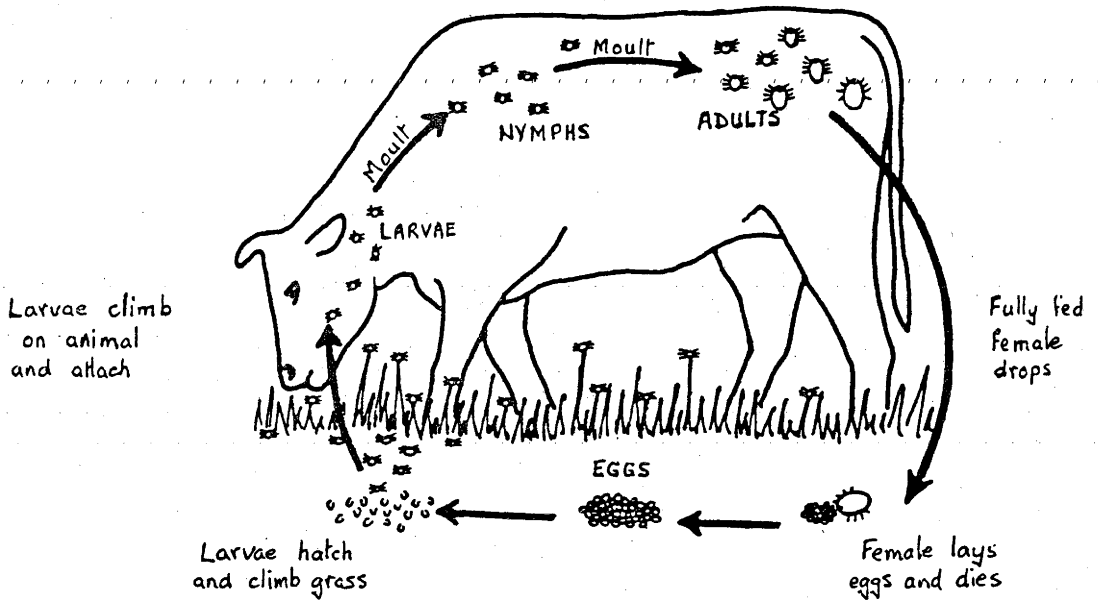
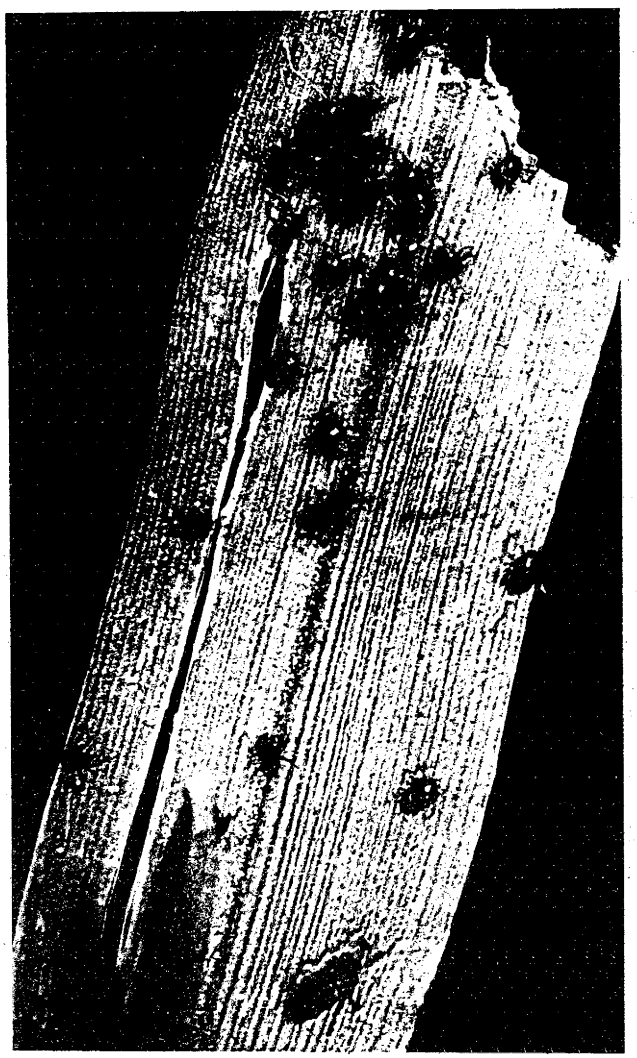


Diagram of the life cycle of the cattle tick



Cattle tick larvae on a blade of grass

ticks. The female ticks feed for 7-10 days. When fully fed they fall to the ground. The male ticks are more active. They look for females and mate with them.

It takes 19-26 days for a larva to become a fully fed female, from the time the larva starts to feed.

As the larvae are so small, they can be scattered by wind. They can also be spread from one area to another on the fur of animals or in people's clothes.

DISTRIBUTION

Thirty to forty years ago, the cattle tick was found everywhere in Papua New Guinea where there were cattle. A government programme to eradicate (get rid of) cattle tick was successful in most parts of the country. Today cattle tick is found in a few areas in Milne Bay Province, in Central Province around Port Moresby, and in the Trans-Fly area of Western Province.

Ticks are still found in these areas for the following reasons:

In the Milne Bay Province, there are wild cattle which cannot be caught and treated. Ticks spread from these to other cattle.

Around Port Moresby and in the Trans Fly area, wild deer sometimes graze the same pasture as cattle. The deer carry cattle ticks which can re-infest cattle, even after they have been treated with insecticide.

ECONOMIC IMPORTANCE

It is important that cattle tick is stopped from spreading because:

1. Cattle tick leads to a drop in cattle production. This would slow down Papua New Guinea's effort to become self sufficient in beef.

2. The tick spreads tick diseases which would affect the health of cattle and lead to many cattle dying.

3. Farmers would have to spend a lot of money to buy insecticides to kill ticks and vaccines to fight tick disease.

4. If another tick eradication campaign had to be carried out, it would cost the country a lot of money.

CONTROL OF CATTLE TICK

Cattle tick must be prevented from spreading from one area to another. Also, in the areas where it is already present, it must be treated.

Prevention of spread

D.P.I stops the spread of cattle tick by controlling the movement of animals. Movement of cattle and deer from the Central and Western Provinces to other parts of the country is not allowed. Movement of cattle from the affected areas of the Milne Bay Province is also not allowed.

Cattle ticks are sometimes found on other animals. Therefore movement of dogs, goats, sheep, horses, wallabies, etc., from the affected provinces is strictly controlled. Before they can be moved, a stock inspector examines them. If they are tick-free, the inspector writes out a movement permit. Sometimes animals must be treated with insecticide and kept in quarantine for 3 weeks before a permit is written.

Treatment

The only way to kill ticks on cattle is by treatment with insecticide.

In areas which already have cattle tick, information on spraying and the type of insecticide to be used can be obtained from the Provincial Livestock Officer, or the Area Veterinary Officer.

If cattle tick spreads to a new area, the Area Veterinary Officer will give advice and instructions to the Provincial Livestock staff on how to carry out an eradication campaign.

Resistance of cattle to tick

Brahman breed cattle usually carry fewer cattle ticks than British breeds. Cattle with 50% or more Brahman blood show better resistance to cattle tick. However even cattle with good resistance often carry a few ticks. These are found especially around the base of the tail and on the inside of the legs.

WHAT YOU SHOULD DO IF YOU FIND A TICK ON AN ANIMAL

Different kinds of ticks are found on animals in Papua New Guinea. It is difficult to tell one type from another. If you find any ticks on domestic or wild animals, they should be collected and sent in a small jar or bottle to:

The National Veterinary Laboratory
D.P.I., P.O. Box 6372
BOROKO

(Telephone: 21 7931)

Here, they will be checked and identified.

This is very important. If cattle tick does spread to a new area, an eradication programme must be started as soon as possible.

FURTHER READING

Rural Development Series Handbook No. 16. *Cattle.* Department of Primary Industry, Port Moresby (1980).

FURTHER INFORMATION

For further information on the cattle tick, contact the National Veterinary Laboratory at the above address or your Area Veterinary Officer. AVO's are based at:

1. D.P.I. KilaKila
   P. O. Box 6372
   BOROKO
   (Telephone: 21 7141).

2. D.P.I. 3 Mile
   P. O. BOX 73
   LAE
   (Telephone: 42 3844).

3. D.P.I.
   P. O. Box 766
   GOROKA
   (Telephone: 72 1455).

Copies of this Animal Health Note can be obtained by writing to Publications Section, D.P.I., P. O. Box 417, Konedobu.