Ticks affecting animals in Australia

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Recommended Citation
Shilkin, J (1960) "Ticks affecting animals in Australia," Journal of the Department of Agriculture, Western Australia, Series 4: Vol. 1 : No. 1 , Article 22.
Available at: https://researchlibrary.agric.wa.gov.au/journal_agriculture4/vol1/iss1/22

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While there are many external parasites affecting animals in Australia, information in regard to their geographical distribution and incidence is far from complete. However, there is little doubt that the ticks, and in particular, the cattle tick, are the most important of these parasites in Australia. We are fortunate that many species are not present in this country, as some of them are carriers of serious diseases of both man and animals.

Certain of the ticks not present in Australia are confined to Europe, Africa or the American Continent, but some occur in South-East Asia or the islands between there and Australia. In the early period of settlement of Northern Australia, cattle, buffaloes and horses were imported from the East and from early times a miscellaneous collection of native vessels commonly carrying dogs, pigs and goats have visited North Australian ports and coastal aboriginal settlements, in the course of trading operations. It seems rather remarkable therefore, that except for the cattle tick, the bush tick, the fowl tick and the brown dog tick, no others were introduced.

As far as Australia is concerned, the cattle tick, the fowl tick and the scrub or dog tick are the species of particular importance.

From time to time other ticks have been found on animals brought into Australian ports but have not been introduced as the infested animals have either not been landed, or have been cleansed prior to entering quarantine.

**The Cattle Tick**

The cattle tick, whilst mainly found on cattle, may also be found on horses and occasionally on sheep, pigs, dogs, rabbits and certain of the marsupials. It was probably first introduced into Australia at Darwin in 1872 with Brahman cattle from Batavia. Some escaped and the survivors of these were taken to Adelaide River where they mixed with station cattle.

From the Northern Territory the tick spread east to Queensland and west to this State, and from Queensland it ultimately reached Northern New South Wales.

At present, Queensland, Northern Territory and the Kimberley area of Western Australia are widely infested as well as the northern part of New South Wales where...
a Board of Tick Control has been in operation for many years and has been responsible for clearing big areas and limiting the southward spread of the tick.

Climatic conditions limiting the spread of the tick have not been ascertained with any certainty, but as the adult tick is susceptible to low temperatures and the eggs and larval tick to low humidities, it is possible that the cattle tick will never reach severe proportions in localities where the grass temperature is frequently below freezing or where the relative humidity is always below 70 per cent.

However, throughout Australia, active steps are continually being taken by restriction of movement of stock, dipping etc., to ensure that spread does not occur.

At present in Western Australia, the limit of southern spread is in the vicinity of Anna Plains Station, north or Port Hedland.

Ticks have been found in and around Perth and even as far south as Manjimup in 1897, 1906, 1913 and again in 1921-22. Fortunately none survived and although there may be some doubts as to whether they would, no risks are taken and quarantine restrictions in relation to Kimberley cattle, which are also applied for the control of Contagious Pleuro-pneumonia as well, are designed to ensure that ticks are not introduced outside the areas already infested.

Where ticks occur, they not only cause considerable tick-worry on cattle purely by mechanical means, but in addition, many of them carry small blood parasites which are responsible for the disease "Tick Fever" or "Redwater."

When ticks first spread through Northern Australia, losses from tick fever were enormous, from 60 to 80 per cent. of the cattle dying from that disease, but as the stock in tick infested areas are now largely resistant, losses are very much less serious, although far from negligible. As long as cattle are exposed to tick infestation, the immunity to tick fever generally persists, and so in affected areas, the eradication of the tick is not generally attempted, but is controlled by various means in some areas.

In the Kimberley region of this State no steps are taken to control the tick on properties where infestation occurs. Under the conditions prevailing in these areas, control measures would be most difficult, but peculiarly, there are areas and properties which are tick-free.

This fact poses problems in the movement of stock as cattle from tick-free areas moving through tick-infested areas run the risk of contracting tick fever, owing to their lack of immunity.

Dipping has been the principal method of control and arsenical dips were regularly used for many years. About 1937 it was found in Queensland that ticks in some areas were becoming resistant to arsenic. After World War II, DDT became available and it was found to have considerable value where arsenic resistance was encountered, and it has since been used widely in Queensland since then.

There has been considerable investigational work in Queensland and New South Wales into the question of control and eradication in recent years, and this is still going on.

However, cattle owners in the south-west areas of this State are most fortunate that it is not one of their worries, and that regular dipping of herds has not to be carried out for this purpose.

THE BUSH TICK

Cattle are also the normal hosts of the bush tick which, however, is confined...
mostly to the coastal and sub-coastal districts of Queensland and New South Wales, and while it may cause some ill-effects in cattle due to loss of blood, its presence in areas where the cattle tick also occurs, and where dipping and spraying are regularly undertaken for the control of this parasite, renders the bush tick relatively unimportant.

It is capable of transmitting a parasitic disease of dogs, but fortunately the blood parasite responsible is not present in Australia. However, it is possible that it can act as a mechanical distributor of Q. fever which can be a serious disease in humans.

**THE POULTRY TICK**

A tick of some importance, however, is the poultry or fowl tick which may affect domestic fowls, ducks, turkeys and pigeons, and has also been found on caged canaries.

The fact that it is so widely distributed, particularly in far inland areas, suggests that it was not introduced initially but is indigenous. However, it is quite likely that introductions from other countries have been made from time to time in the past.

It has spread throughout the drier parts of Australia and is found in towns and valleys and even on farms and stations in remote areas.

In this State it is prevalent in the Perth-Fremantle area, and is somewhat less prevalent in the surrounding areas. It occurs in Geraldton, Kalgoorlie and the East and West Kimberleys.

Fowl tick infestation causes fowls considerable discomfort, particularly at night, and the anaemia so produced may be quite severe.

In addition, it acts as the transmitting agent of a blood parasite which produce Spirochaetosis or tick fever. Spirochaetosis occurs wherever the tick is found, and as with tick fever in cattle, birds habituated to tick infestation are usually immune, but those introduced to a clean area quickly contract the disease and suffer high mortality.

**THE DOG TICK**

Another tick of importance, fortunately not in this State is the dog or "paralysis tick." It is confined to the coastal area, along the northern and eastern coasts of Queensland and New South Wales, parts of Victoria and Tasmania, and is restricted to bush and scrub country.

It commonly occurs on certain native fauna, particularly bandicoots, but it is not indigenous to Australia, as it occurs also in New Guinea, Indonesia and parts of India.

Domesticated animals are really accidental hosts, and whilst it most commonly attached itself to dogs, it has been found not infrequently on cattle, sheep, goats, horses, pigs and cats, and also occasionally on poultry.
Paralysis usually follows the attachment of female ticks and a single female is capable of causing paralysis and death in even a large dog. Large numbers of larval ticks may also cause paralysis and in man they may cause considerable local irritation and nervous prostration. Occasional deaths have been reported in children from mature ticks.

The nature of the agent responsible for tick paralysis has not been determined, but it is considered most likely that it is a nerve toxin generated by the salivary glands of the tick.

Whilst symptoms of tick paralysis may appear on the third day or even earlier from the time of attachment, they usually commence by the end of the fourth or beginning of the fifth day.

In a condition such as this which is not particularly amenable to treatment, prevention is most important, and in infested areas, a thorough daily search of dogs is most necessary.

A weekly bath, using some of the newer insecticides such as Gammexane and Dieldrin, have been found very effective, and such preparations are being used widely in the infested areas around Sydney, particularly on the North Shore, where the dog tick has been responsible for the loss of large numbers of dogs, for many years.

All in all, with the exception of the Kimberleys, Western Australia is fortunate in being free from serious tick infestation and it is to be hoped that this desirable state of affairs will continue.
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