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# KALORI

Conservation Society



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Lower Blue Mountains

Wildlife

CONSERVE, PRESERVE, INVESTIGATE, EDUCATE.

Kalori is published monthly by and for the members of the Lower Blue Mountains Wildlife Conservation Society.

The aims of the Society are, briefly, to:-

1. Educate the members and the public to the cultural values of nature.
2. Work for the reservation of areas of natural environment for the refuge and breeding of indigenous flora and fauna.
3. Carry out research into the distribution, population and species of flora and fauna in the Blue Mountains.

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PESTS FOLLOW THE CHEMICALS IN THE COCOA OF MALAYSIA

Continued from May 'Kalori'

The earliest attempts at control were by hand; laborers were employed to seek out fresh borings and destroy the larvae inside by inserting a wire or by injecting toxic chemicals. This method soon became too costly in labor, and in 1959 spraying with high concentrations of chemicals began. Dieldrin or DDT were applied as high volume sprays to the branches and trunk. Spraying resulted in some degree of control, but the inaccessibility of the borer larvae precluded very high kills.

In 1959 several other pests became noticeable. Again, these were present in very low numbers, but they were felt to be a potential danger, and in early 1960, further general spraying was carried out as a prophylactic measure. Dieldrin, endrin, DDT, BHC, lead arsenate, and a white oil were variously used, either in combination or alone. Applications were irregular but often frequent, so that during 1960 and 1961 the cocoa received a very heavy insecticide coverage.

The situation, however, gradually became worse. First, the branch borers increased, becoming abundant by the beginning of 1961. Not long afterward, outbreaks of three other pests also occurred. Two were leaf-eating caterpillars, the third was of a plant hopper. All of these became extremely abundant, the hopper so much so that on being disturbed, the adults, which resembled moths, rose in large clouds from the branches.

In July, 1961, a fourth outbreak, which proved to be the most serious of all, occurred. This consisted of several species of bagworm. Bagworms are unusual insects with a number of characteristics that make them particularly important pests. The bag gives the insect considerable protection throughout its lifetime, not only from the weather but also, apparently, from insecticides. In a series of trials, they showed almost complete resistance to DDT, BHC, dieldrin, diazinon, and dimethoate. The damage caused by bagworms is great, since they are not only voracious feeders but they also chew off large areas of leaf surface to make the bags.

The outbreak of 1961 began in one field at the Cocoa Research Station and rapidly spread. By late 1961 some 70 acres were affected, and repeated defoliation had produced large numbers of bare dying trees. Spraying with DDT, dieldrin and the other insecticides continued throughout 1961, but the bagworm outbreak persisted unaffected. Some attempt at hand collection was made, but this proved ineffective and very costly. The other outbreaks also continued, with the exception of the nettle caterpillar, *Setora nitens*, which died out in September. Then, toward the end of 1961, with the pest situation extremely serious, a decision was made to stop the spraying.

( To be continued.)

## THE INTRODUCED RATS.

The two main introduced rats - the Long-tailed ship or black rat (*Rattus rattus*) and the sewer, Brown or Norway rat (*Rattus Norvegicus*) are the most repulsive mammals to have yet invade Australia. Their disease-carrying habits are well known - bubonic and septicaemia plague and leprosy are the commonest. The spread of these rodents has always been damaging to man.

However, these rats are not to be confused with the many species of native rats found in Australia. These exist in small numbers and are normally unobtrusive in their habits. However, only when Man has destroyed their natural environment will these natives become a pest. Destruction of their natural enemies is a major problem while excessive cultivation will result in the plagues of migrating rodents seen in Australia from time to time.

While dealing with the introduced species, the multiple common names will be dispensed with and the latin for the species name will be used.

The *R. Rattus* has a general distribution throughout Australia except the most inhospitable areas of the country. Here it has infiltrated into the house, the field and the foliage. Originating in India and Burma it has spread throughout the world and to Australia by ship hence one of it's common names, the Ship Rat.

The *Rattus* throughout the world has many colour variations and sub-species, however, most of the sub-species of *Rattus* infesting Australia have rather vague differences. These variations, together with a difference in habits, make it impossible to separate the local races. The name, Black Rat, is misleading when confronted with the many colour varieties of the species.

*Rattus Rattus* is an enemy of many of our native species. The destruction of birdlife on Lord Howe Island after its introduction there in 1919 is an example. *Rattus* is a greater danger to wildlife than *Norvegicus* because of its wide distribution while *Norvegicus* is a coast dweller. However, *Norvegicus* eclipses the overall destruction caused by *Rattus*.

*Norvegicus* is distributed mainly in the environs of cities, coastal ports and waterways. They also occupy dwellings. This rat will oust *Rattus Rattus* from favoured haunts and has gained dominance over *rattus* in most countries of the world

but has been less successful here in Australia.

Norvegicus favours wharves and sewers as haunts being an excellent swimmer. It is a powerful rat, aggressive and repulsive, having revolting scavenger habits and when impelled by hunger will attack man. An example of this was the case of a miner being killed when entering a disused mine. It is fond of bathing but its drain haunting and sewer eating habits make this species' apparent cleanliness a source of danger to Mankind.

It's pugnacious disposition resulted in the ousting of the coastal native species of rodents and it is a potential danger to all native animals and humans if it should increase it's distribution inland.

Norvegicus' remarkable fecundity is shown by the fact that litters may vary from six to twenty two. Owing to a gestation period of 21-25 days they could breed every month of the year.

The introduced rats - Rattus and Norvegicus - having implanted themselves in our environment would be very hard to dislodge judging from their extreme tenacity in other countries in face of persecution. These rodents, like the other introduced animals, have easily infiltrated this highly specialized environment.

M. Smithson