

## THE SPECIES OF TERMITES IN NEW ZEALAND.

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Termites form a comparatively small order of insects, some 1,600 species being now known from all countries. Of this total, only two are peculiar to New Zealand; on the other hand, over 200 are known to occur in Australia.

Until some three years ago but little attention was paid in New Zealand to this economically important insect group. This was mainly due to the fact that our native species, especially in face of the serious depredations upon service timbers of the native longicorn beetle *Ambeodontus tristis*, were not considered especially destructive. From time to time, however, we had drawn attention to the danger of one or more destructive species reaching New Zealand, especially from Australia, and becoming destructively established; this danger was frequently illustrated by the presence of "dry-wood" species in imported Australian hardwoods; but these have not become a menace as far as is known. However, when it was discovered that Australian "earth-dwelling" species were destructively established in certain northern districts, the subject became one of the first order.

Reviewing the extent of this establishment and invasion of service timbers, there can be little doubt that these earth-dwelling species had been reaching the country over a period of several years; and in the course of our investigations it has been shown beyond doubt that hardwood poles and railway sleepers are the means of transport.

So far as we know at present there are now seven species of Australian termites to be found in New Zealand in addition to the original two native species. These species are:—

### Calotermitidae.

- Stolotermes ruficeps* Brauer. N.Z.
- Calotermes browni* (Froggatt). N.Z.
- Calotermes insularis* (White).
- Calotermes condonensis* Hill.
- Calotermes oldfieldi* var. *chryseus* Hill.
- Porotermes adamsoni* (Froggatt).

### Rhinotermitidae.

- Coptotermes acinaciformis* (Froggatt).
- Coptotermes frenchi* Hill.
- Coptotermes lacteus* (Froggatt).

In addition to the above, an active colony of *Eutermes* sp. was found in the pipe of a hardwood pole and destroyed; there is as yet no further record of this species.

Of the above species among the Calotermitidae the two New Zealand species, *Stolotermes ruficeps* and *Calotermes browni*, are to

be found breeding naturally in native forests, but are not destructive there; they also breed in such exotic trees and timber as eucalypt, macrocarpa, larch, and insignis pine. On the other hand, the attacks of *Coloterme browni* upon service timbers is now recognised as resulting in extensive damage.

The fact that *Caloterme insularis* was first described in 1853 from material collected in New Zealand illustrates that this species had reached the Dominion at an early date. Since it breeds only in Australian hardwoods confirms the assumption that it is a species of Australia where it is common. As far as is known of the other species of Australian Calotermitidae, *Caloterme condonensis* and *C. oldfieldi* var. *chryseus* are also confined to Australian hardwood poles and *Poroterme adamsoni* to railway sleepers.

Turning to the earth-dwelling Rhinotermitidae. The three species are responsible for very serious and extensive damage to service timbers at Auckland and New Plymouth, where well established and populous colonies are to be found in buildings and hardwood poles, and in native trees such as pohutukawa (*Metrosideros tomentosa*), as well as in English oak, macrocarpa, poplar and willow. The usual New Zealand building timbers are attacked; rimu (*Dacrydium cupressinum*), matai (*Podocarpus spicatus*), white-pine (*Podocarpus dacrydioides*) and kauri (*Agathis australis*), as well as such imported timbers as Oregon pine and Australian hardwoods.

The specific identity of *C. acinaciformis*, *frenchi* and *lacteus* is by no means clear, though evidence tends to point that the first of these forms is the most important.

In view of the seriousness of the situation, a concentrated campaign has been launched under technical supervision against *Coptoterme* in New Zealand. The field being a restricted one, it will afford an excellent opportunity of illustrating the effectiveness of termite control. Extermination, of course, is out of the question, but a practical degree of control should be effected.