INFORMATION SHEET 15

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TERMITES IN WESTERN AUSTRALIA

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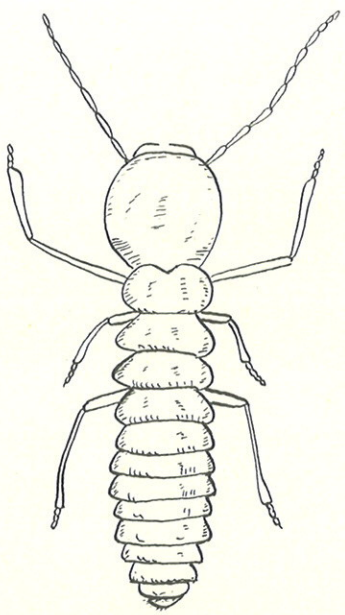
Termites, or white ants as they are sometimes called, are only white in colour when in their immature stages and they are not ants. Like the ants, the bees and the wasps, they are social insects, that is they live together in a co-operative way for the common good. It is perhaps this characteristic which has led to their being confused with ants. Present knowledge indicates that man has been on this earth for perhaps one or two million years, the ants, bees and wasps for about 70 million years, and termites for at least 200 million years. Thus the *termitary* as the termite home or nest is called, is the oldest type of community dwelling in the world. A fossil termite has been found in some rocks in the Ural Mountains in Russia which has been estimated to be 200 million years old. We have in the north-west part of this State a termite which is a living fossil. Specimens of this termite have been found preserved in rocks over 70 million years old and they look very much like their living descendants in Australia today.



There are several different forms or castes in a termite family. They are the Queen and King, the workers, the soldiers and the winged or flying termites.

The King and Queen were once winged termites, who after their mating flight from the termitary, shed their wings because they would never need them again, and set about forming a new colony. They burrowed down into the ground for some distance and excavated a small spherical chamber or cell in which the young Queen laid her first small batch of eggs. These were carefully tended by both parents until they hatched, and in due course developed into fully grown workers.

The workers in the colony, as their name suggests, do all the work that has to be done. They excavate all the tunnels and chambers in the soil, they build the termitary and maintain its hygiene, they maintain the temperature and humidity in the termitary at the required levels, seek out and gather food, feed the King and Queen, also the soldiers who are unable to feed themselves, and the immature forms until they are old enough to feed themselves. The King and Queen take no further part in the work of their home once they have successfully raised the first small group of workers. Their part is then to rule and direct operations and the Queen continues to produce more and more eggs.

When the colony has grown into quite a large family with perhaps some hundreds of workers, then by some means not yet understood, the workers arrange for some of the eggs to produce soldiers instead of workers. These soldiers have large heads and their jaws or mandibles develop into quite fearsome fighting weapons. The purpose of the soldiers is to guard the termitary from its enemies, one of the most serious of which are ants which sometimes try to break in. Not all soldiers have fighting mandibles; a number of species defend themselves with a kind of chemical warfare weapon. This takes the form of a long pointed tube in front of their heads from which they can eject a sticky, irritating fluid and if it makes contact with ants for instance, they quickly run away.

When the colony has grown really large and has a great many workers and soldiers, then the workers can cause some of the Queen's eggs to produce a number of winged Kings and Queens, which when they are mature fly away to form new colonies. Not many of them are able to avoid

their many predators, which include all insect-eating birds, lizards, many types of insects including ants, and also frogs, fish and some animals such as echidnas and numbats. This is nature's way of keeping the termite population under control.

We are inclined to think that termites are harmful insects because we only see the harm they do. The good they do far out weighs the damage they inflict on man's wooden structures but it is not so easily seen. If proper precautions are taken when buildings are being erected it is not possible for termites to gain access to them. This can be done by treating the soil under the structure with a poison such as dieldrin and a further precaution is to use only timber that is naturally resistant to attack or has been treated with a preservative to make it unpalatable.

Now for the beneficial things they do. They are soil builders, burrowing down to bring the subsoil to the surface and then grinding up with their powerful jaws the logs and branches twigs, leaves, sticks, dead grass and in fact all forms of organic debris lying on the surface and transporting this down into the soil. As the ground almost everywhere in Western Australia is honey combed with their tunnels and passages they mix the soil up and aerate it. Thus it can be seen that the termite is a great help to the forester because it works hard to break down all the debris on the forest floor and take it down into the soil to be recycled again.

We see then what very interesting insects the termites are and although some of them are able to seriously damage the works of man, it is often his own fault for not having taken proper precautions when he is erecting his structures. The damage they do is much more than offset by the benefits that attend their operations and there is no doubt that our country would suffer from some drastic and adverse changes if termites were to disappear over night.