

Rhinoceros Beetles

Fact Sheet



Male Common Rhinoceros Beetles in combat. Image: Steve Wilson.

Introduction to Scarab Beetles

There are more species of beetles in the world than any other group of insects and they come in all sizes, colours and shapes. Among the largest are the rhinoceros beetles, so named because the males generally have prominent horns on the front end of the body. They belong to a big family of beetles known as scarabs characterised by having antennae terminating in a club which can open out into a fan. Scarab larvae are fat, C-shaped and live in soil, dung, and decomposing plant material including wood. Other familiar scarab beetles include dung beetles, cane beetles (which damage the roots of sugar cane) and the beautiful, iridescent Christmas beetles.

Common Rhinoceros Beetle *Xylotrupes ulysses*

One of the most spectacular beetles in Australia is the Rhinoceros Beetle (*Xylotrupes ulysses*). It occurs from South East Asia through the islands of Indonesia to the Solomons and Australia. It is often found in Queensland's coastal towns, including Brisbane. This black beetle reaches 60 mm in length and the male is easily recognised by its large horns; one on the top of the head and the other projecting forward from the middle of the thorax. Each horn is slightly forked at the end. The two horns almost meet, and by moving its head, the beetle can pinch weakly with them.



Female Common Rhinoceros Beetle. Image: QM, Jeff Wright.

As well as their fearsome appearance, *Xylotrupes* beetles can make loud hissing squeaks when threatened. They are really quite harmless, and can be handled with safety although the claws on the ends of the legs can grip clothing or skin strongly. The hissing squeak is merely bluff and is produced by rubbing the abdomen against the ends of the wing covers; if a squeaking beetle is examined closely, the

abdomen can be seen moving in time with the squeaks.

These bulky beetles have large wings neatly folded under the wing covers and can fly strongly. They are attracted to lights at night and are generally noticed when they come to house lights and accumulate in large numbers beneath street lights. In Brisbane they are only seen in the summer months, but in the tropical north they can be found at any time of the year.

Only the males have horns and the females are plain black beetles. Females give off a sex hormone (pheromone) which attracts and excites males. In the presence of females, males use their horns in combat as they try to push one another off a branch. This behaviour is the basis for a gambling game in the villages of northern Thailand where rhinoceros beetles are common. Big males are kept as pets in hollowed-out sugar cane stalks where they have both protection and food. Each male beetle is tethered to its home by a silk thread so it can fly and maintain its fitness. The males are induced to fight by putting them on the outside of a bamboo cylinder containing female beetles. The male that manages to push the other one off the bamboo is the winner.

Biology

The adult beetle stage of *Xylotrupes* feeds on the soft bark of young shoots of many trees, a favourite being the Poinciana trees gracing so many of Queensland's gardens and streets. Sometimes a particular Poinciana tree will become especially attractive to the beetles and large groups of them may be seen festooning its young branches. Minor damage may be caused by the feeding beetles, but it is rare for any permanent damage to occur. It is thought that these gatherings are part of the beetles' mating behaviour.



Common Rhinoceros Beetle larva. Image: QM, Jeff Wright.

As with all beetles, the rhinoceros beetle larvae (grubs) hatch from eggs and develop into pupae, and these eventually emerge as adult beetles. Each female lays about 50 white eggs in decaying vegetable matter and these take about three weeks to hatch. The larvae feed on decomposing vegetable material and are valuable in accelerating its break-down into compost. In New Guinea the larvae reach maturity in about eight months, but in southern Queensland, it is thought that they require two years of growth before reaching full size. The larvae of *Xylotrupes* are easily recognised by their translucent grey colour, fine reddish down, dark brown head and enormous size - almost filling the palm of a hand. The larvae are most commonly encountered when digging up old compost heaps or tending a well-mulched garden. In the bush, they are abundant in Australian Brush-turkey (*Alectura lathamii*) mounds.



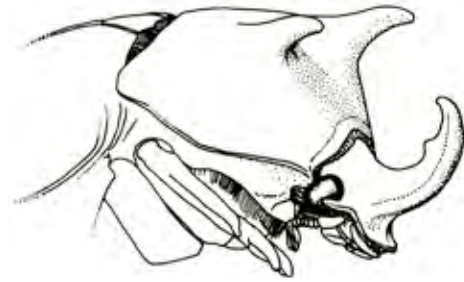
Common Rhinoceros Beetle pupa. Image: QM, Jeff Wright.

When full-grown the larva forms a cell in the soil and lines it with faeces that solidify into a waterproof layer. The larva then transforms into a pupa inside the cell. After about a month the adult beetle hatches out and digs its way to the surface. The beetles live for about 2-4 months.

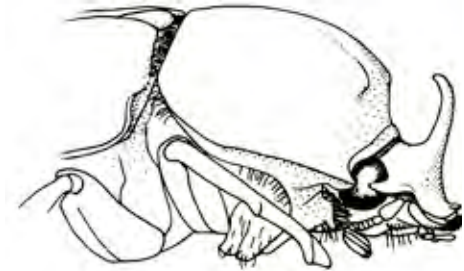
Other Rhinoceros Beetles

Two other rhinoceros beetles as large as *Xylotrupes* occur in Queensland, but both are rare. One of these, *Haploscapanes australicus*, is also found in Brisbane and can be identified by its two short horns on the thorax instead of one long one. It has an unbranched horn with a scalloped inner edge on its head. The other large species, *Haploscapanes barbarossa*, is found only in North Queensland. It has a plain horn on its head, but none on the thorax. Large as our Australian rhinoceros beetles seem when we first meet them, they are small beside the world's largest beetle. This is the aptly named *Dynastes hercules*, a 160 mm long rhinoceros beetle from South America.

Australia has almost 200 other species of rhinoceros beetles. Most of these are much smaller, but many still have elaborate horns on head and thorax. One interesting group of dull, flattened species belong to the genus *Cryptodus* and their larvae live inside termite nests. An unwelcome, introduced rhinoceros beetle is the African Black Beetle (*Heteronychus arator*). This shiny black species, about 15 mm long, has no horns and is a serious pest of lawns and pastures in NSW and Queensland.



Male *Haploscapanes australicus*. Illustration: QM, Geoff Thompson.



Male *Haploscapanes barbarossa*. Illustration: QM, Geoff Thompson.

Further Information

Beford, G.O., 1975. Observations on the biology of *Xylotrupes gideon* (Coleoptera: Scarabaeidae: Dynastinae) in Melanesia, *Journal of the Australian Entomological Society*, vol. 14, pp.213-16.

Carne, P.B., 1957. *Systematic Revision of the Australian Dynastinae*. CSIRO Division of Entomology, Melbourne.

Endrodi, S., 1985. *The Dynastinae of the World*. W.Junk, The Hague, Holland.

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