



Australia's Tropical Rainforests

WORLD HERITAGE

FACT SHEET

Would you like a pet rhino?

THERE ARE MORE BEETLES IN THE WORLD THAN ANY OTHER GROUP OF INSECTS. THEY COME IN A GREAT RANGE OF SIZES, COLOURS AND SHAPES. ONE OF THE LARGEST IS THE RHINOCEROS BEETLE. THE RHINOCEROS BEETLE GRUBS PROVIDED IN YOUR KIT ARE COMMONLY FOUND IN GARDENS IN TROPICAL QUEENSLAND. THIS SPECIES IS CALLED *XYLOTRUPES GIDEON*.

Rhinoceros or Rhino beetles belong to a big family of beetles known as scarabs. Scarabs have special antennae with fans on their tips. Other familiar scarab beetles are dung beetles, Christmas beetles and cane beetles, which damage the roots of sugar cane. Although the grubs may look similar, Rhinoceros beetles don't damage cane, so don't kill them!



Male Rhinoceros Beetle

sap of young shoots of many trees - a favourite is the Poinciana trees which have been planted in our parks and streets. Sometimes large groups of them can be seen on a single tree, perhaps as part of their mating behaviour. But it's rare for them to permanently damage the tree.



Rhinoceros beetles are one of the most spectacular beetles in Australia. They are found from south-east Asia through the islands of Indonesia to the Solomons and Australia.

They can grow up to 7cm long. The male is easily identified by the forked horns on his head and thorax. Horn size is important when fighting. When two males meet around a female, the males butt, toss and try to push each other off the tree branch. The larger male usually wins. Villagers in northern Thailand keep Rhino beetles as pets. They place them on a bamboo cylinder with females inside and gamble on whose beetle will win the fight.



Rhinoceros beetles feed on the

LIFE CYCLE

Although Rhinoceros beetles fly all year round, they are seen more frequently during the summer months around a street light or porch light. They are also found in fruit such as over-ripe pawpaws left on the tree.



The female beetle lays about 50 white eggs in decaying plant matter.

They take about 10 days to hatch and the grubs begin feeding on the organic matter. (Compost bins are popular nurseries for these beetles.)



Don't be scared!

Although their horns may look ferocious, Rhino beetles can only pinch very weakly. Their mouth parts are used for feeding, and are so small they don't pose a threat to humans.

Rhino beetles are harmless and can be handled safely - although you should always wash your hands first so that you don't harm the beetle.

Don't be frightened by the loud hissing squeaks they make when disturbed. It's just a bluff, produced by rubbing the abdomen against the ends of the wing covers (elytra). If you examine a squeaking beetle closely, you can see the abdomen moving in time with the squeaks. This noise-making is called stridulating.

The serrated claws on the ends of the beetle's legs help it when clinging, digging and mating. They may also grip onto your clothing or your finger. Most people react by trying to pull the beetle off, which just encourages a tighter grip. Use gentle persuasion instead. Simply pat the beetle on the rear and it will slowly move off.

Millions of years in the making. Protected forever.



BUY AN INSECT KIT AND LET'S TAKE A CLOSER LOOK!

1. What is a life history? It's the complete cycle of your pet insect's development over time. You can begin your study at any time - because it is a cycle! Form groups of 4-5 students and share out the larvae. Each group looks after its own larva. Once a week measure your larva's weight and length. When you have observations for all stages of the life cycle, you can describe your insect's life history. Present the information on a graph, using a computer printout or an illustrated poster and compare the results with other groups. Some students have studied growth variations by varying the food supply.

2. Do the Hula Hoop Dig. Place a hula hoop on the school oval grass. (Ask the groundkeeper first!) Using small gardening forks, dig up the area inside the hula hoop to a maximum depth of 10cm and see how many insects you find. What are they? Are

there any rhino beetle grubs? Find another habitat - maybe an area with more leaf litter under a shady tree - and dig again. Do you find more or less insects? Why? Don't forget to put the soil and insects back!

3. How rhinos help. Insects play a vital role in the environment by recycling nutrients. They are also a major food source for many birds, mammals and reptiles. Prepare a list of environmental roles in the various life stages of your insect. Explain their ecological importance.

4. Compost Comparisons. When changing over the mulch, keep the old pellet-filled soil and use it in an experiment. Buy some seedlings (eg. basil or parsley) and plant them in pots, one using the pellets added to the potting mix and another using pure potting mix. Record the growth of each plant. Which plant grows the best?



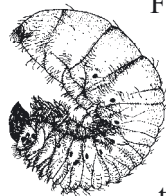
The kits are available from \$45 plus postage from the Australian Insect Farm (07) 4063 3860 or www.insectfarm.com.au

5. Follow the trail. Beetle grubs help to aerate the soil - a major component to any healthy garden. Find a wide, flat tray at least 3cm deep. Add a 1cm layer of clean, dry, fine sand or sawdust. Place a couple of grubs in the dish and map their trails.

6. Introduce composting. Does your school tuckshop compost its waste? Research how composting works and have a debate about whether it should be introduced at your school.

CARING FOR GRUBS

The grubs have a translucent creamy-white body with fine, reddish hairs and a dark brown head. They can grow up to 7cm long, almost filling the palm of your hand. Always wash your hands before touching any insects, avoid using insect repellent sprays and handle them gently. The insect kits contain clean organic mulch, the ideal diet for growing rhino grubs. They eat the mulch and create natural rhino poo fertiliser. In a few months (July) when the larvae have converted nearly all the mulch to pellets, contact the Insect



Farm for some new organic mix (costs \$4-\$5, phone 07-4063 3860). When fully grown (around September or October) the larva forms a cell in the soil and lines it with its own droppings which solidify into a waterproof layer. The larva then turns into a pupa inside the cell.

CARING FOR BEETLES

After 6-12 weeks the adult beetle hatches out and digs its way to the surface. The beetles can be up to 7cm long and live for about 2-4 months. Once the beetles hatch, place a piece of old fruit such as pawpaw in their container every day. If you live in Tropical North Queensland, at the

end of the school year you can release the beetles in the school grounds. Alternatively, a keen teacher or student may like to take the beetles home and breed their own larvae for next year.

ANY QUESTIONS?

If you have any questions or you need assistance with any insect-related issues, please phone Sue Hasenpusch on: (07) 4063 3860 or email: sue@insectfarm.com.au. There is also a wealth of information on the following websites:

Australian Insect Farm
www.insectfarm.com.au

Queensland Museum
www.qmuseum.qld.gov.au

WTMA
www.wettropics.gov.au

Larva illustration: Geoff Thompson, Qld Museum

