

RESEARCH

The Woolly Bear Caterpillar

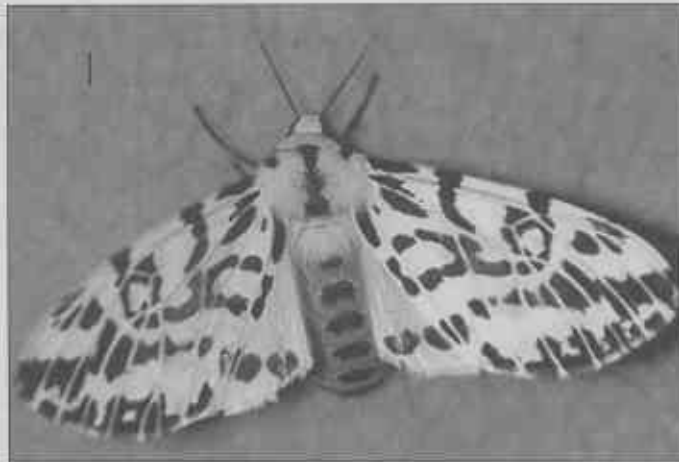
Peter Langlands

A common sight in Western Australian gardens is a black/ brown hairy caterpillar, the 'woolly bear' caterpillar (*Spilosoma glatignyi*). Although this native caterpillar, which can grow to 5cm, is easily seen and recognised, the adult moth it turns into is not so well known. The adult moths have white wings with black patterning (6cm wingspan) and a vivid red and black striped abdomen. Belonging to the sub-family Arctiinae or 'Tiger moths', the bright colouring of the abdomen warns birds that this moth is distasteful and may be poisonous.

The adult moths emerge in April-June, mate and the females lay eggs on suitable food plants. The 'woolly bear' caterpillar is not a fussy eater and is known to feed on 23 plant species, including Artists Acanthus (*Acanthus mollis*) and Paterson's Curse (*Echium plantagineum*). Only causing minor problems in Western Australian gardens, the caterpillar has defoliated pine plantations in South Australia. The larvae emerge and begin feeding, increasing in size rapidly over winter. The thick hairs covering the caterpillar deter birds and allow it to bask in the open while feeding. This does however leave the caterpillar vulnerable to attack by parasitic wasps. In August, the caterpillars become sensitive to light and crawl into the leaf litter or crevices. After spinning a loose cocoon of silk, debris and hairs, they turn into pupae. The following



The Woolly Bear caterpillar.



The adult moth of the Woolly Bear caterpillar.
(photo: D Herbison-Evans)

year they emerge as adult moths. The moths are often attracted to lights and can be found at night around the house. The moths may be less well known due to high infection by parasites and their brief existence.

An experiment was conducted last year to find out how environmental factors (temperature, light and food source) influenced the time taken by the 'woolly bear' caterpillars to reach pupation. Although overseas species of *Spilosoma* have been investigated, there have been no Australian species studied. Caterpillars were collected from the field and reared at Curtin University in cages, fed on Paterson's Curse leaves.

The study consisted of four treatments: constant increased temperature of 25°C; short light period of 5 hours; decreased food source; and controls. The time in days for each caterpillar to start pupating was recorded, as well as pupal weight. It was found that the caterpillars reared under constant 25°C developed faster, but were smaller, and similar in size to the starvation treatment. The short light period and controls developed at the same time and showed no significant difference in size.

These results show that, although increased temperature leads to quicker development, the resulting moths are smaller and in several cases fail to form proper wings. Likewise, the caterpillars reared with limited food were stunted and many did not hatch into moths. A reduced light period had no effect and it is likely that the hairiness of the caterpillars means they are not restricted to feeding under cover of night. Although this experiment has shown that this caterpillar could be easily mass reared, it is unlikely that it could be used as a biological control agent for pest plant species (Paterson's Curse) as it will also feed on many other plants.

Peter Langlands completed this work under the supervision of Dr B Heterick, as part of his Bachelor of Science (Environmental Biology) degree.