

# *Pogona barbata*

Sandra Abell-Davis, 2000 © 2001 James Cook University

Authority: Cuvier, 1829

**Common Name:** Bearded Dragon

**Description** (Cogger 2000; Wilson and Knowles 1988; Houston 1978; Amey and Whittier 2000): The stout head of *P. barbata* appears triangular and elongate when viewed from above, the body is also stout and is relatively broadened and depressed. The legs and tail are short with respect to the body length, which may be up to 250 mm from snout to vent. The scales of the dorsal surface are heterogenous with mainly small imbricate and slightly keeled scales along with larger highly keeled scales scattered throughout. The ventral surface scales are also keeled. Above the ears, on the occiput, behind the mouth and at the base of the tail are enlarged, strongly keeled and spiny scales. In the gular region is the "beard", which is a well-developed pouch that in adults is bordered by keeled, spiny scales. Their background colour is generally grey although it may vary ranging from reddish-brown, yellowish-brown to brown. The inside of the mouth is generally a bright yellow colour. Patterning on the dorsal surface is more pronounced for juveniles and may be reduced or absent in adults. Mature males have a wider head, a larger dark grey to black beard and a pale green to bluish tinge on the forepart of the head. They have an average snout to vent length of 235mm and weight of 393g. The mature females are smaller in size with an average snout to vent length of 193mm and a weight of 239g. Their heads are longer with smaller beards and may have bite wounds on the back of the head resulting from copulation.

**Similar species** (Cogger 2000): The other species of the *Pogona* genera are the most similar to *P. barbata*, which can be distinguished from *P. vitticeps* which has enlarged gular spines across the centre of the throat and from *P. mitchelli* which has strongly defined spines on the head. *P. minimus* has an extra row of nuchal spines along each side of the vertebral column, *P. microlepidota* does not have enlarged gular spines in the centre of the throat region, and *P. nullabor* is distinguished from *P. barbata* by having white bands present across the dorsal surface of the back and tail. A common misidentification as frilled neck lizards, *Chlamydosaurus kingii* occurs, which can be distinguished by a large loose "frill" around the neck that overlaps behind the crown of the head. *P. barbata* and other *Pogona* species have only the lower gular region enlarged into their characteristic "beard".

**Range** (Cogger 2000): From North East to South East Australia except Cape York Peninsula and cooler regions to the south, also in a disjunct population around the Eyre Peninsula of South Australia.

**Ecology and behaviour** (Brattstrom 1971; Carpenter *et al.* 1970; Davey 1977; Heatwole 1976; Hoser 1997; Cogger 2000): *P. barbata* prefer open woodlands and dry sclerophyll forests although they are also found in rural and urban areas which is possibly related to the extensive clearing of their preferred habitat. They are diurnal and their diet is diverse and may include insects, worms, small rodents, snails, berries and dandelion flowers. *P. barbata* are shuttling heliotherms and thigmotherms; they move in and out of the sun and use heated surfaces to regulate their body temperature. Colour change occurs during aggressive behaviour as well as during thermoregulation. They are known for their elevated perching sites associated with their thermoregulatory behaviour, including shrubs, dead trees, fence posts and telegraph poles. The behaviour of *P. barbata* has been well researched and there are 73 described postures that are thermoregulatory, social or have a general function. One of the most interesting displays is circumduction, which is the raising of a forelimb and rotation by 360 degrees perpendicular to the longitudinal plane of

the body. This is also known as a “wave” and may be submissive when performed slowly or aggressive if fast. Hierarchy is related to size with extreme territorial behaviour exhibited by males. Females have smaller ranges and may be found within the male territories along with juveniles. Juvenile activity has been observed to consist of just two things, eating and submissive waving; even when they are alone. Circumduction is not restricted to this species and has also been observed in *Amphibolurus muricatus* and *Ctenophorus reticulatus*. When placed in the same area as *P. barbata* the smaller species perform the submissive wave, possibly to prevent aggressive behaviour towards them. The behaviour sequences used within this species do not involve full extension of the “beard” which appears to be reserved for defence when threatened by a predator. This behaviour also includes opening of the mouth to display the bright yellow colouring, flattening of the body and if further stimulus occurs they may hiss and make small jumps toward the aggressor. This occurs in a sequence and can reverse and move forward at any step within the sequence depending on the distance that the stimulus is from the animal. The defensive strategy is only used in extreme circumstances and they rely mainly on cryptic behaviour or escape.

**Breeding biology** (Brattstrom 1971; Amey and Whittier 2000; Badham 1971; Hoser 1997): Courtship involves mounting by the male and biting of the females gular and head region to maintain their position. Flapping of the forelegs by the male may occur while holding the female. To signal the male to release, the female lifts the head into an almost vertical position. *P. barbata* is unusual in that for such a large and long-lived lizard they have a relatively high fecundity of up to 35 eggs per clutch and can lay more than one clutch per breeding season. There is sperm storage by the females, however this is related to male competition and storage does not occur between breeding seasons. The ability to have multiple clutches is possible as the females have two germinal beds per ovary in contrast to other lizard species that generally have one. Both ovaries contribute follicles to each clutch and vitellogenesis occurs within the second germinal bed even before the first clutch is laid. This is thought to allow shorter time intervals between clutches thus increasing the potential number of offspring per season. More research is needed to ascertain why a high fecundity is required by this species and it may be related to high juvenile mortality. The interval between clutches is approximately six weeks and breeding occurs each year between August and December. The maximum number of clutches therefore is three although two clutches of 15 to 35 eggs appears to be the average. The female scoops a hole and buries the clutch generally in moist sand allowing uptake of water by the shell to prevent desiccation. Under captive conditions when kept at a constant temperature of 28.9 degrees, incubation takes from 45 to 79 days. After hatching, the young dig their way out of the soil and there is no parental care.

#### **Literature cited:**

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