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COLOUR CHANGE IN DEATH ADDERS (*ACANTHOPHIS ANTARCTICUS*) AND OTHER REPTILES.

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It is generally acknowledged that snakes and other reptiles change colour and/or brilliance of colour over their lifetimes. Even the period between birth and after the first slough can lead to a significant change in colour within a single individual.

Species such as the Eastern Brown Snake (*Pseudonaja textilis*) often exhibit distinct juvenile and adult patterns (banded versus unbanded in the Sydney area), while for other species such as Collett's Snakes (*Pseudechis colletti*) and Death Adders (*Acanthophis antarcticus*) there usually appears to be a gradual dulling of colour with age, making adult and young appear very different. Here I am not taking into account seasonal shifts that may result in colours getting darker or lighter depending on the average temperature the reptile is exposed to. While many authors report on the different colouration between juvenile and adult, including showing photos of both age groups in a single publication in order to demonstrate this colour shift, it is relatively rare for photos of a single snake at all stages of it's life, ranging from juvenile to adult to be published in the one place, showing such colour shift.

On 24/12/78 at 8.55 PM, I legally caught a 43.5 cm (total length) female Death Adder (*Acanthophis antarcticus*) (File no. AAA-3) on the Coal and Candle Creek Road, about 250 metres towards McCarr's Creek Road from the West Head Road turn off (in Kurringai Chase National Park, just north of Sydney, NSW). The location was approximately at Lat. 33° 33' S Long. 151° 40' E). The snake was held in captivity until 10 July 1984, when it was stolen from my house by John Cook, then employed by the NSW National Parks and Wildlife Service (snake had been caught and held under scientific licence number SLF 486), at which time it was 65.7 cm total length. The (unfed) weight of the snake was several times greater at the time of theft compared to that at the time of capture.

Over the six year period that the snake was held, photos were taken of it at regular intervals. Four of these are reproduced here in this journal on page 31. Comparing the earlier photos with the later ones, it is clearly evident that there was a marked colour change in the snake's colour with it's bands fading dramatically as it grew larger and older. For the four photos reproduced here (page 31), the first was taken in early 1979, shortly after capture, the last being taken in 1984, with the middle two being taken between these times. Other (Sydney area) Death Adders held by myself (both red and grey) exhibited similar colour changes throughout their lifetimes, with the changes usually being most marked in females as opposed to males.

After my breeding of Death Adders in 1984 and from regular sightings of Death Adders of all ages both before and since then, I have concluded that colours usually remained brightest in the first two to two and a half years of life, usually peaking in brilliance at adolescence, after which they tended to become duller. I also noted that newborn Death Adders were born fairly dull in colour, becoming significantly brighter after the first slough (although this initial dullness would also in part reflect the impending first slough). This trend seems to be mirrored in many other snakes.

In the period up to 1998, I have also observed a similar colour brilliance trend in Desert Death Adders (*Acanthophis pyrrhus*), Barkly Tableland Death Adders (*Acanthophis hawkei*), Northern Death Adders (hill form and lowland forms) (*Acanthophis lancasteri* and *cummingi*), South-West Queensland and South Australian Death Adders (*Acanthophis woolfi* and *A. antarcticus*) so assume that these colour trends are fairly constant for the genus.

Roy Pails (pers. com. June 1998) reports on Centralian Carpet Snakes (*Morelia bredli*) and others in the genus tending to become duller in colour during cooler months in a seasonal colour change. Fred Rossignoli had a large female Shingleback (*Tiliqua rugosa*) give birth to two young which appeared substantially brighter in colour than the adult, (see photo in this journal). It is presumed that the bright white spots present in the young animals nearly totally fade in the adult.

Another factor that has been said to influence colour brilliance in reptiles is their general health, however there has been little if any controlled experimentation on this.

Furthermore I see little prospect of anyone undertaking such research in the near future as there would be ethical conflicts involved and little if any practical benefit in such an investigation. Because of these problems, it is suggested that private keepers may wish to more closely monitor and record (by photographing) their captive snakes and other reptiles so that changes over time may be accurately documented.

Photo: Raymond Hoser

R A Y M O N D HOSER's principal herpetological interest is Death Adders (genus *Acanthophis*).