

## NATURAL HISTORY NOTE

### *Homopus signatus signatus* (Gmelin, 1789) Namaqualand speckled padloper

#### NATURAL OVIPOSITION AND INCUBATION

Although the literature on *Homopus signatus signatus* has expanded considerably in recent years, reports of oviposition and incubation are limited to observations in captivity (e.g., Loehr, V.J.T. 1999. Husbandry, behavior and captive breeding of the Namaqualand speckled padloper [*Homopus s. signatus*]. *Chelonian Conservation and Biology* **3**: 468-473). During a 5-year field study, I conducted annual fieldwork near Springbok, in the tortoises' egg-laying season (spring). Forty-four gravid females were tracked daily by means of telemetry and thread-trailing, totalling circa 487 observations. Nevertheless, only a single observation of nesting was made. Most females retained their calcified eggs for long periods (i.e., weeks).

On 30 September 2004 15:30 hrs, a female (SCL 95.1, SH 45.1, SW 76.2, PL 80.6 mm) was located approximately 6 m outside the normal activity range for this individual. The tortoise was in the process of excavating a 4.5 cm deep nest chamber, concealed by a dense, dead shrub, similar to captive nesting sites (i.e., no sunlight could penetrate to the nest). The nest was located at a levelled area on a steep slope, bordering a bare rock slab with scattered boulders and rocks. At 16:10 hrs, the female had produced an egg (35.7 x 26.5 mm, 14.2 g) and had closed the nest. At that time, nest temperature was 23.7°C.

The egg was exchanged for four Thermochron iButton temperature dataloggers (Dallas Semiconductors, Maxim Integrated Products, Inc., Sunnyvale, U.S.A.), set for different measurement frequencies and intervals. On 7 March 2006, the iButtons were recovered, but unfortunately all but one malfunctioned. The data from the functioning iButton, recording temperatures hourly, showed a nest temperature range from 14.0 – 36.0°C between 2 October and 24 December 2004 (Fig. 1). In addition, daily temperature fluctuation was 1.5 – 10.0°C. In captivity, the incubation period for *H. s. signatus* is 101-145 days (V.J.T. Loehr, unpublished data), 18 – 62 days longer than the number of days that temperatures were recorded in the natural nest.

This note confirms captive observations of *H. s. signatus* selecting concealed sites for nesting, which may relate to the temperature regime required for successful incubation, or to the risk of predation for the egg or for the female. It also confirms that females may nest in the afternoon. Although it remains unknown if the temperatures recorded would result in successful incubation, they are similar to temperatures that produce healthy hatchlings in captivity (V.J.T. Loehr, personal observation), and enable captive breeders to select a natural incubation temperature regime.

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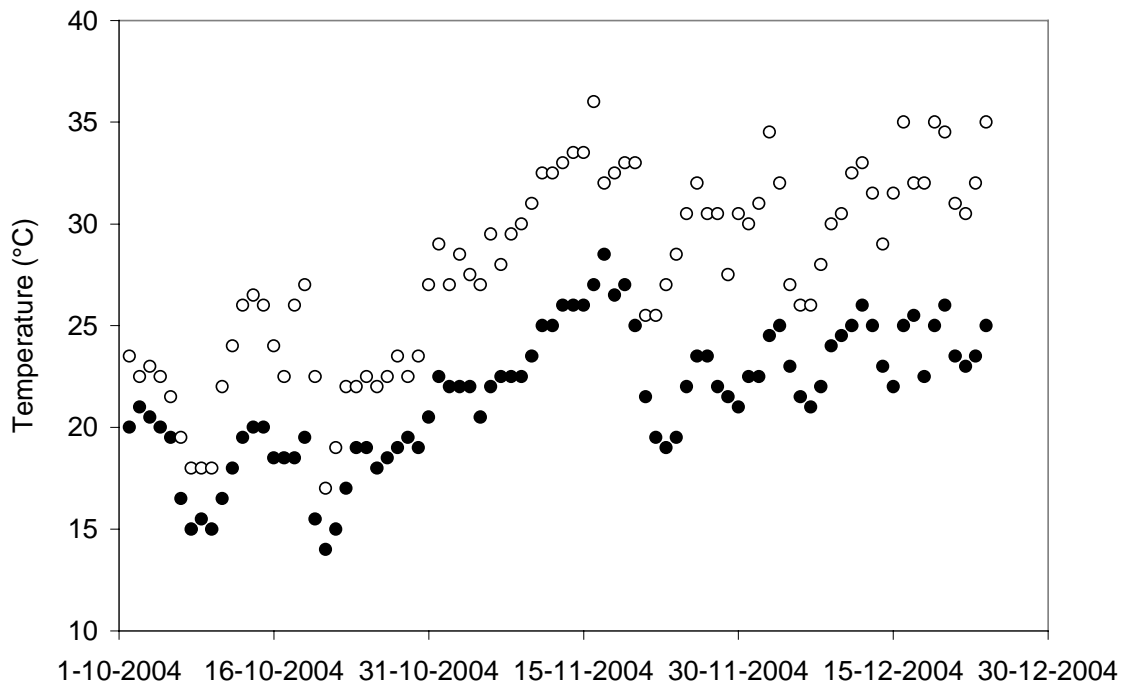


Figure 1. Daily minimum and maximum temperatures recorded in a natural nest of *H. s. signatus* near Springbok.