PHOTOPERIOD, TEMPERATURES AND BREEDING IN CAPTIVE NAMAQUALAND SPECKLED PADLOPERS, *HOMOPUS S. SIGNATUS*

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Tortoises of the genus *Homopus* generally do not survive easily in captivity outside their native habitat. Of the specimens obtained from pet shops in the USA, Europe and elsewhere, in past years, very few adults or offspring have survived.

Factors contributing to the poor success in keeping *Homopus* in captivity include lengthy periods between collecting in the wild and releasing in the final enclosure (thus weakening the small tortoises and making them vulnerable for deadly outbursts of internal parasites), and failure to satisfy specialised dietary and other requirements. A contributing factor that is not well documented is the fact that specimens from the southern hemisphere (longest photoperiod and highest temperature in January) will have to adjust to northern hemisphere climatic conditions (longest photoperiod and highest temperature in July). It is common practice among keepers in Europe and the USA to release wild-caught tortoises from southern hemisphere regions in enclosures in which northern hemisphere climatic conditions already prevail.

There appears to be a total lack of published data on the effects of this practice on the well-being of reptiles. Hersche and Gorseman (pers. comm.) found that different species of South African tortoises did not, for unknown reasons, do well in captivity in Switzerland and The Netherlands respectively. The annual cycle of behaviour of the animals showed deviations from what should be expected and survival rates were low. They attributed this to the sudden shift from southern to northern hemisphere climatic conditions. Angulated tortoises (*Chersina angulata*) seemed to deal best with the shift.

In September 1995, four *Homopus s. signatus* were collected in South Africa (permit 331/95) and exported to The Netherlands (CITES permit 281/95C). Climatic conditions in the enclosure initially replicated those prevailing at the locality of capture (southern hemisphere) and were gradually changed to those of the northern hemisphere over a period of 4 years (figure 1). The tortoises responded to this regime by showing activity patterns following the shifting course of the climatic conditions (Loehr, in prep.). The most marked pattern relates to egg-laying, which first started in October 1995, then at the end of July 1996, the end of June 1997, and finally at the beginning of June 1998 (figure 1).

It is hypothesised that difficulties in keeping southern African tortoise species in captivity in northern hemisphere countries might be partly attributable to the commonly practised method of releasing tortoises into enclosures in which northern hemisphere climatic conditions already prevail. A gradual shift from southern to northern conditions could yield better results. Obviously, there will be difficulty in applying this method to tortoises kept in outdoor enclosures.

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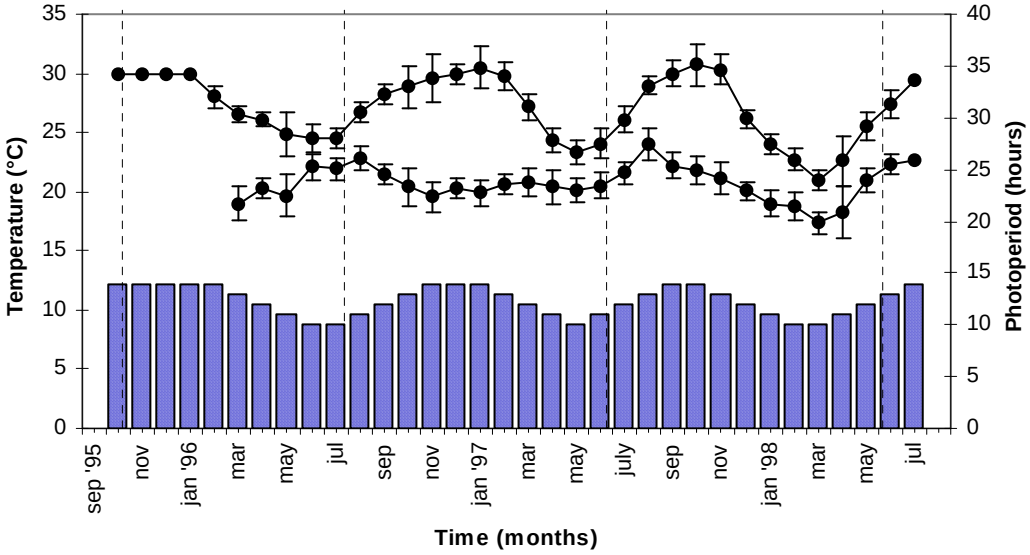

Figure 1: Monthly mean maximum and minimum temperature (±SE) in a hiding place (lines) and photoperiod (bars) in an enclosure with *Homopus s. signatus*. Dashed lines indicate dates on which first eggs of a season have been laid. Temperatures without SE are estimates.