

On the reproductive biology of the herbivorous spiny-tailed agamid *Uromastyx philbyi* in western Saudi Arabia

by Talal A. Zari

Abstract: The reproductive biology of the Spiny-tailed Agamid *Uromastyx philbyi*, a herbivorous desert lizard, was studied in western Saudi Arabia. Reproduction is seasonal, with mating in early spring (March), oviposition in late spring (May–June), and hatching in summer (July). The mean clutch size was 6.67 eggs. Eggs are large (mean mass = 7.48 g) and relative clutch mass (RCM) averaged 0.49. Clutch mass and RCM increased with increasing egg mass. Clutch size, egg size, clutch mass, and RCM were significantly correlated with maternal body size.

Kurzfassung: Die Fortpflanzungsbiologie der Dornschwanzagame *Uromastyx philbyi*, eine herbivore Wüstenagame, wurde im westlichen Saudi-Arabien untersucht. Die Fortpflanzung zeigt einen jahreszeitlichen Zyklus, wobei die Paarung im zeitigen Frühjahr (März) und die Eiablage im späten Frühjahr (Mai–Juni) stattfindet; die Jungen schlüpfen im Sommer (Juli). Die mittlere Gelegegröße betrug 6,67 Eier. Die Eier sind groß (mittlere Masse: 7,48 g) und die relative Gelegemasse (RCM) betrug im Mittel 0,49. Die Gelegemasse und RCM ist umso größer, je größer die Eimasse ist. Gelegegröße, Eigröße, Gelegemasse und RCM ist signifikant korreliert mit der Körpergröße des Muttertieres.

Key words: *Uromastyx philbyi*, lizard, egg, reproductive biology, desert, Saudi Arabia.

Introduction

Reptilian reproductive strategies have been investigated by many researchers, and several reviews have attempted to analyse available data for the explanation of general reproductive patterns in this group from the ecological and evolutionary view points (e.g. CONGDON et al. 1982, DUVALL et al. 1982, SEIGEL & FORD 1987, DUNHAM et al. 1988, PHILLIPS & MILLAR 1998). Reptilian reproductive cycles are influenced by environmental factors and endogenous rhythms (FITCH 1970, DUVALL et al. 1982, SAINT GIRONS 1982). In temperate climatic regions, lizards generally have a short annual breeding cycle, producing one clutch each year. The reproduction of tropical species is quite frequently acyclic or continuous; however, several tropical species also exhibit cyclical reproductive patterns (FITCH 1970, 1980, DUVALL et al. 1982, SPELLERBERG 1982).

Spiny-tailed agamids (genus *Uromastyx*) live in hot, arid environments and maintain high (>38°C) activity body temperatures (AVERY 1982). *Uromastyx philbyi* inhabits the western mountains of Saudi Arabia and North Yemen (ARNOLD 1986). It exhibits low rates of metabolism (ZARI 1996) and food consumption (ZARI 1998). Moreover, gravid females show the lowest food consumption rates, the highest mean selected body temperatures and spend more time at higher temperatures (ZARI 1998). Until recently there was no published