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| Month | *n* | Recrudescent | Spermiogenesis |
|---|---|---|---|
| February | 2 | 0 | 2 |
| March | 9 | 0 | 9 |
| June | 13 | 1 | 12 |

Table 1. Monthly distribution of stages in the testicular cycle of 24 *H. spekii* from Kenya.

| Month | *n* | Quiescent | Early yolk deposition | Enlarged ovarian follicles > 4 mm | Oviducal eggs | Oviducal eggs and yolk deposition |
|---|---|---|---|---|---|---|
| January | 1 | 0 | 0 | 0 | 1 | 0 |
| February | 4 | 0 | 2 | 1 | 0 | 1 |
| March | 5 | 1 | 0 | 3 | 0 | 1 |
| June | 3 | 0 | 1 | 1 | 0 | 1 |

Table 2. Monthly stages in ovarian cycle of 13 *Heliobolus spekii* from Kenya.



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# REPRODUCTION OF JACKSON'S FOREST LIZARD, *ADOLFUS JACKSONI* (SQUAMATA: LACERTIDAE)

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## INTRODUCTION

*Adolfus jacksoni* is known from northern Tanzania, north-central Kenya, western Uganda, Rwanda, northern Burundi and the eastern Democratic Republic of the Congo (Spawls *et al.*, 2002). There is a report that *A. jacksoni* usually produces clutches of 3 – 5 eggs in the field guide by Spawls *et al.*, 2002. In this paper I add information on *A. jacksoni* reproduction, including the first information on the testicular cycle and evidence that multiple clutches are produced. Minimum sizes for male and female reproductive activity are presented.

## MATERIALS AND METHODS

Thirty-one *A. jacksoni* were examined from the herpetology collection of the Natural History Museum of Los Angeles County (LACM), Los Angeles, California. The sample contained of 19 males (mean snout-vent length [SVL] = 72.5 mm ± 6.1 SD, range = 60 – 80 mm) and 12 females (mean SVL = 67.8 mm ± 7.6 SD, range = 56 – 80 mm). *Adolfus jacksoni* were collected in 1967 – 1969, and in 1973.

For histological examination, the left testis was removed from males to study the testicular cycle and the left ovary was removed from females to check for the presence of vitellogenesis (yolk deposition) and/or corpora lutea. Counts were made of oviducal eggs or enlarged ovarian follicles (> 4 mm length). Slides were stained with Harris haematoxylin followed by eosin counterstain (Presnell & Schreibman, 1997). Histology slides were deposited at LACM. An unpaired *t*-test was used to compare male versus female body sizes (SVL) using Instat vers. 3.0b, Graphpad Software, San Diego, CA.

The following *A. jacksoni* were examined from Kenya (by province) and Uganda (by district) from LACM: **UGANDA, Rakai District**: LACM 35146, 35147, 39487 – 39509, **KENYA, Kenya Rift Valley Province**: LACM 60798, 60857 – 60859; **Eastern Province**: LACM 93307, 93308.

## RESULTS AND DISCUSSION

There was no significant size difference between male and female mean body sizes (unpaired *t*-test, $P = 0.070$).

The only stage present in the testicular cycle was spermiogenesis (sperm formation) in which the lumina of the seminiferous tubules were lined by groups of spermatozoa or metamorphosing spermatids. The presence of reproductively active *A. jacksoni* males at opposite ends of the year (February $n = 15$) and September $n = 4$) suggests an extended period of sperm formation. The smallest reproductively active *A. jacksoni* male measured 60 mm SVL (LACM 60859) and was collected in September.

Mean clutch size for seven *A. jacksoni* females was 4.1 ± 0.90 SD, range = 3 – 5 eggs. Females with quiescent ovaries (no yolk deposition) were found in February and September (Table 1). The smallest reproductively active female (corpora lutea and yolk deposition) measured 56 mm SVL) (LACM 60857) and was collected in September. There was evidence that *A. jacksoni* produces multiple clutches (Table 1) as seen by one female each collected in February (LACM 39495) and March (LACM 35147) with oviducal eggs (current clutch) and concomitant early yolk deposition in ovarian follicles for a subsequent clutch. Additional evidence that multiple clutches are produced was seen in one female collected in September that contained corpora lutea from a recently deposited egg clutch and concomitant early yolk deposition for a subsequent clutch (LACM 35147). Production of multiple egg clutches in the same year has been reported for *Heliobolus spekii* from Kenya (Goldberg, 2009) and other species of lacertid lizards from southern Africa (Goldberg, 2006a, b, c, d).

The presence (Table 1) of reproductively active females at opposite ends of the year (February-March and September) suggests *A. jacksoni* has an extended reproductive cycle, although examination of samples from additional months is needed to fully characterize its reproductive cycle.

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Table 1. Monthly stages in the ovarian cycle of 12 *Adolfus jacksoni*. *One female each from February and March contained oviducal eggs and concomitant early yolk deposition for a subsequent clutch.

| Month | *n* | Quiescent | Early yolk deposition | Enlarged follicles > 4 mm | Oviducal eggs | Corpora lutea and Yolk Deposition |
|---|---|---|---|---|---|---|
| February | 8 | 2 | 0 | 4 | 2* | 0 |
| March | 2 | 0 | 1 | 0 | 1* | 0 |
| September | 2 | 1 | 0 | 0 | 0 | 1 |