

oviducts.

Fifty-eight males ranged in size from 22 to 75 mm SVL; minimum reproductive size was 61 mm. Testicular volume was not correlated with body size (Spearman: $r_s = 0.33$; $P = 0.07$; $N = 29$). Testicular volume varied through the gonadal cycle (ANOVA: $F_{4,24} = 10.75$; $P = 0.0001$; $N = 29$; Fig. 1).

Seasonal variation in fat body mass (measured as bimonthly samples) was statistically significant (ANOVA: $F_{4,24} = 9.37$; $P = 0.0001$; $N = 29$; Fig. 1) for males.

Our data suggest that *Liolaemus pseudoanomalus* produces one clutch a year like *L. multimaculatus* (Vega 1999. Ecología de saurios arenícolas de las dunas costeras bonaerenses. Tesis doctoral, inédita, Universidad Nacional de Mar del Plata. 102 pp.) and *L. chacoensis* (Cruz and Ramirez-Pinilla 1996. Rev. Española Herpetol. 10:33–39). Mean clutch size of *L. pseudoanomalus* is larger than *L. darwini* (mean: 4.9, range: 2–8, $N = 40$), *L. riojanus* (mean: 4.2, range: 3–6, $N = 15$) (Blanco et al. 2001, *op. cit.*; Blanco et al. 2003. Reunión de Com. Herpetol. Asoc. Herpetol. Argentina. XVII:31 pp.), *L. koslowskyi* (mean: 4.2, range: 3–9, $N = 53$) (Aun et al., *op. cit.*); and *L. wiegmanni* (mean: 4.6, range: 4–5, $N = 19$), *L. multimaculatus* (mean: 4.2, range: 3–7, $N = 29$), *L. gracilis* (mean: 4.7, range: 4–6, $N = 19$) (Vega, *op. cit.*) and *L. olongasta* (mean: 3.8, range: 1–8, $N = 10$) (Cánovas et al., *in press*. Herpetol. Rev.). Our data suggest spring–summer reproductive activity with a late maturing, single annual clutch reproductive strategy (Tinkle 1969. Amer. Nat. 103:501–516).

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PHRYNOSOMA CORNUTUM (Texas Horned Lizard). WINTER ACTIVITY. Reports of winter activity among horned lizards are sparse. One that appeared recently (Wone and Beauchamp 2003. J. Herpetol. 37:679–686) described winter activity of *Phrynosoma mcallii* from California. Although the Texas Horned Lizard, *P. cornutum*, is well studied across its geographic range, the only data close to addressing winter activity are those of Fair and Henke (1999. J. Herpetol. 33:525–517), who described activity prior to hibernation and after emergence in south Texas. Hence, here we report mid-winter activity of *P. cornutum* from west Texas.

Our observations were made in the Dog Canyon area of Big Bend National Park, Brewster County, Texas (29°37'N, 103°09'W, datum: NAD83; elev. 789 m). A small group ($N = 3$) of *P. cornutum* were individually fitted with PD-2T radio transmitters (Holohil Systems Ltd, Carp, Ontario, Canada) and iButton thermachron temperature dataloggers (Dallas Semiconductor, Sunnyvale, Cali-

fornia, USA) to monitor overwinter activities and external temperatures. Additional thermachrons were placed on the ground at each of two reference sites (shade and sun). Dataloggers recorded temperatures every two hours from 1 September 2005 to 16 February 2006. We inferred lizard activity from the temperature datalogger record and verified this by regular observations of the lizards. Lizards were observed twice weekly from 7 August 2005 through 24 April 2006. Each lizard was assigned an alphanumeric identifier of a letter indicating its sex followed by a number. Measurements of each lizard (M1: 96 mm SVL, 73 g; F2000: 111 mm SVL, 99 g; F4000: 107 mm SVL, 93 g) were taken just prior to dormancy.

On 15 September 2005, the male (M1) buried himself 2 cm beneath the ground surface under the cover of a honey mesquite (*Prosopis glandulosa*) and did not emerge from this site until 7 March 2006. The two females buried themselves ca. 2 cm below the ground surface on 24 October 2005, both locations under the cover of *P. glandulosa*. Female F2000 remained underground until emerging on 16 April 2006. Interestingly, female F4000 emerged on 17 December 2005 (58 days after beginning dormancy) and moved to a second location 6 m away where she reburied herself for an additional 104 days until emerging on 2 April 2006. Exposed daytime ground temperatures nearby (~200 m) recorded a high of 29.0°C while the thermachron attached to the lizard's dorsum recorded a high of 29.5°C for 17 December 2005. Both pre- and post-movement refuges were located within one meter of the center of a *P. glandulosa* ca. 2 cm below ground level in sandy soils.

The low temperature recorded for F4000 on the morning of 17 December 2005 prior to its movement was 3.5°C while the thermachrons of two other lizards recorded lows of 7.0°C (M1) and 5.5°C (F2000) that morning. Low temperatures recorded on lizard F4000 10 days before and after movement averaged 5.4°C (range: -1.0–12.5°C) while the other two lizards (M1 and F2000) averaged 6.2°C (range: 1.0–12.0°C) and 4.4°C (range: -1.5–10.5°C), for that time period respectively. An F-test indicated no significant difference in temperature variation recorded on lizard thermachrons before and after F4000 moved.

To our knowledge, this is the first report of mid-winter activity in *P. cornutum*. We believe the winter movement observed may have been a result of the low temperature recorded on the morning of 17 December 2005, but we cannot exclude the possibility of other factors. This type of winter activity may be more common than recognized, and only has come to light with the increasing use of temperature dataloggers and radio telemetry equipment during non-breeding seasons.

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