NEW RECORDS OF SPEODESMUS  
(DIPLOPODA: POLYDESMIDA: POLYDESMIDAE) 
FROM FORT HOOD, BELL AND CORYELL COUNTIES, TEXAS

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ABSTRACT

New records are provided for the troglobitic millipede *Speodesmus castellanus* in caves on Fort Hood, Bell and Coryell Counties, Texas. Additional records for the genus are also provided for female and immature specimens not identifiable to species but probably belonging to *S. castellanus*.

RESUMEN

Se proporcionan nuevos registros para el milpiés troglobio *Speodesmus castellanus* en cuevas en los condados de Fort Hood, Bell y Coryell, Texas. Se proporcionan registros adicionales de especímenes hembras e inmaduros para el género, no identificables a especie pero que probablemente pertenezcan a *S. castellanus*.

INTRODUCTION

The genus *Speodesmus* Loomis, 1939, is an important element of the cavernicol fauna of Texas, with six described and several undescribed species. *Speodesmus tugambius* (Chamberlin) from western Texas also occurs in New Mexico and another species is known only from a cave in Colorado (Loomis, 1939; Chamberlin, 1952; Causey, 1959; Shear, 1984; Elliott, 2004). All species are troglobitic.

The only species known from Fort Hood is *S. castellanus* Elliott, described from adults in six caves. Females and immatures were tentatively identified as this species from eleven additional caves. The present report includes records of adult males from an additional 18 caves and females or immatures from an additional 10 caves.

Specimens of *S. castellanus* have been taken from clay banks in total darkness, but they have also been found (sometimes abundant) in soil in the twilight zone of sinkhole entrances to caves.

METHODS

Specimens were preserved in 80% ethanol and stored in patent lipped vials within museum jars. Specimens were examined up to 80X on a stereoscope. Gonopods of all adult males were examined, and all were *Speodesmus castellanus*.  

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RESULTS

A total of 148 specimens was examined, of which 55 were adult males, 51 were adult females, and 42 were immature.

The species is widely distributed across northern Fort Hood (Fig. 1). The only specimens of the genus from southern Fort Hood are two juveniles from Nolan Creek Cave. This cave is physiographically isolated from caves in northern Fort Hood and it will be interesting to determine if it contains S. castellanus or an undescribed species.

There was little variation except in body size, from 7 to about 11 mm for adults. There was no significant difference from across Fort Hood or from specimens taken in different habitats. In some vials adult males were larger, in some females were larger. Some sexual dimorphism was noted: males usually have longer, thicker legs, as in other species, but males had no obvious leg bumps. A few females had swollen clypeopores on segment 3. The overall sex ratio was about equally. Immatures were about 29% of the 148 total specimens. All preanal scales that were examined (most adults) had two setae, as in the species description. Many smaller specimens were fragmented, as were some adults, but the collections were good for determination.

Figure 2 shows an annual cycle in the ratio of immatures to adults. Data were grouped into four seasons and the percentage of immatures was graphed in the total for each season. Immatures are at a low in summer (11%), then peak in the fall at 39% and decline through the winter to spring as they mature into adults. From this it appears that the species has an annual cycle and lays eggs mostly in the summer. A more systematic census is required to verify this, especially since there is a collecting bias for larger specimens. Another potential problem is that in dry summer months specimens are generally rare and there have been fewer collections made during these months than at other times of the year.

**Speodesmus sp.**

Records.—**Bell County:** Buchanan Cave; Figure 8 Cave; Sanford Pit Cave; Steak Cave; Triple J Cave.  **Coryell County:** Big Red Cave; Copperhead Cave; Cornelius Cave; Ingram Cave; Mixmaster Cave; Tippit Cave.

New records.—**Bell County:** Buchanan Cave, 2 June 2005 (J. Fant, C. Pekins), lower level, 1 female; Chupacabra Pit Cave, 3 May 2006 (J. Fant, M. Reyes), 1 female; Cross Crack Cave, 5 April 2007 (J. Reddell), 1 female, 2 immature males; Estes Cave, 27 Sept. 2005 (J. Krejca, C. Phillips), 1 female; Green Carpet Cave, 10 Oct. 2004 (J. Fant, C. Murray, M. Reyes, M. Warton), 1 immature female; Molly Hatchet Cave, 8-9 Oct. 2005

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**Fig. 1.**—Distribution of *Speodesmus castellanus* on Fort Hood.
Fig. 2.—Annual cycle in the ratio of immatures to adults of *Speodesmus castellanus*

(J. Fant, M. Reyes), 2 immature females; Nolan Creek Cave, 27 April 2007 (J. Fant, J. Reddell), 1 immature female; 20 May 2007 (J. Fant, J. Reddell, M. Reyes), 1 immature male; Ruggers Rift Cave, 17 March 2005 (C. Pekins), 1 immature male; Speak Cave, 18 Oct. 2007 (J. Reddell, M. Reyes), 1 immature female; Triple J Cave, 15 June 2007 (C. Pekins, J. Reddell, M. Reyes), 1 female; Wire Basket Cave, 2 May 2005 (J. Fant), 1 immature male; Woods Edge Cave, 7 Nov. 2005 (M. Reyes, M. Warton), 1 immature male. *Coryell County*: Lucky Day Cave, 4 April 2007 (J. Fant, J. Reddell, M. Reyes), 1 immature male.

*Speodesmus castellanus* Elliott

**Records.**—*Bell County*: Bumelia Well Cave; Fellers Cave; Lucky Rock Cave; Price Pit Cave. *Coryell County*: Keyhole Cave; Rocket River Cave (type-locality).

**New records.**—*Bell County*: Afternoon Cave, 18 March 2005 (M. Reyes), 2 females; 4 May 2005 (M. Reyes), 1 male; 4 April 2007 (M. Reyes), 3 males, 1 female; Blue Green Hole Cave, 3 May 2005 (J. Fant, J. Reddell), 1 female; 31 May 2005 (J. Fant, M. Reyes), 1 female; 5 April 2007 (J. Fant), 2 males, 2 females; 2 immature males; Cigarina Cave, 6 April 2007 (C. Pekins, J. Reddell, M. Reyes), 1 male; Copperhead Cave, 20 Aug. 2004 (J. Fant, J. Reddell), 1 male; 20 Feb. 2005 (J. Fant, M. Reyes), 2 females; 2 May 2005 (J. Fant, M. Reyes), 1 immature female; Cowbell Cave, 19 May 2004 (C. Pekins, J. Reddell, M. Reyes), 1 male; Dos Caminos Cave, 4 May 2005 (J. Fant, J. Reddell), 5 males, 6 females, 1 immature female; 23 Oct. 2005 (M. Reyes), 1 male, 1 female; Dual Sinks Cave, 22 Nov. 2005 (J. Fant, M. Reyes), 3 males, 2 females; Endless Pit Cave, 15 Oct. 2004 (J. Fant, C. Pekins, J. Reddell, M. Reyes), 3 males, 3 immature males, 2 immature females; 9 March 2005 (J. Fant), 2 males, 2 females; Falling Turtle Cave, 20 March 2004 (J. Fant, R. Ralph, J. Reddell, M. Reyes, M. Warton), 4 males, 1 female, 1 immature male, 1 immature female; Fellers Cave, 13 May 2007 (J. Fant, J. Reddell), 1 male, 1 female, 1 immature male; Fire Break Cave, 7 March 2004 (M. Reyes, M. Warton), 1 male, 1 female; 2 Oct. 2004 (J. Fant, C. Murray, M. Warton), 1 male; 25 Oct. 2004 (J. Fant, C. Pekins, J. Reddell, M. Reyes), 2 females; Hackberry Cave, 12 June 2004 (M. Reyes, M. Warton), 1 male; 18 Sept. 2004 (J. Fant, M. Reyes), 1 male, 2 females; Hidden Fern Pit Cave, 26 Aug. 2004 (J. Fant, M. Reyes), 1 female, 1 immature female; 2 May 2005 (M. Reyes), 1 male; Hidden Pit Cave, 7 Aug. 2003 (J. Reddell, M. Reyes), 1 female; 21 March 2004 (J. Fant, J. Reddell, M. Reyes), 1 male; Lost Chasm Cave, 4 May 2004 (J. Fant, J. Reddell, M. Reyes), 1 male, 1 female, 1 immature male, 1 immature female; 20 Jan. 2005 (M. Reyes), 1 immature female; 18 Oct. 2007 (J. Reddell, M. Reyes), 1 immature female; Mouse Hole Pit, 7 March 2004 (M. Reyes), 1 male; Plethodon Pit Cave, 24 March 2004 (J. Fant, C. Pekins, J. Reddell, M. Reyes), 1 immature male; 2 May 2005 (J. Fant, M. Reyes), 1 male, 1 immature male, 3 immature females; Rainy Day Cave, 14 Aug. 2003 (J. Reddell, M. Reyes), 1 male; 19 May 2004 (M. Reyes), 2 males, 2 females, 1 immature female; Slotsky Pit Cave, 19 Sept. 2004 (J. Fant, M. Reyes), 1 male. *Coryell County*: Sperry Cave, 2 Apr. 2007 (J. Fant, J. Reddell, M. Reyes), 13 males, 9 females, 1 immature male, 6 immature females; 12 May 2007 (J. Fant, J. Reddell, M. Reyes), 1 female, 1 immature male.

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LITERATURE CITED


