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ON THE SPIDER FAMILY ANAPIDAE (ARANEAE, ARANEOIDEA) IN THE UNITED STATES

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Abstract.—The only known Nearctic anapid, *Chasmocephalon shantzi* Gertsch from California and Oregon, is not congeneric with the Australian type species of *Chasmocephalon* and is placed in the new genus *Gertschanapis.*

The tiny orb-weaving spiders of the family Anapidae are quite common in tropical and south temperate forests of both the Old and New Worlds, but the distribution of the family in north temperate areas is patchy, including the Mediterranean region, Nepal, Korea, and Japan. In the United States, only a single species is known, described as *Chasmocephalon shantzi* by Gertsch (1960) and apparently endemic to California and Oregon.

The genus *Chasmocephalon* was described by O.-P. Cambridge (1889) for the Australian species *C. neglectum*; over the ensuing century, the genus has served as a dumping ground for a wide variety of dissimilar species from South Africa, New Zealand, and Australia as well as the United States. Forster (1959) and Brignoli (1981) corrected several of these misplacements but, like the other authors involved, did not examine *C. neglectum,* instead basing their concept of the genus on the much more fully described Tasmanian species *C. minutum* Hickman (1943). As Brignoli (1981:112) indicated, "the lack of an adequate description of the generotype leaves open many doubts on the real identity of this genus." Although Brignoli did not study specimens from the United States, he noted (1981:113) that "The puzzling *Ch. shantzi* Gertsch, 1960 from California and Oregon has a specialized femur and a very long embolus: it does not fit in any of the genera I know."

In the course of a recently completed revision of the anapid faunas of Chile, New Zealand, New Caledonia, and Australia (Platnick and Forster, in press), we were able to examine the holotype female of *C. neglectum,* and to confirm (from modern material) that it is a Western Australian endemic (because the holotype was found by O.-P. Cambridge attached to the leg of a much larger mygalomorph spider, long after that mygalomorph was collected in Western Australia, it could easily have become accidentally associated with that specimen and could actually have come from some other region entirely). *Chasmocephalon* has proved to be a sizable genus, containing seven other species from various parts of Australia, but none of the taxa previously associated with *C. neglectum* are actually congeneric with that species. Hence we describe here the new genus needed to contain *C. shantzi*; interestingly, this American species does seem to be more closely related to true *Chasmocephalon* than to the other known New World genera or to the misplaced Tasmanian species that supported previous misconceptions of *Chasmocephalon.*

We thank Mrs. C. M. Tibbetts for supplying illustrations. Material was obtained

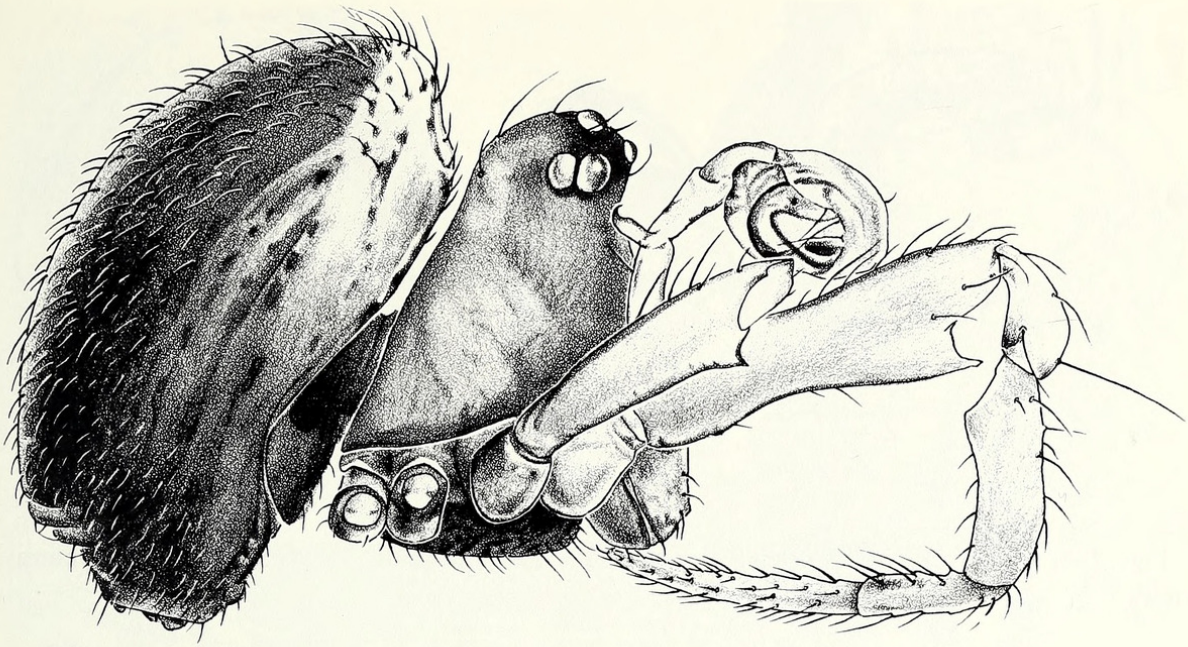


Fig. 1. *Gertschanapis shantzi* (Gertsch), male, lateral view.

from the collection of the American Museum of Natural History (AMNH) and from Dr. H. W. Levi of the Museum of Comparative Zoology, Harvard University (MCZ), Dr. E. I. Schlinger of the University of California at Berkeley (UCB), and Mr. S. Frommer of the University of California at Riverside (UCR); the assistance of those curators is much appreciated. This research was supported by NSF grants BSR-8312611 and BSR-8406225 to the first author.

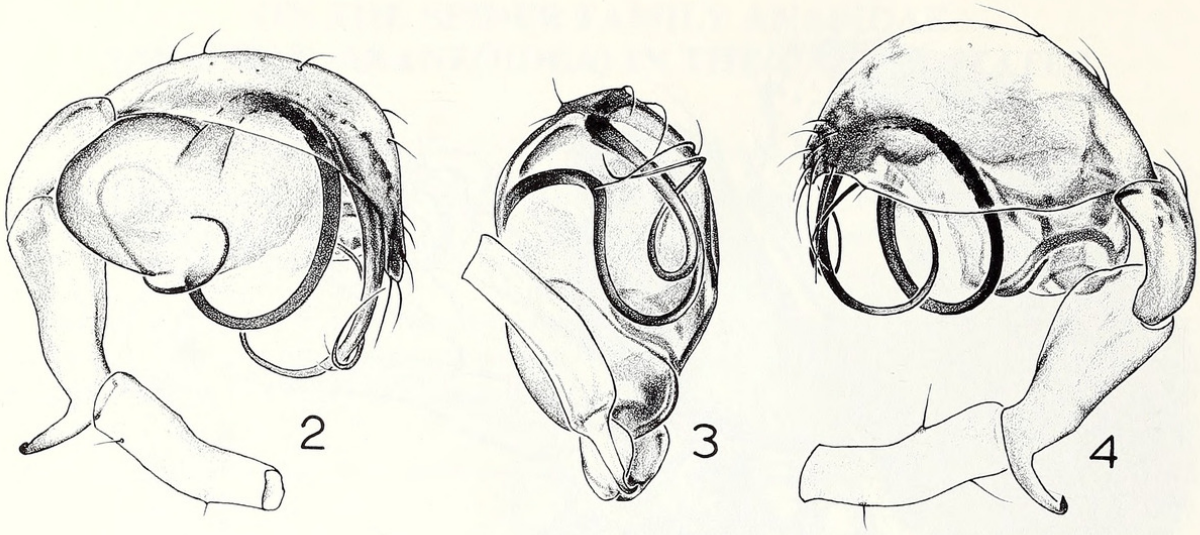
Gertschanapis, new genus

Type species. Chasmocephalon shantzi Gertsch (1960).

Etymology. The generic name is in honor of Willis J. Gertsch, a pioneer in the study of American Anapidae, and is feminine in gender.

Diagnosis. Members of this genus can be recognized by the enlarged ventral tubercle situated subdistally on femora I and II in both sexes (Fig. 1). Males have an elongated, dorsally directed apophysis situated proximally on the palpal patella (Figs. 2–4). Females have uniquely spiralled ducts in the internal genitalia (Fig. 5).

Relationships. Two putative synapomorphies associate *Gertschanapis* more closely with a group of Australasian genera than with any of the other American anapids (three Neotropical genera revised by Platnick and Shadab, 1978, 1979, and six temperate South American genera revised by Platnick and Forster, in press). These characters are, first, the incorporation of the anterior pair of spiracles into the anterior abdominal suctum and the anterior displacement of those spiracles to a position about halfway between the epigastric furrow and pedicel, and second, the rotation of the cephalic porepit onto a sclerite that is reflexed under the lateral margin of the carapace and that thus separates the dorsal edge of the palpal endites from the carapace. The Australasian anapids sharing these characters include some of the genera from New Zealand and Australia, and all the genera known from New Caledonia (Platnick and Forster, in press).



Figs. 2–4. *Gertschanapis shantzi* (Gertsch), left male palp, prolateral, ventral, and retrolateral views.

Description. Relatively large anapids (total length over 1 mm). Eight eyes, anterior medians much smaller than others. Cephalic porepit on reflexed sclerite situated between endites and anterolateral corners of carapace. Abdomen with dorsal scutum in males, anterior scutum incorporating advanced anterior spiracles supplying tracheae to both abdomen and cephalothorax (contrary to the statement of Gertsch, 1960:5); posterior tracheae lost (Forster, 1958, fig. 27). Femora I and II with enlarged ventral tubercle situated subdistally. Female palpal segments beyond coxa represented only by small knob on endites. Female genitalia haplogyne.

Gertschanapis shantzi (Gertsch), new combination
Figs. 1–5

Chasmocephalon shantzi Gertsch, 1960:5, figs. 2–8 (male holotype from Hastings Natural Reservation, Monterey Co., California, in AMNH, examined).

Diagnosis. With the characters of the genus and genitalia as in Figures 2–5.

Male. Described by Gertsch (1960).

Female. Described by Gertsch (1960), who correctly indicated that there is no external epigynum. The internal genitalia are of unusual complexity for the family, including a pair of dorsolateral flaps partially enclosing a pair of rounded receptacula on long, spiralled ducts (Fig. 5).

Variation. The size of the enlarged ventral tubercles on femora I and II is somewhat variable, with the largest tubercles (as shown in Fig. 1) occurring on specimens from the San Francisco Bay area.

Material examined. UNITED STATES: **California:** *Amador Co.:* 2 mi NE Jackson, Apr. 16, 1957 (L. M. Smith, R. O. Schuster, AMNH), 1♀. *Butte Co.:* Chico, Sept. 4, 1958 (L. M. Smith, R. O. Schuster, AMNH), 1♂. *Calaveras Co.:* 2 mi W San Andreas, Mar. 25, 1958 (L. M. Smith, R. O. Denning, AMNH), 1♂, 2♀. *Contra Costa Co.:* Moraga, Oct. 5, 1981 (D. G. Denning, AMNH), 1♀; no specific locality, June 3–4, 1983 (D. G. Denning, AMNH), 1♀. *Los Angeles Co.:* SE end, Bouquet Reservoir, Nov. 17, 1980, pack rat nest under oak (K. W. Cooper, UCR), 3♂, 3♀; Glendale,

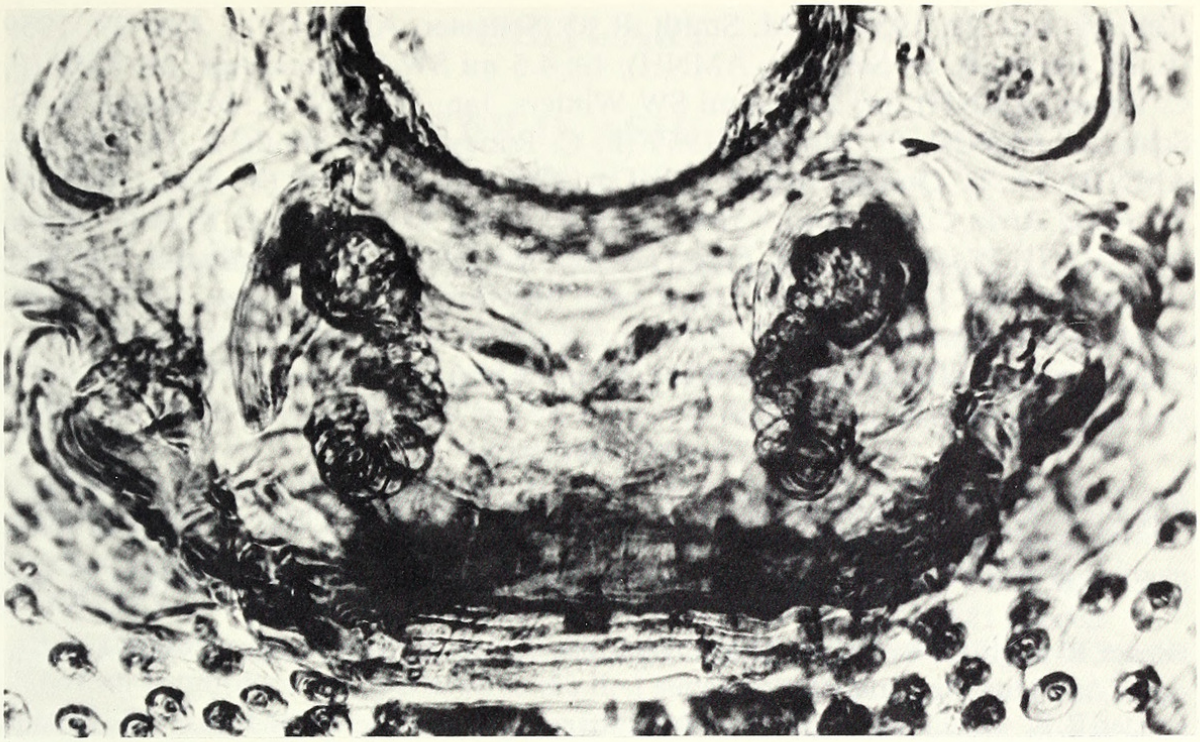


Fig. 5. *Gertschanapis shantzi* (Gertsch), internal female genitalia, dorsal view.

Nov. 24, 1950 (E. I. Schlinger, AMNH), 1♀; Los Angeles, Aug. 5, 1931 (W. Ivie, AMNH), 1♀; Montrose, Dec. 31, 1932 (W. Ivie, AMNH), 2♂, 3♀. *Marin Co.:* Bolinas, Mar. 24–Apr. 7, 1960 (R. O. Schuster, AMNH), 13♂, 8♀; 1 mi S Inverness, May 17, 1953 (D. D. Linsdale, UCB), 1♂, 1♀; 1 mi W Inverness, Mar. 1, 1960 (Grigarick, L. M. Smith, R. O. Schuster, AMNH), 2♂, 2♀; 6 mi E Point Reyes Station, Mar. 1, 1960 (Grigarick, L. M. Smith, R. O. Schuster, AMNH), 1♂, 2♀; San Geronimo, Sept. 19–21, 1963–1965 (J. and W. Ivie, AMNH), 2♀; Taylor State Park, Sept. 21, 1965 (J. and W. Ivie, AMNH), 1♀. *Mendocino Co.:* Inglenook Fen, 4 mi N Fort Bragg, Aug. 12–Dec. 15, 1973, elev. 30–50 ft, dune, fen areas, vacuum samples (C. E. Griswold, UCB), 14♀, 4♂. *Monterey Co.:* Hastings Natural History Reservation, Mar. 13, 1936, wood-rat nest (J. M. Linsdale, AMNH), 1♂, 1♀ (types). *Napa Co.:* Mt. St. Helena, May 30, 1949 (E. I. Schlinger, AMNH), 1♂; Napa Valley Ranch, Apr. 12, 1958 (L. M. Smith, AMNH), 1♂. *Nevada Co.:* Chicago Park, July 26, 1950 (A. E. Cott, S. F. Bailey, AMNH), 1♀. *Placer Co.:* 4 mi W Newcastle, Mar. 19, 1959 (L. M. Smith, R. O. Schuster, AMNH), 1♂. *San Diego Co.:* Cleveland National Forest, near Henshaw Reservoir, July 30, 1956 (V. Roth, W. J. Gertsch, AMNH), 1♂; Mt. Palomar, June 18, 1955 (R. O. Schuster, AMNH), 1♀. *San Francisco Co.:* San Francisco, July 10, 1904 (AMNH), 1♀. *San Luis Obispo Co.:* beach NW San Simeon, Sept. 16, 1964 (J. and W. Ivie, AMNH), 1♂. *San Mateo Co.:* S Woodside, Sept. 17, 1964 (J. and W. Ivie, AMNH), 1♂. *Santa Clara Co.:* Stevens Creek, June 2, 1957 (R. O. Schuster, AMNH), 1♂. *Santa Cruz Co.:* Bonny Doon Road, 1.2 mi E intersection with Route 1, Apr. 4–5, 1980, redwood litter (J. Coddington, MCZ), 3♂, 5♀. *Shasta Co.:* Burney Falls, June 18, 1954 (R. O. Schuster, AMNH), 4♀. *Sonoma Co.:* 10 mi S Santa Rosa, Mar. 22, 1957, magnolias (L. M. Smith, R. O. Schuster, AMNH), 1♂. *Ventura Co.:* Matilija, near Ojai, June 16, 1955 (R. O. Schuster, AMNH), 1♀. *Yolo Co.:* 3 mi N

Rumsey, July 29, 1959 (L. M. Smith, R. O. Schuster, AMNH), 1♀, Aug. 29, 1959 (L. M. Smith, R. O. Schuster, AMNH), 1♂; 4.5 mi SW Winters, Apr. 23, 1959 (F. C. Raney, AMNH), 1♂, 2♀; 5.4 mi SW Winters, Jan. 17, 1960 (L. M. Smith, R. O. Schuster, AMNH), 6♀, May 29, 1959 (F. C. Raney, L. M. Smith, R. O. Schuster, AMNH), 1♂, 2♀. **Oregon:** *Benton Co.:* Corvallis, Oct. 15, 1949 (V. Roth, AMNH), 1♀. *Hood River Co.:* Perham Creek, 5 mi W Hood River, July 1, 1954 (V. Roth, AMNH), 1♀. *Washington Co.:* Forest Grove, Feb. 1941 (J. C. Chamberlin, AMNH), 1♂, 1♀. *Yamhill Co.:* Peavine Ridge, near McMinnville, Nov.–Dec. 1947 (K. M. Fender, AMNH), 2♀.

Distribution. Widely distributed in California and Oregon.

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