



<https://www.biodiversitylibrary.org/>

**Journal of the New York Entomological Society.**

Lawrence, Kan. :Allen Press [etc.],1893-2007.

<https://www.biodiversitylibrary.org/bibliography/8089>

**v.92 (1984):** <https://www.biodiversitylibrary.org/item/206056>

Article/Chapter Title: Cheliferoides

Page(s): Page 169, Page 170, Page 171, Page 172, Page 173

Holding Institution: Smithsonian Libraries

Sponsored by: Biodiversity Heritage Library

Generated 4 May 2018 10:45 AM

<https://www.biodiversitylibrary.org/pdf4/077908900206056>

This page intentionally left blank.



ON THE PSEUDOSCORPION-MIMICKING SPIDER  
*CHELIFEROIDES* (ARANEAE: SALTICIDAE)

NORMAN I. PLATNICK

Department of Entomology, American Museum of Natural History,  
Central Park West at 79th Street, New York, New York 10024

*Abstract.*—The male of *Cheliferoides segmentatus* F. O. P.-Cambridge is redescribed and the female is described for the first time; Cambridge's hypothesis that these spiders mimic pseudoscorpions is supported by the discovery of specimens living with chernetids.

---

Jumping spiders are well known as mimics; many genera are extremely ant-like in appearance and behavior (Reiskind, 1977), and others (such as the Neotropical genus *Cylistella*) are convincing impersonators of beetles. F. O. P.-Cambridge (1901), in describing the male of a Guatemalan jumping spider which he aptly named *Cheliferoides segmentatus*, indicated that a more unusual model might be involved: "One would suspect by its general appearance that this spider mimics one of the Pseudoscorpions." Cambridge's hypothesis has remained uninvestigated (as has the species), but it has recently gained support from the discovery of a male and juvenile specimens living together with several chernetid pseudoscorpions of similar size and appearance under the bark of mesquite in Maricopa County, Arizona; the pseudoscorpions belong to *Parachernes* (Muchmore, *in litt.*). The flatness of the spiders, the modification of the first legs into structures resembling pseudoscorpion palpal chelae, and the abdominal pigmentation, which provides a strongly segmented appearance, all contribute to the resemblance (Figs. 1, 2).

Since the original description of *Cheliferoides segmentatus*, two additional species have been placed in the genus: *C. longimanus* Gertsch (1936) from Texas and *C. planus* Chickering (1946) from Panama. These species do resemble *C. segmentatus* in having an incrassate tibia I, but such modifications occur in a number of other Neotropical genera, such as *Bellota* (see Galiano, 1972a) and *Chirothecia* (see Galiano, 1972b), where they are generally accompanied by a ventral fringe of thick setae. Comparison of the genitalia of *C. longimanus* and *C. planus* indicates that (as was indicated for the first species by Richman and Cutler, 1978) neither of them is closely related to *C. segmentatus*. Each belongs to a different (and possibly undescribed) genus of the *Bellota* complex, but the problem of their proper assignment is beyond the scope of the present paper. Both the genitalic structure and the presence of a small caudal extension of the abdomen support instead Wanless's (1978) hypothesis of a close relationship between *Cheliferoides* and *Marengo*, a genus found in central and southern Africa, Sri Lanka, Malaysia, Borneo, Java, and the Philippines in which the front legs are similarly modified.

I am indebted to Dr. W. B. Muchmore for donating the specimens that initially stimulated this paper. Further material, including the first known females of *C. segmentatus*, was obtained from the collection of the American Museum of Natural History (AMNH) and from Drs. F. Wanless of the British Museum (Natural History)



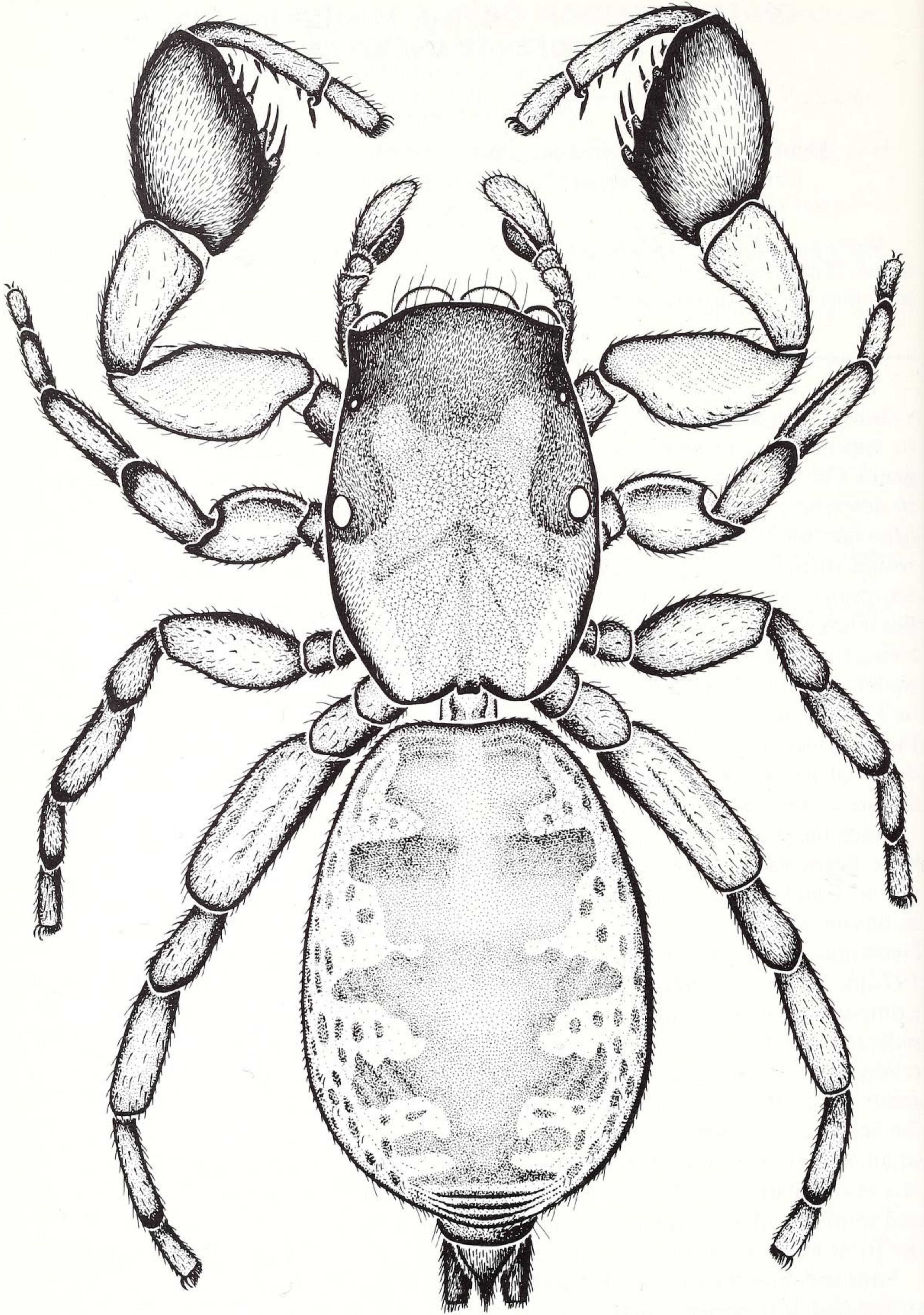
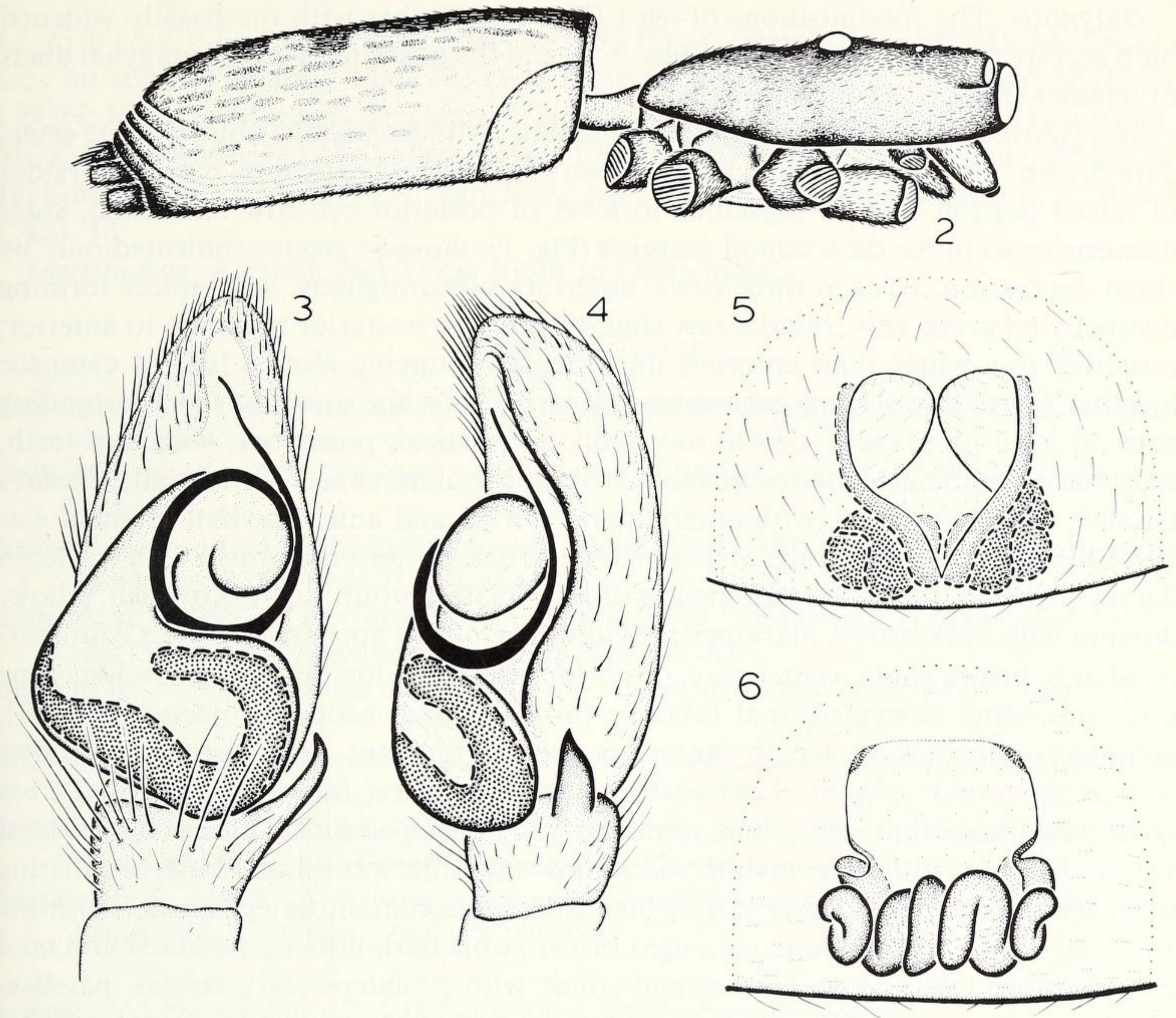


Fig. 1. *Cheliferoides segmentatus* F. O. P.-Cambridge, male, dorsal view.





Figs. 2–6. *Cheliferoides segmentatus* F. O. P.-Cambridge. 2. Cephalothorax and abdomen, lateral view. 3. Palp, ventral view. 4. Palp, retrolateral view. 5. Epigynum, ventral view. 6. Epigynum, dorsal view.

(BMNH), W. Pulawski of the California Academy of Sciences (CAS), G. B. Edwards of the Florida State Collection of Arthropods (FSCA), and H. W. Levi of the Museum of Comparative Zoology (MCZ). Drs. Wanless and Edwards, as well as Drs. B. Cutler, M. E. Galiano, C. E. Griswold, and D. B. Richman, generously shared their knowledge of salticids. The illustrations are by Dr. M. U. Shadab of the American Museum. The format of the description follows that of Wanless (1978).

*Cheliferoides segmentatus* F. O. P.-Cambridge

Figs. 1–6

*Cheliferoides segmentatus* F. O. P.-Cambridge, 1901:254, pl. 22, figs. 12a–f (male holotype from Guatemala, no specific locality, in BMNH, examined [the holotype lacks both palpi; a single palp in the holotype vial does not correspond to Cambridge's figures or to the palpi of other specimens, and belongs to some other spider]). Richman and Cutler, 1978:84.



*Diagnosis.* The modifications of leg I (Fig. 1), together with the basally widened bulb and spiral embolus of males (Figs. 3, 4) and the posteriorly coiled epigynal ducts of females (Figs. 5, 6), are diagnostic.

*Male* (Arizona). *Carapace* flattened, reticulate, with evenly distributed white setae, dark brown, with area enclosed by front two eye rows and extending back along sides of raised portion of pars cephalica to level of posterior eye row blackened, sides orangeish except for dark lateral margins (Fig. 1); thoracic groove indicated only by slight depression. *Eyes* in three rows, anteriors subcontiguous, with apices forming distinctly recurved row, middle row slightly closer to posterior row than to anterior; posterior row wider than anterior; quadrangle occupying almost half of carapace length. *Clypeus* low, sloping backwards, with fringe of white squamous setae extending back to level of coxae I. *Chelicerae* small, subvertical; promargin with two teeth, retromargin with one; anterior surface with white squamous setae proximally. *Endites* parallel, distally globose, with anterolateral serrula and anteromedian scopula. *Labium* slightly wider than long. *Sternum* oval, obtuse posteriorly, brown with scattered darker pigment. *Abdomen* flattened, without dorsal scutum, light brownish yellow, dorsum with dark brown markings providing segmental appearance, sides with scattered dark brown spots, venter gray; posterior portion of dorsum with five telescoping folds preceding elongated anal tubercle forming small caudal projection (Fig. 2); spinnerets subequal in length, anteriors robust, medians and posteriors slender; colulus apparently absent. *Legs* with first pair massive, femur, patella, and tibia grossly enlarged, tibia with robust spines on well developed socket flanges but without ventral fringe of stiff setae, metatarsus with distal prolateral spine robust, originating from distinct cuticular lobe, opposing first tibial spine; remaining legs slender, formula 1432; leg I with femur and patella light brown, tibia dark brown, metatarsi and tarsi orange, other legs yellow, femora and tibiae with prolateral dark stripes, patellae, tibiae, and metatarsi with proximal and distal dark rings; spination: femora: II, III d0-0-1, p0-0-1; IV d0-1-1; tibiae: I v0-3-3; II v0-2-1; metatarsi: I v0-2-2; II v0-1-0; claw tufts present, scopulae absent. *Palp* with slender, apically bent tibial apophysis; tegulum wide basally, with conspicuous spermophore duct and distally coiled embolus (Figs. 3, 4). *Dimensions*: total length 3.38; carapace length 1.40, width 0.90; abdomen length 1.84; eyes anterior row 0.78, middle row 0.72, posterior row 0.86, quadrangle length 0.73. *Ratios*: AM:AL:PM:PL, 13:6:2:6; AL-PM-PL, 15-13.

*Female* (Nuevo León). As in male, except for the following. *Chelicerae* without squamous setae. *Abdomen* with six posterior folds. *Leg* I slightly less massive than in male, with stripes and rings as on legs II-IV; spination: tibia I v0-3-3; metatarsus I v0-2-2. *Palp* yellow with prolateral dark stripes on femur and patella. Epigynum pale (Figs. 5, 6). *Dimensions*: total length 3.02; carapace length 1.30, width 0.83; abdomen length 1.69; eyes anterior row 0.71, middle row 0.69, posterior row 0.82, quadrangle length 0.70. *Ratios*: AM:AL:PM:PL, 13:6:2:5, AL-PM-PL, 13-12.

*Material examined.* **United States:** ARIZONA: *Maricopa Co.*: Coons Bluff, along Salt River, Tonto National Forest, Dec. 25, 1980, under bark of mesquite with pseudoscorpions (L. Merkle, AMNH), 1♂. *Pima Co.*: Forestry Cabin, Baboquivari Mountains, July 18-29, 1951, elevation 3,500 feet (W. S. Creighton, AMNH), 1♀. *Pinal Co.*: Aravaipa Canyon, Mar. 8, 1970 (K. Stephan, FSCA), 1♂. TEXAS: *Comal Co.*: Seancy Estates, New Braunfels, Apr. 12, 1936, tree trunk (S. E. Jones, MCZ),



1♂. *Frio Co.*(?): Frio State Park, Mar. 5, 1952 (W. S. Creighton, AMNH), 1♂. *Uvalde Co.*: no specific locality, May 20, 1938 (Robinson, AMNH), 1♂. **Mexico:** NUEVO LEÓN: Villa de Santiago, Hacienda Vista Hermosa, June 19, 1940 (H. Hoogstraal, MCZ), 1♀. TAMAULIPAS: Mante, Apr. 17, 1963 (W. J. Gertsch, W. Ivie, AMNH), 1♂. **Guatemala:** ESCUINTLA: San José, Apr. 3, 1955 (E. I. Schlinger, E. S. Ross, CAS), 1♂.

*Distribution.* Arizona and Texas south to Guatemala.

#### LITERATURE CITED

- Cambridge, F. O. P.-. 1901. Arachnida. Araneida. *In*: F. D. Godman and O. Salvin, *Biologia Centralia-Americana*.
- Chickering, A. M. 1946. The Salticidae (spiders) of Panama. *Bull. Mus. Comp. Zool.* 97:1-474.
- Galiano, M. E. 1972a. Salticidae (Araneae) formiciformes. XIII. Revision del genero *Bellota* Peckham, 1892. *Physis* 31:463-484.
- Galiano, M. E. 1972b. Revision del genero *Chirothecia* Taczanowski, 1878 (Araneae, Salticidae). *Rev. Mus. Argentino Cienc. Nat., Ent.* 4:1-42.
- Gertsch, W. J. 1936. Further diagnoses of new American spiders. *Amer. Mus. Novit.* 852:1-27.
- Reiskind, J. 1977. Ant-mimicry in Panamanian clubionid and salticid spiders (Araneae: Clubionidae, Salticidae). *Biotropica* 9:1-8.
- Richman, D. B. and B. Cutler. 1978. A list of the jumping spiders (Araneae: Salticidae) of the United States and Canada. *Peckhamia* 1:82-110.
- Wanless, F. R. 1978. A revision of the spider genus *Marengo* (Araneae: Salticidae). *Bull. British Mus. Nat. Hist., Zool.* 33:259-278.

Received November 22, 1983; accepted December 15, 1983.



The following text is generated from uncorrected OCR.

[Begin Page: Page 169]

NEW YORK ENTOMOLOGICAL SOCIETY  
92(2), 1984, pp. 169-173  
ON THE PSEUDOSCORPION-MIMICKING SPIDER  
CHELIFER OWES (ARANEAE: SALTICIDAE)  
Norman I. Platnick

Department of Entomology, American Museum of Natural History,  
Central Park West at 79th Street, New York, New York 10024

Abstract .— The male of *Cheliferoides segmentatus* F. O. P.-Cambridge is redescribed and the female is described for the first time; Cambridge's hypothesis that these spiders mimic pseudoscorpions is supported by the discovery of specimens living with chemetids.

Jumping spiders are well known as mimics; many genera are extremely ant-like in appearance and behavior (Reiskind, 1977), and others (such as the Neotropical genus *Cylistella*) are convincing impersonators of beetles. F. O. P.-Cambridge (1901), in describing the male of a Guatemalan jumping spider which he aptly named *Cheliferoides segmentatus*, indicated that a more unusual model might be involved: "One would suspect by its general appearance that this spider mimics one of the Pseudoscorpions." Cambridge's hypothesis has remained uninvestigated (as has the species), but it has recently gained support from the discovery of a male and juvenile specimens living together with several chernetid pseudoscorpions of similar size and appearance under the bark of mesquite in Maricopa County, Arizona; the pseudoscorpions belong to *Parachernes* (Muchmore, in litt.). The flatness of the spiders, the modification of the first legs into structures resembling pseudoscorpion palpal chelae, and the abdominal pigmentation, which provides a strongly segmented appearance, all contribute to the resemblance (Figs. 1, 2).

Since the original description of *Cheliferoides segmentatus*, two additional species have been placed in the genus: *C. longimanus* Gertsch (1936) from Texas and *C. planus* Chickering (1946) from Panama. These species do resemble *C. segmentatus* in having an incrassate tibia I, but such modifications occur in a number of other Neotropical genera, such as *Bellota* (see Galiano, 1972a) and *Chirothecia* (see Galiano, 1972b), where they are generally accompanied by a ventral fringe of thick setae. Comparison of the genitalia of *C. longimanus* and *C. planus* indicates that (as was indicated for the first species by Richman and Cutler, 1978) neither of them is closely related to *C. segmentatus*. Each belongs to a different (and possibly undescribed) genus of the *Bellota* complex, but the problem of their proper assignment is beyond the scope of the present paper. Both the genitalic structure and the presence of a small caudal extension of the abdomen support instead Wanless's (1978) hypothesis of a close relationship between *Cheliferoides* and *Marengo*, a genus found in central and southern Africa, Sri Lanka, Malaysia, Borneo, Java, and the Philippines in which the front legs are similarly modified.

I am indebted to Dr. W. B. Muchmore for donating the specimens that initially stimulated this paper. Further material, including the first known females of *C. segmentatus*, was obtained from the collection of the American Museum of Natural History (AMNH) and from Drs. F. Wanless of the British Museum (Natural History)

[Begin Page: Page 170]

170

JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY Vol. 92(2)

Fig. 1. *Cheliferoides segmentatus* F. O. P.-Cambridge, male, dorsal view.



**[Begin Page: Page 171]**

1984

PSEUDOSCORPION-MIMICKING SALTICID

171

Figs. 2-6. *Cheliferoides segmentatus* F. O. P.-Cambridge. 2. Cephalothorax and abdomen, lateral view. 3. Palp, ventral view. 4. Palp, retrolateral view. 5. Epigynum, ventral view. 6. Epigynum, dorsal view.

(BMNH), W. Pulawski of the California Academy of Sciences (CAS), G. B. Edwards of the Florida State Collection of Arthropods (FSCA), and H. W. Levi of the Museum of Comparative Zoology (MCZ). Drs. Wanless and Edwards, as well as Drs. B. Cutler, M. E. Galiano, C. E. Griswold, and D. B. Richman, generously shared their knowledge of salticids. The illustrations are by Dr. M. U. Shadab of the American Museum. The format of the description follows that of Wanless (1978).

*Cheliferoides segmentatus* F. O. P.-Cambridge

Figs. 1-6

*Cheliferoides segmentatus* F. O. P.-Cambridge, 1901:254, pi. 22, figs. 12a-f (male holotype from Guatemala, no specific locality, in BMNH, examined [the holotype lacks both palpi; a single palp in the holotype vial does not correspond to Cambridge's figures or to the palpi of other specimens, and belongs to some other spider]). Richman and Cutler, 1978:84.

**[Begin Page: Page 172]**

172

JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY Vol. 92(2)

Diagnosis. The modifications of leg I (Fig. 1), together with the basally widened bulb and spiral embolus of males (Figs. 3, 4) and the posteriorly coiled epigynal ducts of females (Figs. 5, 6), are diagnostic.

Male (Arizona). Carapace flattened, reticulate, with evenly distributed white setae, dark brown, with area enclosed by front two eye rows and extending back along sides of raised portion of pars cephalica to level of posterior eye row blackened, sides orangeish except for dark lateral margins (Fig. 1); thoracic groove indicated only by slight depression. Eyes in three rows, anteriors subcontiguous, with apices forming distinctly recurved row, middle row slightly closer to posterior row than to anterior; posterior row wider than anterior; quadrangle occupying almost half of carapace length. Clypeus low, sloping backwards, with fringe of white squamous setae extending back to level of coxae I. Chelicerae small, subvertical; promargin with two teeth, retromargin with one; anterior surface with white squamous setae proximally. Endites parallel, distally globose, with anterolateral serrula and anteromedian scopula. Labium slightly wider than long. Sternum oval, obtuse posteriorly, brown with scattered darker pigment. Abdomen flattened, without dorsal scutum, light brownish yellow, dorsum with dark brown markings providing segmental appearance, sides with scattered dark brown spots, venter gray; posterior portion of dorsum with five telescoping folds preceding elongated anal tubercle forming small caudal projection (Fig. 2); spinnerets subequal in length, anteriors robust, medians and posteriors slender; colulus apparently absent. Legs with first pair massive, femur, patella, and tibia grossly enlarged, tibia with robust spines on well developed socket flanges but without ventral fringe of stiff setae, metatarsus with distal prolateral spine robust, originating from distinct cuticular lobe, opposing first tibial spine; remaining legs slender, formula 1432; leg I with femur and patella light brown, tibia dark brown, metatarsi and tarsi orange, other legs yellow, femora and tibiae with prolateral dark stripes, patellae,



tibiae, and metatarsi with proximal and distal dark rings; spination: femora: II, III dO-O-1, pO-O-1; IV dO-1-1; tibiae: I vO-3-3; II vO-2-1; metatarsi: I vO-2-2; II vO-1-0; claw tufts present, scopulae absent. Palp with slender, apically bent tibial apophysis; tegulum wide basally, with conspicuous spermophore duct and distally coiled embolus (Figs. 3, 4). Dimensions: total length 3.38; carapace length 1.40, width 0.90; abdomen length 1.84; eyes anterior row 0.78, middle row 0.72, posterior row 0.86, quadrangle length 0.73. Ratios: AM:AL:PM:PL, 13:6:2:6; AL-PM-PL, 15-13.

Female (Nuevo Leon). As in male, except for the following. Chelicerae without squamous setae. Abdomen with six posterior folds. Leg I slightly less massive than in male, with stripes and rings as on legs II-IV; spination: tibia I vO-3-3; metatarsus I vO-2-2. Palp yellow with prolateral dark stripes on femur and patella. Epigynum pale (Figs. 5, 6). Dimensions: total length 3.02; carapace length 1.30, width 0.83; abdomen length 1.69; eyes anterior row 0.71, middle row 0.69, posterior row 0.82, quadrangle length 0.70. Ratios: AM:AL:PM:PL, 13:6:2:5, AL-PM-PL, 13-12.

Material examined. United States: ARIZONA: Maricopa Co.: Coons Bluff, along Salt River, Tonto National Forest, Dec. 25, 1980, under bark of mesquite with pseudoscorpions (L. Merkle, AMNH), 13. Pima Co.: Forestry Cabin, Baboquivari Mountains, July 18-29, 1951, elevation 3,500 feet (W. S. Creighton, AMNH), 19. Pinal Co.: Aravaipa Canyon, Mar. 8, 1970 (K. Stephan, FSCA), 13. TEXAS: Comal Co.: Seancy Estates, New Braunfels, Apr. 12, 1936, tree trunk (S. E. Jones, MCZ),

## [Begin Page: Page 173]

1984

PSEUDOSCORPION-MIMICKING SALTICID

173

1<3. Frio Co.(?): Frio State Park, Mar. 5, 1952 (W. S. Creighton, AMNH), 16. Uvalde Co.: no specific locality, May 20, 1938 (Robinson, AMNH), 16. Mexico: NUEVO LEON: Villa de Santiago, Hacienda Vista Hermosa, June 19, 1940 (H. Hoogstraal, MCZ), 1\$. TAMAULIPAS: Mante, Apr. 17, 1963 (W. J. Gertsch, W. Ivie, AMNH), 16. Guatemala: ESCUINTLA: San Jose, Apr. 3, 1955 (E. I. Schlinger, E. S. Ross, CAS), 16.

Distribution. Arizona and Texas south to Guatemala.

### LITERATURE CITED

- Cambridge, F. O. P.-. 1901. Arachnida. Araneida. In: F. D. Godman and O. Salvin, *Biologia Centralia-Americana*.
- Chickering, A. M. 1946. The Salticidae (spiders) of Panama. *Bull. Mus. Comp. Zool.* 97:1-474.
- Galiano, M. E. 1972a. Salticidae (Araneae) formiciformes. XIII. Revision del genero *Bellota* Peckham, 1892. *Physis* 31:463-484.
- Galiano, M. E. 1972b. Revision del genero *Chirothecia* Taczanowski, 1878 (Araneae, Salticidae). *Rev. Mus. Argentino Cienc. Nat., Ent.* 4:1-42.
- Gertsch, W. J. 1936. Further diagnoses of new American spiders. *Amer. Mus. Novit.* 852:1-27.
- Reiskind, J. 1977. Ant-mimicry in Panamanian clubionid and salticid spiders (Araneae: Clubionidae, Salticidae). *Biotropica* 9:1-8.
- Richman, D. B. and B. Cutler. 1978. A list of the jumping spiders (Araneae: Salticidae) of the United States and Canada. *Peckhamia* 1:82-1 10.
- Wanless, F. R. 1978. A revision of the spider genus *Marengo* (Araneae: Salticidae). *Bull. British Mus. Nat. Hist., Zool.* 33:259-278.
- Received November 22, 1983; accepted December 15, 1983.