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**COCINACHERNES FOLIOSUS, A NEW GENUS AND SPECIES
OF PSEUDOSCORPION (CHERNETIDAE)
FROM MEXICO**

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ABSTRACT

The new genus and species *Cocinachernes foliosus* is described, based on specimens from Isla Cocinas, Estado de Jalisco, México. It is unique in the form of the spermathecae of the female.

INTRODUCTION

In recent years increasing attention has been paid to the spermathecae of females in the taxonomy of pseudoscorpions in the family Chernetidae (see Muchmore 1975; Muchmore and Hentschel 1982; Mahnert 1979, 1985). A number of species with similar external features have proved to possess quite different female genitalia (spermathecae), for example, *Epactiochernes* compared to *Dinocheirus* (Muchmore 1974), and *Americhernes* compared to *Lamprochernes* (Muchmore 1976). Here we present the description of a genus which is quite similar externally to *Illinichernes* Hoff or *Ceriochernes* Beier but which has a unique form of spermatheca.

Cocinachernes, new genus

Type species.—*Cocinachernes foliosus*, new species.

Diagnosis.—A genus of the family Chernetidae Chamberlin. Carapace and pedipalps moderately sclerotized, deep reddish-brown in color. Surface of carapace, palps and abdominal sclerites reticulate, with stout, wide, pinnately feathered and leaflike vestitural setae. Carapace with 2 transverse furrows, without eyes or ocular spots, and with about 60 pinnately feathered setae more or

less arranged in 8 transverse rows. Tergites 1-10 divided; sternites 4-10 divided; pleural membranes longitudinally rugose and slightly papillose. Tergites with 6 to 12 pinnately feathered, palmate setae arranged in a single row; sternites with 8 to 12 smaller marginal setae, slightly denticulate on anterior ones, changing gradually to pinnately feathered shape on posterior ones. Setae on stigmal and anal plates short and acuminate. Cheliceral hand with 7 setae, *b* and *sb* terminally denticulate, *es* short and acuminate, both accessory setae acuminate (proximal one possibly denticulate); flagellum of 4 setae, the 2 basal ones short and lying close together, the distal one unilaterally serrate along distal margin; galea of female moderate in size, with 6 small branches, that of male smaller and without branches. Palps robust, slightly larger in female; surface of palps reticulate except for fingers, with pinnately feathered setae on all segments except movable finger. Two especially long, slightly feathered setae on inner surface of chelal hand near base of fixed finger, and 3 similar long setae arranged in a row on dorsal side of fixed finger. Trichobothrium *st* on movable finger closer to *t* than to *sb* and near middle of finger; *ist* on fixed finger distinctly distad of *est*, which is near middle of finger. Venom apparatus well developed in movable chelal finger, vestigial or absent in fixed finger; each finger with 29-32 marginal teeth and with several external and 1 or no internal accessory teeth. Legs rather slender, with pinnately feathered, denticulate, and acuminate setae. Tarsus of leg IV without any tactile seta. Anterior genital operculum of male with a group about 35 setae, including 4 larger ones medially; posterior operculum with 20 setae on face and along posterior margin. Female anterior genital operculum with 23-24 short setae on face; posterior operculum with a row of 15-16 setae on face and along posterior margin; spermatheca in form of four short, broad tubes attached to a spherical base.

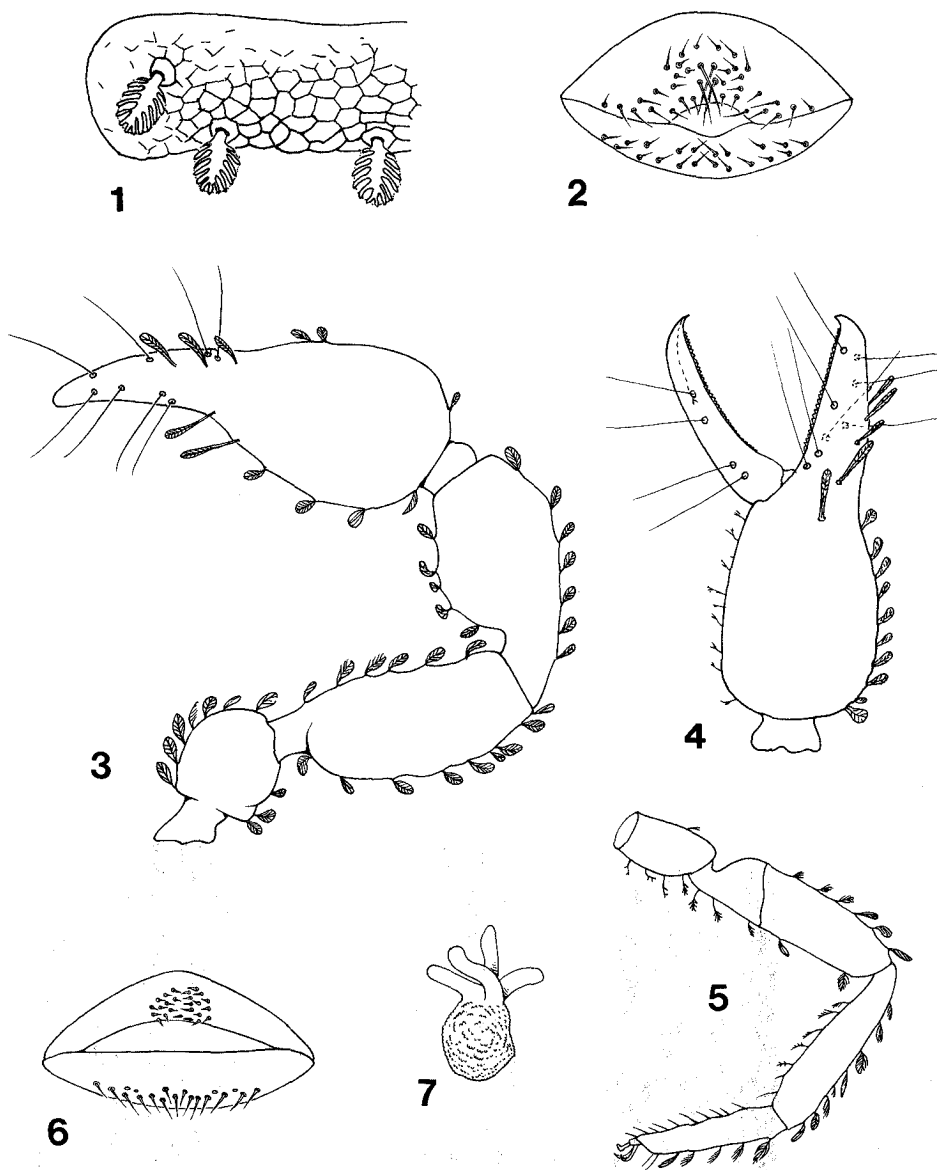
Etymology.—The genus is named after the island Cocinas, where it was collected.

Remarks.—This new genus shares a number of important characters with *Illinichernes* Hoff (1949) from the United States: four setae in cheliceral flagellum, absence of a tactile seta from tarsus IV, presence of accessory setae on the cheliceral hand, the peculiar leaflike setae on body and appendages, and the long clavate setae on the fixed chelal finger. But it differs radically from *Illinichernes* in the form of the spermathecae: four short tubules extending from a central globose chamber in *Cocinachernes*, two long thin tubules with expanded ends in *Illinichernes* (see Benedict and Malcolm 1982: fig. 5). Also *Cocinachernes* is quite similar in respect to its integument and leaflike setae to *Ceriochernes foliaceosetosus* Beier (1974) from Brasil, but differs in having four rather than three setae in the flagellum. It differs from *Ceriochernes(?) amazonicus* Mahnert (1985) in the nature of both the vestitural setae and the spermathecae.

Cocinachernes foliosus, new species

Figs. 1-7

Types.—México, Estado de Jalisco, Islas Coçinas, in dry litter 200 m from shore, 9 September 1981 (J. G. Palacios): male holotype and 2 female paratypes, deposited in the Arachnid Collection of the Laboratorio de Acarología, Facultad de Ciencias, Universidad Nacional Autónoma de México, México DF.



Figures. 1-7.—*Cocinachernes foliosus*, new species: 1-5, male; 1, part of tergite, showing reticulated surface and leaflike setae; 2, genital opercula; 3, right palp, dorsal view; 4, left chela, lateral view; 5, leg IV; 6, 7, female; 6, genital opercula; 7, spermathecae.

Description of male (based on holotype).—Surface of carapace, tergites, posterior sternites palps (except fingers), and legs lightly to moderately sclerotized and moderately to heavily reticulate, each space with more or less hexagonal shape, except for the small area surrounding the insertion of each seta, which is smooth (Fig. 1). Vestitural setae on these parts of the body broad, pinnately feathered, leaflike, with a middle axis and 9 to 12 lateral ribs, which are often arranged opposite one another, the pair of basal ribs always much shorter and thinner than the rest; each seta standing on a small tubercle (Fig. 1). Carapace subtriangular, as long as posterior breadth, with two distinct transverse furrows,

without eyes or ocular spots; surface heavily reticulate, with 62 vestitural setae more or less arranged in 8 transverse rows, 7 setae near anterior margin and 6 near posterior margin, setae along lateral margins smaller than those on face of carapace. Tergites 1-10 and sternites 4-10 divided; surfaces of tergites heavily reticulate; anterior sternites almost smooth, changing gradually to a heavily reticulate surface on the posterior ones; pleural membranes longitudinally rugose and slightly papillose; all dorsal setae well developed in a pinnately feathered shape, except for the acuminate ones on the anal plate; setae of sternites acuminate on the genital, stigmal and anal plates, denticulate on anterior sternites, and changing gradually to a pinnately feathered shape on posterior sternites, but always smaller than setae on the dorsum of body. Tergal chaetotaxy of holotype 6:8:6:8:8:9:11:10:11:10:2; and sternal chaetotaxy 37:(3)20(3):(1)8(1):17:13:12:10:10:8:6:2. 37 setae on face of anterior genital operculum, of which the 4 in the middle are longer; posterior operculum with 20 setae, arranged more or less in 2 rows on face and posterior margin (Fig. 2). Internal genitalia of usual chernetid type, well sclerotized and distinct.

Chelicera 1/3 as long as carapace; hand with 7 setae, *b* and *sb* terminally denticulate, *es* short and acuminate, distal accessory seta acuminate proximal one slightly denticulate; flagellum of 4 setae, the 2 basal ones short and lying close together, and the distal one heavily dentate along distal margin; galea short and simple, without denticles.

Palp stout (Fig. 3), with chelal hand a little broader than deep; femur 2.75, tibia 1.8, and chela (without pedicel) 2.5 times as long as broad; hand (without pedicel) 1.4 times as long as deep; movable finger 0.97 as long as hand. Surface of palp moderately reticulate except for fingers; setae pinnately feathered except for those on ventral margin of hand, which are less developed or denticulate and those on fingers, which are acuminate; 5 especially long, pinnately feathered setae on fixed finger, a row of 3 on dorsal side near middle and 2 on internal face near base of finger. Trichobothria as indicated in Fig. 4. Fixed finger with 30 contiguous, cusped marginal teeth, and 5 external plus 1 internal accessory teeth; movable finger with 31 similar marginal teeth and 5 external (no internal) accessory teeth; venom apparatus well developed only in movable finger.

Legs slender, with moderately reticulate surfaces and with pinnately feathered setae except on internal margins, where setae are smaller and denticulate or acuminate; leg IV (Fig. 5) with entire femur 3.95 times as long as deep; tarsus lacking a tactile seta.

Description of female (based on the 2 paratypes).—Much like male, but slightly more robust; genital opercula as shown in Fig. 6; anterior operculum with a compact Ω -shaped group of 23-24 short setae on face, posterior operculum with 15-16 setae on face and along posterior margin; spermathecae in form of four short, broad tubes extending from a globose chamber with a rugose surface (Fig. 7). Cheliceral galea better developed than in male, with 6 small rami. Palp much as in male, but slightly larger; femur 2.8, tibia 2.05-2.1, and chela (without pedicel) 2.45-2.55 times as long as broad; hand (without pedicel) 1.3-1.4 times as long as deep; movable finger 0.94-1.03 times as long as hand. Fixed finger with 29-31 marginal teeth, and 5-7 external and 1 or no internal accessory teeth; movable finger with 32 marginal teeth, 3-4 external and no internal accessory teeth.

Measurements (mm).—Figures given first for holotype male, followed in parentheses by those for the paratype females. Body length 2.13 (2.41-2.55). Carapace length 0.68 (0.74-0.78). Chelicera length 0.225. Palpal femur 0.59 (0.67) by 0.215 (0.24); tibia 0.525 (0.58-0.59) by 0.29 (0.28); chela (without pedicel) 0.83 (0.93-0.94) by 0.335 (0.37-0.38); hand (without pedicel) 0.44 (0.48-0.495) by 0.315 (0.36-0.37); pedicel length about 0.10; movable finger length 0.425 (0.47-0.495). Leg IV: entire femur 0.495 (0.54-0.57) by 0.125 (0.12-0.14); tibia 0.41 (0.44-0.45) by 0.08 (0.095-0.10); tarsus 0.335 (0.355-0.37) by 0.07 (0.08).

Etymology.—The species is named *foliosus* for the leaflike appearance of the vestitural setae.

Remarks.—In this species the female is larger than the male, but the proportions of the palps are about the same in the two sexes. It is interesting to note the considerable reduction in the number of setae, a condition apparently related to the increase in breadth of the setae.

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LITERATURE CITED

- Beier, M. 1974. Brasilianische Pseudoscorpione aus dem Museum in Genf. *Rev. suisse Zool.*, 81:899-909.
- Benedict, E. M. and D. R. Malcolm. 1982. Pseudoscorpions of the family Chernetidae newly identified from Oregon (Pseudoscorpionida, Cheliferoidea). *J. Arachnol.*, 10:97-109.
- Hoff, C. C. 1949. The pseudoscorpions of Illinois. *Bull. Illinois Nat. Hist. Surv.*, 24:407-498.
- Mahnert, V. 1979. Pseudoscorpione (Arachnida) aus dem Amazonas-Gebiet (Brasilien). *Rev. suisse Zool.*, 86:719-810.
- Mahnert, V. 1985. Weitere Pseudoscorpione (Arachnida) aus dem zentralen Amazonasgebiet (Brasilien). *Amazoniana*, 9:215-241.
- Muchmore, W. B. 1974. Pseudoscorpions from Florida. 3. *Epactiochernes*, a new genus based upon *Chelanops tumidus* Banks (Chernetidae). *Florida Entomol.*, 57:397-407.
- Muchmore, W. B. 1975. Use of the spermathecae in the taxonomy of chernetid pseudoscorpions. *Proc. 6th Int. Arachnol. Congr.*:17-20.
- Muchmore, W. B. 1976. Pseudoscorpions from Florida and the Caribbean area. 5. *Americhernes*, a new genus based upon *Chelifer oblongus* Say (Chernetidae). *Florida Entomol.*, 59:151-163.
- Muchmore, W. B. and E. Hentschel. 1982. *Epichernes aztecus*, a new genus and species of pseudoscorpion from Mexico (Pseudoscorpionida, Chernetidae). *J. Arachnol.*, 10:41-45.

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