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**EPICHERNES AZTECUS, A NEW GENUS AND SPECIES  
OF PSEUDOSCORPION FROM MEXICO  
(PSEUDOSCORPIONIDA, CHERNETIDAE)**

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ABSTRACT

A new genus, *Epichernes* Muchmore, and species, *E. aztecus* Hentschel, are described from the Distrito Federal, México. All specimens have been found on the bodies of the volcano mouse, *Neotomodon alstoni alstoni* Merriam.

INTRODUCTION

In a project designed by M. en C. Cornelio Sánchez H. (Instituto de Biología, U.N.A. M.) to study the ecology of a rodent community at El Ajusco, D.F., México, it was found that many pseudoscorpions occurred on the volcano mouse, *Neotomodon alstoni*. One of us (E. H.) joined the project to study the pseudoscorpions and has reported on their ecology (Hentschel 1979). All the pseudoscorpions belong to a single species, at first thought to belong to the genus *Dinocheirus* Chamberlin. Further study, however, showed that they represent a new genus and species, which are described below.

*Epichernes* Muchmore, new genus

**Type species.**—*Epichernes aztecus* Hentschel, new species.

**Etymology.**—*Epichernes*, masculine in gender, is from the Greek *epi*, above or near to, and *Chernes*, a genus of pseudoscorpions, and signifies a similarity to but difference from the genus *Chernes*.

**Diagnosis.**—A genus of the family Chernetidae Chamberlin. Of moderately large size; generally heavily sclerotized, therefore, dark in color, with palps and carapace reddish to

dark brown. Vestitural setae sparsely denticulate or acuminate. Carapace with 2 deep transverse furrows; surface granulate; no eyes evident; with 150-200 setae. Tergites and sternites divided, surfaces scaly; pleural membranes longitudinally rugose and papillose; middle tergites and sternites with 20-30 marginal setae; 11th tergite with 4 and 11th sternite with 2 long, tactile setae; setae of spiracular plates acuminate, those of anal plates terminally denticulate. Cheliceral hand with 5 setae, *b*, *sb* and *es* denticulate; flagellum of 4 denticulate setae, the 2 basal ones short; galea of female moderate in size and branched, that of male small and denticulate. Palp robust, that of male slightly heavier than that of female; tibia with a prominent dorsomedial swelling; surfaces granulate; setae denticulate. Trichobothrium *st* on movable finger much nearer to *t* than to *sb*; on fixed finger *ist* at same level as, or proximad of, *est*; *ib* at about same level as *est*. Venom apparatus well developed in movable finger, much reduced in fixed finger; each finger well provided with both external and internal accessory teeth. Legs moderately slender; tarsus of leg IV with a prominent, acuminate tactile seta distad of middle. Anterior genital operculum of male with 4 large setae medially, flanked by many shorter ones; anterior operculum of female with a compact  $\Omega$ -shaped group of about 20 setae; spermathecae of female in form of 2 rather short, diverging tubes. The type species, at least, is found, apparently phoretic, on the bodies of small rodents of the genus *Neotomodon*.

**Remarks.**—Superficially *Epichernes* appears most similar to *Dinocheirus* Chamberlin (see Muchmore 1974a), *Epactiochernes* Muchmore (1974b), and *Mexachernes* Hoff (1947). From the last it can be distinguished by setae *b* and *sb* on the cheliceral hand, both denticulate in *Epichernes*, both acuminate in *Mexachernes*. *Epichernes* differs from *Dinocheirus* in the nature of the spermathecae of the female, which are rather short, thick tubes in the former, but long, thin tubules with expanded ends in the latter. The spermathecae of *Epichernes* and *Epactiochernes* are somewhat alike, but *Epichernes* is much larger in body size and has many more setae on the carapace and abdomen than *Epactiochernes*.

Because of the similarity between *Epichernes* and *Dinocheirus*, some of the Middle and South American species presently assigned to *Dinocheirus* may actually belong to the new genus.

#### *Epichernes aztecus* Hentschel, new species

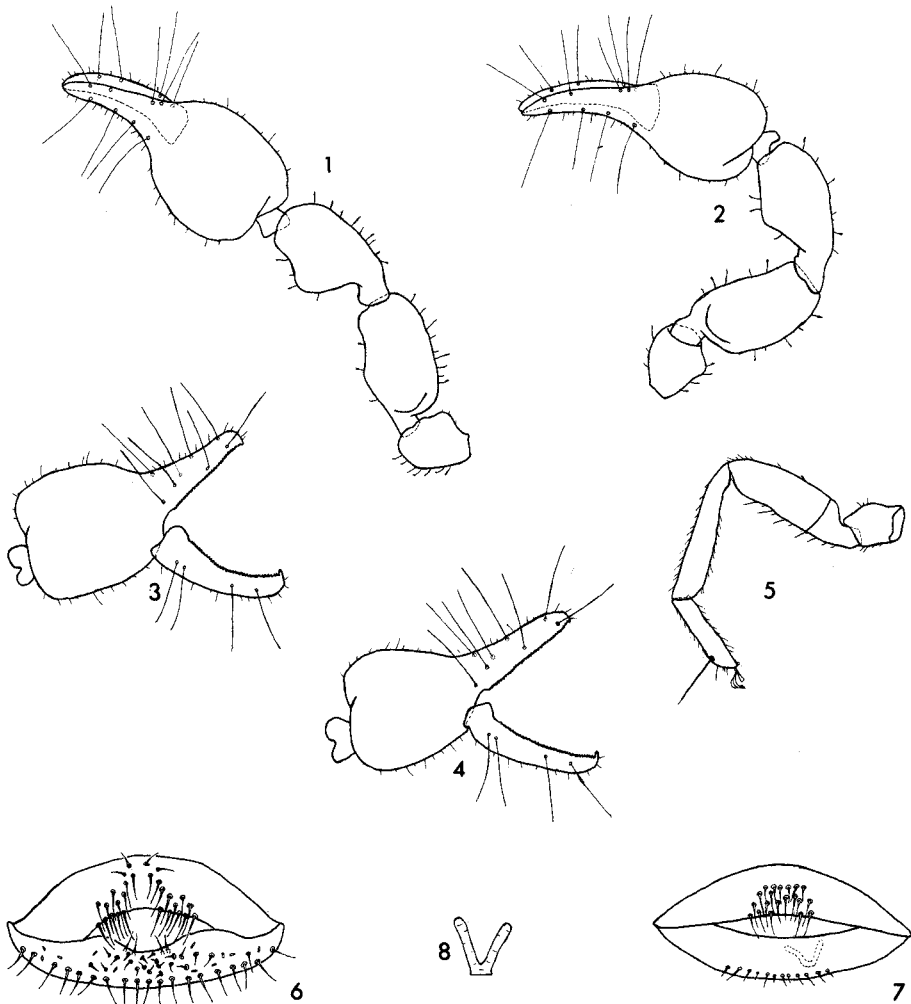
**Material examined.**—The holotype male and 22 paratypes (9 males, 10 females, and 3 tritonymphs) were mounted on slides; there are also about 750 paratypes in alcohol. All specimens were collected from the hair of volcano mice (*Neotomodon alstoni alstoni* Merriam) in a pine wood, elevation 2850 m, at El Ajusco, south of México City, D.F., México, from March 1978 to April 1979 (E. Hentschel). Types are deposited in the Arachnid Collection of the Acarology Laboratory (Facultad de Ciencias, U.N.A.M.).

**Description of male** (based on the 10 mounted specimens).—Carapace and palps heavily sclerotized, dark brown to red; tergites light brown and the rest of the body paler. Carapace a little longer than broad, with 2 distinct transverse furrows and without eyes; surface heavily granulate, with more than 200 terminally dentate, vestitural setae, of which 7 are at anterior margin and about 20 near posterior margin. Tergites 1-10 and sternites 4-10 divided; surfaces of tergites granulate, of sternites almost smooth; inter-scutal and pleural membranes strongly papillose; most dorsal setae terminally denticulate, ventral setae acuminate. Tergal chaetotaxy of holotype 23:23:22:23:23:27:27:24:25:20:T8T:2; others varied. Sternal chaetotaxy of holotype

28:(2)(2-2)/(40)(2):(1)25(1):30:30:31:30:27:25:(T-T)/(T-11-T):2; others varied, often with fewer setae on the posterior genital operculum. Setae on anterior genital operculum range 24-30 (Fig. 6); posterior operculum with 2 sets of 2 small setae beneath anterior margin and 30-40 setae scattered on face and posterior margin, those on margin longer than those on face; setae on stigmal plates acuminate and those on anal plates denticulate. Internal genitalia of the usual chernetid type, well sclerotized and distinct.

Chelicera nearly 0.4 as long as carapace; hand with 5 setae, *b* and *sb* terminally denticulate, *es* acuminate or denticulate and shorter than *b*; flagellum of 4 setae, 2 large distal ones, denticulate along margins, and 2 short proximal ones, denticulate subterminally; galea short, with 0-5 very small subterminal denticulations.

Palps rather robust, with chelal hands usually deeper than broad and tibia with a protuberance on the medial side (Figs. 1 and 3); palpal femur 2.0-2.29, tibia 1.73-2.04,



Figs. 1-8.—*Epichernes aztecus*, new species: 1, dorsal view of right palp of holotype male; 2, dorsal view of right palp of female; 3, lateral view of right chela of holotype male; 4, lateral view of right chela of female; 5, lateral view of leg IV; 6, genital opercula of holotype male; 7, genital opercula of female; 8, spermathecae of female.

and chela (without pedicel) 1.88-2.1 times longer than broad; hand (without pedicel) 0.94-1.1 times as long as deep; movable finger 1.0-1.16 times as long as hand. Surfaces more or less granulate, except chelal fingers; most setae terminally broadened and denticulate. Trichobothria as indicated in Fig. 3. Fixed finger with 37-44 contiguous, cusped marginal teeth, and 9-12 external and 12-15 internal accessory teeth; movable finger with 40-44 similar marginal teeth and 9-11 external and 9-12 internal accessory teeth; venom apparatus well developed only in movable finger, with nodus ramosus about midway between trichobothria *t* and *st*; terminal tooth of fixed finger reduced.

Legs rather slender; leg IV (Fig. 5) with entire femur 2.62-3.64 times as long as deep; tactile seta on tarsus rather long and erect, just distad of middle of tarsus.

**Description of female** (based on the 10 mounted specimens).—Similar to male in most respects, but larger and with palpal chela slightly less robust. Genital opercula as shown in Fig. 7; anterior operculum with a compact  $\Omega$ -shaped group of 19-24 setae on face, posterior operculum with 14-19 short setae along posterior margin. Spermathecae very delicate (Fig. 8) and often difficult to make out or lost entirely. Cheliceral galea much better developed than in male, with 5 or 6 prominent rami. Palps much as in male, with exception of chelal hand (Figs. 2 and 4); femur 1.95-2.15, tibia 1.89-2.13, and chela (without pedicel) 2.23-2.57 times as long as broad; hand (without pedicel) 1.0-1.08 times as long as deep; movable finger 1.16-1.27 times as long as hand. Fixed finger with 8-10 external and 10-12 internal and movable finger with 9-12 external and 5-8 internal accessory teeth.

**Tritonymph** (based on 3 mounted paratypes).—Similar to adults, but smaller, paler, and with reduced number of setae on some structures. Carapace with about 150 setae. Tergal chaetotaxy of one paratype 16:16:15:16:16:18:20:16:18:16:T8T:2; sternal chaetotaxy 4:(2)6(2):(1)12(1):16:20:18:20:17:17:(T-T)/(T-8-T):2. Cheliceral galea a small, simple elevation or elongate and with prominent rami. Trichobothria *isb* and *sb* absent from fixed and movable chelal fingers respectively, as is usual. Fixed finger with 32 and movable finger with 33 marginal teeth.

**Measurements** (mm).—Male (figures given first for holotype, followed in parentheses by ranges for the 9 paratypes): Body length 3.42(2.42-3.72). Carapace length 1.04(0.98-1.15). Chelicera 0.40(0.36-0.42) by 0.20(0.17-0.23). Palpal trochanter 0.61(0.49-0.61) by 0.37(0.33-0.39); femur 0.88(0.78-1.03) by 0.41(0.33-0.50); chela (without pedicel) 1.50(1.37-1.73) by 0.68(0.68-0.92); hand (without pedicel) 0.81(0.65-0.90) by 0.77(0.67-0.94); pedicel about 0.15 long; movable finger 0.82(0.76-0.96) long. Leg IV: entire femur 0.91(0.78-0.95) by 0.25(0.24-0.29); tibia 0.80(0.72-0.92) by 0.18(0.15-0.21); tarsus 0.55(0.45-0.62) by 0.09(0.09-0.13).

Female (ranges for the 10 paratypes): Body length 3.35-4.61. Carapace length 1.06-1.23. Chelicera 0.38-0.47 by 0.16-0.24. Palpal trochanter 0.47-0.54 by 0.35-0.40; femur 0.84-0.99 by 0.40-0.49; tibia 0.84-0.96 by 0.41-0.47; chela (without pedicel) 1.41-1.69 by 0.59-0.70; hand (without pedicel) 0.67-0.76 by 0.65-0.73; pedicel 0.13-0.14; movable finger 0.81-0.92 long. Leg IV: entire femur 0.84-1.02 by 0.26-0.29; tibia 0.78-0.93 by 0.17-0.20; tarsus 0.53-0.64 by 0.13-0.14.

Tritonymph (ranges for the 3 mounted specimens): Body length 2.23-2.60. Carapace length 0.75-0.85. Chelicera 0.26-0.27 by 0.14-0.15. Palpal trochanter 0.33-0.37 by 0.15-0.24; femur 0.57-0.58 by 0.28-0.32; tibia 0.55-0.57 by 0.27-0.28; chela (without pedicel) 0.88-0.96 by 0.39-0.42; hand (without pedicel) 0.44-0.48 by 0.39-0.42; pedicel 0.08; movable finger 0.51-0.54 long. Leg IV: entire femur 0.62-0.65 by 0.24-0.26; tibia 0.52 by 0.14-0.17; tarsus 0.32-0.33 by 0.11-0.13.

**Etymology.**—The species is named *aztecus* in reference to its occurrence in the region of Mexico where the Aztec culture was centered.

**Remarks.**—The variation in measurements and proportions of *Epichernes aztecus* is considerable; the specimens chosen for description included the widest possible range of sizes. There is sexual dimorphism in the species in that the females are usually larger than the males and their palpal chelae are less robust.

All of the 766 specimens collected were combed from the fur of live-trapped volcano mice (*Neotomodon alstoni alstoni*). Other rodents in the same vicinity carried no pseudoscorpions. The pseudoscorpions appear to feed mainly upon the ectocommensal mites which also occur on the volcano mice in large numbers. The relations among the pseudoscorpions, the mites, and the rodent host are discussed by Hentschel (1979).

There is no obvious modification of *E. aztecus* for life on the body of the host mammal, such as that shown by *Chiridiochernes platypalpus* Muchmore (1972) where the palps are long and flattened, thus facilitating movement among hairs; *E. aztecus* has heavy palps with globose hands. However, *E. aztecus* may be protected against scratching by the host by its well sclerotized and hardened cuticle.

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#### LITERATURE CITED

- Hentschel, E. 1979. Biología del pseudoscorpion *Dinocheirus* sp. asociado a *Neotomodon alstoni* (Mammalia Rodentia). Thesis, Universidad Nacional Autónoma de México, México, D.F., 79 pp.
- Hoff C. C. 1947. The species of the pseudoscorpion genus *Chelanops* described by Banks. Bull. Mus. Comp. Zool., 98:473-550.
- Muchmore, W. B. 1972. A remarkable pseudoscorpion from the hair of a rat (Pseudoscorpionida, Chernetidae). Proc. Biol. Soc. Washington, 85:427-432.
- Muchmore, W. B. 1974a. Clarification of the genera *Hesperochernes* and *Dinocheirus* (Pseudoscorpionida, Chernetidae). J. Arachnol., 2:25-36.
- Muchmore, W. B. 1974b. Pseudoscorpions from Florida. 3. *Epactiochernes*, a new genus based upon *Chelanops tumidus* Banks (Chernetidae). Florida Entomol., 57:397-407.

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