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FURTHER REVISION OF SOME NORTH AMERICAN FALSE SCORPIONS ORIGINALLY ASSIGNED TO *MICROCREAGRIS* BALZAN (PSEUDOSCORPIONES, NEOBISIIDAE)

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ABSTRACT

The type specimens of six North American species, originally described in the genus *Microcreagris* Balzan have been re-examined. Of these, five species belong to four *Microcreagris*-related genera. These are: *T. lata* (Hoff) in *Tuberocreagris* Ćurčić, *C. laudabilis* (Hoff) in *Cryptocreagris* Ćurčić, *A. mortis* (Muchmore) in *Alabamocreagris* Ćurčić, and *A. reddelli* (Muchmore) and *A. texana* (Muchmore) in *Australinocreagris* Ćurčić. A new genus, *Minicreagris*, has been proposed, with *Microcreagris pumila* (Muchmore) as its type species. Genital areas and trichobothrial patterns are figured, and brief diagnoses and some taxonomic and distributional data for the genera and species examined are given. A key to the *Microcreagris*-related genera of North America north of Mexico is presented.

Considerable confusion has surrounded the identity of members of the genus *Microcreagris* Balzan, 1892. This was in part due to the difficulty in obtaining type specimens, but to a greater extent to inadequate original description of the type species, *M. gigas* Balzan, 1892, from Asia. In addition, the long used character of galeal form has shown to be of limited value. It was recently that the holotype of *M. gigas* was adequately redescribed by Mahnert (1979), and Ćurčić (1983) did the same for the other known species, *M. herculea* Beier, 1959. As currently defined, the genus *Microcreagris* is restricted to China and Afghanistan (Ćurčić 1983, 1985, 1986).

Some of the available pseudoscorpions, previously assigned to the genus *Microcreagris* and present in North America north of Mexico (Beier 1931, 1932; Hoff 1945, 1958; Chamberlin 1952, 1962; Muchmore 1966, 1969), have been revised by Ćurčić (1978, 1981, 1982a, 1984). The type material of some United States species, along with some undetermined U.S. species, has been re-examined. From this study, ten new genera have been proposed and described (Ćurčić 1984). Thus the outstanding heterogeneity of "*Microcreagris*" in that area has been demonstrated.

In the present study, I have re-examined the type specimens (holotypes and allotypes) of six additional pseudoscorpion species of the "*Microcreagris*"-complex, which are deposited in the collection of the American Museum of Natural History in New York (AMNH). Of these, five species belong in four *Microcreagris*-related genera already reported from this region and one belongs to a new genus, *Minicreagris*.

The purpose of this paper is to further demonstrate the heterogeneity of "*Microcreagris*" in North America and to present objective criteria for the identification of some North American genera of this complex. This study should also stimulate an analysis of the taxonomic rank of all other North American pseudoscorpions currently assigned to "*Microcreagris.*"

Family NEOBISIIDAE Chamberlin, 1930

Genus *Tuberocreagris* Ćurčić, 1978

Diagnosis.—Galea with subterminal spinule(s). Abdominal sternites with one row of setae. Male genital area: sternite II with a group of median and posterior setae, sternite III with a transverse row of anterior setae, some intermediary setae, and a row of posterior marginal setae. Female genital area: sternite II with a group of setae on either side of the midline, sternite III with a transverse row of posterior setae.

Manducatory process with 3 setae. Femur and chelal palm of pedipalp with distinct granulations. Interiorly, an accessory tubercle on femur and two such tubercles on tibia. Trichobothriotaxy *esb* distal to *eb; ib-ist-isb* in proximal part of finger; *est* closer to *it* than to *ist*; *sb* and *st* equidistant from *b* and *t*, respectively.

Leg IV: tibia, basitarsus and telotarsus with one tactile seta each.

Type species.—*Ideobisium rufulum* Banks.

Subordinate taxa.—*Tuberocreagris rufula* (Banks), *T. lata* (Hoff).

Distribution.—District of Columbia and North Carolina, USA.

Remarks.—A thorough study of some congeneric specimens from Washington, D.C., has showed that the interior tubercles on pedipalpal femora and tibiae may be of different sizes, and sometimes inconspicuous and even difficult to establish (particularly when these podomeres are studied on fixed slide preparations) (Ćurčić, MS).

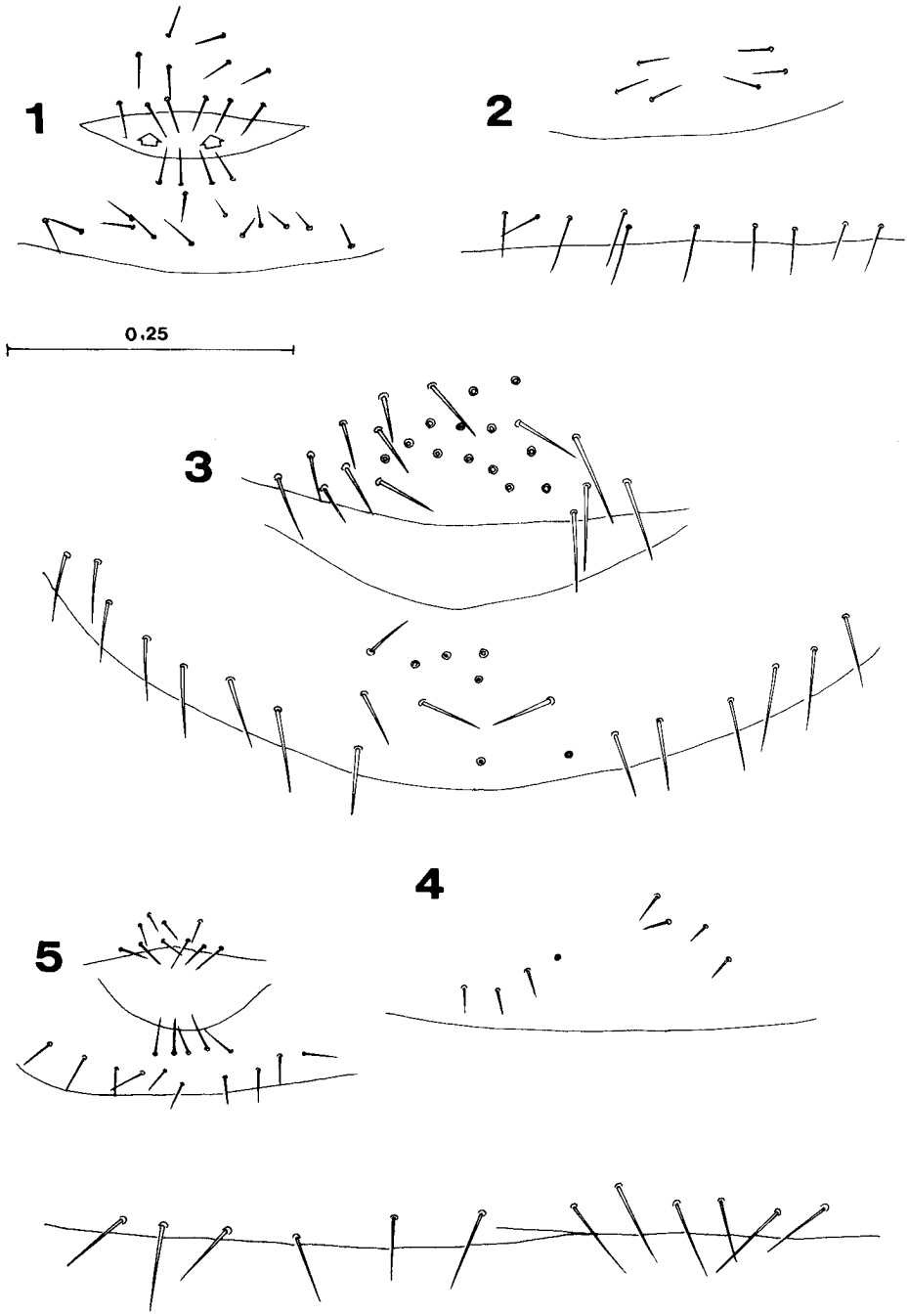
Tuberocreagris lata (Hoff), new combination
Figs. 1, 2, 9, 10

Microcreagris lata Hoff, 1945:323, 1958:12.

Diagnosis.—Epistome small and apically rounded. Carapace with 4 + 4 + 6 + 6 + 6 = 26 (male) and 4 + 6 + 6 + 6 + 7 = 29 setae (female). Two pairs of eyes resembling eye-spots. Galea with several terminal branchlets.

Tergites I-X with 6-9-11-11-11-12-11-13-12-11 (male), or 6-9-11-11-12-11-12-12-13-12 setae (female). *Male genital area:* sternite II with 12 setae (of these, six setae are found along the posterior sternal margin), sternite III with 4 anterior, 3 intermediary and 10 posterior setae, and 4 or 5 microsetae along each stigma. *Female genital area:* sternite II with 3 setae on each side of the midline, sternite III with 10 posterior setae and 5 or 6 suprastigmal microsetae on each side. Other sternites with one row of setae.

Pedipalps: fixed chelal finger with 51 or 52 (male) and 56 close-set, small and rounded and eventually square-topped teeth (female); some distal teeth are



Figures 1-5.—Genital area. 1, *Tuberocreagris lata* (Hoff), holotype male; 2, *T. lata* (Hoff), allotype female; 3, *Cryptocreagris laudabilis* (Hoff), holotype male; 4, *C. laudabilis* (Hoff), allotype female; 5, *Minicreagris pumila* (Muchmore), holotype male. Scale in mm.

asymmetrically pointed. Movable chelal finger with 51 (male) or 60 small, close-set and rounded teeth (female); few distal teeth are asymmetrical.

Distribution.—North Carolina, USA.

Specimens examined.—Holotype male (C. Clayton Hoff 5610-S-419.1) and allotype female (C. Clayton Hoff 5611-S-419.2), from oak litter, sandy soil, Duke Forest, Durham, North Carolina, 16 September 1944 (A. S. Pearse).

Genus *Cryptocreagris* Ćurčić, 1984

Diagnosis.—Galea with apical branchlets. Abdominal sternites VI and VII each with 2 anterior discal setae. *Male genital area:* sternite II with a group of median and posterior setae, sternite III with a row of anterior, some intermediate and a series of posterior setae. *Female genital area:* sternite II with a group of small setae on each side of the midline, sternite III with a row of posterior setae.

Manducatory process with 4 setae. Femur and chelal palm of pedipalp with inconspicuous granulations. *Trichobothriotaxy: esb* distal to *eb*; *ist-isb-ib* clustered on finger base; *it* and *et* located distally on finger tip; *est* nearer to *it* than to *ist*; *st* slightly closer to *t* than to *sb*; *sb* slightly closer to *b* than to *st*.

Leg IV: tibia, basitarsus and telotarsus with one tactile seta each.

Type species.—*Microcreagris laudabilis* Hoff.

Subordinate taxa.—*Cryptocreagris laudabilis* (Hoff), *C. magna* (Banks).

Distribution.—California and New Mexico, USA.

Remarks.—In this study, the holotype and allotype of *C. laudabilis* have been restudied, in addition to the earlier redescription, based on the analysis of seven paratype specimens (Ćurčić 1984).

Cryptocreagris laudabilis (Hoff)
Figs. 3, 4, 12, 13

Microcreagris laudabilis Hoff, 1956:4, 1958:12.

Diagnosis.—Epistome low and rounded apically, carapace with 4 + 6 + 4 + 4 + 6 = 24 setae. Two pairs of eyes with flattened lenses. Galea with terminal branchlets. Flagellum with 8 anteriorly pinnate blades.

Tergites I-X with 6-9-11-12-12-12-13-17-17-15 (male) and 6-8-11-10-11-13-12-13-11-12 setae (female). *Male genital area:* sternite II with 27 median and posterior setae, sternite III with 5 anterior, 3 intermediate and 16 posterior setae, and 6 microsetae along each stigma. *Female genital area:* sternite II with a group of 4 small setae on either side of midline, sternite III with 12 posterior setae and 6 small setae along each stigma. Sternites VI and VII each with 2 anterior discal setae.

Pedipalps: fixed chelal finger with 71 (female) and 78 small and close-set teeth (male), distal teeth are asymmetrical, gradually changing from square-topped to eventually slightly asymmetrical teeth. Movable chelal finger with 72 (female) and 80 teeth (male), similar in form and size to those on the fixed chelal finger, but only few distal teeth asymmetrical.

Distribution.—New Mexico, USA.

Remarks.—In the holotype female of this species, two teratologies were noted. First, on the movable finger of the left chelicera, two galeal setae are developed (instead of one). Second, the right manducatory process bears 6 setae, while the left has the normal complement of 4 setae.

The material of *C. magna* has been redescribed elsewhere (Ćurčić 1984).

Specimens examined.—Holotype male (C. Clayton Hoff 9152-S-2083.5) and allotype female (C. Clayton Hoff 9152-S-2083.9), under rocks, fir litter, near top of Mt. Taylor, Valencia Co., New Mexico, 11,150 ft. 21 July 1953.

Genus ***Minicreagris*** Ćurčić, new genus

Name derivation.—Named for the small body size of its type species

Diagnosis.—Galea stylet-like. Flagellum of 7 or 8 blades, of which the proximal 3 are smooth and reduced in size from distal to proximal. *Male genital area:* sternite II with a group of median and posterior setae (of these, some setae are found along the posterior sternal margin), sternite III with a transverse row of some anterior and a series of posterior setae. *Female genital area:* one group of small setae on each side of the midline. Other abdominal sternites with one row of setae.

Manducatory process with 3 setae. Chelal palm of pedipalp with inconspicuous granulations (not "smooth" *sensu* Muchmore 1969). *Trichobothriotaxy: esb* distal to *eb*; *ib-ist-isb* in proximal part of finger; *est* closer to *it* than to *ist*; *sb*, equidistant from *st* and *b*; *st* somewhat closer to *t* than to *sb*, and closer to the interior finger margin (or teeth) than other trichobothria of the movable chelal finger.

Leg IV: tibia, basitarsus and telotarsus with one long tactile seta each.

Type species.—*Microcreagris pumila* Muchmore.

Subordinate taxon.—*Minicreagris pumila* (Muchmore).

Distribution.—Alabama and Tennessee, USA.

Remarks.—The study of the paratype male and paratype female of *M. pumila* (Ćurčić 1984) has made me think that the taxonomic status of this species was debatable. The reason for this opinion was the inadequate number of males studied. The subsequent analysis of the holotype male has enabled me to reconsider *M. pumila* as the type species of a new genus. Its diagnostic characters include the number of eyes, the trichobothrial pattern, the setation of the manducatory process, the form and dermal structure of pedipalpal articles, the setation of the sternites and the form of flagellar blades. At present, *Minicreagris* is monotypic.

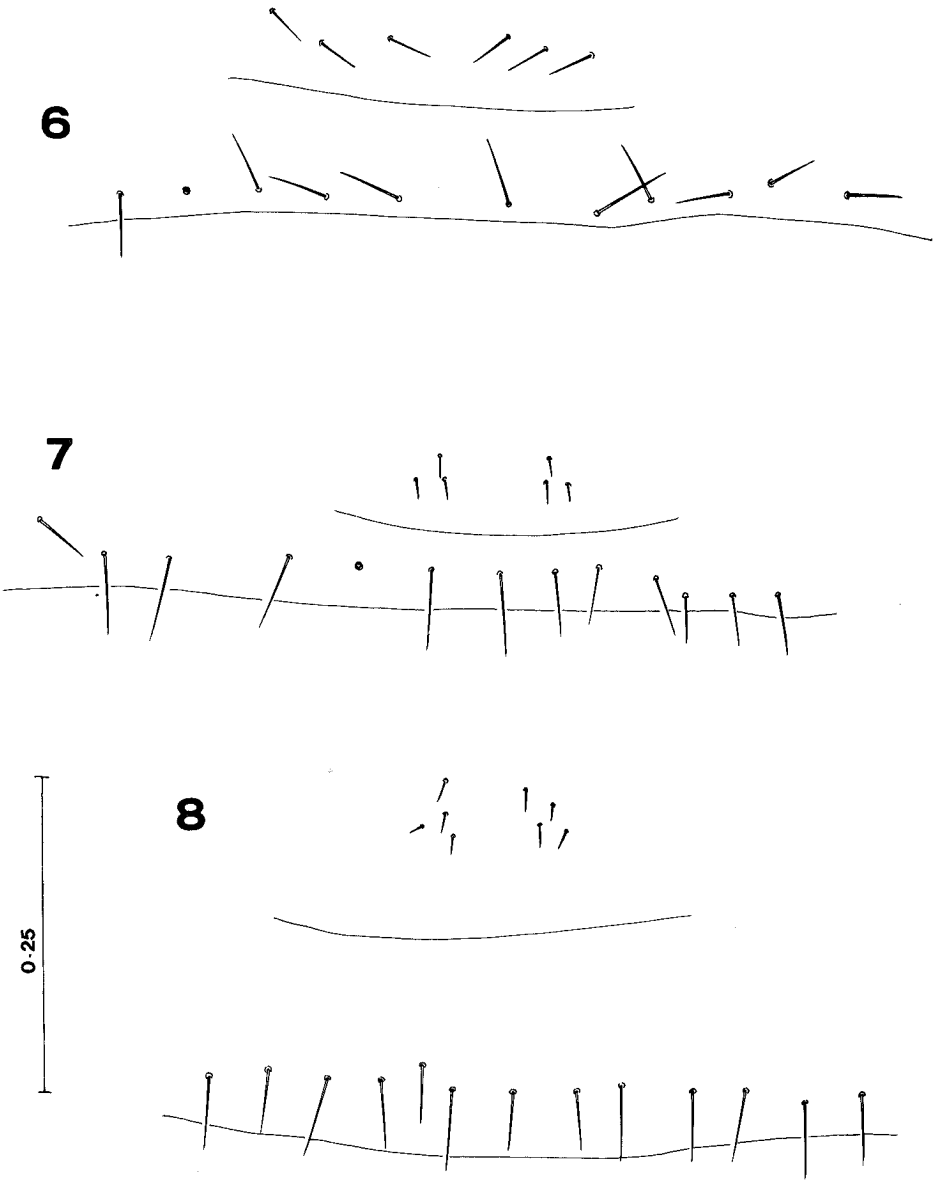
Minicreagris pumila (Muchmore), new combination
Figs. 5, 11

Microcreagris pumila Muchmore, 1969:2.

Diagnosis.—Epistome small and rounded. Carapace: 4 + 6 + 4 + 4 + 6 = 24 setae. With two small eyes. Galea simple.

Tergites I-X with 6-6-8-11-10-12-11-10-10-9 setae. *Male genital area:* sternite II with 10 setae. Of these, 6 are along the posterior sternal margin. Sternite III with 5 anterior and 10 posterior setae, and 3 suprastigmal setae on each side. Other sternites with one row of setae.

Pedipalps: fixed chelal finger with 43 small and close-set teeth, distal ones asymmetrical; proximal teeth rounded or slightly asymmetrical. Movable chelal



Figures 6-8.—Genital area: 6, *Alabamocreagris mortis* (Muchmore), holotype female; 7, *Australinocreagris reddelli* (Muchmore), holotype female; 8, *Australinocreagris texana* (Muchmore), holotype female. Scale in mm.

finger with 42 small and close-set teeth; distal teeth asymmetrically pointed, and proximal ones square-topped or rounded.

Distribution.—Alabama, Georgia, and (?) Tennessee, USA.

Remarks.—The descriptions of this species by Muchmore (1969) and by Ćurčić (1984) define the species adequately, except for some details of the setation and dermal structure.

Muchmore (1969) suggested that this species is epigean and is only fortuitously collected in caves. That it may be widespread and more variable than indicated

by the same author is suggested by two other specimens from caves in Tennessee and Alabama.

Specimen examined.—Holotype male (WM 1009.01001), from Bryant Cave, Blount Co., Alabama, 19 March 1966 (S. Peck).

Genus *Alabamocreagris* Ćurčić, 1984

Diagnosis.—Galea simple. Abdominal sternites uniseriate. *Male genital area:* sternite II with some median and posterior setae, sternite III with an anterior row of few setae and a posterior setal row. *Female genital area:* sternite II with a group of small setae on either side, sternite III with a transverse series of posterior setae.

Manducatory process with 4 long setae. Pedipalpal articles smooth, except for chelal palm which is inconspicuously granulate internally. *Trichobothriotaxy: esb* not distal to *eb*; *ist-isb-ib* at finger base; *it* and *et* located distally; *est* closer to *it* than to *ist*; *st* equidistant from *t* and *sb*; *sb* closer to *b* than to *st*.

Leg IV: tibia, basitarsus and telotarsus each with one or two tactile setae.

Type species.—*Microcreagris pecki* Muchmore.

Subordinate taxa.—*Alabamocreagris pecki* (Muchmore), *A. mortis* (Muchmore).

Remarks.—The type species has been described elsewhere (Ćurčić 1984).

Alabamocreagris mortis (Muchmore), new combination
Figs. 6, 14

Microcreagris mortis Muchmore, 1969:8.

Diagnosis.—Epistome knob-like. Carapace with : 4 + 6 + 4 + 4 + 6 = 24 setae. Neither eyes nor eye-spots present. Galea unbranched.

Tergites I-X with 6-6-7-9-9-13-13-12-12-10 setae. *Female genital area:* sternite II with 3 small setae on either side of the middle, sternite III with 10 posterior setae and 3 suprastigmal microsetae on each side. Other sternites with single row of setae.

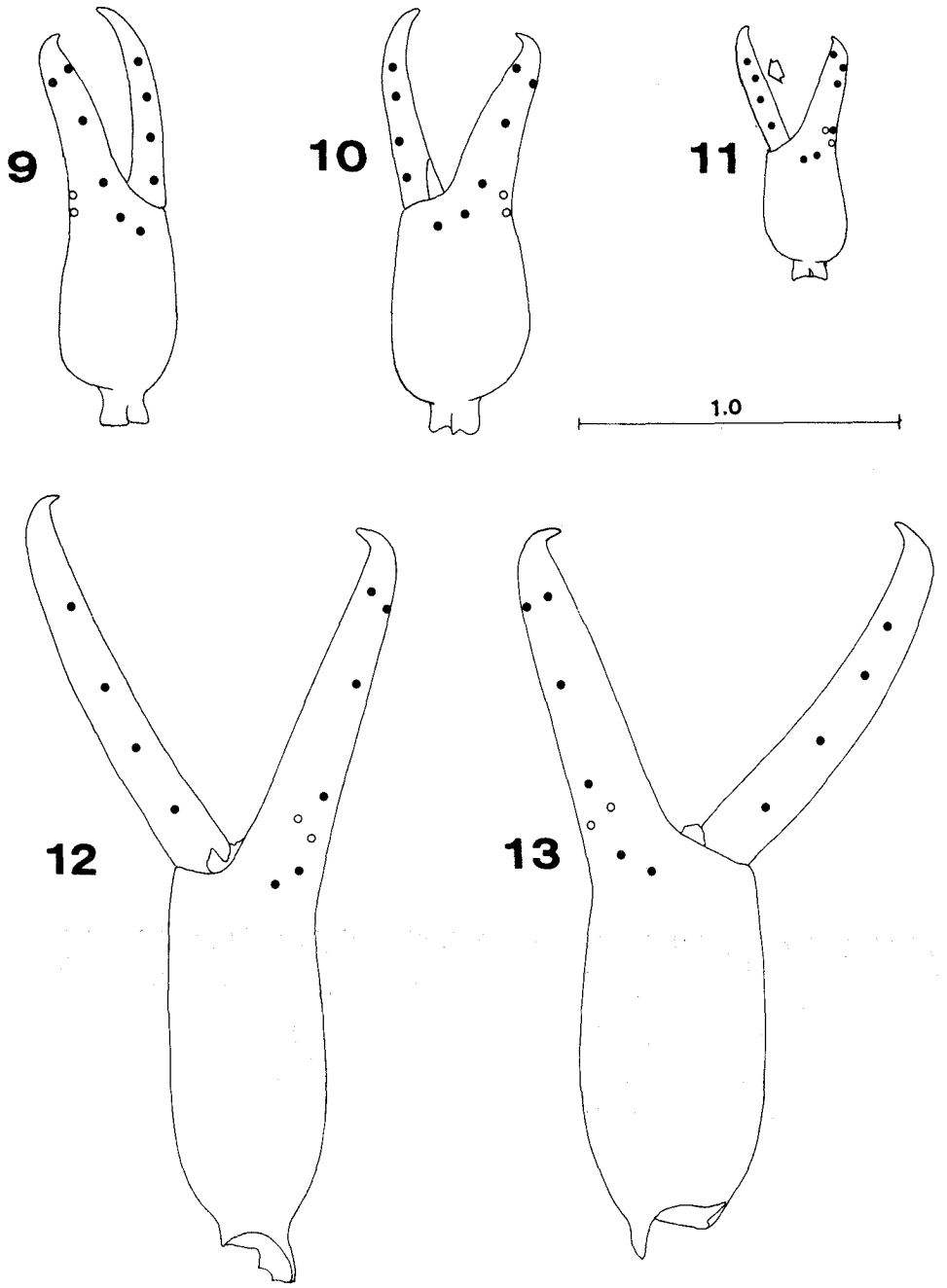
Pedipalps: fixed chelal finger with 71 close-set and small teeth, distal ones asymmetrical; proximal teeth square-topped. Movable chelal finger with 81 teeth which are small, close-set, distally asymmetrical, and rounded proximally; basal teeth square-topped.

Remarks.—*Alabamocreagris mortis* has a single tactile seta on telotarsus IV, whereas *A. pecki* bears two such setae.

Specimen examined.—Holotype female (WM 1555.01001), from "Morgue" Cave nr. Fern Cave, Jackson Co., Alabama, 22 June 1968 (W. Torode).

Genus *Australinocreagris* Ćurčić, 1984

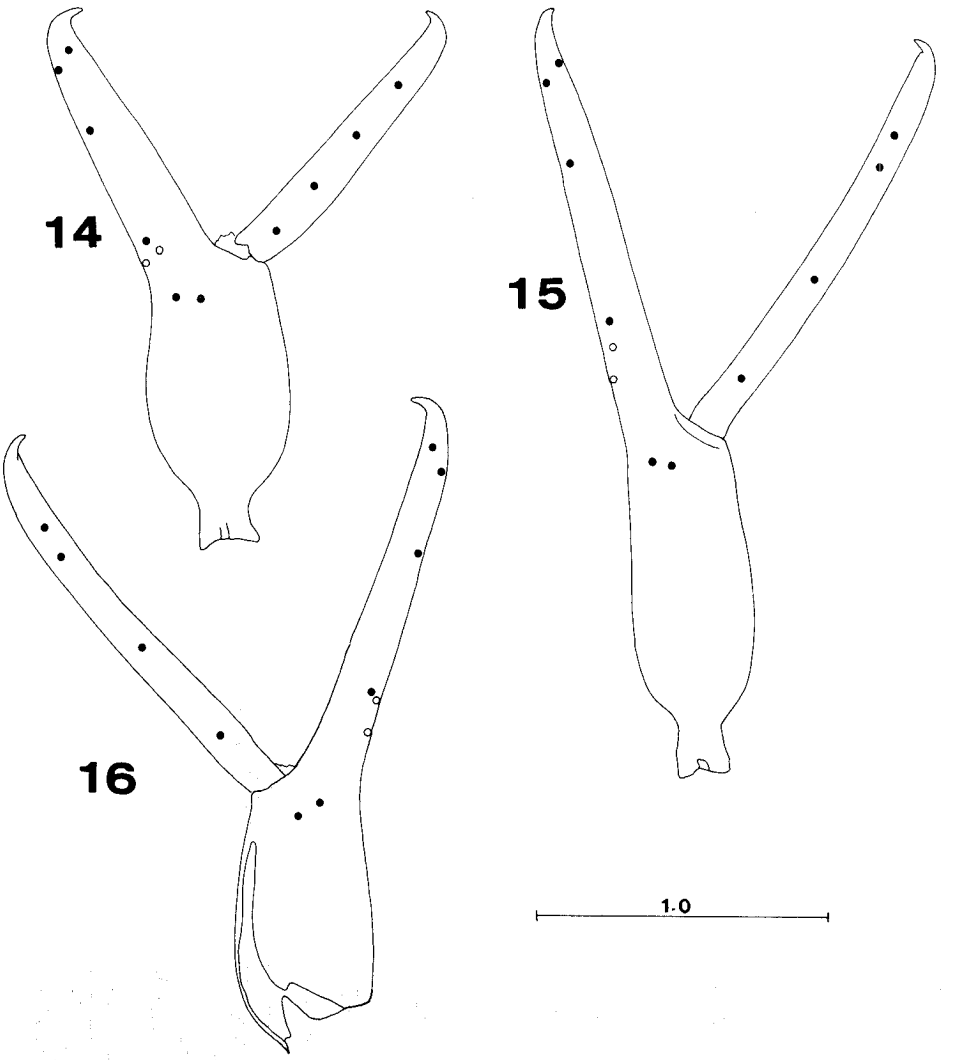
Diagnosis.—Galea simple, stylet-like, or branched apically. *Male genital area:* sternite II with a cluster of median and posterior setae, sternite III with a group of anterior and median setae, followed by few intermediary setae, and a transverse row of posterior setae. Female genital area: sternite II with a group of



Figures 9-13.—Trichobothrial pattern: 9, *Tuberocreagris lata* (Hoff), holotype male; 10, *T. lata* (Hoff), allotype female; 11, *Minicreagris pumila* (Muchmore), holotype male; 12, *Cryptocreagris laudabilis* (Hoff), holotype male; 13, *C. laudabilis* (Hoff), allotype female. Scale in mm.

small setae on either side of the middle, sternite III with a row of posterior setae. Abdominal sternites VI-VIII each with a pair of anterior discal setae.

Manducatory process with 3 (occasionally 4) setae. Pedipalpal articles inconspicuously granulate. *Trichobothriotaxy: esb* distal to *eb*, both setae on bulb of chela; *ist* and *isb* close to each other; *ib* somewhat closer to *ist* than to *esb*; *est-*



Figures 14-16.—Trichobothrial pattern: 14, *Alabamocreagris mortis* (Muchmore), holotype female; 15, *Australinocreagris texana* (Muchmore), holotype female; 16, *Australinocreagris reddelli* (Muchmore), holotype female. Scale in mm.

it-et in distal finger half; *st* closer to *t* than to *sb*; *sb* slightly closer to *st* than to *b*, or equidistant from these setae.

Tibia IV and basitarsus IV each with one long tactile seta, and telotarsus IV with one or two such setae.

Type species.—*Microcreagris grahami* Muchmore.

Subordinate taxa.—*Australinocreagris grahami* (Muchmore), *A. ozarkensis* (Hoff), *A. reddelli* (Muchmore), and *A. texana* (Muchmore).

Distribution.—Arkansas, California and Texas, USA.

Remarks.—In the description of *Australinocreagris*, Ćurčić (1984) erroneously stated that sternite III of the male is beset with "few intermediary setae". Actually this sternite has only a small group of anterior and median setae and a transverse row of posterior setae, as illustrated in fig. 7 of the same paper.

Australinocreagris reddelli (Muchmore), new combination
Figs. 7, 16

Microcreagris reddelli Muchmore, 1969:17.

Diagnosis.—Epistome absent. Carapace with 4 + 6 + 2 + 5 + 4 = 21 setae. Neither eyes nor eyespots developed. Both galeae broken and lost. Flagellum eight-bladed, all blades pinnate anteriorly.

Tergites I-X with 8-10-12-11-11-12-11-11-11-9 setae. *Female genital area:* sternite II with a small group of 3 setae on either side of the midline, sternite III with 13 posterior setae and 6 microsetae along each stigma. *Male genital area:* unknown. Sternites VI-VIII each with a pair of anterior discal setae.

Pedipalps: fixed chelal finger with 85 small and close-set, asymmetrically pointed teeth. Movable chelal finger with 98 small, asymmetrically pointed and close-set teeth.

Distribution.—Texas, USA.

Remarks.—In this species, basitarsus IV has two tactile setae. In view of the fact that *A. texana* has one such seta on this podomere, it is probable that the number of tactile setae on basitarsus IV reflects intrageneric variability, just as is seen in the members of the genus *Neobisium* Chamberlin, 1930 (Čurčić 1982b).

Specimen examined.—Holotype female (WM 171.01001), under small rock on silt in darkness, Shultz Cave, 2 miles E Valente, Travis Co. Texas, 21 August 1963 (Bill Russell).

Australinocreagris texana (Muchmore), new combination
Figs. 8, 15

Microcreagris texana Muchmore, 1969:18.

Diagnosis.—Epistome minute and knob-like. Carapace with 4 + 6 + 7 + 6 = 23 setae. Neither eyes nor eye-spots present. Galea biramous, each ramus with 2 or 3 terminal branchlets. Flagellum nine-bladed, all blades pinnate anteriorly.

Tergites I-X with 8-8-12-14-13-14-13-12-13-10 setae. *Female genital area*: sternite II with 4 small setae on each side of the midline, sternite III with a series of 13 posterior setae and 6-8 small setae along each stigma. *Male genital area*: unknown. Sternites VI-VIII each with a pair of anterior discal setae. Even on sternite IX two median setae are found slightly anterior to posterior setal row.

Pedipalps: fixed chelal finger with 99 low, close-set and small teeth; distal ones asymmetrically pointed and proximal ones square-topped but still slightly asymmetrical. Movable chelal finger with 108 teeth of the same form and size as those on the fixed finger.

Distribution.—Texas, USA.

Remarks.—This species has one tactile seta on telotarsus IV, and *A. reddelli* has two such setae. Until more examples are available, the occurrence of the different number of tactile setae on telotarsus IV in the members of *Australinocreagris* may be regarded as the case of intrageneric variability.

Specimen examined.—Holotype female (WM 849.01001), from Tooth Cave, Travis Co., Texas, 16 May 1965 (T. Barr, R. Mitchell, W. Andrews).

Key to *Microcreagris*-related Genera of North American Pseudoscorpions

The newly established genus and its related genera (Ćurčić 1984) may be distinguished by means of the following key:

1. Some abdominal sternites with two rows of setae 2
   Abdominal sternites with one row of setae 5

2. Sternites VI and VII with two rows of setae ..... *Cryptocreagris* Ćurčić
   Sternites VI-VIII with two rows of setae 3

3. Sternite III of the female with a transverse row of posterior setae 4
   Sternite III of female with a transverse row of posterior setae and a few setae on face near middle ..... *Tartarocreagris* Ćurčić

4. Sternite II of female with a group of setae on either side of midline. Manducatory process with 3 setae ..... *Australinocreagris* Ćurčić
   Sternite II of female with a unique group of setae in the form of an inverted "U". Manducatory process with 4 setae ..... *Saetigerocreagris* Ćurčić

5. Sternite III of male with an anteromedian groove in the form of a "V", bordered by two pairs of small setae ..... *Fissilicreagris* Ćurčić
   Sternite III of male with an ungrooved anterior margin: anterior setae clustered or arranged in a row 6

6. Pedipalpal articles smooth ..... *Lissocreagris* Ćurčić
   Some pedipalpal articles granulate 7

7. Chelal trichobothria *sb* and *st* equidistant from *b* and *t* respectively 8
   Chelal trichobothrium *sb* closer to *b* than to *st*, or somewhat closer to *st* than to *b* 9

8. Manducatory process with 3 long setae. Pedipalpal femur granulate, femur and tibia with one and two accessory tubercles respectively ..... *Tuberocreagris* Ćurčić
   Manducatory process with 4 long setae. Pedipalpal femur and tibia smooth ..... *Alabamocreagris* Ćurčić

9. Chelal trichobothrium *st* somewhat closer to the interior finger margin than are *sb* or *b* ..... *Minicreagris*, new genus
   Chelal trichobothrium *st* as close to the interior finger margin as *sb* or *b* 10

10. Sternite III of male with a cluster of anteromedian setae and a row of posterior setae ..... *Americocreagris* Ćurčić
    Sternite III of male with an anteromedian group of setae, a series of intermediary setae and a transverse row of posterior setae ..... *Globocreagris* Ćurčić

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LITERATURE CITED

Balzan, L. 1891-1892. Voyage de M. E. Simon au Venezuela (Decembre 1887 - Avril 1888). 16[e] mem. Chernetes (Pseudoscorpiones). Ann. Soc. Entomol. France (1891), 60:497-552.

Beier, M. 1931. Neue Pseudoscorpione der U.O. Neobisiinea. Mitt. zool. Mus. Berlin, 17:299-318.

Beier, M. 1932. Pseudoscorpionidea I. Subord. Chthoniinea et Neobisiinea. Tierreich, 57:1-258.

Beier, M. 1959. Zur Kenntnis der Pseudoscorpioniden-Fauna Afghanistans. Zool. Jahrb., Abt. Syst. Oekol. Geogr. Tiere, 87:257-282.

Chamberlin, J. C. 1952. .New and little-known false scorpions (Arachnida, Chelonethida) from Monterey County, California, Bull. American Mus. Nat. Hist., 99:259-312.

Chamberlin, J. C. 1962. New and little-known false scorpions, principally from caves, belonging to the families Chthoniidae and Neobisiidae (Arachnida, Chelonethida). Bull. American Mus. Nat. Hist., 123:299-352.

Ćurčić, B. P. M. 1978. *Tuberocreagris*, a new genus of pseudoscorpions from the United States (Arachnida, Pseudoscorpiones, Neobisiidae). Fragm. Balcanica, 10:111-121.

Ćurčić, B. P. M. 1981. A revision of some North American pseudoscorpions (Neobisiidae, Pseudoscorpiones). Bull. Mus. Hist. Natur. Belgrade, ser. B, 36:101-107.

Ćurčić, B. P. M. 1982a. *Americocreagris*, a new genus of pseudoscorpions from the United States. Bull. Acad. Serbe Sci. Arts, Cl. Sci. Math. Natur. (Sci. Natur.), 80, 22:47-50.

Ćurčić, B. P. M. 1982b. Postembryonic development in the Neobisiidae (Pseudoscorpiones, Arachnida). Serbian Acad. Serbe Sci. Arts, Monogr., 545, Dep. Sci., 56:1-90.

Ćurčić, B. P. M. 1983. A revision of some Asian species of *Microcreagris* Balzan, 1892 (Neobisiidae, Pseudoscorpiones). Brit. Arachnol. Soc. Bull., 6:23-36.

Ćurčić, B. P. M. 1984. A revision of some North American species of *Microcreagris* Balzan, 1892 (Arachnida : Pseudoscorpiones: Neobisiidae). Brit. Arachnol. Soc. Bull., 6:149-166.

Ćurčić, B. P. M. 1985. A revision of some species of *Microcreagris* Balzan, 1892 (Neobisiidae, Pseudoscorpiones) from the USSR and adjacent regions. Brit. Arachnol. Soc. Bull., 6:331-352.

Ćurčić, B. P. M. 1986. On the taxonomy and biogeography of *Microcreagris*-related genera in Eurasia (Neobisiidae, Pseudoscorpiones). Mem. Soc. R. Belge Entomol., 33:75-79.

Hoff, C. C. 1945. New species and records of pseudoscorpions from Arkansas. Trans. American Microsc. Soc., 64:34-57.

Hoff, C. C. 1945. Pseudoscorpions from North Carolina. Trans. American Microsc. Soc., 64:311-327.

Hoff, C. C. 1956. Diplosphyronid pseudoscorpions from New Mexico. American Mus. Novit., 1875:1-50.

Mahnert, V. 1979. The identity of *Microcreagris gigas* Balzan (Pseudoscorpiones, Neobisiidae). Brit. Arachnol. Soc. Bull., 4:339-341.

Muchmore, W. B. 1966. A cavernicolous pseudoscorpion of the genus *Microcreagris* from southern Tennessee. Entomol. News, 77:97-100.

Muchmore, W. B. 1969. New species and records of cavernicolous pseudoscorpions of the genus *Microcreagris* (Arachnida, Chelonethida, Neobisiidae, Ideobisiinae). American Mus. Novit., 2392:1-21.

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