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A NEW CAVERNICOLOUS PSEUDOSCORPION BELONGING TO THE GENUS *MICROCREAGRIS*

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This remarkable new form was found among collections in the Peabody Museum lent by Dr. C. L. Remington.

Microcreagris grandis, n. sp.

Material: Holotype male [Holotype No. E 101] (WM 403.01001) found July 6, 1946 by T. O. Thatcher "on formations in cave," Lehman Caves National Monument, White Pine Co., Nevada. Paratype tritonymph (WM 402.01001) found June 8, 1937 by T. O. Thatcher and R. Loir "on stalagnite in cave," also in Lehman Caves National Monument. Types in the Peabody Museum of Natural History.

Diagnosis: MALE. A very large species for the genus, modified for cavernicolous life by considerable attenuation of the appendages, but not by loss of pigment or reduction of eyes. Color of carapace and palps a dark reddish-brown, the abdomen and legs much lighter. Carapace about one-third longer than broad, rather narrow at the anterior margin and greatest in breadth near the posterior end; broad, smoothly rounded epistome pre-

sent; four well-developed eyes of nearly equal size present; surface smooth anteriorly, becoming rather scaly posteriorly and reticulated on the sides; carapacial setae 24 (4-5).

Abdomen elongate and typical of the genus; tergal chaetotaxy 5:9:7:11:8:10:9:9:12:9:?:mm; sternal chaetotaxy 28:(3-4) $\frac{13}{(5)21(4)}$:(4) 13 (5):16: $\frac{2}{16}$: $\frac{2}{13}$:12:?:?:?:mm; pleural membrane typically granulate; genital area typical. Chelicera of typical facies, about twice as long as broad; six setae on palm; fixed finger with 19 or 20 irregularly large and small teeth; movable finger with 20-21 such teeth; galea bifid just distad of the middle with each branch terminally divided into two short, pointed projections, reaching about to the end of the finger; galeal seta not reaching the tip of the galea; flagellum of 10 setae nearly all of which are deeply serrate on the anterior side; serrula interior with about 26 blades and serrula exterior with about 45 blades.

Palps very elongate for the genus; surfaces markedly granulate, except for the tibial pedicel, the pedicel and base of the chelal hand, and the chelal fingers; setae long and acuminate.

Maxillae with 4 or 5 terminal setae. Proportions of the podomeres as shown in figure 1. Tactile setae of chela as shown in figure 2; fixed finger of chela with a marginal row of 127 low, rounded or truncate teeth which are closely contiguous; movable finger with 118 similar teeth.

Trochanter 2.5, femur 5.9, entire tibia 5.0, tibial pedicel alone 5.2, chela 4.6, and hand 2.6 times as long as broad; movable finger 1.14 times as long as hand.

LEGS. Legs generally similar to but more elongate and slender than those of other members of the genus. Each coxa of legs I and II heavily sclerotic but not produced into a definite process. Fourth leg with tactile setae on metatarsus 0.15 and on telotarsus 0.59 the length of the segment from the proximal end. Subterminal setae of all tarsi subequally bifurcated and each ramus with several spinose processes. Each claw with a small denticle on the dorsal side about one third the length of the claw from the proximal end.

MEASUREMENTS. Body length 5.49 (in mm); carapace 2.05 long, anterior breadth 1.20, greatest breadth 1.50; abdomen

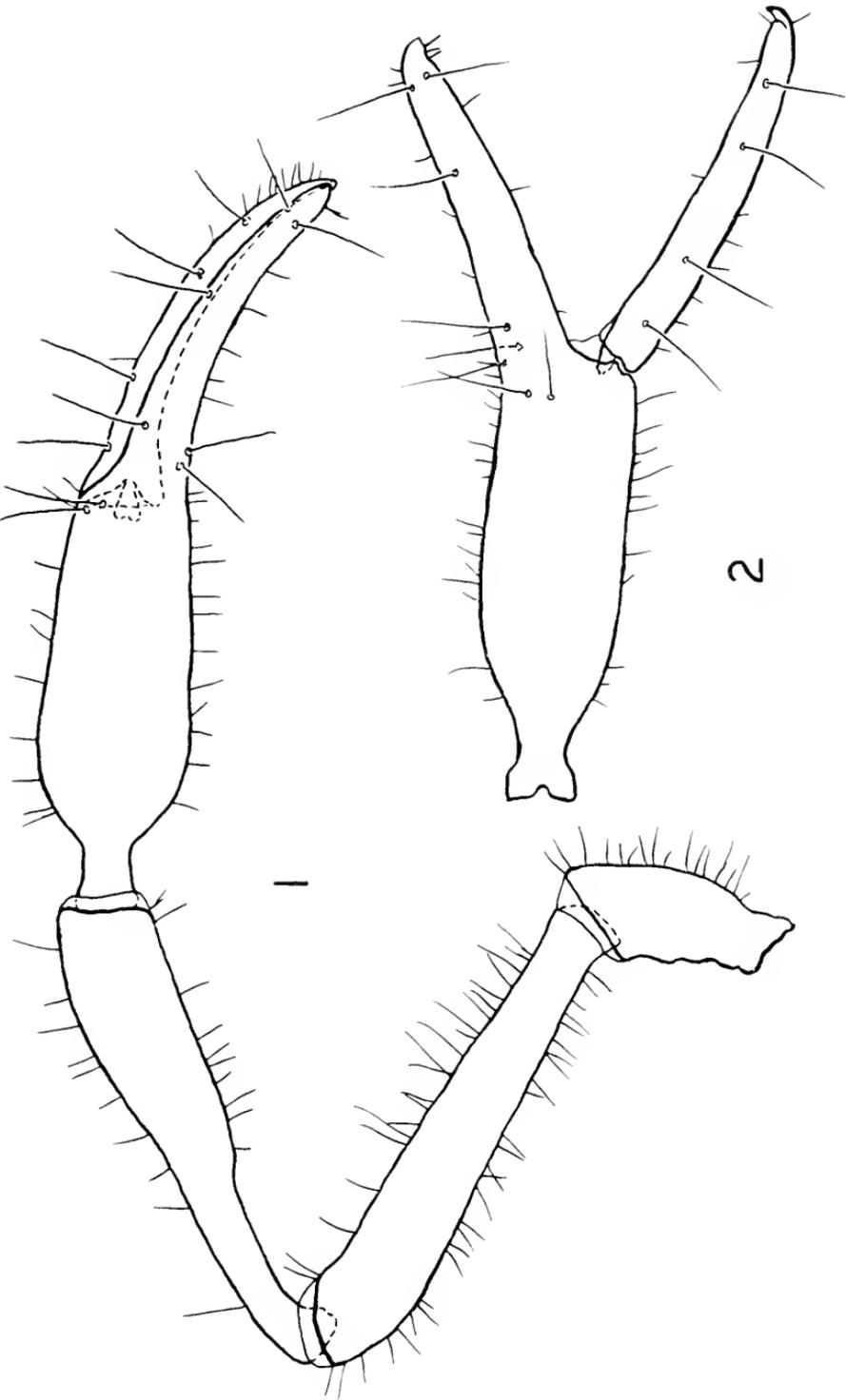


Figure 1. Dorsal view of left palp, $\times 25$.

Figure 2. Lateral view of right chela. The terminal tooth of the fixed finger has been broken off. $\times 25$.

3.43 long, 2.08 broad. Chelicera 1.04 long by 0.53 broad, and with movable finger 0.70 long; galea about 0.075 long. Palpal trochanter 1.31 long by 0.53 broad; femur 2.92 by 0.50; tibia 2.87 by 0.58 including pedicel, which is 1.24 by 0.28; chela without pedicel 3.83 by 0.84; hand 1.93 by 0.75; movable finger 2.19 by 0.29. Leg I: basifemur 1.27 by 0.27; telofemur 0.91 by 0.24; tibia 1.27 by 0.18; metatarsus 0.58 by 0.13; telotarsus 0.85 by 0.12. Leg IV: entire femur 2.15 long; basifemur 0.99 long by 0.42 broad; telofemur 1.23 by 0.40; tibia 2.28 by 0.23; metatarsus 0.75 by 0.17; telotarsus 0.96 by 0.15.

FEMALE. UNKNOWN.

TRITOSYMPH: Similar to the adult male except that the appendages are much less attenuated and all parts are lighter in color. Carapace only one-sixth longer than broad; epistome and eyes as in adult; carapacial setae 23 (4-6).

Chelicera as in adult; six setae on palm; flagellum of 9 setae; galea well developed as in adult, but trifid in the distal third, and without terminal subdivisions.

Palpal podomeres not so attenuated as in adult, especially the tibial pedicel which is only 2.6 times as long as its least breadth; other ratios are: trochanter 2.1, femur 4.4, entire tibia 3.5, chela 4.1 and hand 2.1 times as long as broad; movable finger 1.05 times as long as hand; fixed finger with seven, and movable finger with three, tactile setae; fixed finger with 95 and movable finger with 93 marginal teeth.

Legs as in adult but stouter. Fourth leg with tactile setae on metatarsus 0.19 and on telotarsus 0.49 the length of the segment from the proximal end.

MEASUREMENTS. Body length 3.15 (in mm); carapace 1.32 long, anterior breadth 0.87, greatest breadth 1.15; abdomen 1.82 long by 1.28 broad. Chelicera 0.77 long by 0.39 broad, movable finger 0.51 long; galea 0.068 long. Palpal trochanter 0.78 long by 0.37 broad; femur 1.62 by 0.37; tibia 1.53 by 0.44 including pedicel, which is 0.57 by 0.25; chela without pedicel 2.46 by 0.61; hand 1.24 by 0.61; movable finger 1.31 by 0.22. Leg I: basifemur 0.72 long by 0.19 broad; telofemur 0.54 by 0.17; tibia 0.69 by 0.12; metatarsus 0.37 by 0.10;

telotarsus 0.43 by 0.10. Leg IV: entire femur 1.35 long; basifemur 0.63 long by 0.29 broad; telofemur 0.71 by 0.29; tibia 1.28 by 0.16; metatarsus 0.45 by 0.13; telotarsus 0.59 by 0.13.

Remarks. Although the eyes are not reduced and the derm is heavily sclerotized and pigmented, *M. grandis* is certainly specially modified for life in caves by its large size and great attenuation of the appendages. In support of this contention is the fact that the specimens were taken "on formations" and "on stalagmite" within the cave where they obviously were at home. In proportions of the body and appendages it is rather similar to *M. cavernicola* Vachon (from caves in Portugal) which is undoubtedly a true troglobite. While reduction of the eyes and pigment usually accompanies increase in body size and attenuation of the appendages in adaptation of a pseudoscorpion to cavernicolous life, there is no reason to believe that all these modifications must necessarily proceed together. It is reasonable to suppose that *M. grandis* is exclusively troglotic in spite of the retention of eyes and pigmented derm, features which have not proved disadvantageous and which have not yet been lost by random mutation. Indeed, it is difficult to imagine that such a form as *M. grandis* could live successfully in the epigeal environment of a typical *Microcreagris*, where its size and attenuation would put it at a definite disadvantage.

It is impossible to fit *M. grandis* into the key given by Chamberlin (1962, p. 333) inasmuch as it has four eyes and an extremely slender tibial pedicel, a combination of characters which is not provided for in couplet 1. There is no difficulty, however, in separating it from other American species on the basis of its size and proportions.

It seems appropriate to note here that *Obisium cavicola* Packard from New Market Cave, Virginia, which Beier (1932) and Hoff (1958) tentatively place in the genus *Microcreagris*, does not in fact belong here. As will be shown in another place, it is a member of the genus *Chitrella*.

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