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A New Family, Genus, and Species in the Milliped Order Spirobolida from Mexico

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ABSTRACT

Hoffmanobolidae, n. fam., is proposed for the spirobolidan milliped, *Hoffmanobolus mexicanus*, n. gen., n. sp., characterized by an enlarged collum, which covers the epicranium, parts of the ocellaria, and, laterally, parts of the 2nd-4th pleurotergites, rounded lobes on the 3rd-5th male coxae, and by the configurations of the anterior and posterior gonopods. The relationships of the family are somewhat obscure, but the medial elongations of the anterior gonopod coxites suggest affinity with the *Atopetholidae*.

The order Spirobolida is a dominant element of the Mexican diplopod fauna. The families Spirobolidae and *Atopetholidae* extend southwards into Mexico from the United States (Keeton 1960a, Hoffman & Orcutt 1960), and the *Allopocockiidae* occurs from the United States to El Salvador (Keeton 1960b, Shelley & Hoffman 1995, Hoffman 1999). The *Messicobolidae* ranges from Mexico into Guatemala, while the *Rhinocricidae*, prevalent on Caribbean islands and in South America, reaches its northern continental limit in Mexico; the *Typhlobolellidae*, by contrast, is endemic to this country (Hoffman 1999). I put on record here a seventh Mexican spirobolidan family, which is monotypic and known so far only from Oaxaca. I thank R. L. Hoffman, for bringing the specimens to my attention, and R. G. Kuhler, for preparing figures 1-3.

HOFFMANOBOLIDAE, new family

Diagnosis. Moderate-size Spirobolidea with generally grayish coloration, caudal margins of pleurotergites with narrow light stripe, creating banded appearance. Collum greatly expanded, overlying epicranium, margins of ocellaria, and parts of 2nd-4th pleurotergites. Ozopores beginning on 6th pleurotergite. Scobinae absent. Epiproct short, not overhanging paraprocts; latter not invaginated. Coxae of legs 3-5 of males produced into rounded ventral lobes. Anterior gonopods with narrow sternum; coxites narrowly separated, extending strongly ventrad in midline; telopodites rounded laterad, with dactyliform projection on inner (medial) margins. Posterior gonopod with coxite poorly sclerotized basally, with subtriangular disto-medial projection on anterior face; endite relatively long, distolateral corner extending mediad.

Distribution. Known only from Oaxaca, Mexico.

Component. *Hoffmanobolus*, new genus.

Remarks. The affinities of this family are somewhat obscure, but I believe they lie with the Atopetholidae because of the midline ventral extensions of the anterior gonopod coxites. Members of the Atopetholidae typically show such an extension, although their coxites are usually well segregated by a sternum or a poorly sclerotized vinculum.

Hoffmanobolus, new genus

Type-species. *Hoffmanobolus mexicanus*, new species.

Diagnosis. With the characters of the family.

Species. One is known; others may exist in poorly sampled areas of southern Mexico.

Distribution. Same as that of the family.

Remarks. I am pleased to name the genus for my colleague, R. L. Hoffman, who gave me the opportunity to describe it and has greatly helped me throughout my career in myriapodology.

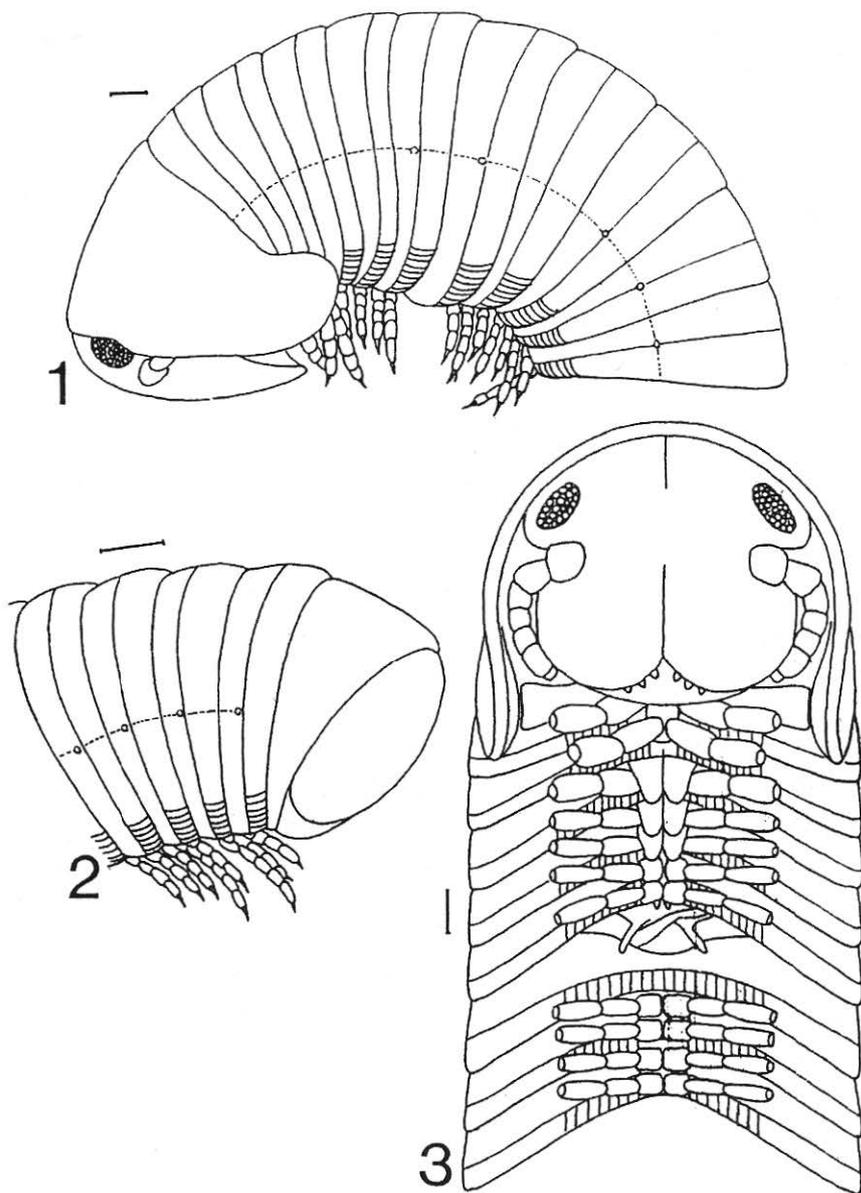
Hoffmanobolus mexicanus, new species

Figs. 1-6

Type specimens. Male holotype and one male and seven female paratypes (American Museum of Natural History) collected by C. M. Bogert, 24 July 1966, at Cofradia, 8 mi (12.8 km) SW San Vicente Lachixo (8,950-9,000'), Oaxaca, Mexico.

Diagnosis. With the characters of the genus and family.

Description. Body of only unbroken specimen, a female, ca. 60 mm long, anterior and caudal ends curled, impossible to unroll without breakage, 6.9 mm wide,



Figs. 1-3. *Hoffmanobolus mexicanus* holotype, somatic features. 1, segments 1-11, lateral view of left side. 2, caudal end, lateral view of left side. 3, segments 1-9, ventral view. Scale lines = 1.00 mm.

W/L ratio 11.5%, 41 segments; another female with 46 segments; holotype with 44 segments.

Head smooth, polished, sunk in collum to edges of ocellaria. Labral sinus narrow, distinct. Genae broadly rounded, unmarginated, exceeded by second antennomeres. Ocellaria separated by around five times their diameters, nearly round, ocelli arranged in six rows, 1, 4, 5, 6, 5, 4. Antennae short and stout, curling under and overlain by collum, first and second antennomeres situated in deep groove, third and more distal articles curving beyond head and inserting under genae, sparsely hirsute except for fifth-seventh articles, with four conical sensory cones, relative lengths of antennomeres $2 > 1 > 3 = 4 > 5 = 6 > 7$.

Collum very broad and expanded, overhanging epicranium and margins of ocellaria, ends rounded and greatly extended, overhanging 2nd, 3rd, and part of 4th pleurotergites (Fig. 1). Pleurotergites smooth except for ventrolateral striae on metazonites. Ozopores small, originating on segment 6, located near caudal margins of mesozonites. Epiproct slightly produced, terminating short of margins of paraprocts (Fig. 2).

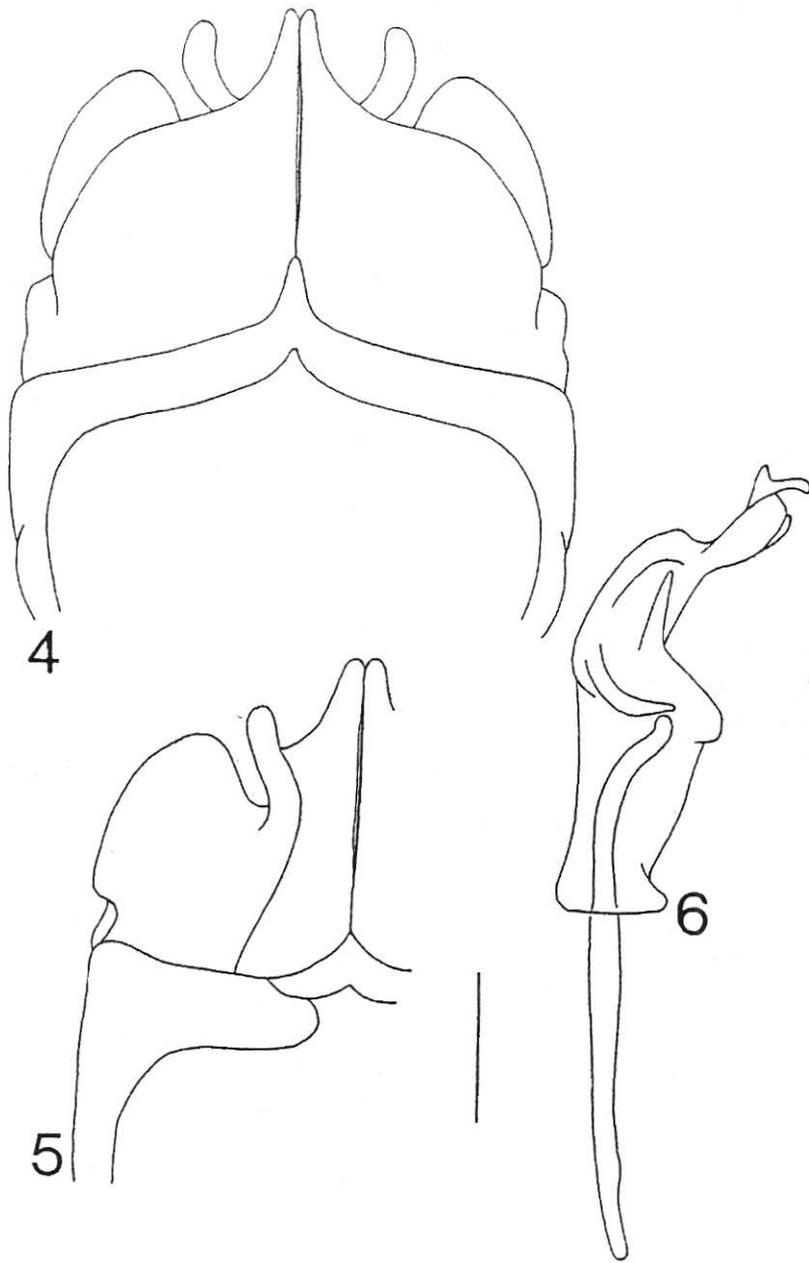
First three legs of males reduced in length, crassate; 4th and succeeding legs of normal length and thickness. Coxae of legs 3-5 with rounded caudal lobes (Fig. 3); remaining legs subsimilar throughout body, podomeres without modifications, tarsal claws gently curved. Hypoproct short and inconspicuous, margin linear; paraprocts with margins not thickened, not invaginated.

Anterior gonopods (Figs. 4-5) with narrow sternum extending sublinearly across anterior face, extending ventrad in midline; coxites moderately large, extending strongly ventrad in midline, narrowly segregated; telopodites well separated, rounded laterad, narrowing then continuing into dactyliform projection. Posterior gonopod (Fig. 6) with long, slender apodeme articulating apically in slight impression on sclerotized projection of coxite; latter poorly sclerotized but with sclerotized, subtriangular medial projection on anterior face; endite relatively long, curving mediad then ventrad, narrowing and folded distad, outer corner with narrowly rounded lateral lobe, extending mediad into short projection.

Distribution. Known only from the type locality.

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Figs. 4-6. *Hoffmanobolus mexicanus* holotype, gonopodal features. 4, anterior gonopods, anterior view. 5, left anterior gonopod, caudal view. 6, right posterior gonopod, anterior view. Scale line = 1.00 mm for figs. 4-5, 1.44 mm for fig. 6.

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