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A NEW CAVERNICOLOUS AMPHIPOD FROM OREGON

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IN July, 1928, Dr. Carl Hubbs collected a number of amphipods in Malheur Cave, Harney County, Oregon, which were sent to the United States National Museum for identification. These specimens belong to the genus *Stygobromus* and represent a new species, which I am naming *Stygobromus hubbsi* in honor of its discoverer. The type male (No. 54218) and paratypes (No. 54219) of both sexes are in the University of Michigan Museum of Zoology.

Stygobromus hubbsi, new species

FEMALE.—Head, lateral lobes rather prominent and distally rounding; eyes absent. Antenna 1 nearly twice as long as antenna 2, first joint a little longer than second; third joint over half the length of the second; flagellum longer than peduncle and consisting of about sixteen joints, the last seven or eight of which bear slender sense organs; accessory flagellum shorter than the first joint of primary flagellum and consisting of one long and one short terminal joint. Antenna 2, fourth and fifth joints about equal in length; flagellum about equal in length to the fifth peduncular joint and consisting of six joints.

Gnathopod 1, second joint equal in length to the sixth joint; fifth joint longer than wide and armed on the upper margin

with three spines in addition to the terminal spines; sixth joint with palm slightly convex and very oblique, leaving a very short hind margin which does not bear spines; palm armed on outside and inside margin with stout notched spines and defined by a long, curved, notched spine beyond which are four short spines; six slender, curved, closely set spines on inside surface of joint submarginal to the defining angle; seventh joint curved and reaching to the long defining spine. Gnathopod 2, second joint shorter than the sixth; fifth joint longer than wide and armed on upper margin with three spines in addition to the terminal spines; sixth joint over twice as long as wide with palm very oblique leaving a very short hind margin which bears two groups of spines; palm with distal third slightly convex and the proximal two-thirds straight, armed throughout on outside and inside margins with notched spines and two groups of long, slender spines where apex of seventh joint touches, and defined by a very long curved spine, below which, on the inside surface of joint, are three stout spines; seventh joint very long and curved, but not reaching the long defining spine.

First coxal plate longer than deep; second, third, and fourth coxal plates about as long as deep, fourth excavate behind. Peraeopods 1 and 2 much alike, but 2 the longer; seventh joint long, slender, slightly curved and bearing a long nail and a setule. Peraeopods 4 and 5 long and slender and very much alike, but 4 a little the longer; second joint only moderately expanded; seventh joint about one-third the length of the sixth, nearly straight and bearing a rather long nail and a setule. Coxal gills simple, borne on well-defined stalks and attached to gnathopod 2 and peraeopods 1 to 4, the fifth peraeopod being without gills. Sternal gills are not present.

Metasome segments with the lower hind corner not produced, but narrowly rounding and bearing a short spinule. Urosome segments free. Uropod 1 extending farther back than 2, peduncle longer than the inner ramus, which is slightly longer than the outer; four closely set spines at inner distal corner of peduncle. Uropod 2, peduncle a little longer than inner

ramus, which is longer than the outer; upper margin of peduncle bearing three spines. Uropod 3 very short, not reach-

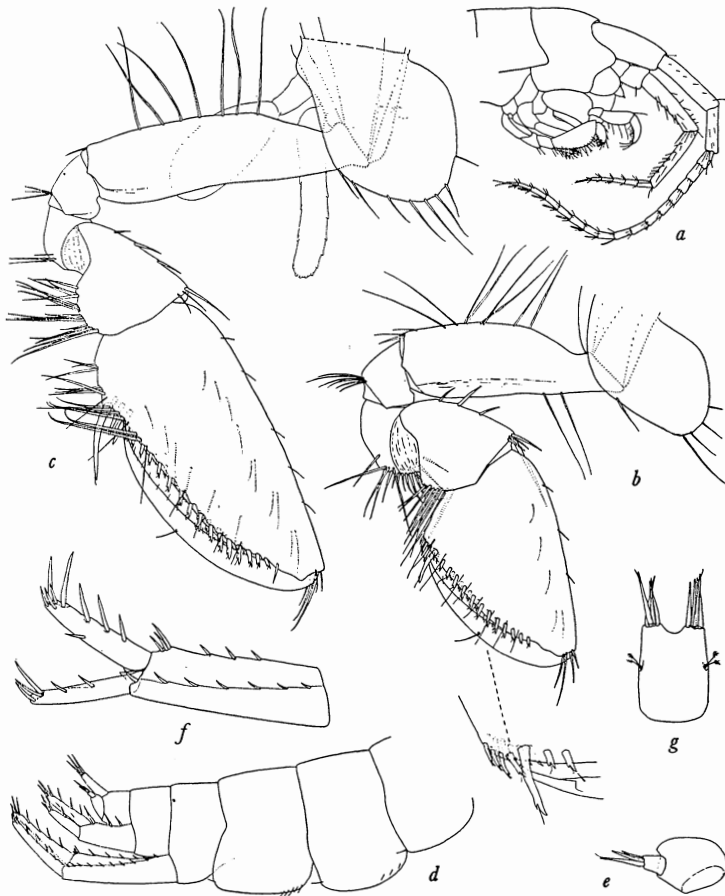


FIG. 1. *Stygobromus hubbsi*, new species. Female: a, Head and antennae; b, gnathopod 1; c, gnathopod 2; d, hind end of animal; e, uropod 3. Male: f, uropod 1. Female: g, telson.

ing end of telson, ramus about one-third the length of the peduncle and armed apically with three spinules. Telson longer than wide, distal margin with shallow median incision,

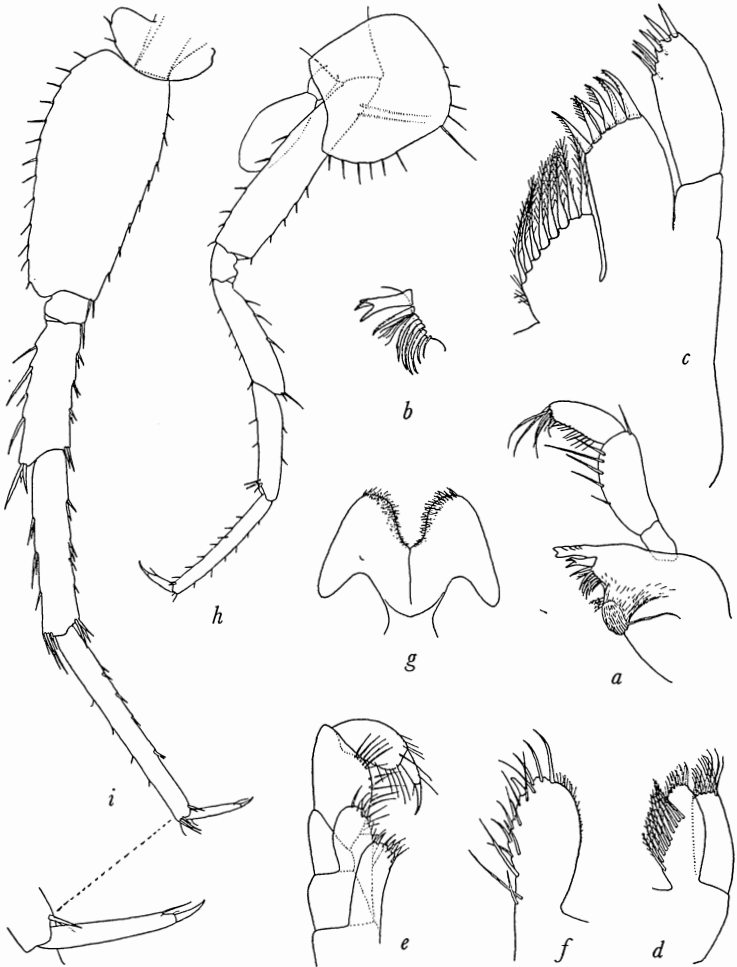


FIG. 2. *Stygobromus hubbsi*, new species. Male: *a*, Mandible; *b*, spine-row of mandible; *c*, maxilla 1; *d*, maxilla 2; *e*, maxilliped; *f*, outer plate of maxilliped greatly enlarged; *g*, lower lip. Female: *h*, peraeopod 2; *i*, peraeopod 5.

each lobe armed with four spines, and the lateral margins each bearing two plumose setules. Length of female, 7 mm.

MALE.—The male is very much like the female, but is smaller, measuring 5.5 mm. Right mandible, cutting edge rather long

and slender and armed with six or seven teeth; accessory plate three-pronged; spine-row of five long and two short spines; molar well developed, with a group of short plumose setae on front margin and a long seta on inner edge; palp, second joint not much longer than third and both with very few spines. Maxilla 1, inner plate broad and bearing eight plumose setae; outer plate armed with seven pectinate spine-teeth; palp armed distally with five slender spines and two setae. Maxilla 2, inner plate a little longer and broader than outer plate, and bearing an oblique row of ten plumose setae. Maxillipeds, inner plate reaching to about the middle of outer plate, and armed distally with three or four spine-teeth and several plumose setae; outer plate reaching to about one-third the distance along the second joint of palp, armed on inner margin with one spine-tooth and a few spines and on rounding distal margin with three long spines; palp rather short and stout, fourth joint bearing a long nail and several spinules. Lower lip without inner lobes, lateral lobes very large. Gill arrangement the same as in female. The peduncle of uropod 1 bears a broad triangular extension at the lower distal end and a group of three spines at the upper inner distal corner.

This species is closely related to *Stygobromus putealis* (Holmes) (*Crangonyx putealis*), but there are certain characters which appear to differentiate it from that species. The single specimen of *Stygobromus putealis*, a female cotype, in the U. S. National Museum is in rather poor condition, the telson and one of the third uropods having been lost. Holmes's figures,¹ though lacking in detail, appear to be correct as far as they go. The lower hind corners of the second and third metasome segments are rounding, and the urosome segments are free. Though Holmes was correct in believing his species to be distinct from *Stygobromus vitreus*, the specimen sent him from the U. S. National Museum for comparison and which he figured was not *S. vitreus*.

I have figured the appendages of a female (Figs. 1-2) so that

¹ "Description of a New Subterranean Amphipod from Wisconsin," *Trans. Wis. Acad. Sci., Arts, and Letters*, 16, Pt. 1 (1908): 77-80, Pls. 6 and 7.

comparison could be made with Holmes's figures which were of that sex. Although the specimen which I used is somewhat larger than that figured by Holmes, the relative proportions of the appendages in the two species are different, most of the appendages being longer in *S. hubbsi*.

The accessory flagellum of antenna 1 appears longer in Holmes's figure, being much longer than the first joint of the primary flagellum, whereas in *S. hubbsi* it is shorter than the first primary joint, but too much weight should not be placed on this character, as it is not a constant one. All the joints of the gnathopods and peraeopods appear to be proportionately longer and more spinose in *S. hubbsi*. There are, for instance, over twice as many spines on the hind margin of the second joint of peraeopod 5, and these spines appear longer. The uropods are much more spinose in *S. hubbsi*, and the telson appears wider in proportion to its length.

