

The basal article of the uropoda is 3 mm. in length. The branches are subequal and are 5 mm. long. The legs are all ambulatory. The first pair is not furnished with a process at the distal end of the propodus. The dactylus is bi-unguiculate.

In the female the second antennæ extend only to the posterior margin of the seventh thoracic segment.

#### LIGYDA EXOTICA (Roux).

*Ligia exotica* ROUX, Crust. Médit., 1828, p. 3, pl. XIII, fig. 9.

*Ligia grandis* PERTY, Delectus animalium articulorum, etc., 1830-1834, p. 212, pl. XL, fig. 13.

*Ligia gaudichaudii* MILNE EDWARDS, Hist. Nat. Crust., III, 1840, p. 157.

*Ligia (Italica) coriacea* KOCH, Deutschlands Crust., 1835-1844, p. 36.

*Ligia gaudichaudii* DANA, U. S. Expl. Exp., Crust., XIV, 1853, p. 741, pl. XLIX, figs. 6 a-h.—NICOLET, in Gay, Hist. Chile, III, 1849, p. 265.

*Ligia exotica* BUDDE-LUND, Crust. Isop. Terrestria, 1885, pp. 266-268.—DOLLFUS, Bull. Soc. Zool. France, XVIII, 1893, p. 189.—RICHARDSON, Proc. U. S. Nat. Mus., XXI, 1899, p. 866; Ann. Mag. Nat. Hist. (7), IV, 1899, p. 335; American Naturalist, XXXIV, 1900, p. 306; Proc. U. S. Nat. Mus., XXIII, 1901, p. 575.

*Localities.*—California; Topolobampo, Mexico; Cedar Keys, Florida; Lake Harley, Florida; Fort Macon, North Carolina; Mazatlan, Mexico;

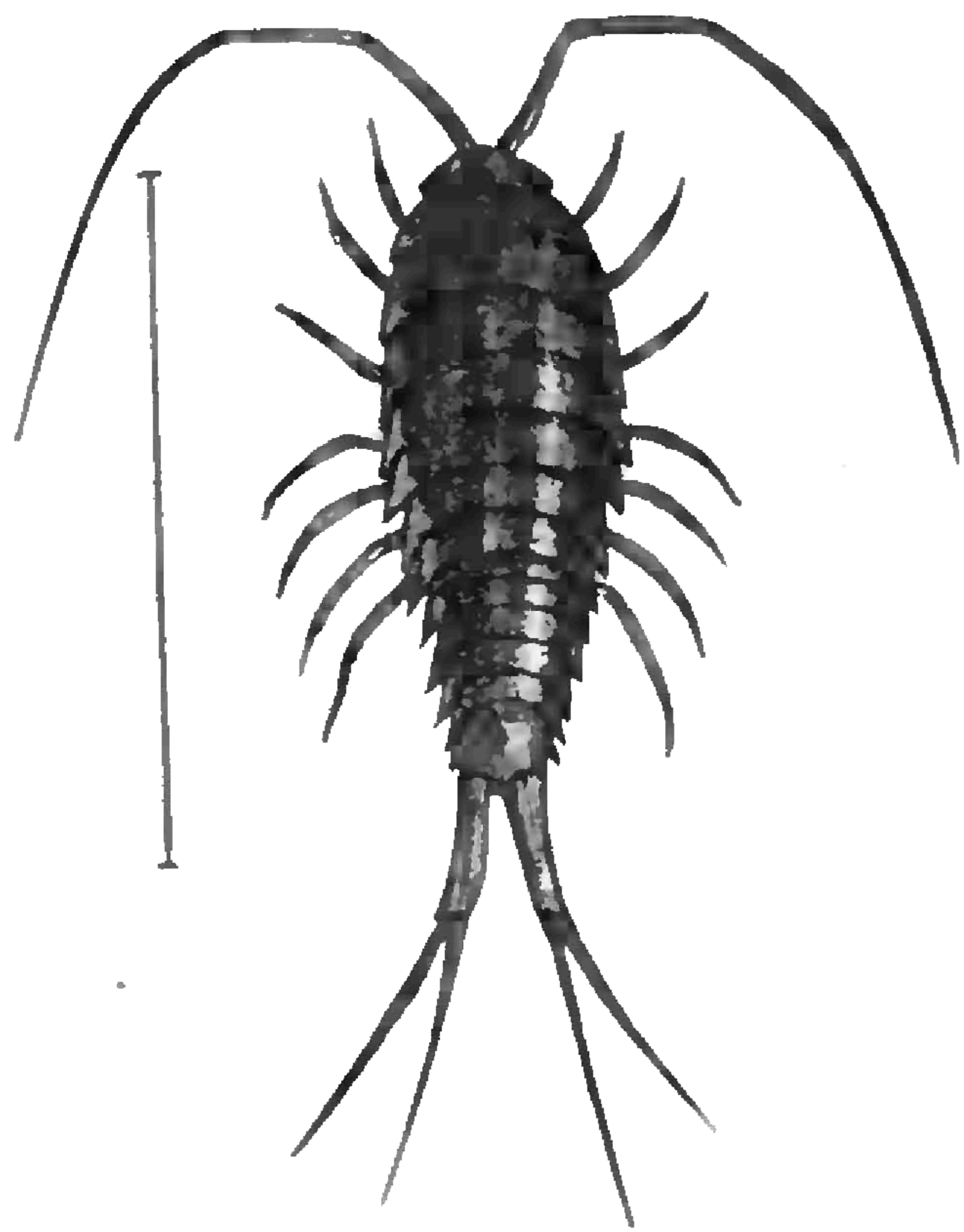


FIG. 716.—LIGYDA EXOTICA (AFTER ROUX).

Florida Keys; New Providence, Bahamas; Beaufort, North Carolina; Key West, Pine Key, Florida; Port Tampa, Florida; Panama; Charleston, South Carolina; Antigua, West Indies; Chusan; Macao; Bahia, Brazil; Puntarenas; Madras; Manila; Luzon; Singapore; Masilia; Espiritu-Santo, Balandra Bay, near Point Diablo; Chili; Ile Ronde; Mahé; Tientsin, China; Guadalupe Island; Misaki, Sagami, Japan; Tokyo, Japan; Honolulu, Hawaii. Found on piles at wharf; along the docks. Called "sea monkeys" in Florida. Very numerous among rocks.

Body oblong-ovate, a little more than twice as long as wide, 14 mm. : 30 mm. Length of uropoda from tip of terminal segment of body equal to 18 mm. Length of body with uropoda equal to 48 mm. Surface covered with minute granules.

Head twice as wide as long, 3 mm. : 7 mm. Anterior margin regularly rounded. Eyes large, round, composite, and placed at the extreme lateral margins. The first pair of antennæ are inconspicuous and rudimentary; they are composed of two subequal articles and a minute terminal one; they extend to the end of the basal article of the



second pair of antennæ. The first and second articles of the second pair of antennæ are about equal in length; the third article is about one and a half times longer than the second; the fourth is three times longer than the third; the fifth is one and a half times longer than the fourth. The flagellum is composed of fifty-five articles. When retracted, the second antennæ extend to the end, or a little beyond the end, of the peduncle or basal article of the uropoda. The maxillipeds have a palp of five articles.

The segments of the thorax are subequal. The epimera are broad plates occupying the entire lateral margins of the segments, but not distinctly separated off from the dorsal portion of the segment, only a faint line, almost inconspicuous, indicates the place where the coalescence has taken place. The lateral parts of the last three segments extend downward.

The abdomen is not narrower than the thorax, the third segment being as wide as the seventh thoracic segment. The lateral parts of the first two segments are not developed. There is a

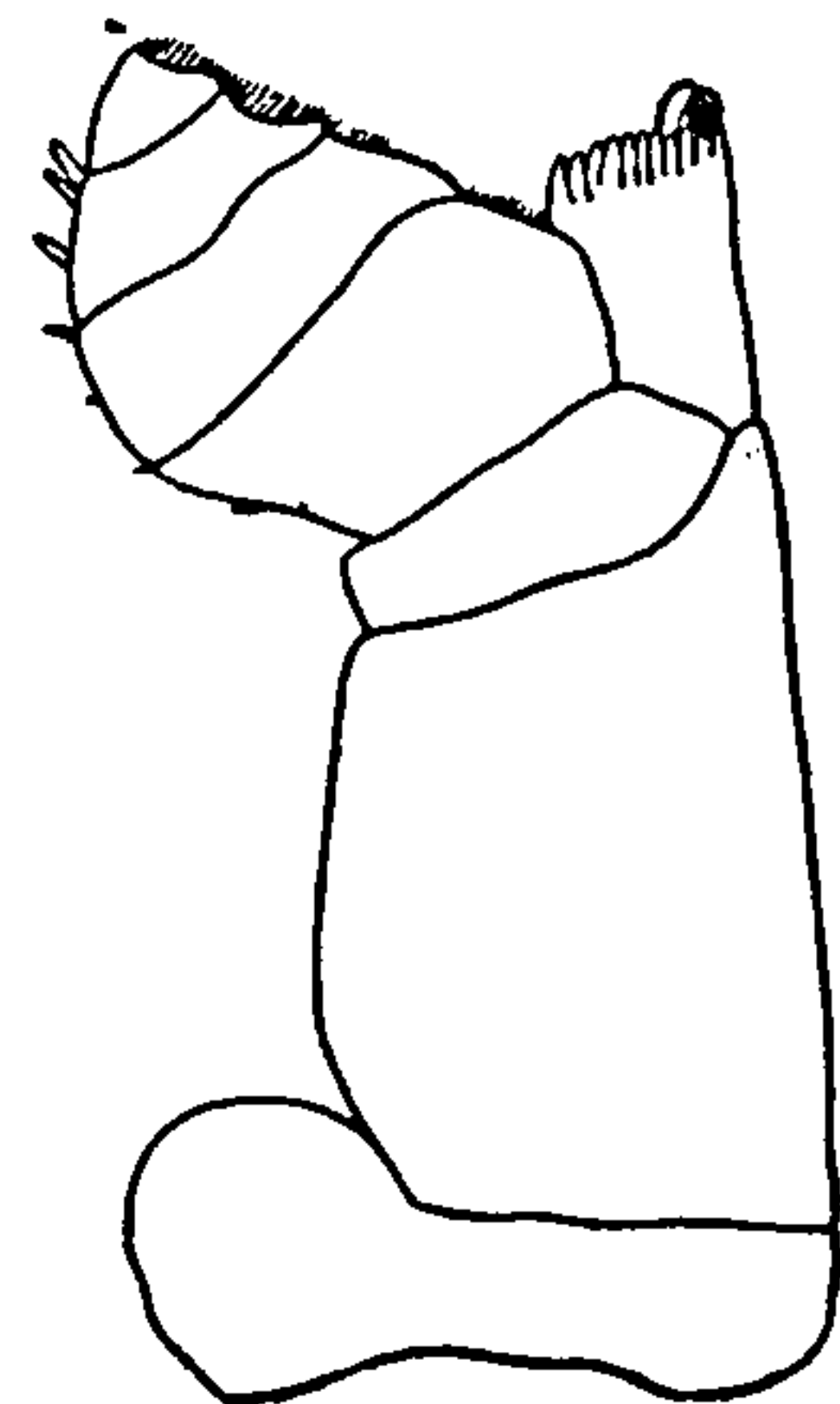


FIG. 717.—LIGYDA EXOTICA. MAXILLIPED.  $\times 15\frac{1}{2}$ .

gradual increase in the length of the segments from the first to the fifth. The lateral parts of the third, fourth, and fifth segments are not distinct from the dorsal portion of the segment. The sixth or terminal segment has the middle part of the posterior extremity produced triangularly in an obtuse point. The post-lateral angles are very acute and long, extending as far as the apex of the middle portion. Between the lateral angles and the middle portion of the segment, but near the lateral angle, are two small triangular processes. The basal article of the uropoda is 6 mm. in length from the apex of the terminal abdominal segment. The branches are of equal length and twice as long as the peduncle, being 12 mm. The inner branch is furnished with a small bristle about half a mm. long.

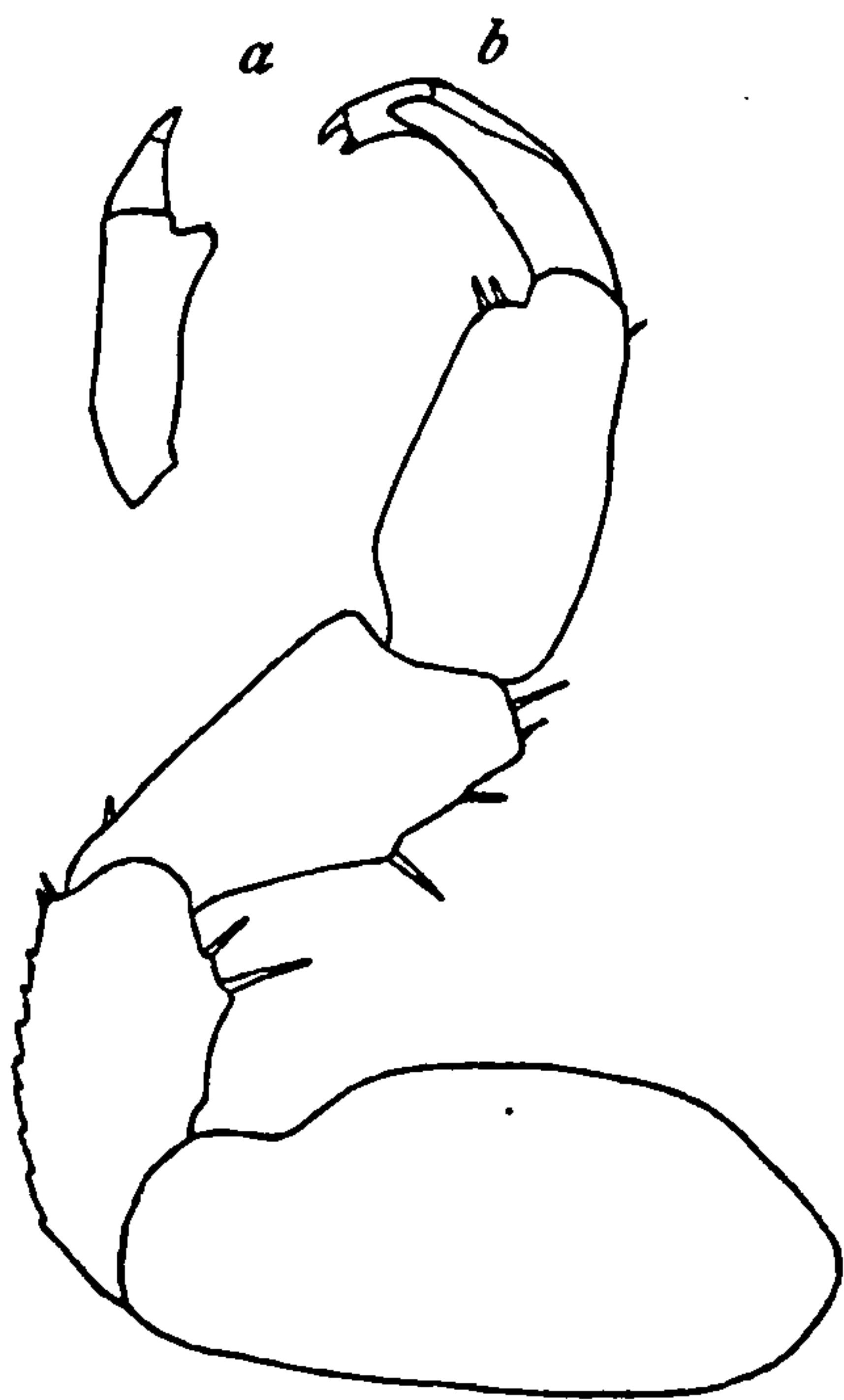


FIG. 718.—LIGYDA EXOTICA. *a*, TERMINAL JOINTS OF FIRST LEG.  $\times 11\frac{2}{3}$ .  
*b*, FIRST LEG.  $\times 11\frac{2}{3}$ .

The legs are all ambulatory. In the male the first pair has the propodus furnished near its distal end with a small lateral process. This process is wanting on the first pair of legs in the female.

## LIGYDA BAUDINIANA (Milne Edwards).

*Ligia baudiniana* MILNE EDWARDS, Hist. Nat. Crust., III, 1840, pp. 155-156.

? *Ligia baudiana* SPENCE BATE, Ann. Mag. Nat. Hist. (4), I, 1868, pp. 443-446.

? *Ligia baudiniana* SAUSSURE, Mém. Soc. Physique et d'Hist. Nat. de Genève, XIV, 1858, pp. 443-446.

*Ligia exotica* DOLLFUS, Bull. Soc. d'Etudes Scientifiques de Paris, 12th year, 1890, p. 7.

*Ligia exotica hirtitarsis* DOLLFUS, Bull. Soc. d'Etudes Scientifiques de Paris, 12th year, 1890, p. 7.

*Ligia baudiana* IVES, Proc. Acad. Nat. Sci. Phila., 1891, pp. 185-186, pl. vi, fig. 2.

*Ligia hirtitarsis* DAHL, Plankton-Expedition, 1892, pp. 111-112, pl. III.

*Ligia baudiniana* RICHARDSON, Proc. U. S. Nat. Mus., XXIII, 1901, pp. 574-575.

*Ligia gracilis* MOORE, Report U. S. Commissioner of Fish and Fisheries, XX, Pt. 2, 1902, p. 175, pl. XI, figs. 7-12.

*Ligia baudiniana* RICHARDSON, Trans. Conn. Acad. Sci., XI, 1902, pp. 306-308, pl. XL, fig. 61.

*Localities.*—Hamilton Island, Bermudas; Saint Jean d'Ulloa, Mexico; Yucatan; Rio Janeiro; Cuba; Cayenne; Miami, Florida; Jamaica;

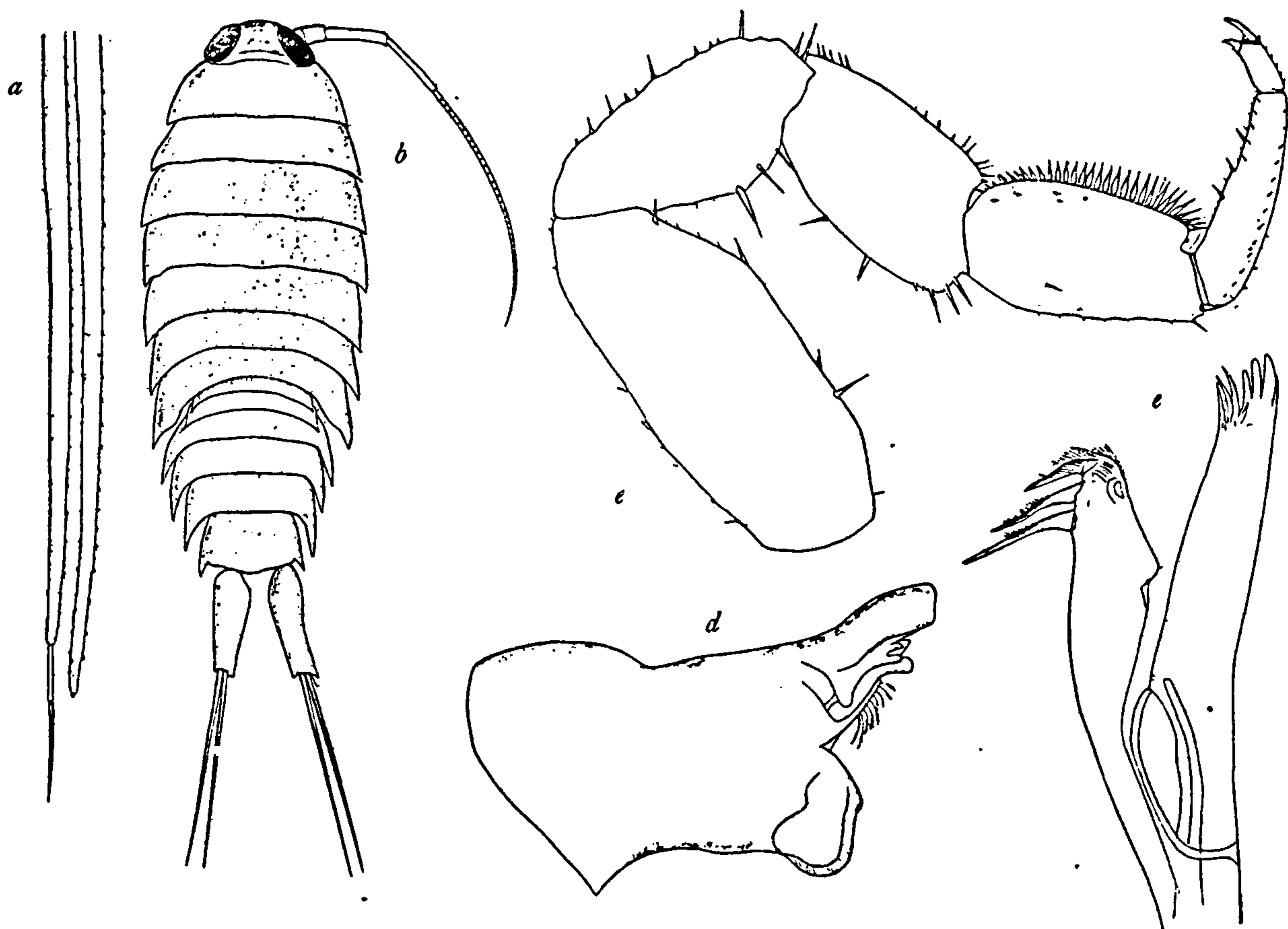


FIG. 719.—LIGYDA BAUDINIANA (AFTER DAHL). *a*, UROPOD. *b*, GENERAL FIGURE. *c*, FIRST LEG OF MALE. *d*, MANDIBLE. *e*, FIRST MAXILLA.

Culebra, Porto Rico; the Bahamas. Found under algæ and drift along shore (Moore).

Body oblong-ovate, nearly two and a half times longer than wide,



10 mm.:23 mm. Uropoda  $10\frac{1}{2}$  mm. long, a little less than half the length of the body. Body, with uropoda,  $33\frac{1}{2}$  mm.

The head is twice as wide as long,  $2\frac{1}{2}$  mm.:5 mm., with the anterior margin widely rounded. The eyes are narrow elongate, about twice as wide as long, and separated in front by a distance equal to the length of one eye, 2 mm. The first pair of antennæ are small and inconspicuous. The second pair have the first

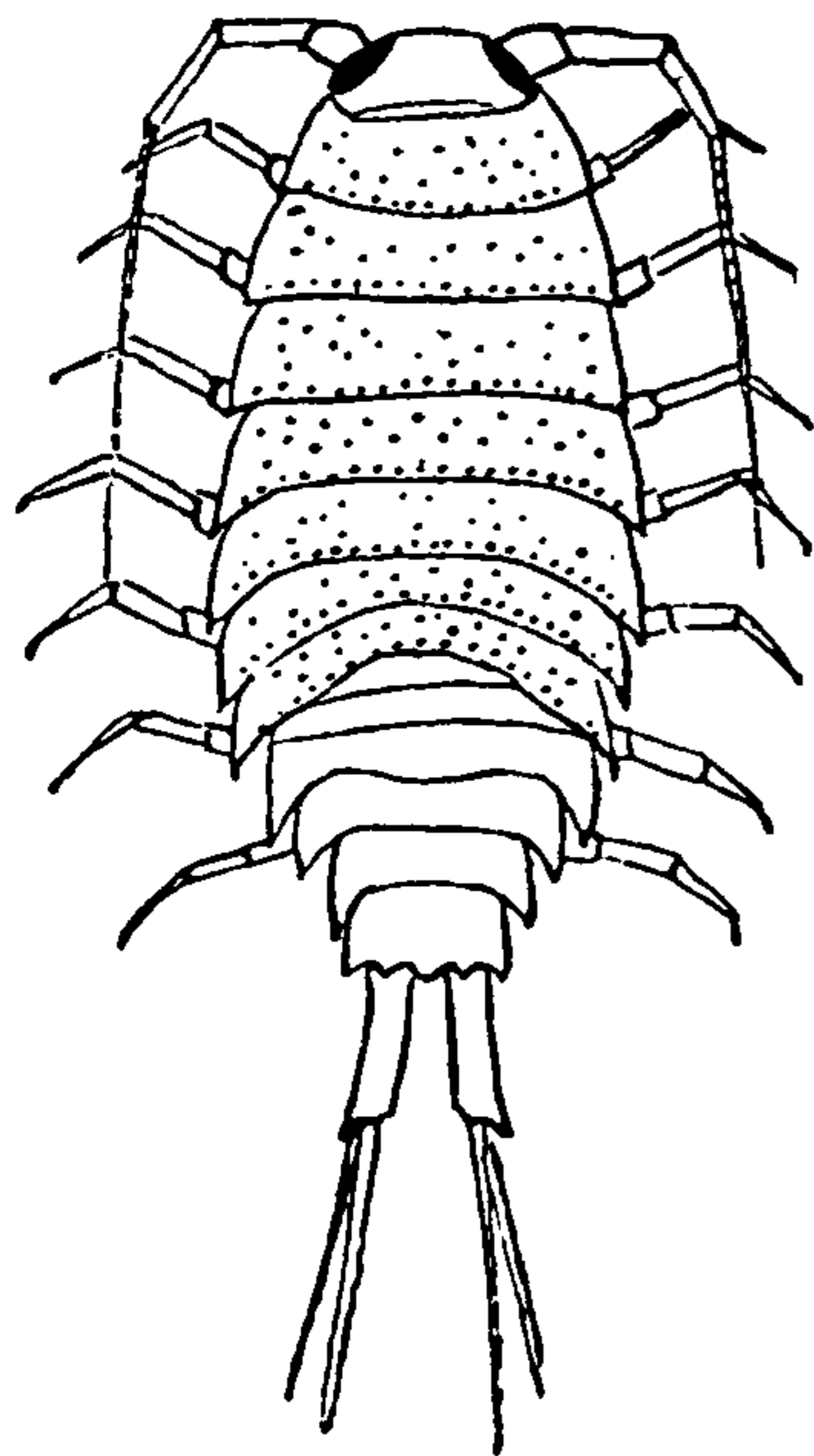


FIG. 720.—LIGYDA BAUDINIANA  
(AFTER IVES).  $\times 2\frac{3}{4}$ .

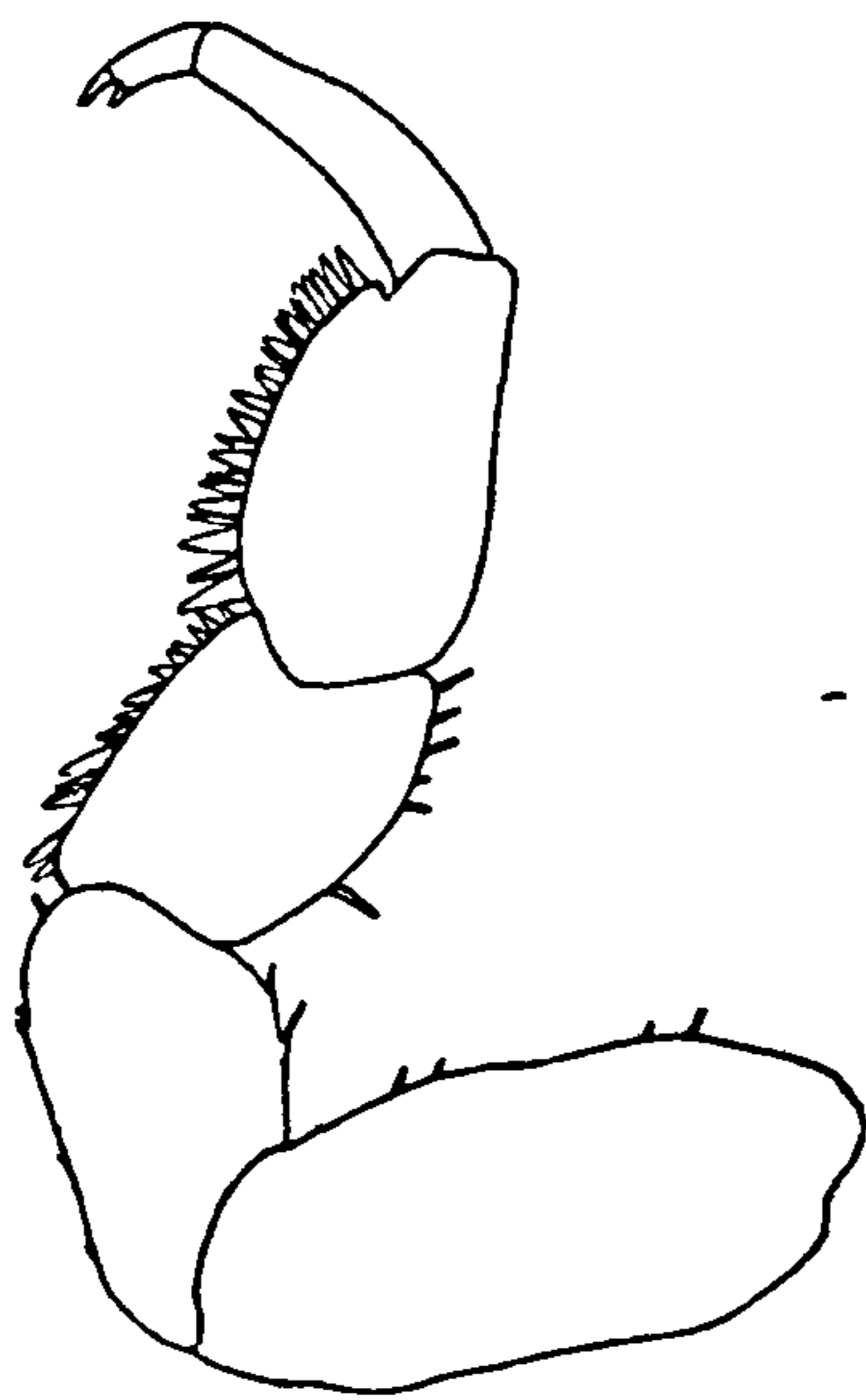


FIG. 721.—LIGYDA BAUDINIANA.  
FIRST LEG OF MALE.  $\times 11\frac{3}{4}$ .

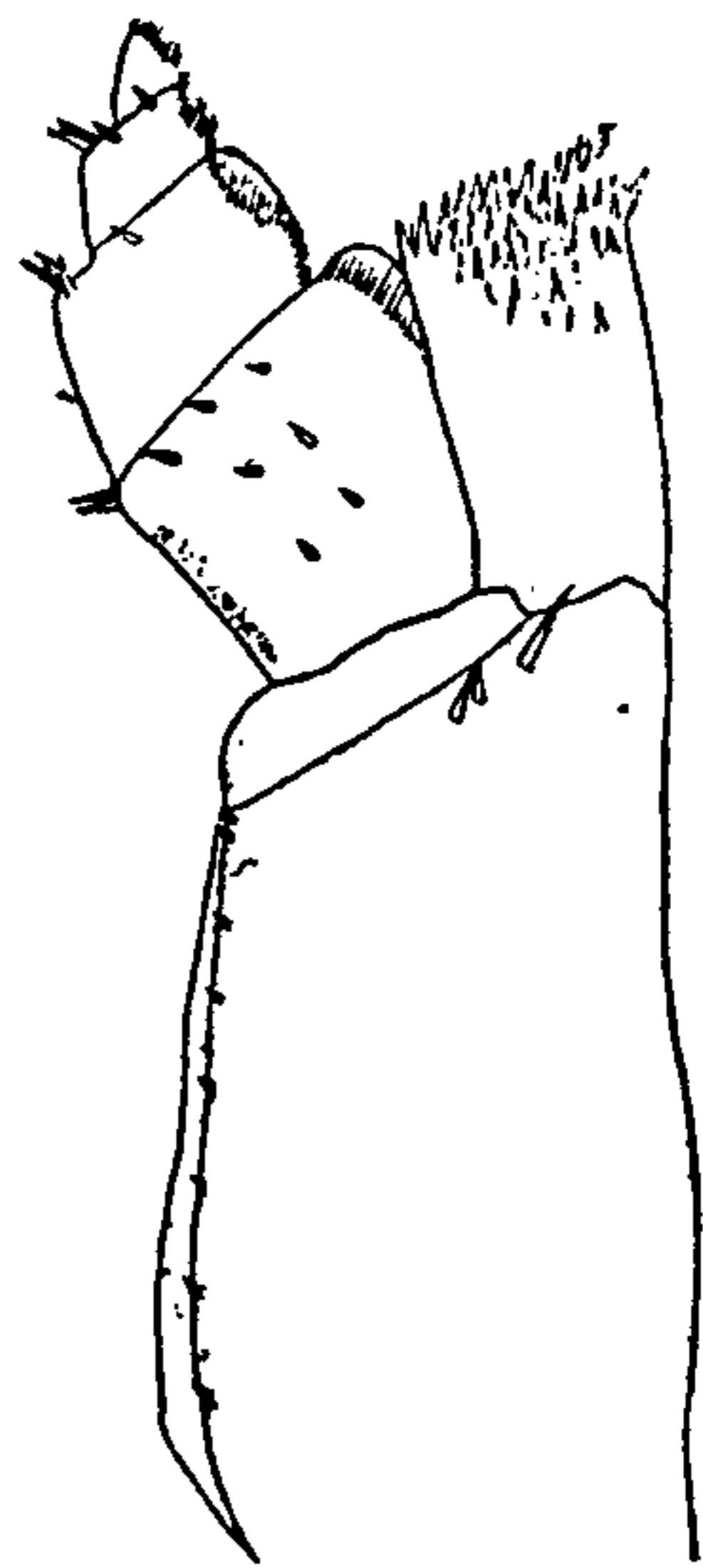


FIG. 722.—LIGYDA BAUDINIANA  
(AFTER DAHL). MAXILLIPED.  
 $\times 24\frac{3}{4}$

two articles short and subequal; the third article is as long as the first two taken together; the fourth is 3 mm. long, or twice as long as the third; the fifth is  $4\frac{1}{2}$  mm. long, or one and a half times longer than the fourth. The flagellum is composed of thirty-eight articles, and extends to the posterior margin of the seventh thoracic segment. The maxilliped has a palp of five articles.

The segments of the thorax are subequal, with lateral margins straight. The epimera are coalesced with the segments, faint depressed lines indicating the place of union.

All six segments of the abdomen are distinct; the first two are somewhat shorter than the three following, and have the lateral parts covered by the seventh thoracic segment. The third, fourth, and fifth segments gradually increase in length, and have the post-lateral angles produced backward in long acute processes. The sixth or terminal segment has the posterior margin triangularly produced in the middle in a very obtuse point, with two small triangular points just within the lateral angles, which are short and not much produced.

The peduncle of the uropoda is 4 mm. long, the branches  $6\frac{1}{2}$  mm. long, and of equal length.



The first pair of legs in the male has a fringe or comb of stiff hairs or bristles along the entire length of the carpus and merus.

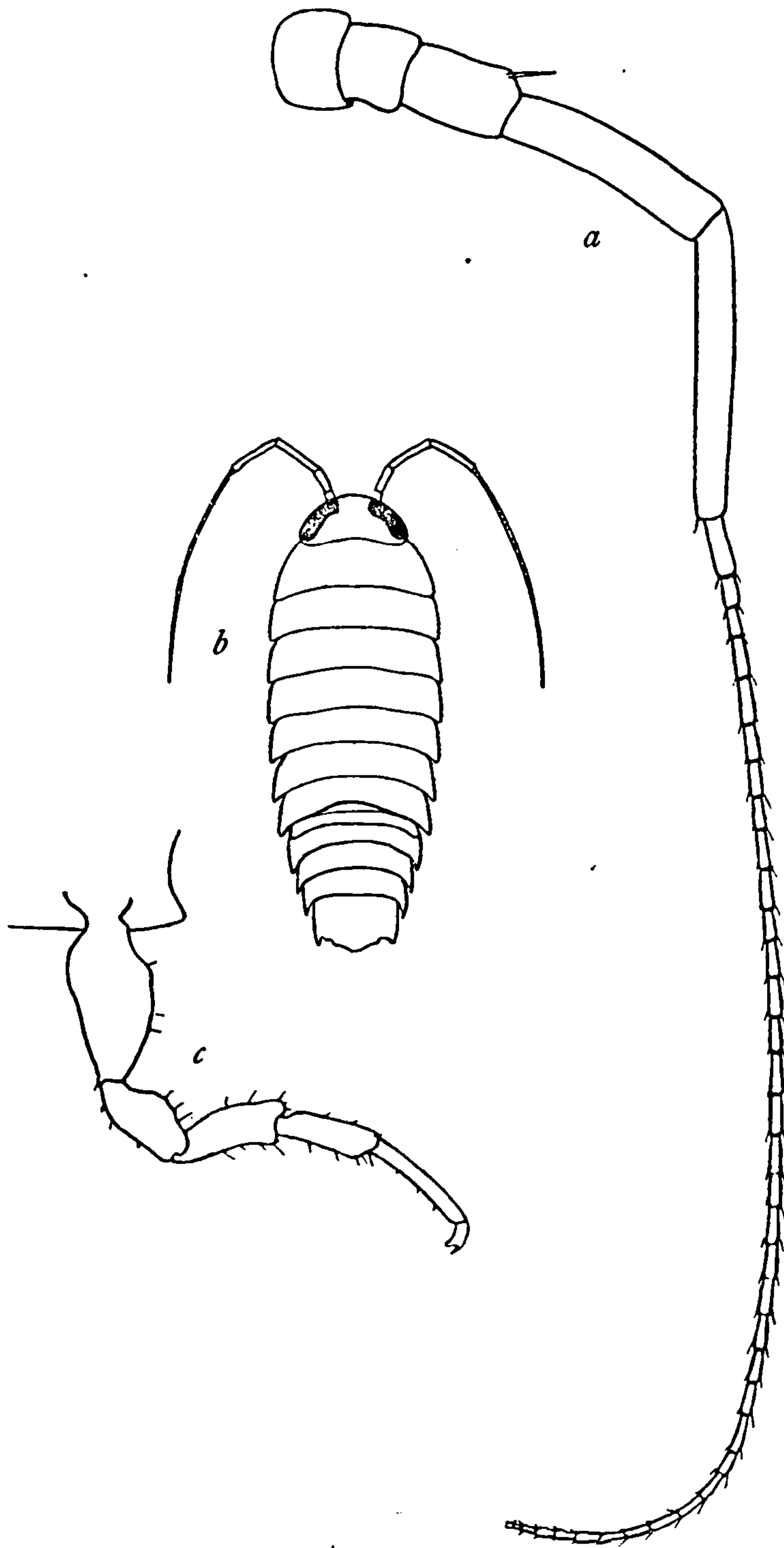


FIG. 723.—LIGYDA BAUDINIANA (AFTER MOORE). *a*, SECOND ANTENNA OF FEMALE. *b*, FEMALE. *c*, FIRST LEG OF FEMALE.

All the legs are ambulatory, with bi-unguiculate dactyli.  
The surface of the thorax is covered with small granules.



## LIGYDA OCCIDENTALIS (Dana).

*Ligia occidentalis* DANA, U. S. Expl. Exp., Crust., XIV, 1853, p. 742, pl. XLIX, fig. 7; Proc. Acad. Nat. Sci. Phila., VII, 1854-55, p. 176.—STIMPSON, Bost. Jour. Nat. Hist., VI, 1857, p. 506.—HARFORD, Proc. Cal. Acad. Sci., VII, 1877, p. 116.—BUDDE-LUND, Crust. Isop. Terrestria, 1885, p. 264.—UNDERWOOD, Bull. Ill. State Lab. Nat. Hist., II, 1886, p. 360.—RICHARDSON, Proc. U. S. Nat. Mus., XXI, 1899, p. 866; Ann. Mag. Nat. Hist. (7), IV, 1899, p. 334; American Naturalist, XXXIV, 1900, p. 306; Harriman Alaska Exp., Crust., X, 1904, p. 226; Proc. U. S. Nat. Mus., XXVII, 1904, p. 670.

*Localities*.—California; San Francisco Bay; San Diego; Santa Cruz Island, California; Sacramento River; Monterey Bay; St. Marguerita Island, Lower California; Sausalito, California; San Bartolomé Bay, Lower California; Farallones, California (J. Lindahl); San José Island, Gulf of California.

Body oblong-ovate, a little more than twice as long as broad, 12 mm. : 26 mm. Uropoda 8 mm. long, or less than one-third the length of the body. Entire length of body with uropoda 34 mm.

Head about twice as wide as long,  $2\frac{1}{2}$  mm. :  $5\frac{1}{2}$  mm., with the anterior margin widely rounded. Eyes large, composite, elongate, and separated in front by a distance equal to the length of one eye, 2 mm. First pair of antennæ minute, inconspicuous. Second pair with the first two articles short and subequal; third article  $1\frac{1}{2}$  mm. long or as long as the first two articles together; fourth article 3 mm. long, twice as long as the third article; fifth article 5 mm. in length. The

flagellum is composed of twenty-nine articles, and extends to the posterior margin of the sixth thoracic segment. The peduncle

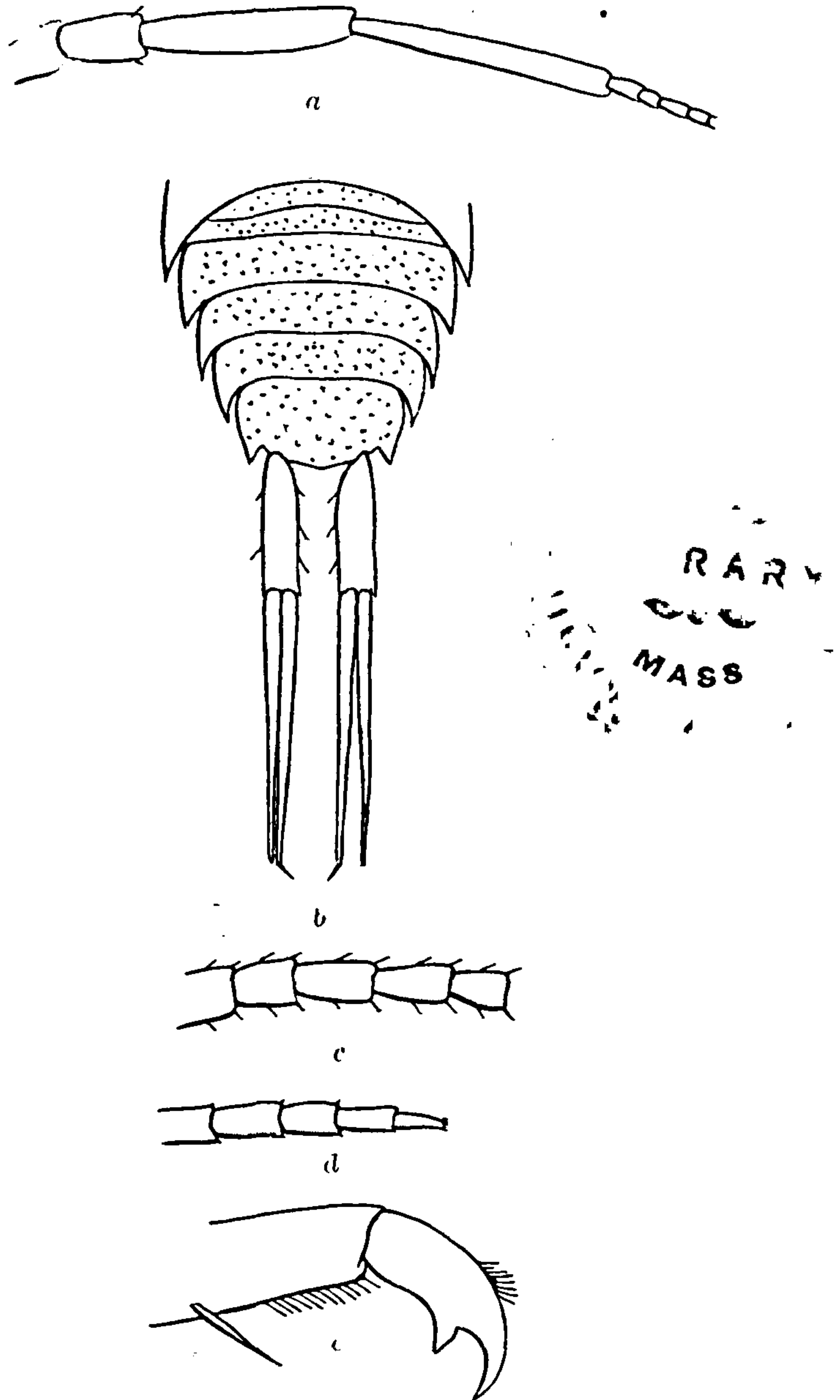


FIG. 724.—LIGYDA OCCIDENTALIS (AFTER DANA). a, PEDUNCLE OF SECOND ANTENNA. b, ABDOMEN AND UROPODA. c, JOINTS OF FLAGELLUM. d, TIP OF FLAGELLUM. e, FIRST LEG OF MALE.



of the second antennæ extends to the posterior margin of the second thoracic segment. The palp of the maxillipeds is composed of five articles.

The first four segments of the thorax are subequal and each is about  $\frac{1}{2}$  mm. longer than any of the last three, which are subequal. The epimera are perfectly united with the segments, faint lines of depression marking the place of coalescence.

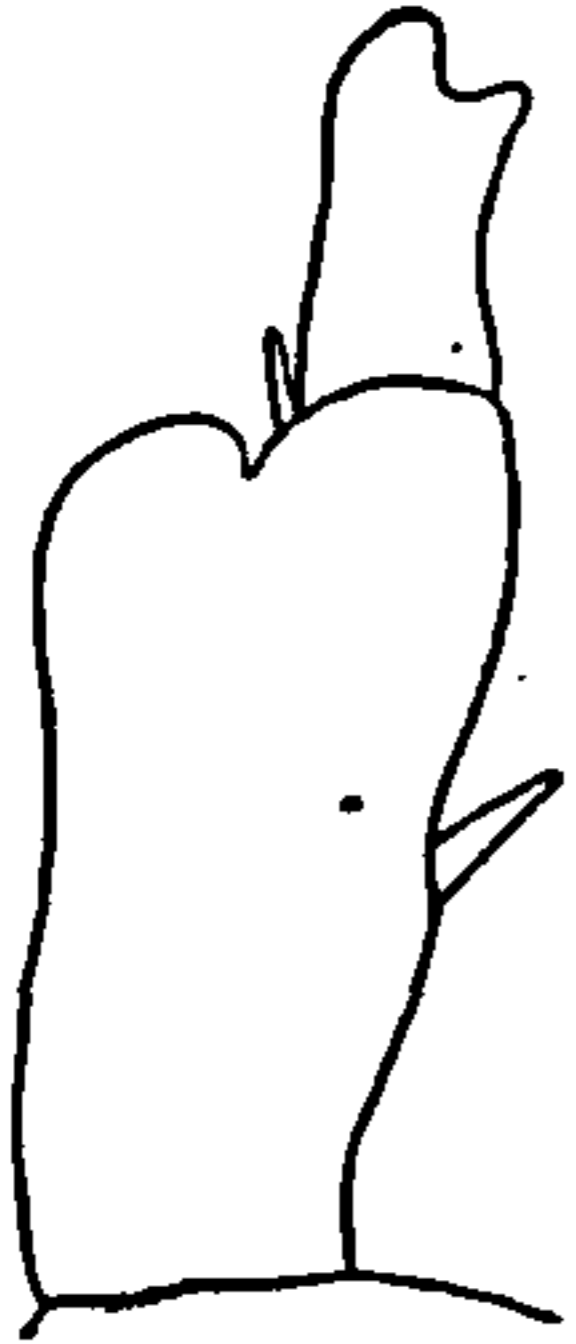


FIG. 725.—LIGYDA OCCIDENTALIS. FIRST LEG (LAST TWO JOINTS).  $\times 20\frac{1}{2}$ .

All six segments of the abdomen are distinct, the first two being a little shorter than the three following, and having the lateral parts covered by the seventh thoracic segment. The third, fourth, and fifth segments gradually increase in length, and have the post-lateral angles produced backward in acute processes, which have a faintly marked carina crossing them obliquely. The terminal segment has the posterior margin triangularly produced in an obtuse point. Between this and the lateral angles, which are acute, are two small points.

The peduncle of the uropoda is 3 mm. long. The branches are 5 mm. in length and subequal.

The legs are all ambulatory, and have the dactylus bi-unguiculate. The first pair in the male have the propodus armed at the distal end on the inner margin with a conspicuous triangular process, similar to that in *L. exotica*.

Entire surface of body covered with small granules.

#### LIGYDA PALLASII (Brandt.)

*Ligia pallasii* BRANDT, Bull. Soc. Impér des Natur. de Moscou, VI, 1833, p. 172.

*Ligia dilatata* STIMPSON, Bost. Jour. Nat. Hist., VI, 1857, p. 507, pl. xxii, fig. 8.

*Ligia septentrionalis* LOCKINGTON, Proc. Cal. Acad. Sci., VII, 1877, Pt. 1, p. 46.

*Ligia stimpsoni* MIERS, Proc. Zool. Soc. London, 1877, p. 671 (foot note).

*Ligia dilatata* SMITH, Report Progress Geol. Survey of Canada, 1880, p. 218.

*Ligia pallasii* BUDDE-LUND, Crust. Isop. Terrestria, 1885, pp. 261-262.

*Ligia dilatata* UNDERWOOD, Bull. Ill. State Lab. Nat. Hist., II, 1886, p. 360.

*Ligia pallasii* UNDERWOOD, Bull. Ill. State Lab. Nat. Hist., II, 1886, p. 361.—

RICHARDSON, Proc. U. S. Nat. Mus., XXI, 1899, p. 866; Ann. Mag. Nat. Hist. (7), IV, 1899, p. 334; American Naturalist, XXXIV, 1900, p. 306; Harriman Alaska Exp., Crust., X, 1904, p. 226; Proc. U. S. Nat. Mus., XXVII, 1904, p. 670.

*Localities*.—Unalaska; Sitka; Wrangel, Alaska; Tanager; Chica Island, Akutan Pass; Lighthouse Rocks, Alaska; Ward Cove, Revillagigedo Island, Alaska; Kyska Harbor; Aleutian Islands; Nazan Bay, Atka; Victoria, Vancouver Island; Puget Sound; Port Townsend, Washington; California; Lowe Inlet, British Columbia; Washington Territory; Lagonistas Creek, California; Farallones, California; Cape Mendocino, California. Found on rock beach, under stones.



Body oblong-ovate, nearly twice as long as broad, 11 mm.:20 mm. Length of uropoda from tip of terminal segment of body, 3 mm. Length of body, including uropoda, 23 mm. Surface covered with minute granules.

Head more than twice as wide as long, 2 mm.:5 mm. Anterior margin widely rounded. Eyes large and round, composite, and situated close to the lateral margins.

First pair of antennæ inconspicuous and rudimentary and composed of two short, subequal articles and a minute terminal article. The first antennæ extend only to the end of the first article of the peduncle of the second antennæ. The first two articles of the second pair of antennæ are equal in length; the third is nearly twice as long as the second; the fourth is one and a half times longer than the third; the fifth is one and a half times longer than the fourth. The flagellum is composed of twelve articles.

The second pair of antennæ extend to the middle of the fourth thoracic segment when retracted. The maxilliped has a palp of five articles.

The first four segments of the thorax are subequal; the last three are somewhat shorter in the median dorsal line. The lateral portions of the last three segments extend downward. The epimera of all the segments are broad plates, occupying the whole of the lateral margins of the segments and indicated by distinct lines.

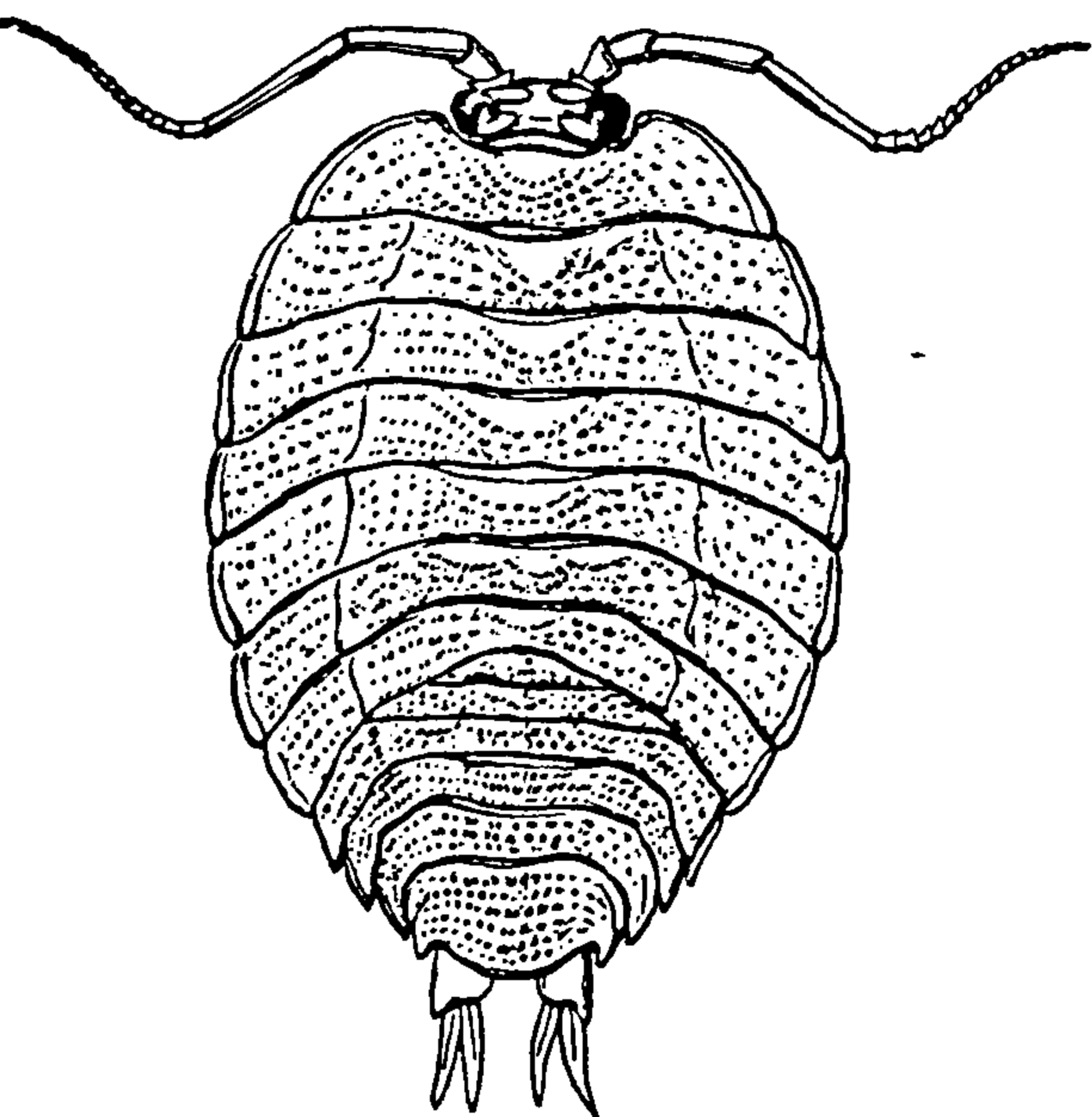


FIG. 726.—LIGYDA PALLASII (AFTER STIMPSON).  $\times 1\frac{1}{2}$ .

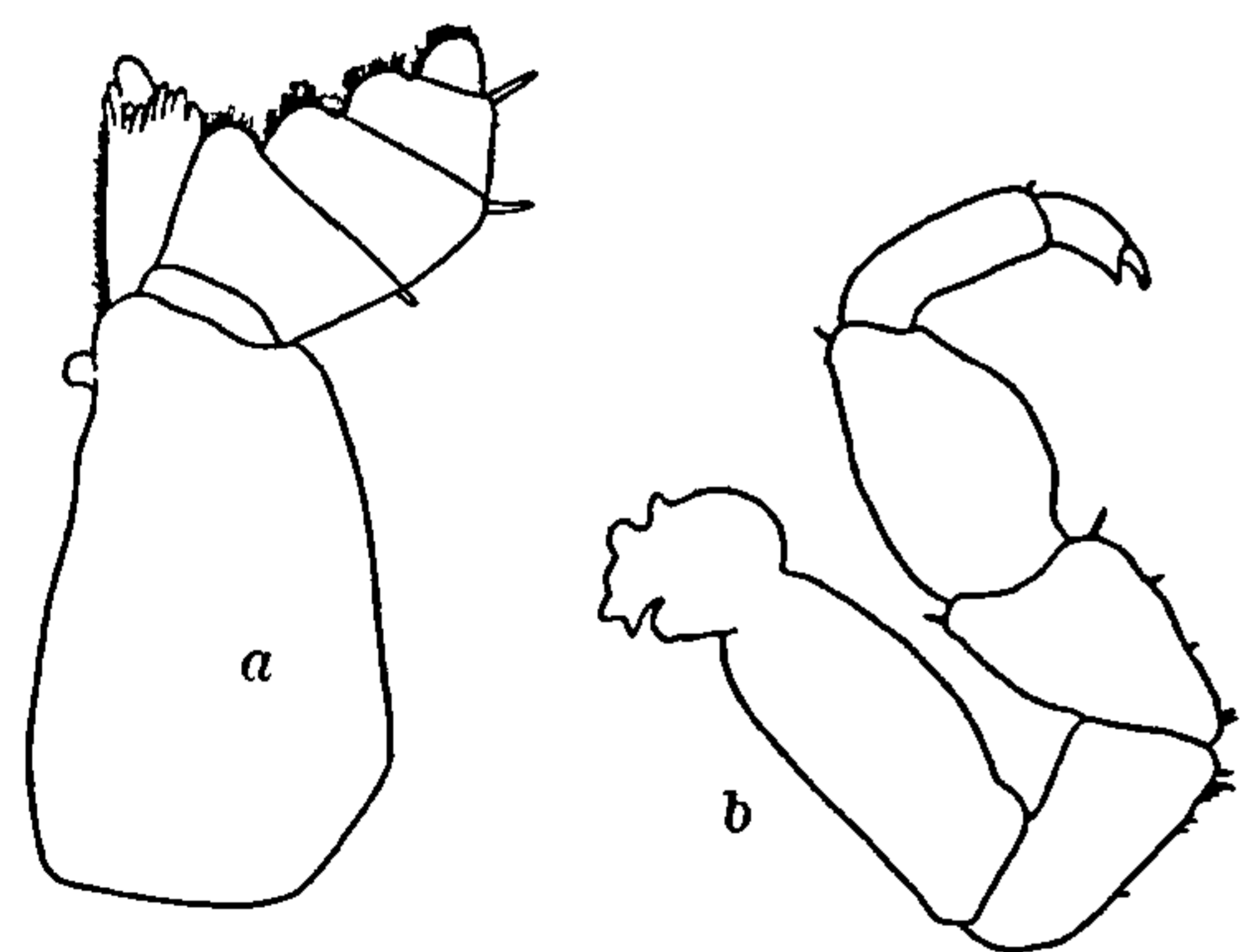


FIG. 727.—LIGYDA PALLASII. *a*, MAXILLIPED.  $\times 20\frac{1}{2}$ . *b*, FIRST LEG OF MALE.  $\times 7\frac{1}{4}$ .

The abdomen is as wide as the thorax, the lateral parts of the third segment extending as far as the lateral parts of the seventh thoracic segment. The lateral parts of the first two segments of the abdomen are not

developed; those of the last four segments are well developed and have the posterior angles produced downward. The lateral parts are not separated off from the dorsal portion of the segments. On the lateral parts of the third, fourth, and fifth segments are distinct carinae extending obliquely from the middle of the segment to the posterior



extremity. The terminal segment of the body has the middle portion of the posterior extremity regularly rounded, the post-lateral angles not extending quite as far as the middle portion. The basal segment or peduncle of the uropoda is short, being only 1 mm. in length from the tip of the middle part of the abdomen. The branches are equal in length, and are twice as long as the peduncle. The inner branch is furnished with one short bristle about 1 mm. in length.

The legs are all ambulatory.

LIGYDA OCEANICA (Linnæus).

*Oniscus oceanicus* LINNÆUS, Syst. Nat., 12th ed., I, Pt. 2, 1767, p. 1061.

*Cymothoa oceanica* FABRICIUS, Mantissa Insectorum, I, 1787, p. 242.

*Ligia oceanica* FABRICIUS, Suppl. Ent. Syst., 1798, p. 301.—BRÉBISSEON, Mém. Soc. Linn. Calv., 1825, p. 258.

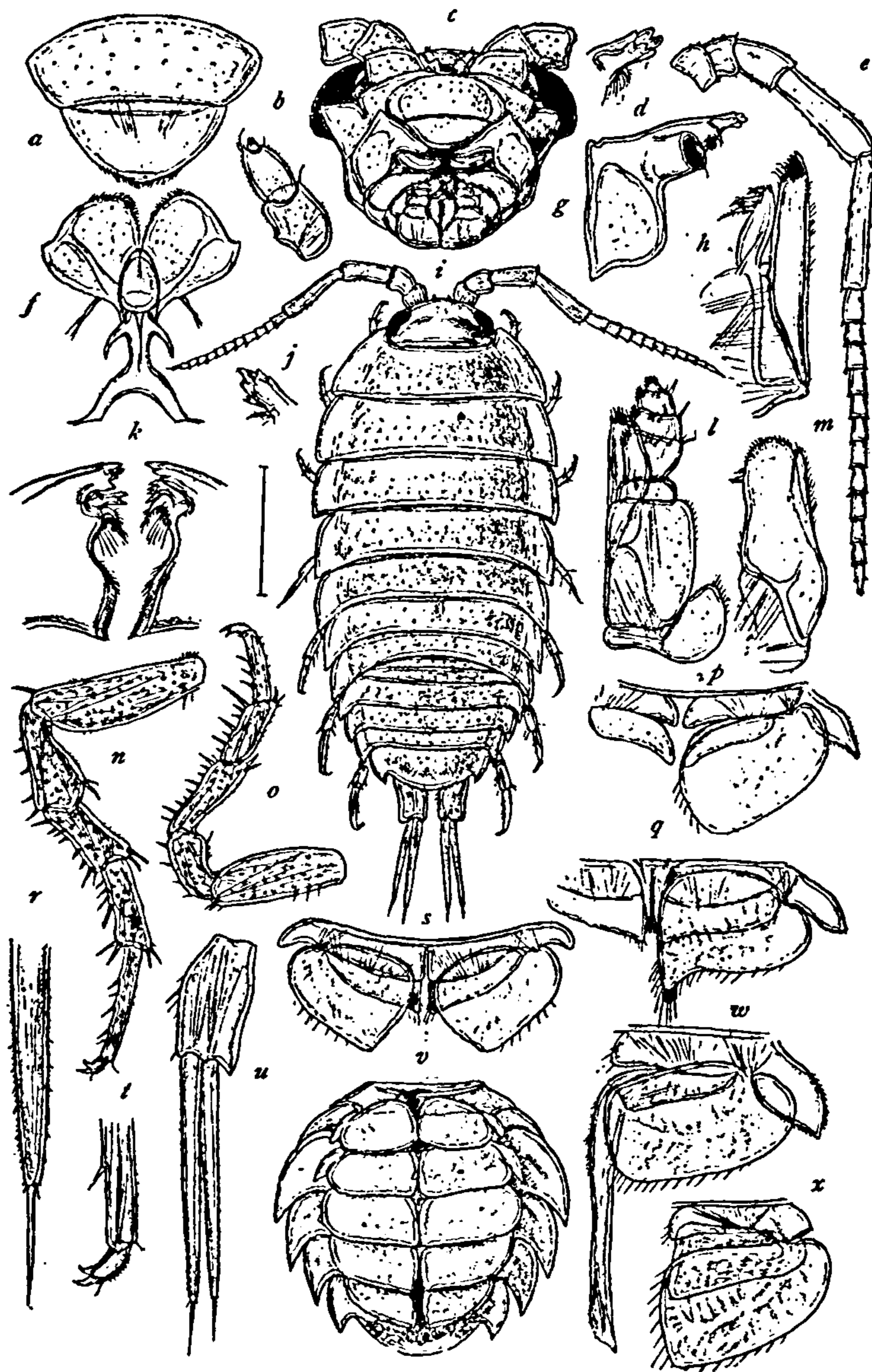


FIG. 728.—LIGYDA OCEANICA (AFTER SARS). *a*, ANTERIOR LIP. *b*, FIRST ANTENNA. *c*, HEAD (VENTRAL VIEW). *d*, TIP OF MANDIBLE. *e*, SECOND ANTENNA. *f*, POSTERIOR LIP. *g*, MANDIBLE. *h*, FIRST MAXILLA. *i*, DORSAL VIEW OF FEMALE. *j*, TIP OF MANDIBLE. *k*, MANDIBLES. *l*, MAXILLIPED. *m*, SECOND MAXILLA. *n*, SEVENTH LEG. *o*, FIRST LEG. *p*, SECOND PLEOPOD OF FEMALE. *q*, FIRST PLEOPOD OF MALE. *r*, ONE BRANCH OF UROPODA. *s*, FIRST PLEOPOD OF FEMALE. *t*, SEVENTH LEG (TIP). *u*, UROPOD. *v*, ABDOMEN (VENTRAL VIEW). *w*, SECOND PLEOPOD OF MALE. *x*, THIRD PLEOPOD OF FEMALE.



*Ligia oniscides* BRÉBISSON, Mém. Soc. Linn. Calv., 1825, p. 259.

*Ligia oceanica* BUDDE-LUND, Crust. Isop. Terrestria, 1885, pp. 259-261.—SARS, Crust. Norway, II, 1899, pp. 156-157, pl. LXX.—RICHARDSON, American Naturalist, XXXIV, 1900, p. 306; Proc. U. S. Nat. Mus., XXIII, 1901, p. 574.

*Localities*.—Off Newport, Rhode Island; North Sea; Baltic Sea; Kattegat Sea; Norway; Faroe Islands; coast of Germany; Belgium; Great Britain; France; Spain; Mediterranean Sea; west shore of Helgoland.

Body oblong-ovate, a little over twice as long as wide, 8 mm.: 17 mm. Length of uropoda from tip of terminal segment of body equal to 5 mm. Length of body with uropoda 22 mm. Surface covered with minute granules.

Head twice as wide as long, 2 mm.: 4 mm. Anterior margin widely rounded. Eyes large, round, composite, and situated at the extreme lateral margins. The first pair of antennæ are inconspicuous and rudimentary; they are each composed of two articles and a minute terminal one, and reach to the end of the basal article of the second pair of antennæ. The basal article of the second antennæ is very short; the second and third are subequal and each is twice as long as the first; the fourth is twice as long as the third; the fifth is one and a half times longer than the fourth. The flagellum consists of thirteen articles. When retracted, the second antennæ extend to the posterior margin of the fourth thoracic segment. The maxilliped has a palp of five articles.

The first six segments of the thorax are subequal; the seventh is a little shorter. The lateral parts of the last four segments extend somewhat downward.

The epimera of all the segments are indicated by distinct lines. They are broad plates and occupy the whole of the lateral margins of the segments.

The abdomen is not narrower than the thorax, the third segment being as wide as the last thoracic segment. The lateral parts of the first two segments are not developed. The lateral parts of the other segments are not separated off from the dorsal portion. The segments increase gradually in length from the first to the fifth. The sixth or terminal segment has the middle part of the posterior extremity regularly rounded. The lateral angles are acute, and do not extend quite to the tip of the terminal segment. The basal segment or peduncle of the uropoda is 1 mm. in length from the extremity or tip of the middle portion of the abdomen. The branches are equal in length, and are four times as long as the basal segment. The inner branch is furnished with a short bristle 1 mm. in length.

The legs are all ambulatory.



FIG. 729.—LIGYDA OCEANICA. MAXILLIPED.  $\times 27\frac{1}{2}$ .



124. Genus *LIGIDIUM* Brandt.<sup>a</sup>

Body oblong; attenuated behind.

First pair of antennæ projecting in front; terminal joint small, articulated at one angle of middle joint. Mandibles without ciliated lappet behind cutting part. Palp of maxillipeds with articles not much expanded; epignath narrow, linguiform.

Abdomen abruptly narrower than thorax; terminal segment with the lateral parts not developed.

Uropoda with the peduncle produced at the inner post-lateral angle in a conical process, to which the inner branch is articulated. Branches unequal in length; inner branch provided with two long and slender terminal bristles.<sup>b</sup>

ANALYTICAL KEY TO THE SPECIES OF THE GENUS *LIGIDIUM*.

- a.* Inner branch of the uropoda furnished with two long apical bristles.  
*b.* Inner branch of the uropoda not extending to the tip of the outer branch.  
*Ligidium hypnorum* (Cuvier)  
*b'.* Inner branch of the uropoda longer than the outer branch and surpassing it.  
*c.* Inner process of the basal article of the uropoda one-fourth as long as the outer branch. Inner branch one-sixth part longer than the outer branch; terminal filaments equal to half the length of the outer branch.  
*Ligidium tenue* Budde-Lund  
*c'.* Inner process of the basal article of the uropoda six or seven times shorter than the outer branch. Inner branch one-third part longer than the outer branch. Terminal bristles equal to one-third the outer branch in length.  
*Ligidium longicaudatum* Stoller  
*a'.* Inner branch of the uropoda not furnished with apical bristles, but tipped with setæ.....*Ligidium gracilis* (Dana)

*LIGIDIUM HYPNORUM* (Cuvier).

*Oniscus hypnorum* CUVIER, Jour. d'Hist. Nat., II, 1792, p. 19, pl. xxvi.

*Ligidium hypnorum* BUDDE-LUND, Naturh. Tidsskrift (3), VII, 1870, p. 225.—STUXBERG, Öfversigt Vetensk. Akad. Forhandl., 1875, No. 2, p. 48.—BUDDE-LUND, Crust. Isop. Terrestria, 1885, pp. 254-256.—UNDERWOOD, Bull. Ill. State Lab. Nat. Hist., II, 1886, p. 361.—RICHARDSON, Proc. U. S. Nat. Mus., XXI, 1899, p. 867; Ann. Mag. Nat. Hist. (7), IV, 1899, p. 335; American Naturalist, XXXIV, 1900, p. 306.

*Localities.*—California; Niagara in Canada; also Sweden, Denmark, Germany, France, and the British Isles; Constantinople and "Chersoneso Taurico" (Budde-Lund). Found in moist places. Budde-Lund thinks that the species found in North America and recorded by Stuxberg as the above is not likely the same, or rather he doubts that this species occurs in North America. I have never seen any specimens of this species.

<sup>a</sup>From the description and figures which Prof. S. J. Holmes gives of *Styloniscus gracilis* Dana, the species ought to be referred to the genus *Ligidium* Brandt. The genus *Euphiloscia* Packard is probably a synonym of *Ligidium*.

<sup>b</sup>See Sars for characters of genus, Crust. of Norway, II, 1899, p. 157, and Budde-Lund, Crustacea Isopoda Terrestria, 1885.



“Body oblong oval; greatest width not attaining half the length. Dorsal face rather convex and perfectly smooth and shining. Cephalon of moderate size and evenly rounded in front. Dorsal face transversely grooved behind the eyes. Lateral parts of the three anterior segments of mesosome but slightly prominent; those of the four posterior segments somewhat larger and terminating behind in obtuse points. Metasome scarcely exceeding in length one-third of the meso-

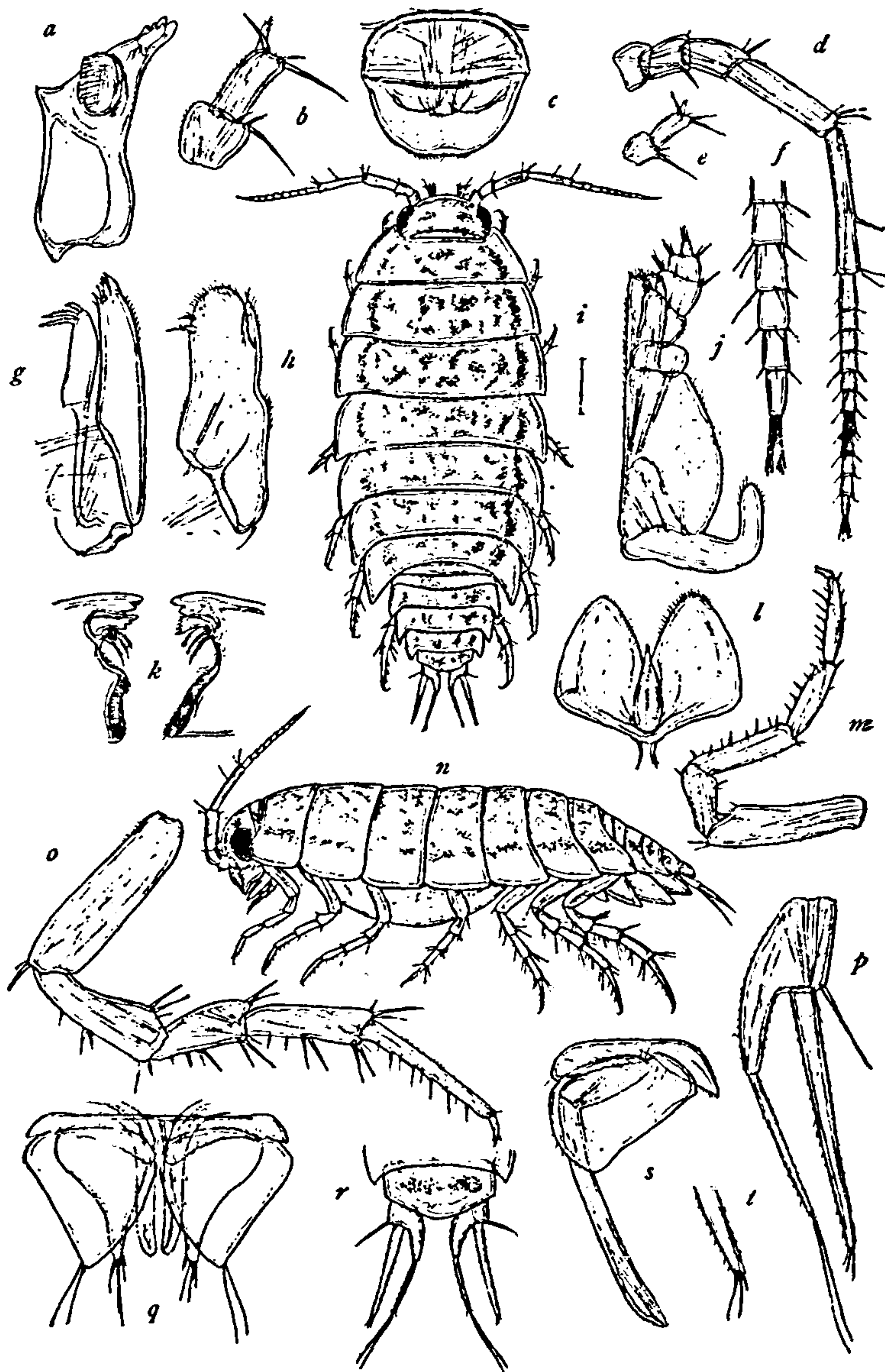


FIG. 730.—*LIGIDIUM HYPNORUM* (AFTER SARS). *a*, MANDIBLE. *b*, FIRST ANTENNA. *c*, ANTERIOR LIP. *d*, SECOND ANTENNA. *e*, FIRST ANTENNA. *f*, FLAGELLUM OF SECOND ANTENNA. *g*, FIRST MAXILLA. *h*, SECOND MAXILLA. *i*, DORSAL VIEW OF FEMALE. *j*, MAXILLIPED. *k*, MANDIBLES. *l*, POSTERIOR LIP. *m*, FIRST LEG. *n*, LATERAL VIEW OF FEMALE. *o*, SEVENTH LEG, *p*, UROPOD. *q*, FIRST PLEOPOD OF FEMALE. *r*, LAST SEGMENT OF ABDOMEN AND UROPODA. *s*, SECOND PLEOPOD OF MALE. *t*, EXTREMITY OF OUTER BRANCH OF UROPOD.

some and much narrower, with the epimeral plates small and appressed; last segment obtusely rounded at the tip, with a slight angle on each side. Eyes very large, oval, extending down the sides of the cephalon. Antennulae with the first joint rather thick; second longer, but much narrower; both armed at the tip inside with three rather long diverg-



ing spines; last joint very small, narrow cylindrical. Antennæ rather slender, though not nearly attaining half the length of the body. Flagellum somewhat shorter than the peduncle, and composed of about eleven articulations, the last tipped with a dense bunch of delicate hair-like bristles. Legs armed with scattered slender spines; propodal joint very narrow and elongated; dactylus simple. Inner plate of first pair of pleopoda in male slightly produced at the tip and provided with four apical bristles. Uropoda scarcely exceeding half the length of the metasome; inner projection of the basal part occupying about half its length; outer ramus gradually tapering distally and carrying on the tip three short bristles; inner ramus very narrow, linear, not extending to the tip of the outer; apical bristles nearly as long as the ramus. Color of dorsal face light fuscous, variegated with irregular dark patches, which, on each side at the base of the lateral plates of mesosome, form a nearly continuous longitudinal band. Length of adult female, 9 mm."—G. O. SARS.<sup>a</sup>

#### LIGIDIUM TENUE Budde-Lund.

*Ligidium tenue* BUDDE-LUND, Crust. Isop. Terrestria, 1885, p. 258.—RICHARDSON, Proc. U. S. Nat. Mus., XXI, 1899, p. 867; Ann. Mag. Nat. Hist. (7), IV, 1899, p. 335; American Naturalist, XXXIV, 1900, p. 306.

*Locality.*—Sitka Island.

Body elongate, narrow, posteriorly attenuated, somewhat convex, smooth.

Second pair of antennæ lost in the specimen.

Transverse line of the epistome raised, straight, or very slightly sinuated in the middle.

---

<sup>a</sup>Crust. of Norway, II, 1899, p. 158. The description which follows is that of G. Budde-Lund:

Oblonge ovatum, post attenuatum, leviter convexum, læve, nitidum.

Antennæ exteriores graciles, dimidium corpus longitudine æquant; flagellum 10–13 articulatum.

Oculi sat magni.

Caput ante rotundatum, linea frontalis marginalis nulla; epistoma linea transversa elevata, medio acute sinuata; vertex sulco postico supramarginali duobusque sulcis post oculos arcuatis præditus.

Trunci annuli duo priores margine posteriore curvato, duo sequentes subtransversi, tres posteriores post magis medio sinuati. Epimera parva, angulis posticis annulorum duorum priorum rotundate obtusis, annulorum duorum sequentium subrectis, trium posteriorum acutis.

Pedes graciles; unguiculi appendice gemina, flabellata.

Cauda trunco abrupte angustior. Annulus analis late rotundate triangulus. Processus internus articuli basalis pedum analium ramo terminali exteriori triplo brevior. Ramus terminalis interior gracilis, apicem rami exterioris subattingens, filis duobus terminalibus tenerrimis, ramum exteriorem longitudine æquantibus.

Color e fusco brunneus, albido vel flavo marmoratus, in lateribus pallidioribus serie longitudinali macularum nigrofuscæ; vivus pruinosus.

Longitudo 7–10 mm., latitudo 3–4 mm., altitudo, 1.6–1.8 mm.—BUDDE-LUND, Crust. Isop. Terrestria, 1885, pp. 254–256.



Inner process of the basal article of the uropoda one-fourth as long as the outer branch. Inner branch long, extending much beyond the apex of the outer branch, being a sixth part longer than that branch, the two terminal filaments short, equal to half the length of the outer branch.

Color dark, without spots. Length 9 mm. Width 3 mm.<sup>a</sup>

**LIGIDIUM LONGICAUDATUM** Stoller.

*Ligidium longicaudatum* STOLLER, 54th report New York State Museum, 1902, pp. 208-211.

*Locality*.—Schenectady, New York.

Body oblong-ovate, about twice as long as wide, 3 mm.: 6 mm. Uropoda, 2 mm. Length of body with uropoda, 8 mm. long.

Head twice as wide as long, 1 mm.: 2 mm., with the anterior margin widely rounded. Eyes round, composite, and situated close to the lateral margins. The first pair of antennæ are small and almost inconspicuous. They are composed of three articles—two subequal ones and a minute terminal one. They extend to the end of the second article of the peduncle of the second pair of antennæ. The second pair of antennæ have the first two articles short and subequal; the third is but little longer than the second; the fourth and fifth are equal in length and each is about twice as long as the third. The flagellum is composed of eleven articles, the terminal article ending in a bunch of hairs. When retracted, the second antennæ extend to the posterior margin of the third thoracic segment.

The first four segments of the thorax are subequal and each is a little longer than any of the last three, which are subequal. The epimera are not distinctly separated on any of the segments.

The first segment of the abdomen has the lateral parts concealed by

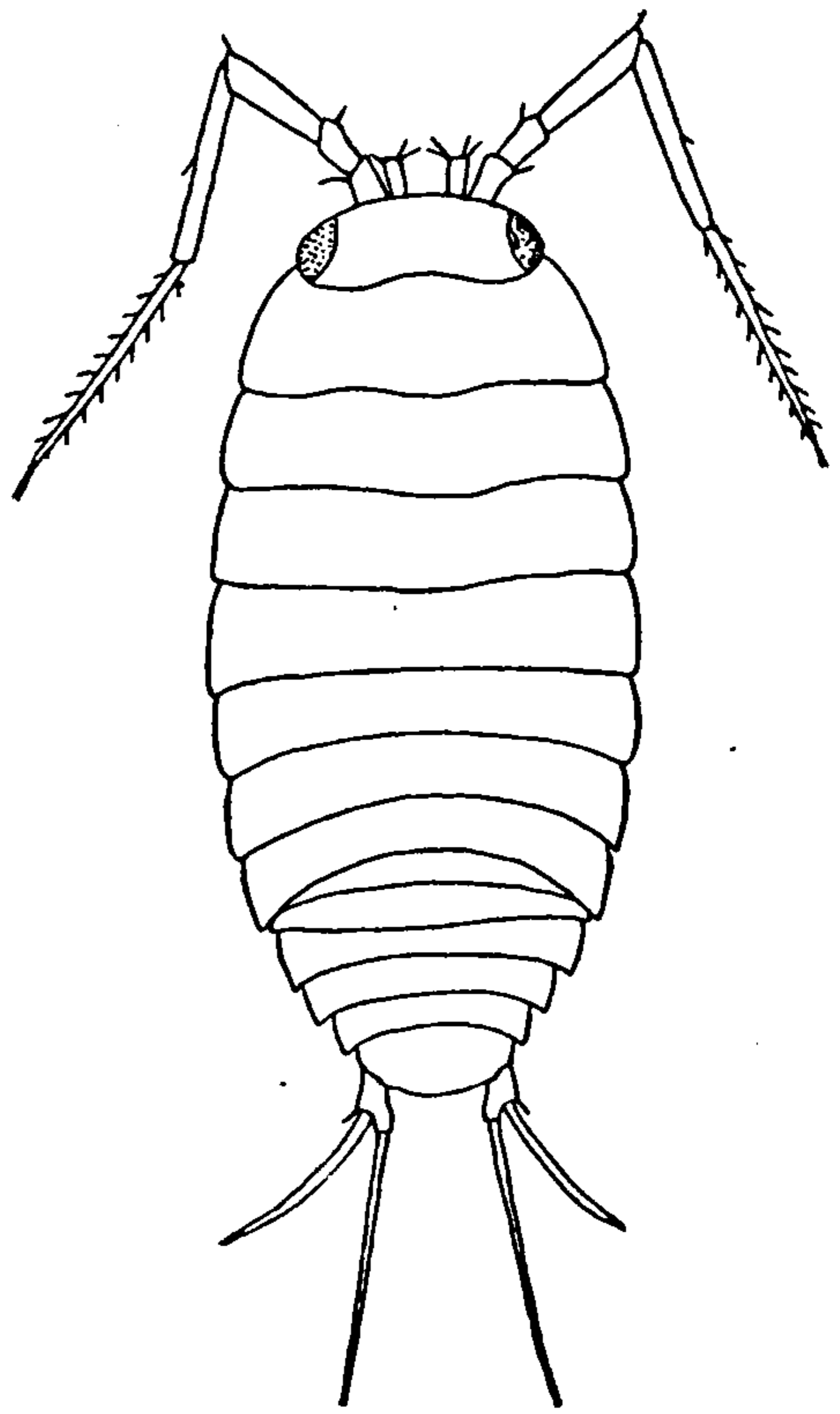


FIG. 731.—*LIGIDIUM LONGICAUDATUM*  
(AFTER STOLLER).  $\times 5\frac{1}{2}$ .

<sup>a</sup>The above description is adapted from the following one of Budde-Lund's:  
Elongatum, angustum, post attenuatum, leviter convexum, læve, nitidum.  
Antennæ exteriores ———.

Epistomatis linea transversa, elevata, subrecta vel medio levissime sinuata.

Processus internus articuli basalis pedum analium ramo terminali exteriori quadruplo brevior. Ramus terminalis interior longus, apicem rami exterioris multum superans, illo sexta parte longior, filis duobus terminalibus brevibus, dimidiam partem rami exterioris æquantibus.

Color fuscus, immaculatus. Longitudo 9 mm., latitudo 3 mm.—BUDDE-LUND, Crust. Isop. Terrestria, 1885, p. 258.



the seventh thoracic segment. The four following segments have the lateral parts well developed. The sixth or terminal segment is rounded posteriorly, with a slight emargination on either side of the rounded median lobe for the reception of the basal articles of the uropoda. The basal article of the uropoda has the inner distal angle produced so that the inner side measures one and a half times longer than the outer side. The inner branch of the uropoda is two and a half times longer than the peduncle measured from the inner side; it terminates in two long subequal hairs, which are a little less than one-fourth the length of the inner branch. The outer branch is shorter than the inner branch, the inner branch being a little less than one and a half times longer than the outer branch. The outer branch is also tipped with two short hairs.

All the legs are ambulatory.

In color it is a reddish brown, mottled with yellow, and with two longitudinal rows of yellow spots, one on either side of the body about the place where the epimera are united with the segments.

#### LIGIDIUM GRACILIS (Dana).

*Styloniscus gracilis* DANA, Proc. Acad. Nat. Sci. Phila., VII, 1854-55, p. 176.—STIMPSON, Bost. Jour. Nat. Hist., VI, 1857, p. 506.

*Alloniscus maculosus* HARFORD, Proc. Cal. Acad. Sci., VII, 1877, p. 54.

*Styloniscus gracilis* BUDDE-LUND, Crust. Isop. Terrestria, 1885, p. 271.—UNDERWOOD, Bull. Ill. State Lab. Nat. Hist., II, 1886, p. 364.—RICHARDSON, Proc. U. S. Nat. Mus., XXI, 1899, p. 867; Ann. Mag. Nat. Hist. (7), IV, 1899, p. 335; American Naturalist, XXXIV, 1900, p. 306.—HOLMES, Proc. Cal. Acad. Sci. (3), III, 1904, pp. 318-319.

*Locality*.—California.

“Thoracic segments smooth, glossy, and of subequal length; postero-lateral and antero-lateral angles of the first four rounded, the postero-lateral angles of the last three segments acute and produced backward.

“Abdomen longer than wide, abruptly narrower than the thorax, the first two segments shorter than the others, the three following segments with the postero-lateral angles acute and produced backward. Terminal segment twice as wide as long and very broadly rounded.

“Head transverse, devoid of prominences, front broadly rounded. Eyes rather large, reaching the lateral margins of the head. Antennules three-jointed, not exceeding the second basal joint of the antennæ; first joint broad, distally widened; second joint subcylindrical, slightly longer and much narrower than the first; third joint very minute and joined to one corner of the preceding. Antennæ nearly one-half the length of the body, first joint short, transverse, second and third joints oblong, cylindrical, subequal, fourth joint as long as the three preceding, fifth joint narrower and slightly longer than the fourth; flagellum about as long as the two preceding joints and composed of thirteen to fifteen articulations.

“Mandibles short and very stout, having a large molar tubercle and



a narrow dark-colored, dentate cutting edge, but no palp. First maxillæ with the inner plate short and furnished with three short ciliated setæ, the upper one much shorter than the lower two, which are of subequal length; outer plate narrow and armed with five curved teeth. Second maxillæ narrow, with two very small ciliated plates on the inner margin near the rounded tip. Inner plate of the maxillipeds with several short, densely ciliated processes on the transverse distal margin and a large ciliated seta on the inner side; palp five-jointed, the terminal joint minute.

“Legs very spiny below; dactyls short, furnished with several setæ and one or two spines below, near the tip. Uropods slender, fully

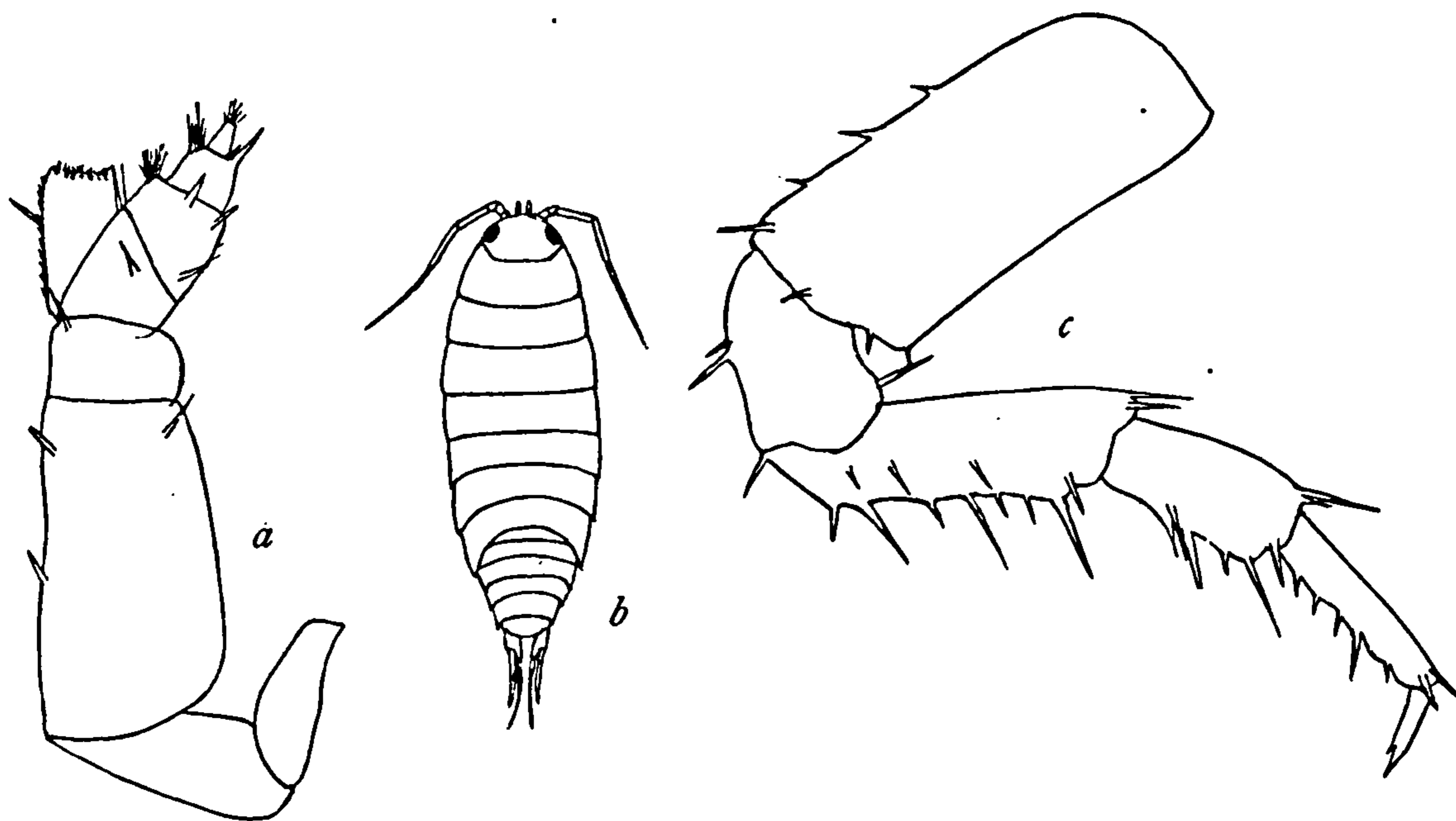


FIG. 732.—*LIGIDIUM GRACILIS* (AFTER HOLMES). *a*, MAXILLIPED. *b*, GENERAL FIGURE. *c*, FIRST LEG.

one-half the length of the abdomen; peduncle oblong, flattened, the inner angle strongly produced backward; rami slender, microscopically scabrous but devoid of spines; inner ramus exceeding the outer in length, but slightly more slender, the tip furnished with setæ.

“The body is furnished with scattered fine short hairs, which are more conspicuous on the posterior margins of the segments.

“Length  $\frac{7}{20}$  inch.”—HOLMES.<sup>a</sup>

<sup>a</sup>The above description is quoted from Proc. Cal. Acad. Sci., (3), III, 1904, p. 318, and is made originally from the three type specimens of *Alloniscus maculosus* Harford, which Mr. Holmes identifies with *Styloniscus gracilis* Dana, the description of which follows:

Corpus gracile. Abdomen paulo oblongum, subovatum, thorace postico subito paululo angustius, segmentis 3 tio, 4 to, 5 toque lunatis. Styli caudalis basis brevis, vix duplo longior quam latus, extus ad medium subito angustior. Antennæ externæ fere nudæ, flagello ferme 14 articulato, nudo, articulos basis duos precedentes longitudine fere æquante.—Long. 5 mm.

As in other species of this genus, the outer antennæ have not the double geniculation characterizing the Oniscidæ. The surface of the body is smooth; yet there are a few exceedingly minute hairs, especially along the posterior margin of the segments of the abdomen. The branches of the caudal stylets in the specimen are mutilated.—DANA, Proc. Acad. Nat. Sci. Phila., VII, 1854–55, p. 176.



## 125. Genus EUPHILOSCIA Packard.

“The genus *Euphiloscia* differs from *Philoscia* in the flagellum of the outer antennæ being subdivided into fifteen joints, while it is no longer than in the latter genus. The second and third joints are rather short; the inner (and smaller) antennæ are very much larger. The body is longer and slenderer, and the abdomen much longer and wider in proportion to the rest of the body, being large and rounded, not mucronate. Uropoda much longer and slenderer than in *Philoscia*, being as long as the basal abdominal segment is wide; they are subequal. Eyes larger than in *Philoscia*. In the form of the legs and the setæ this genus more closely resembles *Philoscia* than *Philougria*, and in some respects intermediate between the two genera.”—PACKARD.<sup>a</sup>

## EUPHILOSCIA ELRODII Packard.

*Euphiloscia elrodii* PACKARD, 5th Report Peabody Acad. Sci., 1873, p. 97.—SMITH, Amer. Jour. Science and Arts (3), IX, 1875, p. 477.—UNDERWOOD, Bull. Ill. State Lab. Nat. Hist., II, 1886, p. 361.—RICHARDSON, American Naturalist, XXXIV, 1900, p. 306.

*Locality*.—Indiana.

“Having no other species with which to compare my two specimens of this species, I can only remark that it is of the usual color of the species of *Philoscia* found running about in moss, and the cave specimens had not been altered by their subterranean life. The eyes are dark as usual, while the body is mottled with brown and carneous, with no well-marked dorsal streak.”—PACKARD.<sup>b</sup>

Family XXIX. TRICHONISCIDÆ.<sup>c</sup>

Body elongated.

Head with distinct lateral lobes; front scarcely marginate, more or less produced, not separated from the epistome. Eyes composite, simple or wanting. Inner lobe of the first maxillæ furnished with three plumose processes. Palp of the maxillipeds large, imperfectly articulated; masticatory lobe terminating in a thin lash, epignath narrow. Mandibles with the molar expansion well developed. First pair of antennæ very small, inconspicuous; terminal joint furnished with olfactory hairs. Flagellum of the second pair of antennæ composed of a limited number of articles.

Lateral parts of the thoracic segments not much expanded.

Opercular plate of pleopoda not furnished with tracheæ.

Uropoda with the basal article expanded inside; branches subequal, slender, or the outer one stouter, both conically tapered.

<sup>a</sup> Fifth Report Peabody Academy of Sciences, 1873, pp. 96–97.

<sup>b</sup> Idem, p. 97.

<sup>c</sup> For characters of family see Budde-Lund, Crust. Isopoda Terrestria, 1885, p. 243, and G. O. Sars, Crust. of Norway, II, 1899, pp. 159–160.



## ANALYTICAL KEY TO THE GENERA OF THE FAMILY TRICHONISCIDÆ.

- a.* Eyes present.
- b.* Body not sculptured dorsally with longitudinal ribs. Lateral parts of the thoracic segments not expanded. Second pair of antennæ long. Branches of the uropoda terminating in a bunch of hairs. Epignath of maxillipeds narrow, linguiform with a rounded expansion at the base. . . . . Genus *Trichoniscus* Brandt
- b'.* Body sculptured dorsally with longitudinal ribs. Lateral parts of thoracic segments expanded. Second pair of antennæ short. Inner branch of the uropoda terminating in a slender spine. Epignath of maxillipeds simple, lanceolate. Abdomen not abruptly narrower than thorax. . . . . Genus *Haplophthalmus* Schöbl
- a'.* Eyes absent . . . . . Genus *Brackenridgia* Ulrich

126. Genus TRICHONISCUS Brandt.<sup>a</sup>

Body oblong.

Head usually rounded in front, generally with small but distinct lateral lobes.

Eyes small, distinct, composed of three ocelli. Second pair of antennæ generally long.

Palp of maxillipeds with the four joints confluent; masticatory lobe nearly as large as the palp and terminating in a narrow, ciliated lash; epignath narrow, linguiform, with a rounded expansion at the base.

Abdomen abruptly narrower than thorax; lateral parts of all the segments visible, small.

Terminal abdominal segment usually truncate at tip, and slightly emarginate on each side.

Legs long, slightly increasing in length posteriorly; joints furnished with spines.

Inner branch of the first pair of pleopods greatly produced and bi-articulate in the male.

Basal article of uropoda broad and flattened, both branches terminating in a bunch of hairs.

## ANALYTICAL KEY TO THE SPECIES OF THE GENUS TRICHONISCUS.

- a.* Surface of body smooth. Front of head straight with small lateral lobes. Last three articles of second pair of antennæ with the inner margins not beset with tubercular-like papillæ. . . . . Terminal segment of abdomen with apex truncate. . . . . *Trichoniscus pusillus* Brandt
- a'.* Surface of body covered with low tubercles. Front of head triangularly produced, with apex slightly emarginate; antero-lateral lobes large. Last three articles of second pair of antennæ with the inner margins beset with tubercular-like papillæ, each surmounted with a tuft of short stiff hairs. Terminal segment of abdomen with apex rounded. . . . . *Trichoniscus papillicornis* Richardson

<sup>a</sup>See Budde-Lund for characters of genus, Crust. Isop. Terrestria, 1885, p. 243, and Sars, Crust. of Norway, II, 1899, pp. 160-161.



## TRICHONISCUS PUSILLUS Brandt.

*Trichoniscus pusillus* BRANDT, Bull. Soc. Impér. des Naturalistes de Moscou, VI, 1833, p. 12, pl. iv, fig. 9.

*Itea riparia* KOCH, Deutschl. Crust., 1835-44, p. 22.

*Itea laevis* ZADDACH, Synops. Crust. Pruss., 1844, p. 16.

*Philougria riparia* KINAHAN, Nat. Hist. Rev., IV, 1857, p. 281, pl. xxii, figs. 1-4.

*Trichoniscus pusillus* STUXBERG, Öfversigt-Vetensk-Akad. Forhandl., 1875, No. 2, p. 49.—BUDDE-LUND, Crust. Isop. Terrestria, 1885, p. 244-245.—UNDERWOOD, Bull. Ill. State Lab. Nat. Hist., II, 1886, p. 364.—SARS, Crust. Norway, II, 1899, p. 161.—RICHARDSON, American Naturalist, XXXIV, 1900, p. 307; Proc. U. S. Nat. Mus., XXIII, 1901, p. 575.

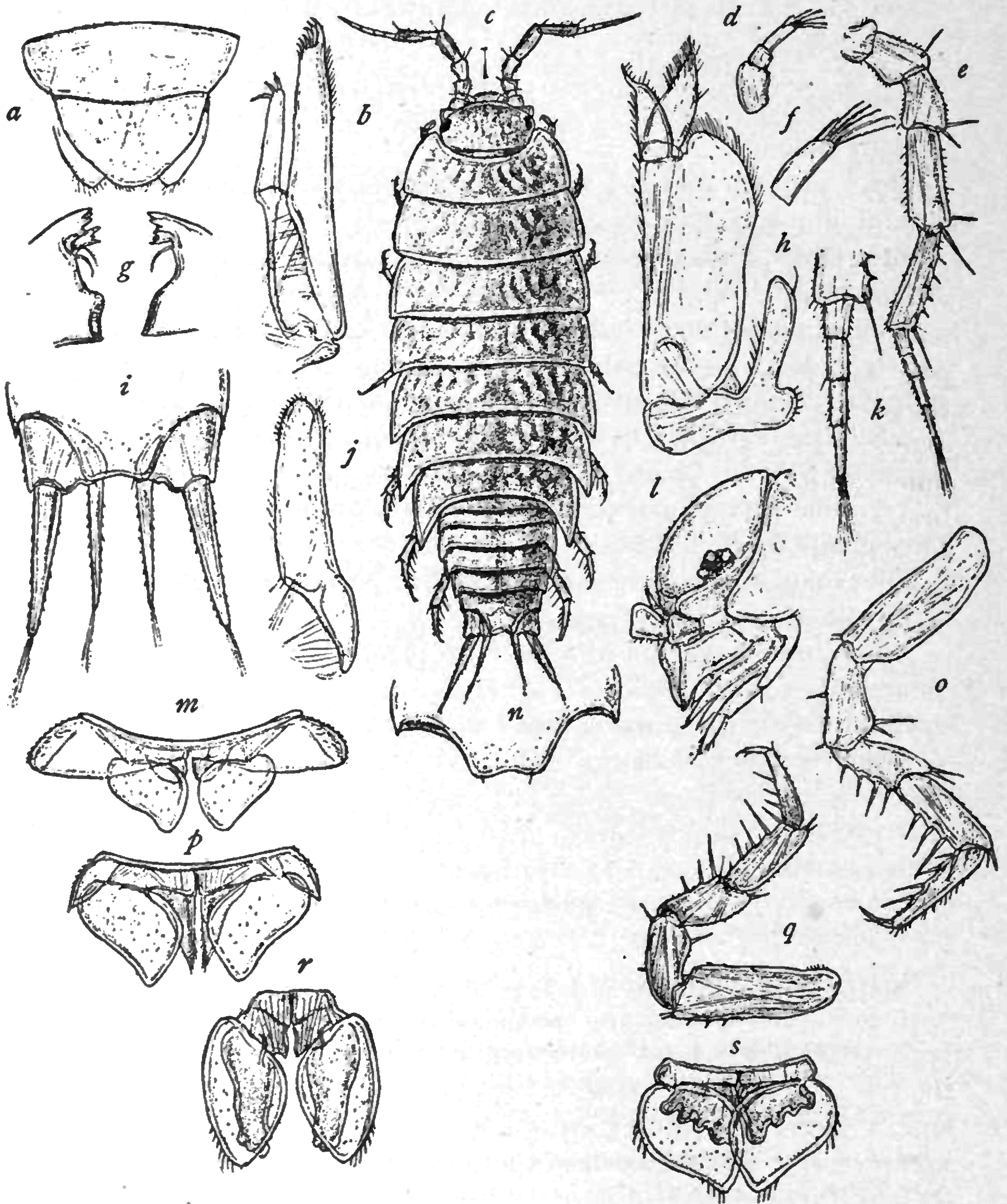


FIG. 733.—TRICHONISCUS PUSILLUS (AFTER SARS). a, ANTERIOR AND POSTERIOR LIPS. b, FIRST MAXILLA. c, DORSAL VIEW OF FEMALE. d, FIRST ANTENNA. e, SECOND ANTENNA. f, TERMINAL JOINT OF FIRST ANTENNA. g, MANDIBLES. h, MAXILLIPED. i, LAST SEGMENT OF ABDOMEN AND UROPODA. j, SECOND MAXILLA. k, FLAGELLUM OF SECOND ANTENNA. l, HEAD (LATERAL VIEW). m, FIRST PLEPOD. n, OUTLINE OF TERMINAL SEGMENT. o, SEVENTH LEG. p, SECOND PLEPOD. q, FIRST LEG. r, THIRD PLEPOD. s, FIFTH PLEPOD.



*Localities.*—North America; also Sweden, Denmark, Germany, France, Great Britain, Spain, Algeria, and Norway.

Body oblong-ovate, three times as long as wide, 1 mm.: 3 mm.

Head wider than long, with the anterior margin produced in a widely rounded, obtuse median lobe. There are no antero-lateral lobes. The eyes are small, round, composite, and situated in the antero-lateral angles of the head. The first pair of antennæ are rudimentary and inconspicuous. The first three articles of the second antennæ are short, the first two being subequal, the third, one and a half times longer than either of the others; the fourth and fifth are subequal and each is one and a half times longer than the third. The flagellum is composed of four or five ill-defined articles. The maxilliped has a palp of two articles. The palp of the mandibles is wanting.

The segments of the thorax are subequal. The epimera are not separated off on any of the segments.

The abdomen is abruptly narrower than the thorax. The first two segments have the lateral parts covered by the seventh thoracic segment. The sixth, or terminal, segment is wide posteriorly, with the post-lateral angles rounded and a slight emargination in the middle of the posterior margin. The basal article of the uropoda or the peduncle extends as far as the posterior margin of the terminal segment. The inner branch is more slender and is a little shorter than the outer branch. Both branches extend some distance beyond the abdomen. All the legs are ambulatory.

**TRICHONISCUS PAPILLICORNIS** Richardson.

*Trichoniscus papillicornis* RICHARDSON, Harriman Alaska Exp. Crust., X, pp. 213-230; Proc. U. S. Nat. Mus., XXVII, 1904, pp. 670-671.

*Locality.*—Seldovia, Cook Inlet, Alaska.

Body covered with low tubercles. Color light brown.

Head with sides produced at the antero-lateral angles in large lobes; front triangularly produced with a slight emargination at the apex of the triangle. Eyes situated on the lateral margins at the base of the antero-lateral lobes; they are small and black and apparently simple in structure. The peduncle of the antennæ consists of five stout joints, the last three of which have the inner margins beset with numerous strong tubercular-like papillæ, each surmounted with a tuft of short

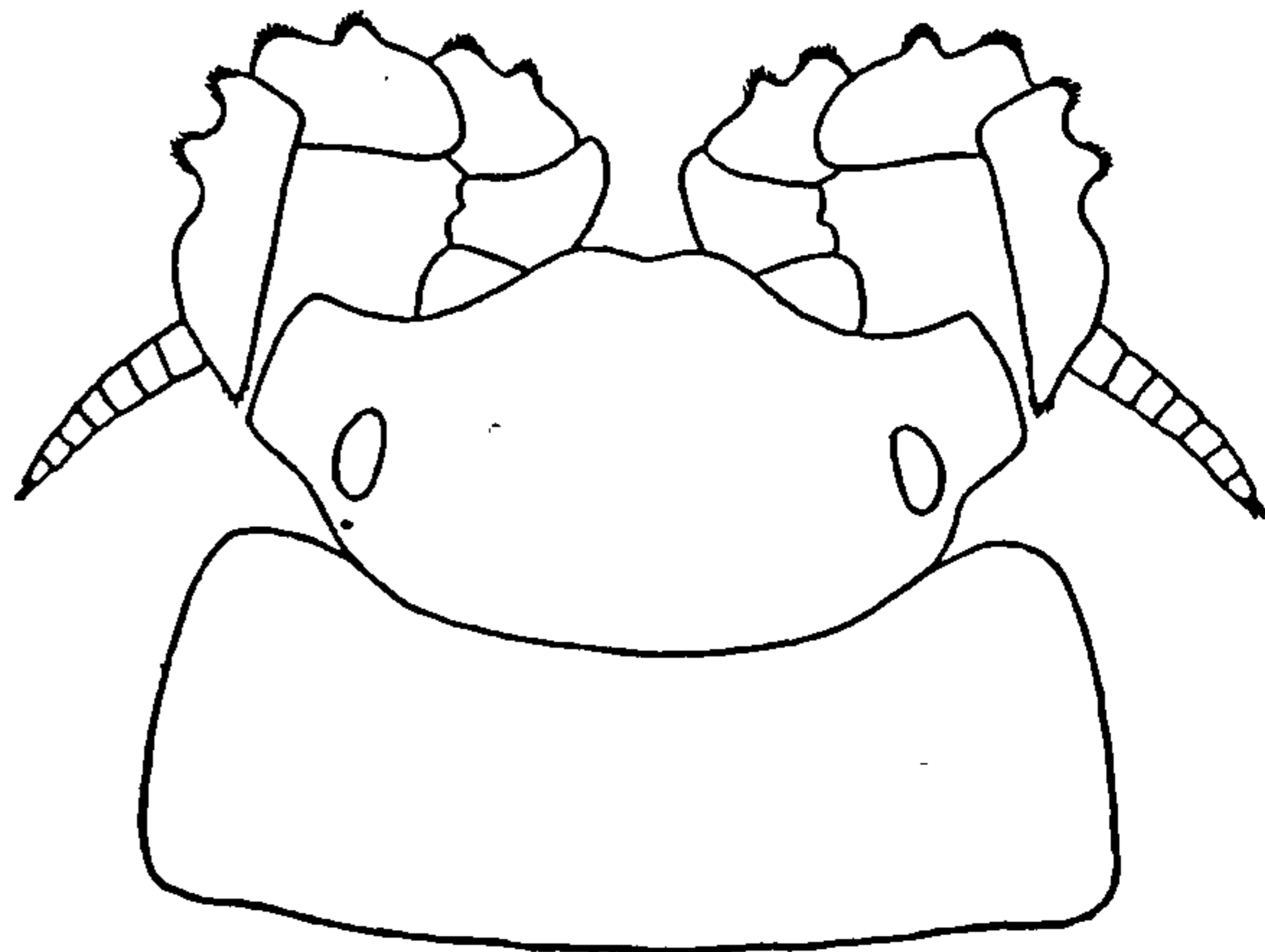


FIG. 734.—TRICHONISCUS PAPILLICORNIS. HEAD AND FIRST THORACIC SEGMENT.  $\times 41$ .



stiff hairs or bristles; the fifth joint is also produced at the outer distal angle in an acute process. The flagellum is composed of about seven

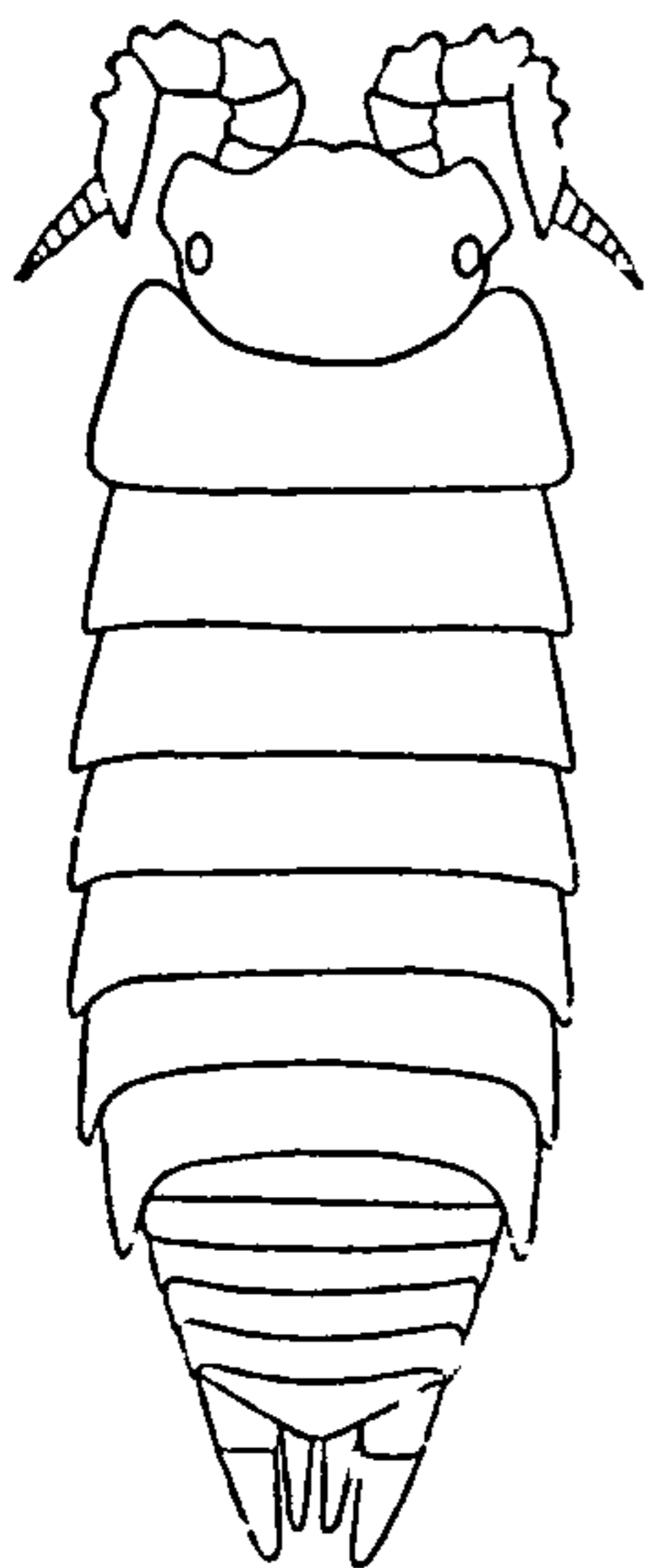


FIG. 735.—TRICHONISCUS PAPILLICORNIS.  $\times 15$ .

articles, rather indistinctly defined; the last article is tipped with a bunch of hairs. The buccal mass is very prominent below.

The segments of the thorax are about equal in length. The post-lateral angles of all the segments, except the first, are produced backward, very slightly in the case of the second, third, and fourth, but becoming gradually more so, until the last two segments show this character very markedly.

The abdomen is narrower than the thorax. All the segments are visible in entirety, not being covered laterally by the last thoracic segment. The terminal segment is triangularly produced, with the apex somewhat rounded.

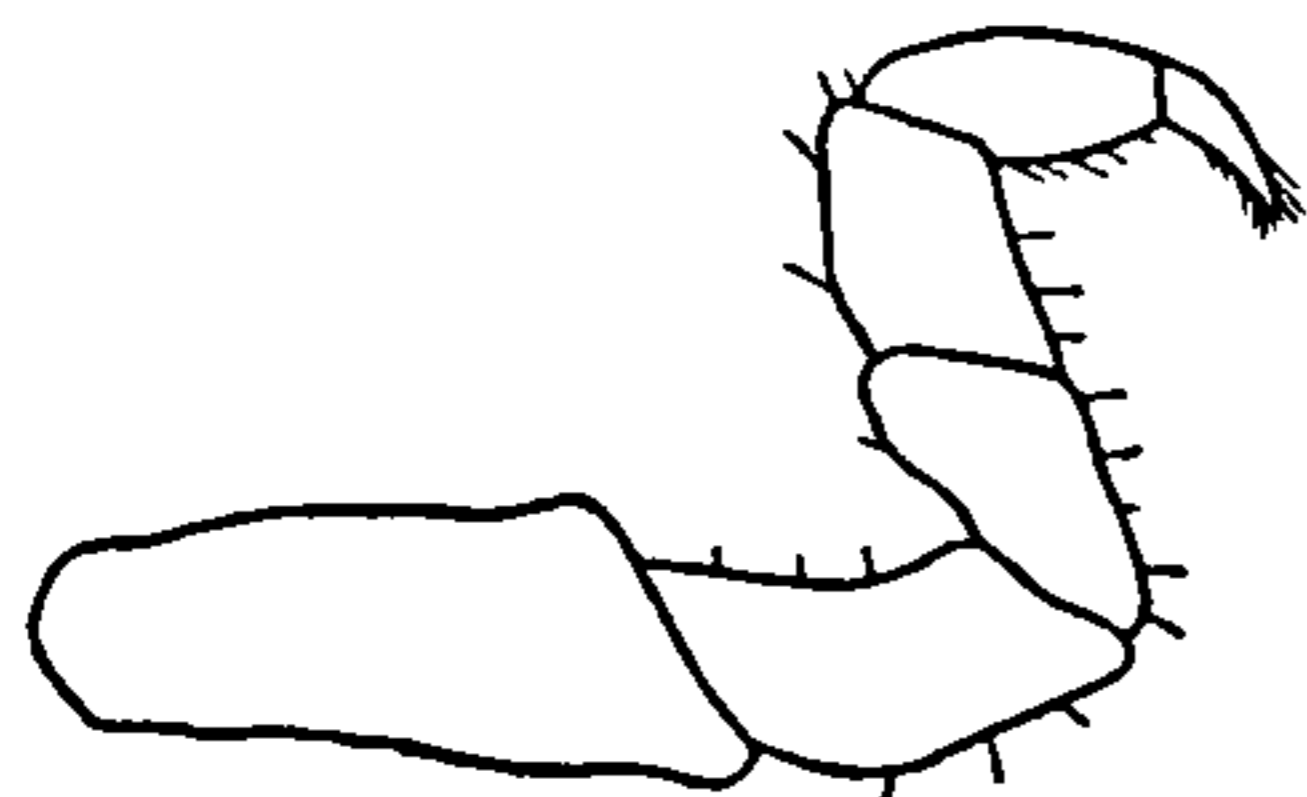


FIG. 737.—TRICHONISCUS PAPILLICORNIS. LEG OF FIRST PAIR.  $\times 15$ .

All the segments are visible in entirety, not being covered laterally by the last thoracic segment. The terminal segment is triangularly produced, with the apex somewhat rounded. The uropoda are short, styliform; the outer branch is the stouter, and extends a little beyond the extremity of the inner branch. Both branches are tipped with a few hairs.

Only a single specimen was obtained by the Harriman Alaska Expedition. It was found on the beach at Seldovia, Cook Inlet.

The type is in the U.S.N.M., Cat. No. 28772.

#### 127. Genus HAPLOPHTHALMUS Schöbl.<sup>a</sup>

Body oblong, somewhat convex, sculptured dorsally with longitudinal ribs.

Head triangularly produced in the middle; lateral lobes large; front scarcely defined from the epistome. Eyes small, simple, dorsally situated. Second pair of antennæ short, nearly equal to one-third the length of the body. Palp of maxillipeds obscurely composed of five articles; epignath simple, lanceolate.

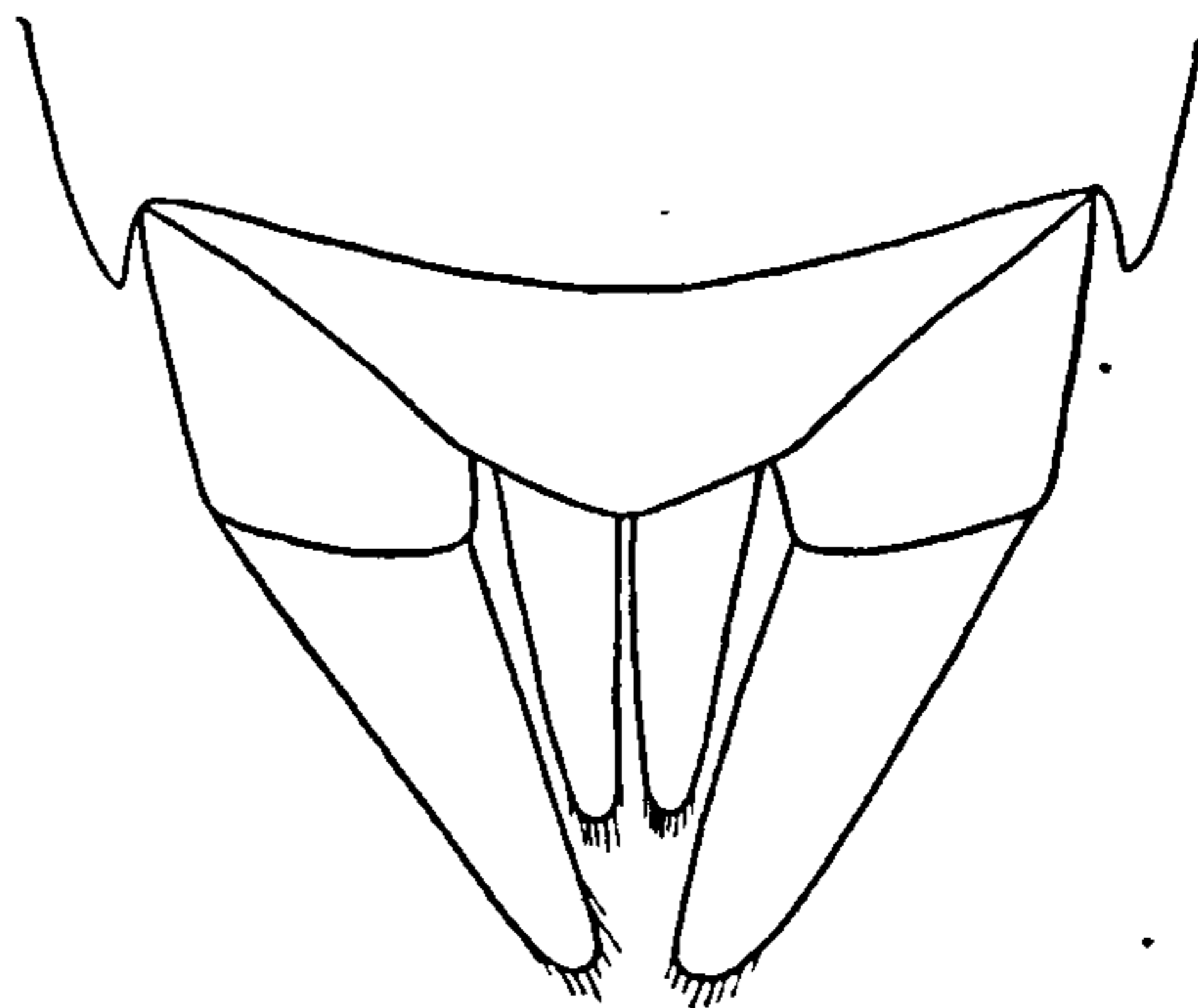


FIG. 736.—TRICHONISCUS PAPILLICORNIS. UROPODA AND LAST SEGMENT OF ABDOMEN.  $\times 77$ .

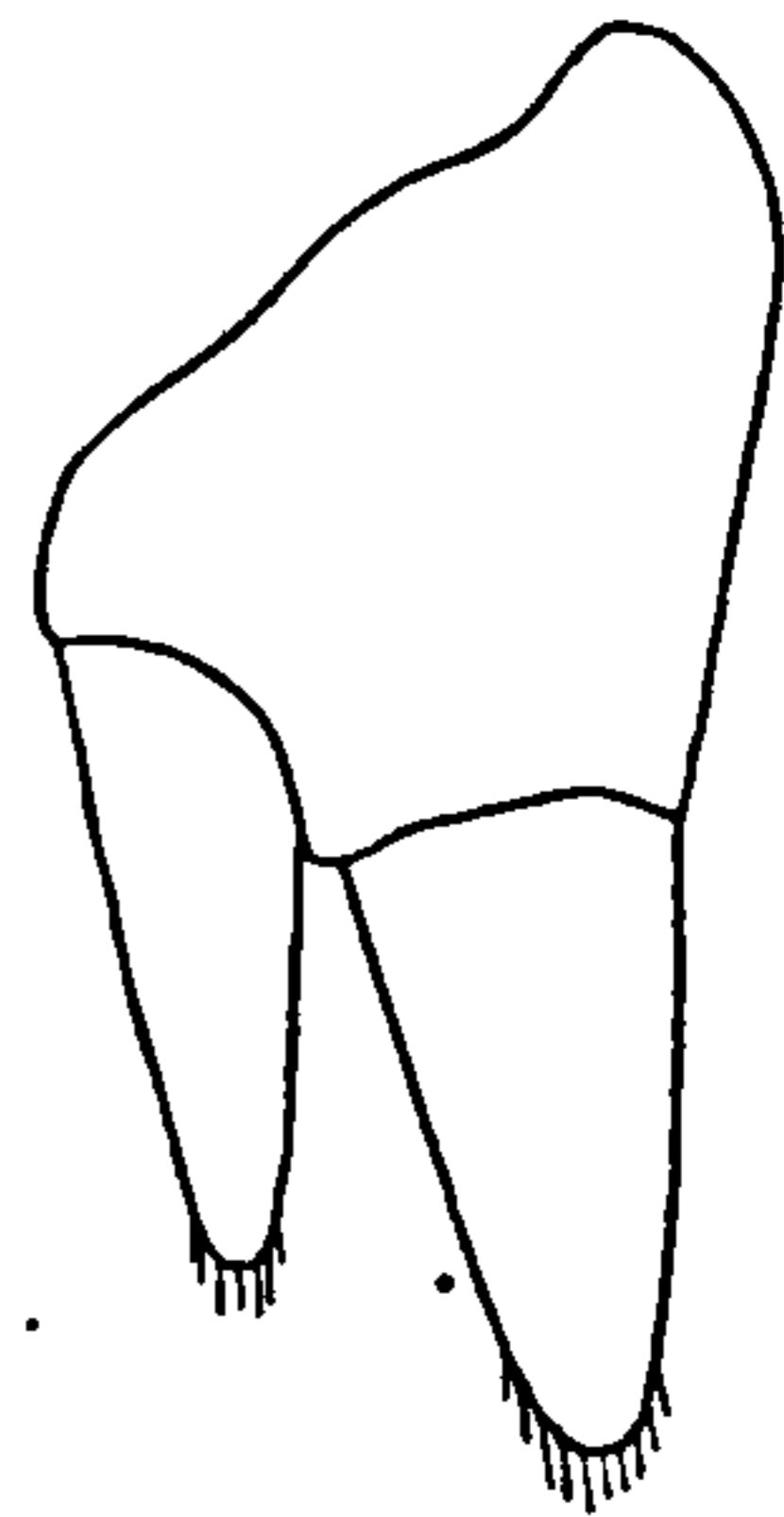


FIG. 738.—TRICHONISCUS PAPILLICORNIS. UROPOD OF LEFT SIDE.  $\times 77$ .

<sup>a</sup>See Sars for characters of genus, Crust. of Norway, II, 1899, pp. 166-167, and Budde-Lund, Crust. Isop. Terrestria, 1885, p. 249.



Abdomen not abruptly narrower than the thorax; epimera large, distant; terminal segment truncate.

Lateral parts of the thoracic segments expanded, discontinuous.

Inner branch of the first pair of pleopods in the male, produced, biarticulate, that of the second pair in the male triarticulate. Inner branch of the uropoda terminating in a single, slender spine; basal article broadly expanded inside.

Legs rather short and thick, scarcely increasing in length posteriorly.

#### HAPLOPHTHALMUS PUTEUS Hay.

*Haplophthalmus puteus* HAY, Proc. U. S. Nat. Mus., XXI, 1899, pp. 871-872, pl. LXXXVI, figs. 1-15.

*Localities.*—Wells in Indiana.

“*Male.*—Body elliptical, length about three times the breadth, dorsal surface strongly convex, covered with longitudinal rows of low tubercles and scattered setæ. Segments of the peræon about equal in length, the posterior pleural angle of all, except the first, more or less produced backward. Pleuræ of third, fourth, and fifth segments of the pleon thin and directed backward and outward. Terminal segment of abdomen notched behind and with the postero-lateral margins concave. Uropods exerted, short, outer ramus longer than inner; both rami setose. Front margin of head very slightly produced. Antennæ longer than the greatest breadth of the body; first and second segments of medium length, third short, fourth and fifth long; flagellum short, pinniform, composed of three very small, closely articulated segments. Antennæ geniculate between segments four and five. Antennules minute, composed of three segments entirely concealed by the front of the head, sensory filaments five. Eyes small, simple. Upper lip regularly rounded in front and with a median triangular patch of setæ. Mandibles large and powerful, bearing on the inner surface a broad, ridged molar tubercle; on the anterior surface, one or two delicate, branched sensory styles. The cutting portion of the mandibles is different; that on the left consists of two portions, an outer with four heavy teeth and an inner with three much smaller teeth; the outer mandible has but one row of three or four large teeth which, when closed, fit in the space between the two rows of teeth of the mandible first described. The first maxilla has both branches erect, the outer bearing five or six acute curved teeth, the inner three delicate plumose flagelliform processes. The second maxilla consists of two strap-shaped lamellæ closely applied to one another and bearing setæ at their ends. The maxilliped is a broad, low, flattened plate, with straight inner and rounded outer margins, and bearing at the tip two obscurely segmented setose proc-



esses. The peræopods are similar in general to one another, differing only in the arrangement and strength of the spines.

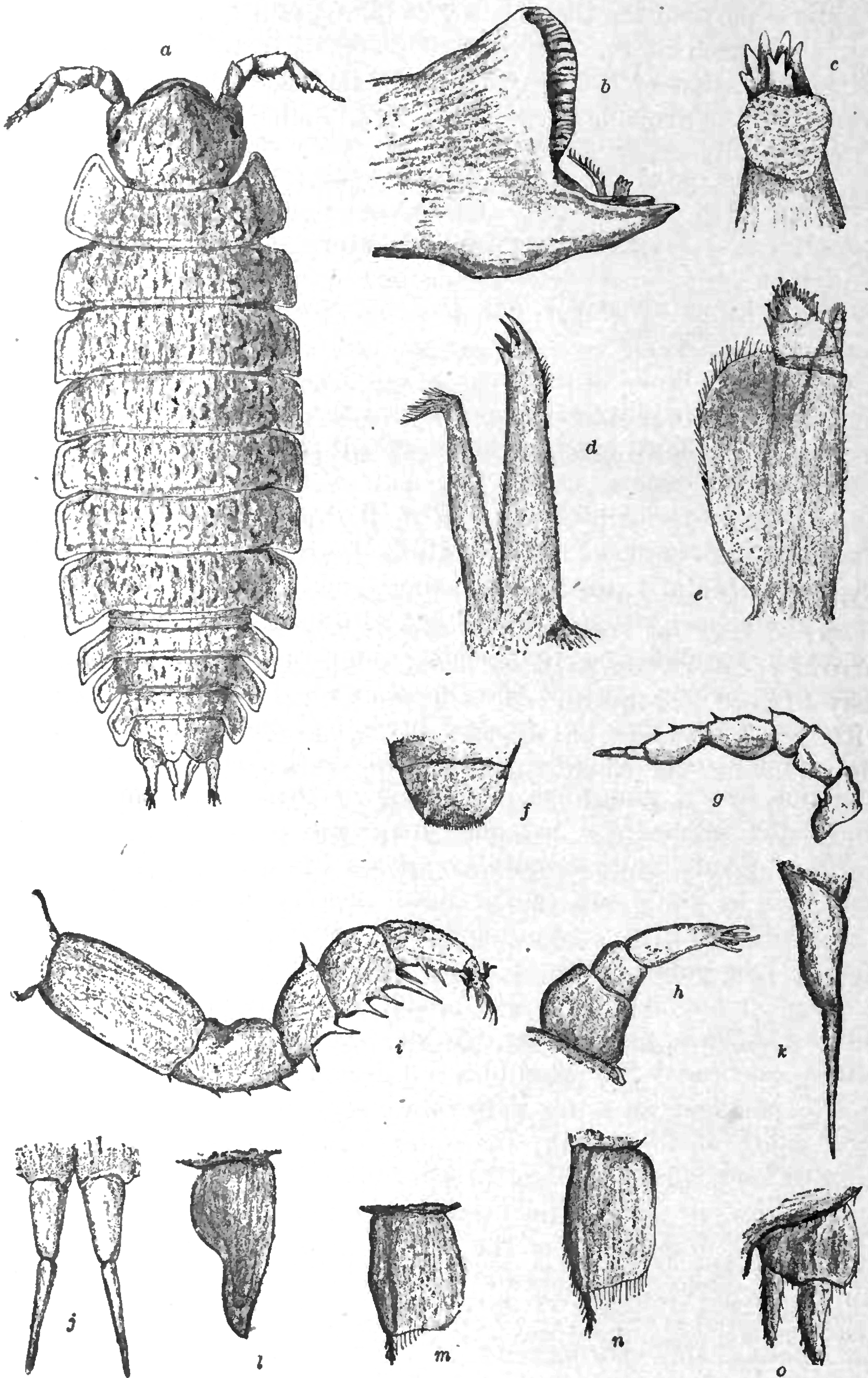


FIG. 739.—HAPLOPHTHALMUS PUTEUS (AFTER HAY). *a*, DORSAL VIEW OF MALE. *b*, RIGHT MANDIBLE. *c*, TIP OF LEFT MANDIBLE. *d*, FIRST MAXILLA. *e*, MAXILLIPED. *f*, UPPER LIP. *g*, SECOND ANTENNA. *h*, FIRST ANTENNA. *i*, FIRST LEG. *j*, FIRST PLEOPOD. *k*, SECOND PLEOPOD. *l*, THIRD PLEOPOD. *m*, FOURTH PLEOPOD. *n*, FIFTH PLEOPOD. *o*, UROPOD.



“The first and second pairs of pleopoda are two segmented, slender, and styliform. The second pair appear to be the sexual organs, while the first are to some degree rudimentary.

“The third pleopod is flattened and somewhat operculiform.

“The fourth and fifth pleopods are broad; flat, thin, and lie flat upon one another and the last segment of the pleon. They and the preceding are the branchial appendages of the animal.

“The uropoda have been already described.

“Color white; eyes black; intestine showing through the shell as a grayish line.

“Female: Similar in general characters to the male, but with the following differences: Body not more than two and one half times as long as wide. First and second pleopods absent. Peræopods, with flattened plates, forming a brood or egg chamber.

“Length, 3 to 4 mm.

“*Type*.—No. 22586, U.S.N.M.”—W. P. HAY.<sup>a</sup>

#### 128. Genus BRACKENRIDGIA Ulrich.

Eyes absent.

Median and antero-lateral lobes of head almost obsolete. Flagellum of second antennæ composed of seven articles. Abdomen abruptly narrower than thorax; sixth or terminal segment posteriorly rounded. Body without longitudinal ribs.

Right mandible with two appendages back of cutting surface; another fringed appendage on the hind cutting surface. Left mandible with two fringed appendages next to cutting surface. Maxilliped with a palp composed of three articles and with two small projections on the anterior margin. Outer branch of uropods longer than abdomen, conical. Inner branch much smaller, spiny.

#### BRACKENRIDGIA CAVERNARUM Ulrich.

*Brackenridgia cavernarum* ULRICH, Trans. Amer. Microscopical Soc., XXIII, 1902, pp. 90-93, pl. xvi, figs. 1-9.

*Localities*.—Ezell's Cave and Beaver Cave, near San Marcos, Texas.

Body oblong-ovate, about three times longer than wide,  $1\frac{1}{2}$  mm.:  $4\frac{1}{2}$  mm.

Head wider than long, with the frontal margin almost straight, the median and lateral lobes being almost obsolete. Eyes absent. The first pair of antennæ are rudimentary and inconspicuous. The second pair have the first and second articles subequal in length; the third article is a little longer than the second; the fourth is one and a half

---

<sup>a</sup> Proc. U. S. Nat. Museum, XXI, 1899, pp. 871-872. Although the types (two or three fragments) are in the U. S. National Museum, they have been so mutilated, through dissection, that I have found it more satisfactory to quote the above.



times as long as the third; the fifth is a little longer than the fourth. The flagellum is composed of seven articles.

The segments of the thorax are subequal in length. The lateral margins are straight. The epimera are not distinctly separated from the segments.

The abdomen is abruptly narrower than the thorax. The first two

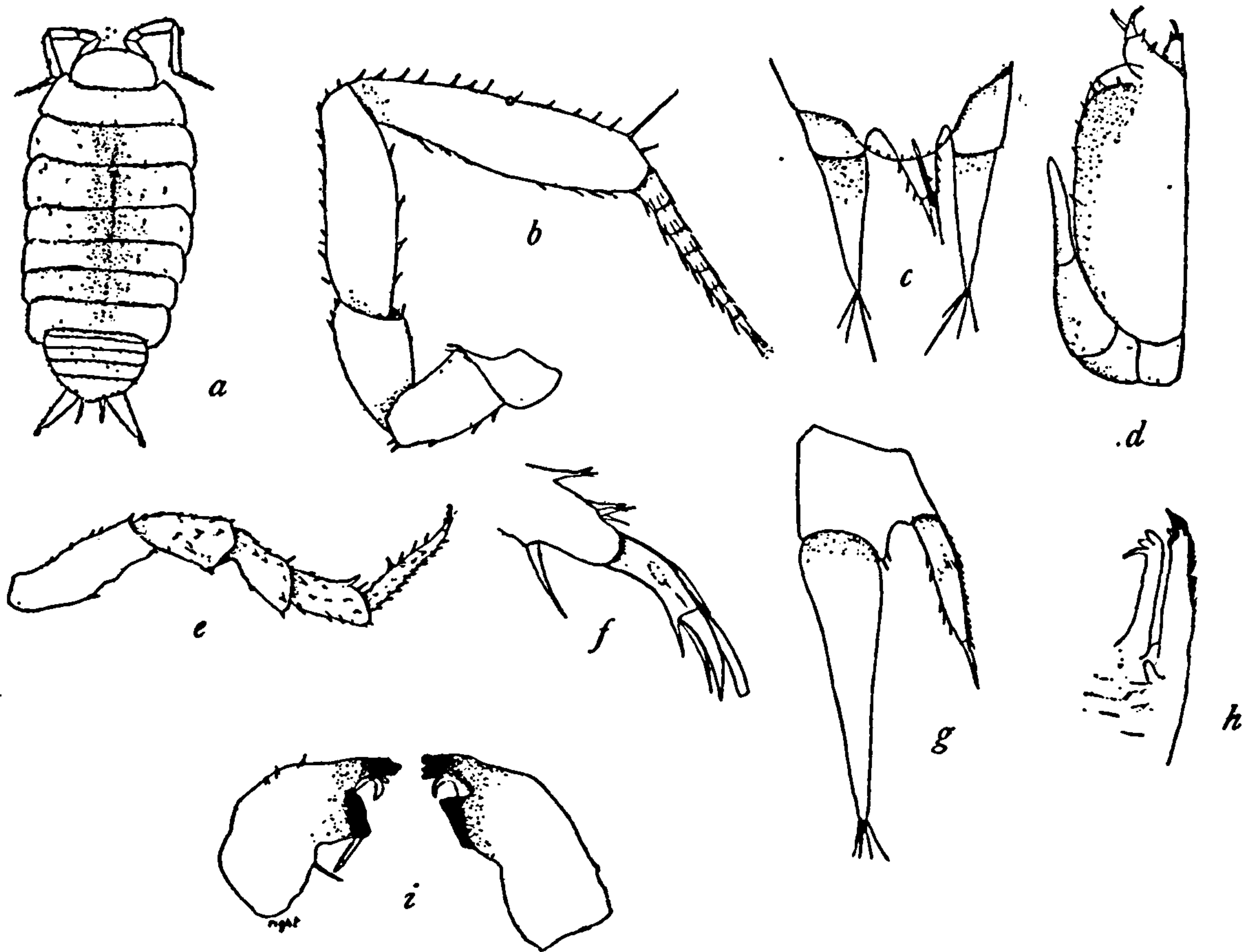


FIG. 740.—BRACKENRIDGIA CAVERNARUM (AFTER ULRICH). *a*, DORSAL VIEW. *b*, SECOND ANTENNA. *c*, LAST ABDOMINAL SEGMENT WITH UROPODS. *d*, MAXILLIPED. *e*, THORACIC LEG. *f*, CLAW. *g*, ONE OF UROPODA. *h*, FIRST MAXILLA. *i*, MANDIBLES.

segments have the lateral parts covered by the seventh thoracic segment. The sixth or terminal segment has the posterior margin rounded. The basal article of the uropoda does not extend beyond the extremity of the last abdominal segment. The inner branch is about half as long as the outer branch.

The legs are all ambulatory in character. The seventh pair has the outer distal extremity of the propodus surmounted with a crest of hairs.



## LIST OF REFERENCES.

---

- ADAMS, ARTHUR, in White, Adam. Sutherland's Voyage Baffin's Bay, II, appendix, 1852, pp. ccvi-ccvii. London, 1852.
- AGASSIZ, ALEXANDER. Three cruises of the United States Coast and Geodetic Survey steamer *Blake* in the Gulf of Mexico, in the Caribbean Sea, and along the Atlantic coast of the United States, from 1877-1880. II, Pt. 16. Characteristic deep-sea types.—Crustacea. Bull. Museum of Comparative Zoology, Harvard College, XV, 1888, pp. 37-52, figs. 225-259. Cambridge, 1888.
- ALCOCK, A., and WOOD-MASON, J. Natural history notes from H. M. Indian marine survey steamer *Investigator*, Commander R. F. Hoskyn, R. N., commanding. No. 21. Note on the results of the last season's deep-sea dredging. Ann. Mag. Nat. Hist. (6), VII, 1891, pp. 270-271. London.
- AUDOUIN, JEAN-VICTOR. Description de l'Égypte, ou recueil des observations, et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française. Explication sommaire des planches de crustacés de l'Égypte et de la Syrie. Publiées par J.-C. Savigny. Histoire naturelle, I, Pt. 4, pp. 77-98. Paris, 1826.
- AUDOUIN, JEAN-VICTOR, and EDWARDS, HENRI MILNE. Résumé d'entomologie, ou d'histoire naturelle des animaux articulés, complété par une iconographie de 48 planches. 2 vols. Paris, 1828-29.
- Précis d'entomologie ou d'histoire naturelle des animaux articulés. Première division. Histoire naturelle des annélides, crustacés, arachnides et myriapodes, complété par une iconographie. Paris, 1829.
- BATE, C. SPENCE. Crustacea in List of the British Marine Invertebrate Fauna, by Robert McAndrew. Report of the British Association for the Advancement of Science, 1861, pp. 217-236. London.
- Characters of new species of crustaceans discovered by J. K. Lord on the coast of Vancouver Island. Proc. Zool. Soc. London, 1864, p. 668. London.
- Lord's Naturalist in British Columbia, II, 1866. London.
- Carcinological gleanings. No. 3. Ann. Mag. Nat. Hist. (4), I, 1868, pp. 442-446. London.
- Report on the Crustacea Macrura collected by H. M. S. *Challenger* during the years 1873-1876. *Challenger* Report, XXIV, 1888, Pt. 52, p. 574; also pp. 645-646. London.
- BATE, C. SPENCE, and WESTWOOD, JOHN O. A History of the British Sessile-eyed Crustacea, II, 1868. London.
- BEDDARD, F. Preliminary notice of the Isopoda collected during the voyage of H. M. S. *Challenger*. Proc. Zool. Soc. Lond., 1886, pp. 97-122. London.
- Report on the Isopoda. Report of the scientific results of the voyage of H. M. S. *Challenger* during the years 1873-1876, XVII, 1886, pp. 1-175, pls. I-XXV. London, 1886.
- BENEDICT, J. E. Preliminary descriptions of a new genus and three new species of Crustaceans from an artesian well at San Marcos, Texas. Proc. U. S. Nat. Mus., XVIII, 1895, pp. 615-617. Washington, 1896.
- A revision of the genus *Synidotea*. Proc. Acad. Nat. Sci. Phila., 1897, pp. 389-404. Philadelphia.
- The Arcturidæ in the U. S. National Museum. Proc. Biol. Soc. Washington, XII, 1898, pp. 41-51. Washington.



- BENEDICT, J. E. Two new Isopods of the genus *Idotea* from the coast of California. Proc. Biol. Soc. Washington, XII, 1898, pp. 53-55. Washington.
- BILIMEK, DOMINIK. Fauna der Grotte Cacahuamilpa in Mexico. Verhandl. zool.-bot. Gesellsch. Wien, XVII, 1867, pp. 901-908. Vienna.
- BONNIER, JULES. Edriophthalmes. (Résultats scientifiques de la campagne du "Caudan" dans le golfe de Gascogne.) Ann. Univ. Lyon, XXVI, 1896, pp. 527-689. Paris.
- Contribution à l'étude des Épicarides—les Bopyridæ. Travaux de la Station Zoologique de Wimereux, VIII, 1900, pp. 1-396, pls. I-XLI. Paris.
- and GIARD, ALFRED. Contributions à l'étude des Bopyriens. Travaux de l'Institut Zoologique de Lille et du Laboratoire de Zoologie Maritime de Wimereux, V, 1887, pp. 1-252, pls. I-X. Lille.
- Sur deux nouveaux genres, *Probopyrus* et *Palægyge*. Bull. Scient., XIX, 1888, pp. 53-77. Paris.
- Sur quelques espèces nouvelles de céponiens. Comptes Rendus, CVII, 1888, pp. 44-47. Paris.
- Prodrome d'une monographie des Épicarides du Golfe de Naples. Bull. Scient., XXII, 1890, pp. 367-391. Paris.
- Contributions à l'étude des Épicarides. Bull. Sci. de la France et de la Belgique (4), XXV, 1893, pp. 415-493, pls. v-xiii. Paris.
- Sur deux types nouveaux d'Épicarides parasites d'un Cumacé et d'un Schizopode. Comptes Rendus, CXXXVI, 1903, pp. 102-103. Paris.
- BOSC, LOUIS A. G. Histoire Naturelle des Crustacés, II, 1802. Paris.
- BOUVIER, E. L. Observations nouvelles sur les *Bathynomus*, isopodes gigantesques des grands fonds. Compt. Rend. Acad. Sci., CXXXII, 1901, No. 10, pp. 643-645. Paris, 1901.
- Also in Revue Scientifique (4), XV, No. 12, 1901, p. 376.
- La circulation branchiale chez les Bathynomes. [Crust.] Bull. Soc. Entom. France, 1901, pp. 122-123. Paris.
- BOUVIER, E. L., and EDWARDS, A. MILNE. Reports on the results of dredging under the supervision of Alexander Agassiz in the Gulf of Mexico (1877-1878), in the Caribbean Sea (1878-1879), and along the Atlantic coast of the United States (1880), by the U. S. Coast Survey steamer *Blake*, Lieut. Commander C. D. Sigsbee, U. S. Navy, and Commander J. R. Bartlett, U. S. Navy, commanding. XL. Les Bathynomes. Memoirs, Museum Comparative Zoology at Harvard College, XXVII, No. 2, 1902, pp. 141-175, pls. I-VIII. Cambridge.
- BOVALLIUS, CARL. Ianthe, a new genus of Isopoda. Bihang till Kongl. Svenska Vetenskaps-Akademiens Handlingar, VI, 1881, No. 4, pp. 3-14, pls. I-III. Stockholm.
- A new Isopod from the coast of Sweden. Bihang till K. Svenska Vetensk. Akad. Handlingar, X, No. 10, pp. 3-10, pls. I-II. Stockholm, 1885.
- New or imperfectly known Isopoda. Pt. I. Bihang till K. Svenska Vet.-Akad. Handlingar, X, No. 11, pp. 1-32, pls. I-V. Stockholm, 1885.
- Notes on the family Asellidæ. Bihang till Kongl. Svenska Vet.-Akad. Handl., XI, No. 15, 1886, pp. 1-52. Stockholm.
- New or imperfectly known Isopoda. Pt. II. Bihang till K. Svenska Vet.-Akad. Handlingar, XI, No. 17, pp. 1-18, 1886, pls. I-II. Stockholm.
- BRANDT, ED. Ueber den Albinismus bei den Kellerasseln. Horæ Societatis Entomologicæ Rossicæ, VIII, 1870. St. Petersburg.
- BRANDT, F. Middendorff's Reise in den aussersten Norden und Osten Sibiriens, II, Zool., Pt. I, 1851, pp. 145-147. St. Petersburg.
- BRANDT, J. F. Conspectus Monographiæ Crustaceorum Oniscodorum Latreillii. Bull. Soc. Impér. des Natur. de Moscou, VI, 1833, pp. 171-193. Moscou.
- BRANDT, J. F., and RATZBURG, J. T. C. Medizinische Zoologie, II, 1830-34. Berlin.



- BRANDT, M. E. Du système nerveux de l'*Idothea entomon* (Crustacé isopode). Comptes Rendus, 1880, pp. 713-715. Paris, 1880.
- On the nervous system of *Idotea entomon*. Ann. Mag. Nat. Hist., VI, 1880, pp. 98-99. London.
- BREBISSE, M. DE. Catalogue des Crustacés terrestres, fluviatiles et marins, recueillis dans le Département du Calvados, lu à la séance du 14 mars 1825. Mémoires de la Société Linnéenne du Calvados, 1825, pp. 225-270. Caen and Paris, 1825.
- BUCHHOLZ, REINHOLD. Zweite deutsche Nordpolfahrt "in den Jahren 1869 und 1870, unter Führung des Kapitän Koldewey." II, Pt. 8, Crustaceen, pp. 262-399, pls. 1-xv, 1874. Leipzig.
- BUDDE-LUND, G. Danmarks Isopode Landkrebssdyr. Nat. Tidsskrift. (3), VII, 1870-71, pp. 217-245. Copenhagen.
- Prosp. generum specierumque Crust. Isop. Terrestrium, 1879. Hauniæ.
- Crustacea Isopoda Terrestria per familias et genera et species descripta. 1885. Hauniæ.
- Landisopoder fra Venezuela, indsamlede af Dr. Fr. Meinert. Entomol. Meddelel., IV, 1893-94, pp. 111-129. Copenhagen.
- A revision of "Crustacea Isopoda Terrestria," with additions and illustrations. I. Eubelum, pp. 1-31, pls. 1-v. Kjøbenhavn, 1899.
- A revision of the Crustacea Isopoda Terrestria, with additions and illustrations. Ent. Meddel. (2), I, 1901, pp. 67-97. Copenhagen.
- CALMAN, W. T. On a collection of Crustacea from Puget Sound. Ann. N. Y. Acad. Sci., XI, 1898, pp. 259-292. New York.
- CAULLERY, M. Branchiophryxus nyctiphanae, n. g., sp., Épicaride nouveau de la famille des Dajidæ. Journ. R. Micr. Soc. London, 1897, Pt. 3, p. 204.
- Also in Zool. Anzeiger, XX, 1897, pp. 88-92. Leipzig.
- CHILTON, CHARLES. The terrestrial Isopoda of New Zealand. Trans. Linn. Soc. London (2), Zool., VIII, Pt. 4, 1901, pp. 99-152, pls. xi-xvi. London.
- CLAUS, C. Ueber *Apseudes latreilli* Edw. und die Tanaiden. Arbeit. zool. Institut zu Wien, V, 1884, Pt. 3, pp. 1-12, pls. 1-ii. Wien, 1884.
- Continued in VII, 1887, Pt. 2, pp. 7-82, pls. 1-vii. Wien, 1888.
- COPE, E. D. On the Wyandotte Cave and its fauna. American Naturalist, VI, 1872, p. 411. Salem, Mass.
- Report on the Wyandotte Cave and its fauna. 3d and 4th Annual reports of the Geological Survey of Indiana. 1872, pp. 157-182. Indianapolis.
- CORNALIA, EMILIO, and PANCERI, PAOLO. Osservazioni zoologiche ed anatomiche sopra un nuovo genere di Isopodo sedentari (*Gyge branchialis*). Accad. Reale d. Sci. di Torino (2), XIX, 1858. Turin, 1861.
- COSTA, ORONZIO GABRIELE. Fauna del Regno di Napoli, Crostacei. 1838. Napoli.
- CUNNINGHAM, ROBERT O. Notes on the Reptiles, Amphibia, Fishes, Mollusca, and Crustacea obtained during the voyage of H. M. S. *Nassau* in the year 1866-1869. Trans. Linn. Soc. London, XXVII, 1869-71, Pt. 4, pp. 498-500. London.
- CUVIER, GEORGES. Mémoires sur les Cloportes. Choix de Mémoires [or Jour. d'Hist. Nat.], II, 1792, pp. 18-31. Paris.
- Règne animal. 2d ed., IV, 1829. Paris.
- DAHL, FR. Die Landfauna von Bermuda. Plankton expedition, 1892, I, Pt. 1, pp. 105-112, pl. iii. Kiel und Leipzig, 1892.
- DANA, JAMES D. Conspectus Crustaceorum, etc. Am. Journ. Science and Arts (2), VIII, pp. 424-428. New Haven, 1849.
- Crustacea. U. S. Expl. Exped., XIV, 1853, pp. 696-805, atlas, pls. XLVI-LIII. Philadelphia.
- Catalogue and descriptions of Crustacea collected in California by Dr. John L. Le Conte. Proc. Acad. Nat. Sci. Phila., VII, 1854-1855, pp. 175-177. Philadelphia.
- DE GEER, C. Mémoires pour servir à l'histoire des insectes. VII, 1778. Stockholm.



- DELAGE, YVES. Contribution à l'étude de l'appareil circulatoire des Crustacés édriophthalmes marins. Archives de zool. exp. et gén., IX, 1881, pp. 1-172, pls I-XII. Paris, 1881.
- DE KAY, JAMES E. Zoology of New York or the New York Fauna. Pt. 6, 1844. Albany.
- DESMAREST, A. G. Malacostracés. Dictionnaire des sciences naturelles, XXVIII, 1823, pp. 138-425. Paris, 1823.
- Considérations générales sur la classe des Crustacés. Isopodes, pp. 281-327. Paris, 1825.
- DOLLFUS, ADRIEN. Isopodes terrestres du *Challenger*. Bull. Soc. d'Études scientifiques de Paris, 12th year, 1890, pp. 63-70. Paris.
- *Sphæroma dugesi*, nova species. Bull. Soc. zool. France, XVIII, 1893, p. 115, figs. 1-2. Paris, 1893.
- Voyage de M. Charles Alluaud aux îles Sechelles. Crustacés isopodes terrestres. Bull. Soc. zool. France, XVIII, 1893, pp. 186-190. Paris.
- Les Idoteidæ des côtes de France. Feuille des jeunes Naturalistes, 1893-1894. 24<sup>ième</sup> année. Paris, 1893-1895.
- On West Indian terrestrial Isopod Crustaceans. Proc. Zool. Soc. London, 1896, pp. 388-400. London.
- Sur les crustacés Isopodes terrestres du Mexique. Bull. Soc. zool. France, XXI, 1896, pp. 46-49. Paris.
- Les Isopodes terrestres du nord de l'Afrique, du Cap Blanc à Tripoli. Mém. Soc. zool. de France, 1896, p. 550. Paris.
- Note préliminaire sur les Tanaidæ recueillis aux Açores pendant les campagnes de l'*Hirondelle*, 1887-1888. Bull. Soc. zool. de France, XXII, 1897, p. 207. Paris.
- Campagnes de la Melita. Tanaidæ récoltés par M. Ed. Chevreux dans l'Atlantique et dans la Méditerranée. Mém. Soc. zool. de France, XI, 1898, pp. 35-47. Paris.
- Note préliminaire sur les espèces du genre *Cirolana* recueillies pendant les campagnes de l'*Hirondelle* et de la *Princesse Alice* sur la direction de s. a. s. le prince Albert 1<sup>er</sup>, de Monaco. Bull. Soc. zool. France, XXVIII, 1903, pp. 5-10. Paris, 1903.
- EDWARDS, ALPHONSE MILNE. On a gigantic Isopod from the great depths of the sea. Ann. Mag. Nat. Hist. (5), III, 1879, pp. 241-243. London.
- Sur un Isopode gigantesque des grandes profondeurs de la mer. Comptes Rendus, Acad. Sci., LXXXVIII, 1879, pp. 21-23. Paris.
- EDWARDS, A. MILNE and BOUVIER, E. L. Reports on the results of dredging under the supervision of Alexander Agassiz in the Gulf of Mexico (1877-1878), in the Caribbean Sea (1878-1879), and along the Atlantic coast of the United States (1880), by the U. S. Coast Survey Steamer *Blake*, Lieut. Commander C. D. Sigsbee, U. S. Navy, and Commander J. R. Bartlett, U. S. Navy, commanding. XL. Les bathynomes. Mem. Museum Comparative Zoology at Harvard College, XXVII, No. 2, 1902, pp. 141-175, pls. I-VIII. Cambridge.
- EDWARDS, H. MILNE. Annotations in Histoire naturelle des animaux sans vertèbres, par J. B. P. A. de Lamarck, 2d ed., V, 1838. Paris.
- Histoire naturelle des Crustacés, III, 1840, pp. 115-284, pls. XXXI-XXXIII. Paris.
- Le règne animal distribué d'après son organisation, par Georges Cuvier. Les crustacés, avec une atlas. [Crochard edition.] 1849. Paris.
- EDWARDS, H. MILNE and AUDOUIN, JEAN VICTOR. Précis d'entomologie ou d'histoire naturelle des animaux articulés. Première division. Histoire naturelle des annélides, crustacés, arachnides et myriapodes, complété par une iconographie. Paris, 1829.



- FABRICIUS, J. C. *Mantissa insectorum*, I. Hafniæ, 1787.  
 ——— *Supplementum entomologiæ systematicæ*. Hafniæ, 1798.
- FABRICIUS, OTHO. *Fauna Grœnlandica*. Copenhagen, 1780.
- FAXON, WALTER, in Garman, Samuel. Cave animals from southwestern Missouri. *Bull. Mus. Comp. Zool. Harvard College*, XVII, No. 6, 1888-89, pp. 225-239. Cambridge.
- FILHOL, H. *La vie au fond des mers*. Paris, 1885.
- FITCH, ASA. First and second report on the noxious, beneficial, and other insects of the State of New York, 1856. Albany.
- FORBES, S. A. List of Illinois Crustacea. *Illinois Museum of Natural History, Bull.* No. 1, 1876, pp. 8-13. Bloomington, Illinois.
- GARMAN, H. A new fresh-water Crustacean. *Bull. Essex Institute*, XXII, 1890, pp. 28-30. Salem, Massachusetts.
- GARMAN, SAMUEL. Cave animals from southwestern Missouri. *Bull. Mus. Comp. Zool., Harvard College*, XVII, No. 6, 1888-1889, pp. 225-239. Cambridge.
- GERSTAECKER, A. Crustacea in Bronn's *Klassen und Ordnungen des Thier-Reichs*, V, Pt. 2, Pts. 1, 2, 3, 1881, pl. vi, fig. 12a.
- GIARD, ALFRED, and BONNIER, JULES. Contributions à l'étude des Bopyriens. *Travaux de l'Institut zoologique de Lille et du Laboratoire de zoologie maritime de Wimereux*, V, 1887, pp. 1-252, pls. 1-x. Lille.
- Sur deux nouveaux genres, *Probopyrus* et *Palægyge*. *Bull. Scient.*, XIX, 1888, pp. 53-77. Paris.
- Sur quelques espèces nouvelles de Céponiens. *Comptes Rendus*, CVII, 1888, pp. 44-47. Paris.
- Prodrome d'une monographie des Épicarides du golfe de Naples. *Bull. Scient.*, XXII, 1890, pp. 367-391. Paris.
- Contributions à l'étude des Épicarides. *Bull. Sci. de la France et de la Belgique* (4), XXV, 1893, pp. 415-493, pls. v-xiii. Paris, 1893.
- GISSLER, CARL. The common prawn and its parasite. *Scientific American*, XLV, 1881, p. 151. New York.
- A singular Parasitic Isopod Crustacean, and some of its developmental stages. *American Naturalist*, XVI, 1882, pp. 6-12. Philadelphia.
- *Bopyroides latreuticola*, a new species of Isopod Crustacean parasitic on a gulf-weed shrimp. *American Naturalist*, XVI, 1882, pp. 591-594. Philadelphia.
- GOODSIR, HENRY D. S. On a new genus, and on six new species of Crustacea, with observations on the development of the egg and on the metamorphoses of *Caligus*, *Carcinus*, and *Pagurus*. *Edinburgh New Philos. Jour.*, XXXIII, pp. 174-192, 1842. Edinburgh.
- GOSSE, PHILIP H. *A naturalist's sojourn in Jamaica*. London, 1851.
- GOULD, A. A. List of Crustacea in Massachusetts. Report on the geology, mineralogy, botany, and zoology of Massachusetts. 2d ed. By Edward Hitchcock. 1835, pp. 548-550. Amherst.
- *Invertebrata of Massachusetts*. 1841, pp. 336-338. Cambridge.
- GRUBE, A. E. *Die Insel Lussin und ihre Meeresfauna*. Breslau, 1864.
- GUÉRIN-MENÉVILLE, FÉLIX ÉDOUARD. *Iconographie du règne animal de Cuvier. Crustacés*. 1829-1843. Paris.
- *Mag. Zool.*, Cl. VII, 1836, pl. xx. Paris.
- Sur une nouvelle espèce de Porcellion provenant de l'île de Cuba. Extrait d'une lettre. *Comptes Rendus de l'Académie des Sciences*, IV, 1837. Paris.
- HANSEN, H. J. Oversigt over de paa Dijnphna-Togtet indsamlede Krebsdyr. *Dijnphna-Togtets zoologisk-botaniske Udbytte*, 1886, pp. 185-286, pls. xx-xxiv. Kjøbenhavn, 1887.
- Oversigt over det vestlige Grønlands Fauna af Malakostrake Havkrebssdyr. *Vidensk. Meddel. fra den Naturh. Foren. i Kjøbenh.*, pp. 177-198, 1887. Copenhagen. 1888.



- HANSEN, H. J. Cirolanidæ et familiæ nonnullæ propinquæ Musei Hauniensis. Vidensk. Selsk. Skr. (6), V, 1890. Copenhagen.
- Isopoden, Cumaceen und Stomatopoden der Plankton Expedition, 1895, pp. 3-50. Kiel.
- Reports on the dredging operations off the west coast of Central America to the Galapagos Islands, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U. S. Fish Commission Steamer *Albatross* during 1891, Lieut. Commander Z. L. Tanner, U. S. Navy, commanding. XXII. The Isopoda. Bull. Mus. Comp. Zool., Harvard College, XXXI, No. 5, 1897, pp. 95-129, pls. I-VI. Cambridge.
- The deep-sea Isopod, *Anuropus branchiatus* Beddard, and some remarks on *Bathynomus giganteus* A. Milne Edwards. Journ. Linn. Soc. London, Zoology, XXIX, 1903, pp. 12-25, pl. iv. London.
- On the morphology and classification of the *Asellota* group of Crustaceans, with descriptions of the genus *Stenetrium* Haswell and its species. Proc. Zool. Soc., London, 1904, II, Pt. 2, pp. 302-331, pls. XIX-XXI. London, 1905.
- Revision of the European Marine Forms of the *Cirolaninæ*, a subfamily of Crustacea Isopoda. Journ. Linn. Soc. London, 1905, pp. 337-372, pls. XXXIII-XXXV. London.
- HARFORD, W. G. W. Description of a new genus and three new species of sessile-eyed Crustacea. Proc. Cal. Acad. Sci., VII, Pt. 1, 1876, p. 54. San Francisco, 1877.
- Description of three new species of sessile-eyed Crustacea, with remark on *Ligia occidentalis*. Proc. Cal. Acad. Sci., VII, Pt. 1, 1876, pp. 116-117. San Francisco, 1877.
- HARGER, OSCAR. The sexes of *Sphæroma*. Am. Jour. Sci. and Arts (3), V, 1873, p. 314. New Haven.
- On a new genus of Asellidæ. Amer. Jour. Science and Arts (3), VII, pp. 601-602, 1874. New Haven.
- Description of *Mancasellus brachyurus*, a new fresh-water Isopod. Am. Jour. Sci. and Arts (3), XI, 1876, pp. 304-305. New Haven.
- Descriptions of new genera and species of Isopoda from New England and adjacent regions. Amer. Jour. Sci. and Arts (3), XV, 1878, pp. 373-379. New Haven.
- Notes on New England Isopoda. Proc. U. S. Nat. Mus., II, 1879, pp. 157-165. Washington, 1880.
- Report on the Marine Isopoda of New England and adjacent waters. Report of the U. S. Commissioner of Fish and Fisheries, 1878, Pt. 6, pp. 297-462, pls. I-XIII. Washington, 1880.
- Reports on the results of dredging, under the supervision of Alexander Agassiz, on the east coast of the United States during the summer of 1880, by the U. S. Coast Survey steamer *Blake*, Commander J. R. Bartlett, U. S. Navy, commanding. XXIII. Report on the Isopoda. Bull. Museum Comparative Zool., Harvard College, XI, No. 4, 1883, pp. 91-104, pls. I-IV. Cambridge.
- with A. E. VERRILL. Report upon the invertebrate animals of Vineyard Sound and the adjacent waters, with an account of the physical characters of the region. Report U. S. Commissioner of Fish and Fisheries, Pt. 1, 1871-72, pp. 295-778 (1-478), pl. I-XXXVIII. Washington, 1873.
- and SMITH, S. I. Report on the dredgings in the region of St. George's Banks in 1872. Trans. Conn. Acad. of Arts and Sciences, III, 1874, pp. 1-57. New Haven.
- VERRILL, A. E., and SMITH, S. I. Catalogue of the marine invertebrate animals of the southern coast of New England and adjacent waters. Report U. S. Commissioner of Fish and Fisheries, Pt. 1, 1871-72, pp. 537-747 (243-453). Washington, 1873.



- HASWELL, WILLIAM A. On some new Australian Marine Isopoda—Part 2. Proc. Linn. Soc. New South Wales, VI, 1881, pp. 183–186. Sydney.
- HAY, O. P. Description of a new species of *Asellus*. Bull. Ill. State Lab. Nat. Hist., No. 2, 1878, pp. 90–92. Bloomington, Illinois.
- Notes on some fresh-water Crustacea, together with descriptions of two new species. American Naturalist, XVI, 1882, pp. 241–242. Philadelphia.
- HAY, WILLIAM PERRY. Description of a new species of subterranean Isopod. Proc. U. S. Nat. Mus., XXI, 1899, pp. 871–872. Washington, 1899.
- Two new subterranean Crustaceans from the United States. Proc. Biol. Soc. Washington, XIV, 1901, pp. 179–180. Washington.
- Observations on the Crustacean fauna of Nickajack Cave, Tennessee, and vicinity. Proc. U. S. Nat. Mus., XXV, 1903, pp. 417–428. Washington, 1903.
- On a small collection of Crustaceans from the Island of Cuba. Proc. U. S. Nat. Mus., XXVI, 1903, pp. 429–435. Washington, 1903.
- HELLER, CAMILL. Reise der österreichischen Fregatte *Novara* um die Erde in den Jahren 1857, 1858, 1859. Zoologischer Theil, II, Crustaceen, pp. 130–148. Wien, 1865.
- Carcinologische Beiträge zur Fauna des adriatischen Meeres. Verhandlungen der k. k. zoologisch-botanischen Gesellschaft in Wien, XVI, 1866, pp. 723–760. Vienna.
- Die Crustaceen, Pycnogoniden, und Tunicaten der k. k. österr-ungar. Nordpol-Expedition. Denkschriften der mathematisch-naturwissenschaftlichen Classe der kaiserlichen Academie der Wissenschaften, XXXV, 1878, pp. 25–46, pls. i–v. Vienna.
- HEWSTON, GEORGE. [Note on *Limnoria californica*.] Proc. Cal. Acad. Sci., V, 1874, p. 24. San Francisco.
- HOLMES, S. J. Remarks on the sexes of Sphæromids, with a description of a new species of *Dynamene*. Proc. Cal. Acad. Sciences (3), III, 1904, No. 11, pp. 296–304, pl. xxxiv. San Francisco, 1904.
- On some new or imperfectly known species of West American Crustacea. Proc. Cal. Acad. Sciences (3), III, 1904, No. 12, pp. 307–324, pls. xxxv–xxxvii. San Francisco, 1904.
- HUBBARD, H. G. Two days collecting in the Mammoth Cave, with contributions to a study of its fauna. Amer. Entomologist, I, 1880, pp. 34–84. New York.
- IVES, J. E. Crustacea from the northern coast of Yucatan, the harbor of Vera Cruz, the west coast of Florida, and the Bermuda Islands. Proc. Acad. Nat. Sci. Phila., 1891, pp. 185–189. Philadelphia.
- JOHNSON, A. Synoptisk Framställning af Sveriges Oniscider. Academisk Afhandling, 1858. Upsala.
- KINAHAN, JOHN R. Analysis of certain allied genera of terrestrial Isopoda; with description of a new genus, and a detailed list of the British species of *Ligia*, *Philougria*, *Philoscia*, *Porcellio*, *Oniscus*, and *Armadillidium*. Nat. Hist. Review, IV, 1857, pp. 258–282, pls. xix–xxii. London.
- On the genus *Platyarthrus* (Brandt); with notices of allied undescribed genera. Proc. Dublin University, I, 1859, pp. 188–201. Dublin.
- KINGSLEY, JOHN STERLING, and STREETS, THOMAS HALE. An examination of types of some recently described Crustacea. Bull. Essex Institute, IX, 1877, pp. 103–108. Salem, 1877.
- KOCH, C. L. Deutschlands Crustaceen, Myriapoden und Arachniden, Ein Beitrag zur deutschen Fauna, VI–X, 1, 2. Regensburg, 1835–44.
- System der Myriapoden mit den Verzeichnissen und Berichtigungen zu Deutschlands Crustaceen, Myriapoden und Arachniden. 1847. Regensburg.
- KOSSMANN, R. Zoologische Ergebnisse einer Reise in den Küstengebiete des Rothen Meeres, III, Malacostraca, 1880. Leipzig.



- KOSSMANN, R. Die Entonisciden: Studien über Bopyriden. III. Ione thoracica und Cepon portuni. Mittheilungen aus der zoologischen Station zu Neapel, III, 1881. Leipzig.
- KRØYER, HENRIK. Grönlands Amphipoder. Kongelige Danske Videnskabenes Selskabs, naturvidenskabelige og matematiske Afhandlinger, VII, 1838, pp. 229-326 (1-98), pls. I-IV. Copenhagen.
- *Bopyrus abdominalis* Krøyer. Nat. Tidsskr., III, 1840-41, pp. 102-112, 289-299. Copenhagen.
- Nye Arter af Slægten Tanais. Naturhistorisk Tidsskrift, IV, pp. 167-168, pl. II. Copenhagen, 1842.
- Karcinologiske Bidrag. Naturh. Tidsskr. (2) II, 1846-49, pp. 1-123, 366-446. Copenhagen, 1846-1849.
- Voyages en Scandinavie, en Laponie, au Spitzberg et aux Férøe. Zoologie, Crustacea. (Published under the direction of M. Paul Gaimard.) Atlas, pl. XXVIII, figs. 1-2; pl. XXIX, fig. 1. Paris, 1849.
- Monografisk Fremstilling af Slægten Hippolyte's nordiske Arter. Kongelige Danske Videnskabenes Selskabs naturvidenskabelige og matematiske Afhandlinger, IX, 1842, pp. 211-360, pls. I-VI. Copenhagen, 1862.
- KUHLGATZ, THEODOR. Untersuchungen über die Fauna der Schwentinemündung, mit besonderer Berücksichtigung der Copepoden des Planktons. Wissenschaftliche Meeresuntersuchungen, herausgegeben von der Kommission zur wissenschaftlichen Untersuchung der deutschen Meere in Kiel und der biologischen Anstalt auf Helgoland, III, 1898, pp. 148-150, pl. III, figs. 4-19. Kiel und Leipzig, 1898.
- LAMARCK, JEAN P. B. A. DE M. DE. Hist. nat. des anim. sans vertèbres, 1st ed., V, 1818. Paris, 1818.
- LATREILLE, P. A. Hist. nat. Crust. et insectes, VI, VII, 1802-1805. Paris.
- Genera Crustaceorum et Insectorum, I, 1806. Parisii et Argentorati.
- Encycl. méth., Pt. 24, 1818, p. 6, pl. CCCXXVIII, figs. 21-22. Paris.
- In Cuvier's Règne animal, 2d ed., IV, 1829, pp. 129-144. Paris.
- LATROBE, BENJAMIN H. A drawing and description of the *Clupea tyrannus* and *Oniscus prægustator*. Trans. Am. Philos. Soc., V, 1802, pp. 77-81, pl. I. Philadelphia.
- LEACH, W. E. Crustaceology. Edinburgh Encyclopedia, VII, 1813-14, pp. 221-277; also appendix, pp. 429-437. Edinburgh.
- A tabular view of the external characters of four classes of animals which Linné arranged under Insecta; with the distribution of the genera composing three of these classes into orders, etc., and descriptions of several new genera and species. Trans. Linn. Soc. London, XI, 1815, pp. 306-400. London.
- Cymothoadées. Dict. des Sci. Nat., XII, 1818, pp. 338-354. Paris.
- LEIDY, JOSEPH. Contributions toward a knowledge of the marine invertebrate fauna of the coasts of Rhode Island and New Jersey. Journ. Acad. Nat. Sciences, Phila., 1855, p. 150. Philadelphia.
- Notices of some animals on the coast of New Jersey. Proc. Acad. Nat. Sci. Phila., XXXI, 1879, pp. 198-199. Philadelphia.
- LEREBOULLET, A. Mémoire sur les Crustacés de la famille des Cloportides qui habitent les environs de Strasbourg. Mémoires de la Société d'Histoire naturelle de Strasbourg, IV, 1853. Strasbourg et Paris.
- LILJEBORG, WILHELM. Bidrag till den högnordiska hafsfaunan. Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar, VII, 1850, pp. 82-88. Stockholm.
- Norger Crustaceer. Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar, VIII, 1851, pp. 19-25. Stockholm, 1851.
- Hafs-Crustaceer vid Kullaberg. Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar, IX, 1852, pp. 1-13. Stockholm, 1852.



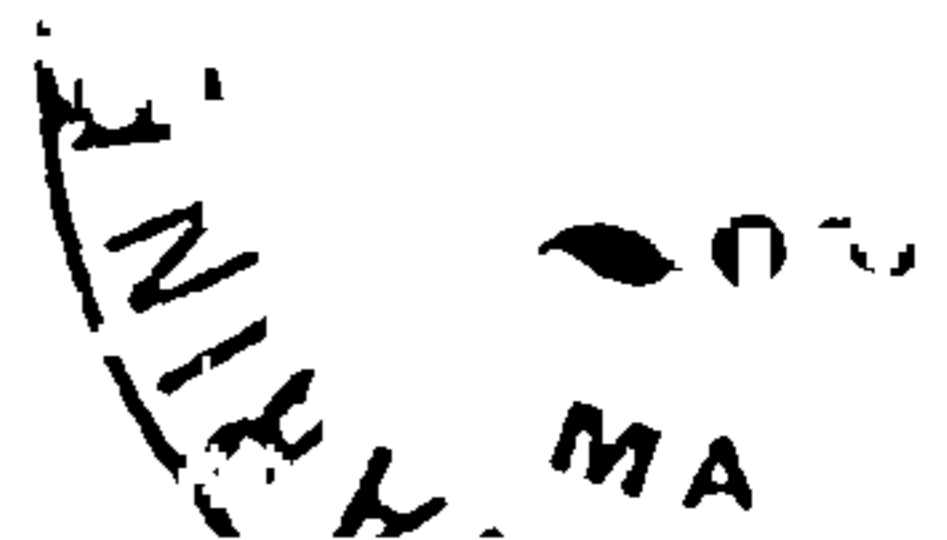
- LILJEBORG, WILHELM. Bidrag till kannedomen om de inom Sverige och Norrige förekommande Crustaceen af Isopodernas underordning och Tanaidernas familj. Upsala Univ. Arsskr., Math. og Naturv., I, 1865, pp. 1-32. Upsala.
- LINNÆUS, CARL VON. Systema naturæ. 10th ed., I, 1758. Holmiæ.  
 ——— Fauna suecica. 2d ed., 1761. Stockholm.  
 ——— Systema naturæ. 12th ed., I, Pt. 2, 1767. Holmiæ.
- LOCKINGTON, W. N. Remarks on the Crustacea of the Pacific Coast, with descriptions of some new species. Proc. Cal. Acad. Sci., VII, 1876, Pt. 1, p. 36. San Francisco, 1877.  
 ——— Description of Seventeen New Species of Crustacea. Proc. Cal. Acad. Sciences, VII, 1876, Pt. 1, pp. 44-46. San Francisco, 1877.  
 ——— Description of a new genus and species of Decapod Crustacean. Proc. Cal. Acad. Sci., VII, 1876, p. 57. San Francisco, 1877.  
 ——— Remarks upon the Thalassinidea and Astacidea of the Pacific Coast of North America, with description of a new species. Ann. Mag. Nat. Hist. (5), II, 1878, pp. 299-300. London.
- LUCAS, H. Histoire naturelle des animaux articulés. Exploration scientifique de l'Algérie pendant les années 1840, 1841, 1842. Zool., I, pp. 59-88. Paris, 1849.
- LÜTKEN, CHRISTIAN FR. Nogle Bemærkninger om de Nordiske Æga-arter samt om Æga-slægtens rette Begrændsning. Videnskabelige Meddelelser fra den naturhistoriske Forening i Kjøbenhavn, pp. 65-78, pl. 1 A. Copenhagen, 1859.  
 ——— Om visse Cymothoagtige Krebsdyrs Ophold i Mundhulen hos forskjellige Fiske. Videnskabelige Meddelelser fra den naturhistoriske Forening i Kjøbenhavn, pp. 172-179. Copenhagen, 1859.  
 ——— Tillæg til "Nogle Bemærkninger om de Nordiske Æga-arter samt om Æga-slægtens rette Begrændsning"—Om Æga tridens Leach og Æga rotundicauda Lilljeborg-samt om slægterne Acherusia og Ægacylla. Videnskabelige Meddelelser fra den naturhistoriske Forening i Kjøbenhavn, 1861, pp. 175-183 (1-9). Copenhagen, 1861.  
 ——— The Crustacea of Greenland. Manual of the natural history, geology, and physics of Greenland and the neighboring regions; prepared for the use of the Arctic expedition of 1875 by T. Ruppert Jones. London.
- LÜTKEN, CHRISTIAN FR. and STEENSTRUP, JAPETUS. Mindre Meddelelser fra Kjøbenhavns Universitets zoologiske Museum. 2. Foreløbig. Notits om danske Havskrebsdyr. Videnskabelige Meddelelser fra den Naturhistoriske Forening i Kjøbenhavn, III, 1861, pp. 274-276. Copenhagen, 1862.
- MACDONALD, JOHN DENIS. On the external anatomy of *Tanais vittatus*, occurring with *Limnoria* and *Chelura terebrans* in excavated Pier-wood. Trans. Linn. Soc. (2), I, (Zoology), pp. 67-71, pl. xv. London.
- MARSHALL, WILLIAM. Die Tiefsee und ihr Leben. Leipzig, 1888.
- MEINERT, FR. Crustacea Isopoda, Amphipoda et Decapoda Daniae; Fortegnelse over Danmarks Isopode, Amphipode og Decapode Krebsdyr. Naturhistorisk Tidsskrift (3), XI, 1877, pp. 57-248; (3), XII, 1880, pp. 465-472. Copenhagen.
- MEINERT, FR. and SCHIÆDTE, J. C. Symbolæ ad Monographiam Cymothoarum, Crustaceorum Isopodum Familiae. Naturhistorisk Tidsskrift, XII, 1879-80, pp. 321-415, pls. VII-XIII. Kjøbenhavn.  
 ——— ——— Symbolæ ad Monographiam, Cymothoarum, Crustaceorum Isopodum Familiae. II. Anilocridæ. Naturhistorisk Tidsskrift (3), XIII, 1881-83, pp. 1-167, pls. I-X. Kjøbenhavn.  
 ——— ——— Symbolæ ad Monographiam Cymothoarum, Crustaceorum Isopodum Familiae. III. Saophridae. IV. Cymothoidæ. Trib. I. Ceratothoinæ. Naturhistorisk Tidsskrift (3), XIII, 1881-83, pp. 281-379, pls. XI-XVI. Kjøbenhavn.  
 ——— ——— Symbolæ ad Monographiam Cymothoarum, Crustaceorum Isopodum Familiae. IV. Cymothdæ. Trib. II. Cymothoinæ. Trib. III. Livonecinæ.



- Naturhistorisk Tidsskrift (3), XIV, 1883-84, pp. 221-455, pls. VI-XVIII. Kjøbenhavn.
- MIERS, E. J. On a collection of Crustacea, Decapoda and Isopoda, chiefly from South America, with descriptions of new genera and species. Proc. Zool. Soc. London, 1877, pp. 653-678. London.
- List of the species of Crustacea collected by the Rev. A. E. Eaton at Spitzbergen in the summer of 1873, with their localities and notes. Ann. Mag. Nat. Hist. (4), XIX, 1877, pp. 131-140. London.
- Report on the Crustacea collected by the naturalists of the Arctic expedition in 1875-76. Ann. Mag. Nat. Hist. (4), XX, 1877, pp. 63-66. London.
- On a small collection of Crustacea made by Edward Whymper, esq., chiefly in the North Greenland seas; with an appendix on additional species collected by the late British Arctic expedition. Journ. Linn. Soc. London, Zoology, XV, 1881, pp. 59-73. London, 1881.
- Revision of the Idoteidæ, a family of Sessile-eyed Crustacea. Jour. Linn. Soc. London, XVI, 1883, pp. 1-88, pls. I-III. London, 1883.
- Crustacea. Zool. Collections of the *Alert*, 1884, pp. 308-310. London, 1884.
- MONTAGU, GEORGE. Description of several marine animals found on the south coast of Devonshire. Trans. Linn. Soc. London, VII, 1804, pp. 61-85, pls. VI-VII. London.
- MOORE, H. F. *Tanais robustus*, a new species of Anisopoda. Proc. Acad. Nat. Soc. Phila., 1894, pp. 90-94, pl. v. Philadelphia, 1895.
- Report on Porto Rican Isopoda. Bull. U. S. Commissioner of Fish and Fisheries, 1900, XX, Pt. 2, pp. 161-176, pls. VII-XI. Washington, 1902.
- MULLER, FRIEDRICH. Bemerkungen zu Zaddach's Synopseos Crustaceorum Prussicorum prodromus. Archiv für Naturgeschichte, I, 1848, pp. 62-64, pl. iv. Berlin, 1848.
- MÜLLER, FRITZ. Bruchstücke zur Naturgeschichte der Bopyriden. Jen. Zeitschrift Nat., VI, 1871, pp. 51-73, pls. III-IV. Leipzig.
- NICOLET, HERCULE, in Gay, Claudio. Historia de Chile, Zool., III, 1849, pp. 256-284. Paris.
- NORMAN, ALFRED MERLE. Report of the committee appointed for the purpose of exploring the coasts of the Hebrides by means of the Dredge. Pt. 2. On the Crustacea, Echinodermata, Polyzoa, Actinozoa and Hydrozoa. Report British Association for the Advancement of Science, 1866, p. 197. London, 1867.
- Preliminary report on the Crustacea, Molluscoïda, Echinodermata, and Coelenterata, procured by the Shetland dredging committee in 1867. Report British Association for the Advancement of Science, pp. 437-441. London, 1868.
- Last report on dredging among the Shetland Isles, Pt. 2, Crustacea. Report of the British Association for the Advancement of Science, 1869, pp. 247-336, 344-345. London.
- Crustacea, Tunicata, Polyzoa, Echinodermata, Actinozoa, Foraminifera, Polycistina, and Spongida, in "Preliminary report of the biological results of a cruise in H. M. S. *Valorous* to Davis Straits in 1875." By J. Gwyn Jeffreys. Proc. Royal Society, XXV, 1876, pp. 202-215. London, 1876.
- British Isopoda Chelifera. Ann. Mag. Nat. Hist. (7), III, 1899, pp. 317-341. London.
- Notes on the Natural History of East Finmark. Ann. Mag. Nat. Hist. (7), X, 1902, pp. 478-479. London.
- British Isopoda of the families *Aegidæ*, *Cirolanidæ*, *Idoteidæ*, and *Arcturidæ*. Ann. Mag. Nat. Hist. (7), XIV, 1904, pp. 430-450, pls. XII-XIII. London.
- Revised nomenclature of the species described in Bate and Westwood's "British Sessile-eyed Crustacea." Ann. Mag. Nat. Hist. (7), XVI, 1905. London.



- NORMAN, ALFRED MERLE. *Museum Normanianum, or a Catalogue of the Invertebrata of the Arctic and North Atlantic Temperate Ocean and Palearctic Region, which are contained in the collection of the Rev. Canon A. M. Norman.* III. Crustacea. Durham, 1905.
- and STEBBING, T. R. R. On the Crustacea Isopoda of the *Lightening, Porcupine, and Valorous* expedition. *Trans. Zool. Soc. Lond.*, XII, 1886, Pt. 4, pp. 77-141, pls. xvi-xxvii. London, 1886.
- OHLIN, AXEL. Bidrag till Kannedomen om Malakostrakfaunan i Baffin Bay och Smith Sound. *Akademisk Afhandling*, XXII, 1895, pp. 1-70. Lund, 1895.
- Arctic Crustacea collected during the Swedish Arctic expeditions 1898 and 1899 under the direction of Prof. A. G. Nathorst. I. Leptostraca, Isopoda, Cumacea. *Bihang. till Kongl. Svenska Vet.-Akad. Handlingar*, XXVI, Afd. iv, No. 12, 1901, pp. 15-40, pls. i-v. Stockholm, 1901.
- OLIVIER, M. *Histoire naturelle des Insectes.* *Encycl. méthod.*, IV, 1789, pp. 246-256. Paris.
- ORTMANN, A. E. A new species of the Isopod genus *Bathynomus*. *Proc. Acad. Nat. Sci. Phila.*, 1894, p. 191. Philadelphia, 1895.
- Preliminary report on the Crustacea and Pycnogonida of the Princeton Arctic expedition, 1899. *The Princeton University Bulletin*, XI, No. 3, 1900, pp. 39-40. Princeton, 1900.
- Crustacea and Pycnogonida collected during the Princeton Expedition to North Greenland. *Proc. Acad. Nat. Sci. Phila.*, 1901, pp. 144-168. Philadelphia.
- OWEN, RICHARD. *The zoology of Captain Beechey's Voyage to the Pacific Ocean and Bering's Straits, performed in the H. M. S. Blossom in the years 1825-1828.* London, 1839.
- PACKARD, A. S. View of the recent invertebrate fauna of Labrador. *Mem. Bost. Soc. Nat. Hist.*, I, 1867, p. 296. Boston.
- The Mammoth Cave and its inhabitants. *Amer. Naturalist*, V, 1871, pp. 751-752. Salem, Mass.
- On the cave fauna of Indiana. *Fifth Report Peabody Academy of Sciences*, 1873, pp. 93-97. Salem.
- *Zoology for Students and General Readers*, 1879, pp. 308-309. New York.
- *Zoology for High Schools and Colleges*, 1881, p. 289. New York.
- A new eyeless Isopod Crustacean from Mexico. *Proc. Amer. Assoc.*, XLIX, 1900, p. 228. Easton, Pennsylvania.
- and COPE, E. D. The fauna of Nickajack Cave. *Amer. Naturalist*, XV, 1881, pp. 879-880. Philadelphia.
- PALLAS, PETER SIMON. *Spicilegia Zoologica, quibus novæ imprimis et obscuræ animalium species iconibus, descript. atque commentariis illustrantur.* IX, 1772. Berolini.
- PANCERI, EMILIO and CORNALIA, PAOLO. Osservazioni Zoologiche ed anatomiche sopra un nuovo genere di Isopodo sedentari (*Gyge brunchialis*). *Accad. reale d. sci. di Torino* (2), XIX, 1858. Turin, 1861.
- PAULMIER, FREDERICK C. Higher Crustacea of New York City. *Bull. New York State Museum*, 1905, pp. 169-186. Albany.
- PENNANT, THOMAS. *British Zoology*, IV, 1777, p. 25, pl. xviii. London.
- PERTY, M. *Delectus animalium articulorum quæ in itinere per Braziliam annis 1817-1820 collegerunt J. B. de Spix et C. F. Ph. de Martius.* Monachii, 1830-1834.
- PLATEAU, F. Crustacés Isopodes terrestres. *Bull. de l'Académie royale de Belgique* (2), XXIX, No. 2, 1870. Brussels.
- RAFINESQUE, C. S. *Précis des découvertes somiologiques.* Palerme, 1814.
- *Analyse de la nature, ou tableau de l'univers et des corps organisés.* Palerme, 1815.





- RATHBUN, MARY J. Fauna of New England. 5. List of the Crustacea. Occasional Papers of the Bost. Soc. Nat. Hist., VII, 1905, pp. 34-49. Boston.
- RATHKE, HEINRICH. Anatomie der Idothea entomon, oder des Schachtwurmes. Neuste Schriften der Naturf. Gesellsch. in Danzig, I, 1820-1825, pp. 109-136. Danzig.
- Beiträge zur Fauna Norwegens. Nova Acta Academiae Cæsareæ Leopoldino-Carolinæ Naturæ Curiosorum, XX, pp. 1-264, pls. I-XII. Breslau and Bonn, 1843.
- RATHKE, JENS. Jagttagelser henhørende til Indvoldsormenes og Blöddyrenes naturhistorie; med anmærkninger af O. Fabricius. Skrifter af Naturhistorie-Selskabet, V, 1799, pp. 61-153, pls. II-III. Copenhagen.
- RATZBURG, J. T. C. and BRANDT, J. F. Medizinische Zoologie, II, 1830-34. Berlin.
- REINHARDT, J. T. Fortegnelse over Grönlands Krebsdyr, Annelider og Indvoldsorme. Naturhistorisk Bidrag til en Beskrivelse af Grönland, 1857, pp. 28-49. Kjöbenhavn.
- RICHARDSON, HARRIET. Description of a new species of Sphæroma. Proc. Biol. Soc., Washington, XI, 1897, pp. 105-107. Washington.
- Description of a new Crustacean of the genus Sphæroma from a warm spring in New Mexico. Proc. U. S. Nat. Mus., XX, 1897, pp. 465-466. Washington.
- Description of a new genus and species of Sphæromidæ from Alaskan waters. Proc. Biol. Soc. Washington, XI, 1897, pp. 181-183. Washington.
- Description of four new species of Rocinela, with a synopsis of the genus. Proc. Amer. Philos. Soc., XXXVII, 1898, pp. 8-17.
- Description of a new parasitic Isopod of the genus *Æga* from the southern coast of the United States. Proc. Biol. Soc. Washington, XII, 1898, pp. 39-40. Washington.
- Key to the Isopods of the Pacific coast of North America, with descriptions of twenty-two new species. Proc. U. S. Nat. Mus., XXI, 1899, pp. 815-869. Washington.
- (Reprinted in Ann. Mag. Nat. Hist. (7), IV, pp. 157-187, 260-277, 321-338. London.)
- Results of the Branner-Agassiz Expedition to Brazil. Pt. 2. The Isopod Crustacea. Proc. Wash. Acad. Sci., II, 1900, pp. 157-159. Washington.
- Synopses of North-American Invertebrates. VIII. The Isopoda. American Naturalist, XXXIV, 1900, pp. 207-230, 295-309. Boston.
- Key to the Isopods of the Atlantic coast of North America, with descriptions of new and little-known species. Proc. U. S. Nat. Mus., XXIII, pp. 493-579. Washington, 1901.
- Papers from the Hopkins-Stanford Galapagos Expedition, 1898-99. VI. The Isopods. Proc. Wash. Acad. Sci., III, 1901, pp. 565-568. Washington, 1901.
- The marine and terrestrial Isopods of the Bermudas, with descriptions of new genera and species. Trans. Conn. Acad. Sci., XI, 1902, pp. 277-310, pls. XXXVII-XL. New Haven.
- A new fresh water Isopod of the genus *Mancasellus* [*danielsi*] from Indiana. Proc. U. S. Nat. Mus., XXV, 1902, pp. 505-507. Washington.
- A new terrestrial Isopod of the genus *Pseudarmadillo*. Proc. U. S. Nat. Mus., XXV, 1902, pp. 509-511. Washington.
- Contributions to the natural history of the Isopoda. Proc. U. S. Nat. Mus., XXVII, 1904, pp. 1-89. Washington.
- Isopod Crustaceans of the northwest coast of North America. Harriman Alaska Expedition, Crust., X, 1904, pp. 213-230. New York.
- (Reprinted in Proc. U. S. Nat. Mus., XXVII, 1904, pp. 657-671. Washington.)
- Isopods of the Alaska Salmon Investigation. Bull. U. S. Bureau of Fisheries, XXIV, 1904, pp. 209-221. Washington, 1905.



- RICHARDSON, HARRIET. Descriptions of a new genus of Isopoda belonging to the family Tanaidæ and of a new species of Tanais, both from Monterey Bay, California. Proc. U. S. Nat. Mus., XXVIII, 1905, pp. 367-370. Washington.
- Further changes in Crustacean nomenclature. Proc. Biol. Soc. Wash., XVIII, 1905, pp. 9-10.
- RISSO, A. Histoire naturelle des crustacés des environs de Nice. 1816. Paris.
- ROUX, JEAN L. F. P. Crustacés de la Méditerranée et de son littoral. 1828. Paris and Marseille.
- SABINE, EDWARD. Supplement to Appendix to Captain Parry's Voyage. 1824. pp. 219-229, pl. I, figs. 4-6. London.
- SARS, G. O. Om en anomal Gruppe af Isopoder. Chr. Vid. Selsk. Forhandl., 1863, pp. 205-221. Christiania, 1864.
- Beretning om en i Sommeren, 1865, foretagen zoologisk Reise ved Kysterne af Christianias og Christiansands stifter. Nyt Magazin for Naturvidenskaberne. Christiania, 1866.
- Histoire naturelle des Crustacés d'eau douce de Norvège. Christiania, 1867.
- Undersøgelser over Christianiafjordens Dybvandsfauna anstillede paa en i Sommeren 1868 foretagen zoologisk Reise. Nyt Magazin for Naturvidenskaberne. Christiania, 1869.
- Nye Dybvandscrustaceer fra Lofoten. Chr. Vid. Selsk. Forhdl., 1869, p. 167. Christiania, 1870.
- Undersøgelser over Hardangerfjordens Fauna. Forhandlinger i Videnskabs-Selskabet i Christiania, 1871, pp. 246-286. Christiania, 1872.
- Bidrag till Kundskaben om Dyrelivet paa vore Havbanken. Vidensk. Selsk. Forhandl., 1872, pp. 73-119. Christiania, 1873.
- Prodromus descriptionis Crustaceorum et Pycnogidarum quæ in expeditione Norvegica anno 1876 observavit G. O. Sars. Arch. Math. Naturv., II, 1877, pp. 237-271 (337-371). Christiania, 1877.
- Revision af Gruppen Isopoda Chelifera. Arch. for Math. og Naturv., 1882, pp. 1-54. Christiania, 1882.
- Oversigt af Norges Crustaceer med foreløbige Bemærkninger over de nye eller mindre bekjendte Arter. I. Forhandlinger i Videnskab Selskabet i Christiania, Nr. 18, pp. 1-124, 1882. Christiania, 1883.
- Crustacea of the Norwegian North Atlantic Expedition, 1876-1878. Christiania, 1885.
- Report on the Schizopoda. Challenger Report, XIII, 1885, Pt. 37, pp. 220-221. London.
- Nye Bidrag til Kundskaben om Middelhavets Invertebratfauna. III. Middelhavets Saxisopoder. Archiv for Mathematik og Naturvidenskab, XI, 1886, pp. 263-368, pls. I-XV. Christiania, 1886.
- Crustacea of Norway. II. Isopoda, 1899. Bergen.
- SARS, M. Oversigt over de i den norsk-arctiske Region forekommende Krebsdyr. Forhandlinger i Videnskabs-Selskabet i Christiania, 1858, pp. 122-163. Christiania, 1859.
- Beskrivelse af en ny Slægt og Art af Isopoder: *Munnopsis typica* Sars. Forhandlinger i Videnskabs-Selskabet i Christiania, 1860, pp. 84-85. Christiania, 1861.
- Fortsatte Bemærkninger over det dyriske Livs Udbredning i Havets Dybder. Forhandlinger i Videnskabs-Selskabet i Christiania, 1868, pp. 246-275. Christiania 1869.
- Bidrag till Kundskab om Christiania Fjordens Fauna, Crustacea, 1868.
- SAUSSURE, H. DE. Diagnosis de quelques Crustacés nouveaux des Antilles et du Mexique. Rev. Mag. Zool. (2), IX, 1857, pp. 304-308. Paris.



- SAUSSURE, H. DE. Mémoire sur divers Crustacés nouveaux du Mexique et des Antilles. Mém. de la Soc. physique et d'Hist. nat. de Genève, XIV, 1858, pp. 60-69. Genève.
- Mémoire sur divers Crustacés nouveaux du Mexique et des Antilles. Mém. Soc. phys., XIV, 1858, pp. 417-490. Genève.
- SAY, THOMAS. An account of the Crustacea of the United States. Jour. Acad. Nat. Sci. Phila., I, Pt. 2, 1818, pp. 393-401, 423-433. Philadelphia.
- SCHIEDTE, J. C. Krebsdyrenes sugemund. Naturhistorisk Tidsskrift (3), IV, 1866, pp. 169-206, pls. x-xi, Kjøbenhavn, 1866-67; X, 1875-76, pp. 211-252.
- On the structure of the mouth in sucking Crustacea. Pt. 1. Cymothoæ. Ann. Mag. Nat. Hist. (4), I, 1868, pp. 1-25, pl. i. London.
- On the structure of the mouth in sucking Crustacea. Pt. 1. Cymothoæ. Ann. Mag. Nat. Hist. (4), XVIII, 1876, pp. 253-266, 295-305. London.
- and MEINERT, FR. Symbolæ ad Monographiam, Cymothoarum, Crustaceorum Isopodum Familiæ. Naturhistorisk Tidsskrift, XII, 1879-80, pp. 321-415, pls. VII-XIII. Kjøbenhavn.
- ——— Symbolæ ad Monographiam Cymothoarum, Crustaceorum Isopodum Familiæ. II. Anilocridæ. Naturhistorisk Tidsskrift (3), XIII, 1881-83, pp. 1-167, pls. i-x. Kjøbenhavn.
- ——— Symbolæ ad Monographiam Cymothoarum, Crustaceorum Isopodum Familiæ. III. Saophridæ. IV. Cymothoidæ, Trib. I. Ceratothoinæ. Naturhistorisk Tidsskrift (3), XIII, 1881-83, pp. 281-379, pls. xi-xvi. Kjøbenhavn.
- ——— Symbolæ ad Monographiam Cymothoarum, Crustaceorum Isopodum Familiæ. IV. Cymothoidæ, Trib. II. Cymothoinæ. Trib. III. Livonecinæ. Naturhistorisk Tidsskrift (3), XIV, 1883-84, pp. 221-455, pls. vi-xviii. Kjøbenhavn.
- SCHNITZLER, H. J. De Oniscineis agri Bonnensis. Dissertatio zoologica. 1853. Cononiæ.
- SCOTT, THOMAS. Notes on some Scottish Marine Isopods. Annals of Scottish Natural History, 1898, pp. 218-225. Edinburgh, 1898.
- SILL, VICTOR. Beitrag zur Kenntniss der Crustaceen, Arachniden und Myriapoden Siebenbürgens. Verhandlungen u. Mittheilungen des Siebenbürgischen Vereins für Naturwissenschaften zu Hermannstadt, XII, 1861; XIII, 1862. Hermannstadt.
- SMITH, S. I. Professor Cope's Cave Crustaceans. Amer. Naturalist, VII, 1873, pp. 244-245. Salem, Massachusetts.
- The Crustacea of the Fresh Waters of the United States. Report U. S. Commissioner of Fish and Fisheries, 1872-73, Pt. 2, pp. 637-665. Washington, 1874.
- The Crustaceans of the Caves of Kentucky and Indiana. American Jour. Science and Arts (3), IX, 1875, pp. 476-477. New Haven.
- Notes on Crustacea collected by Dr. G. M. Dawson at Vancouver and the Queen Charlotte Islands. Report of Progress of the Geological Survey of Canada, 1878-1879, p. 218. Montreal, 1880.
- and VERRILL, A. E. Notice of the Invertebrata dredged in Lake Superior in 1871, by the U. S. Lake Survey, under the direction of Gen. C. B. Comstock. S. I. Smith, naturalist. Amer. Jour. Sci. and Arts (3), II, 1871, pp. 448-454. New Haven.
- ——— Invertebrata of Southern New England. 478 pages, 38 plates. Washington, 1874.
- and HARGER, OSCAR. Report on the dredgings in the region of St. Georges Banks in 1872. Trans. Conn. Acad. Arts and Sciences, III, 1874, pp. 1-57. New Haven, 1874-78.



- SMITH, S. I., VERRILL, A. E., and HARGER, OSCAR. Catalogue of the marine invertebrate animals of the southern coast of New England and adjacent waters. Report U. S. Commissioner of Fish and Fisheries, Pt. 1, 1871-72, pp. 537-747 (243-453). Washington, 1873.
- STEBBING, T. R. R. The sessile-eyed Crustacea of Devon. Transactions Devonshire Association for the Advancement of Science, Literature, and Art. 1874. Plymouth.
- A new Australian Sphæromid, *Cyclura venosa*; and notes on *Dynamene rubra* and *viridis*. Journ. Linn. Soc. London, Zoology, XII, 1874, pp. 146-151, pls. VI-VII. London, 1874.
- Description of a new species of sessile-eyed Crustacean, and other notices. Ann. Mag. Nat. Hist. (4), XVII, 1876, pp. 73-80, pls. IV-V. London.
- Sessile-eyed Crustacea of Devonshire. Supplementary list. Trans. Devonshire Association for the Advancement of Science, Literature, and Art. 1879. Plymouth.
- History of Crustacea. 1893. New York.
- A new West Indian Tanaid. Ann. Mag. Nat. Hist. (6), XVII, 1896, pp. 49-53. London.
- On the Isopod Genus *Leptochelia*. Ann. Mag. Nat. Hist. (6), XVII, 1896, pp. 156-160. London.
- Arctic Crustacea: Bruce Collection. Ann. Mag. Nat. Hist. (7), V, 1900, pp. 1-16. London, 1900.
- On some Crustaceans from the Falkland Islands, collected by Mr. Rupert Vallentin. Proc. Zool. Soc. London, 1900, pp. 517-568. London, 1900.
- South African Crustacea, Pt. 2, 1902, p. 64. Cape Town.
- On Crustacea brought by Doctor Willey from the South seas. Willey's zoological results based on material from New Britain, New Guinea, Loyalty Islands, and elsewhere collected during the years 1895, 1896, and 1897, Pts. 1-6, 1902, pp. 605-690, pls. LXIV-LXXIV. Cambridge, 1902.
- Gregarious Crustacea from Ceylon. Spolia Zeylanica, II, Pt. 5, 1904, pp. 1-28. Ceylon.
- Marine Crustaceans. XII. Isopoda, with description of a new genus. The Fauna and Geography of the Maldive and Laccadive Archipelagoes, II, Pt. 3, pp. 699-721, pls. XLIX-LIII. Cambridge, 1904.
- and NORMAN, A. M. On the Crustacea Isopoda of the *Lightning*, *Porcupine*, and *Valorous* expedition. Trans. Zool. Soc. Lond., XII, 1886, Pt. 4, pp. 77-141, pls. XVI-XXVII. London, 1886.
- STEENSTRUP, JAPETUS, and LÜTKEN, CHRISTIAN, FR. Mindre Meddelelser fra kjøbenhavns Universitets zoologiske Museum.—2. Foreløbig Notits om danske Hav-Krebsdys. Videnskabelige Meddelelser fra den Naturhistoriske Forening i Kjøbenhavn, 1861, III, pp. 274-276. Copenhagen, 1862.
- STIMPSON, WILLIAM. Synopsis of the marine invertebrata of Grand Manan, or the region about the Bay of Fundy, New Brunswick. Smithsonian Contributions to Knowledge, 1853, VI, pp. 39-44. Washington, 1854.
- On some Californian Crustacea. Proc. Cal. Acad. Sci., I, Pt. 2, 1856, pp. 95-99. San Francisco.
- Descriptions of some new marine invertebrata. Proc. Acad. Nat. Sci. Phila., VII, 1856, pp. 385-394. Philadelphia.
- The Crustacea and Echinodermata of the Pacific shores of North America. Boston Jour. Nat. Hist., VI, 1857, pp. 503-513. Boston.
- Notices of new species of Crustacea of western North America; being an abstract from a paper to be published in the journal of the society. Proc. Bost. Soc. Nat. Hist., VI, 1859, pp. 88-89. Boston.
- On an oceanic Isopod found near the southeastern shores of Massachusetts. Proc. Acad. Nat. Sci. Phila., XIV, 1863, pp. 133-134. Philadelphia.



- STIMPSON, WILLIAM. Descriptions of new marine invertebrates from Pugets Sound, collected by naturalists of the Northwest Boundary Commission. Proc. Acad. Nat. Sci. Phila., XVI, 1864, pp. 155-156. Philadelphia.
- STOLLER, JAMES H. Two new land Isopods. 54th report New York State Museum, 1900, pp. 208-213. Albany, 1902.
- STREETS, THOMAS HALE, and KINGSLEY, JOHN STERLING. An examination of types of some recently described Crustacea. Bull. Essex Institute, IX, 1877, pp. 103-108. Salem, 1877.
- STUXBERG, ANTON. Om två nya Oniscider. Öfvers. Svenska Vet. Akad. Förh., XXIX, 1872, No. 9, pp. 3-6. Stockholm, 1873.
- Om Nord-Amerikas Oniscider. Öfversigt af Svenska Vetensk. Akad. Förhandl., XXXII, 1875, No. 2, pp. 43-64. Stockholm, 1876.
- THOMPSON, MILLET T. A new Isopod parasitic on the hermit crab. Bull. U. S. Fish Comm., XXI, pp. 53-56, pls. ix-x, 1902. Washington, 1902.
- ULRICH, CARL JOST. A contribution to the subterranean fauna of Texas. Trans. Am. Microscopical Soc., XXIII, 1901, pp. 83-100, pls. xiv-xviii. Lincoln, Nebraska, 1902.
- UNDERWOOD, LUCIEN. List of the described species of fresh water Crustacea from America, north of Mexico. Bull. Ill. State Lab. Nat. Hist., II, 1886, pp. 358-364. Champaign, Illinois.
- VERRILL, A. E. On the distribution of marine animals on the southern coast of New England. Am. Jour. Sci. and Arts (3), II, 1871, pp. 357-362. New Haven.
- Results of recent dredging expeditions on the coast of New England. American Journal of Science and Arts (3), V, 1873, pp. 1-16; VI, 1873, pp. 435-441; VII, 1874, pp. 38-46, 131-138, 405-414, 498-505, pls. iv-v. New Haven, 1873-74.
- Explorations of Casco Bay by the U. S. Fish Commission in 1873. Proceedings American Association for the Advancement of Science, pp. 340-395, pls. i-vi. Salem, 1874.
- Results of the explorations made by the steamer *Albatross* off the northern coast of the United States in 1883. Report U. S. Commissioner of Fish and Fisheries, 1883, pp. 559-560. Washington, 1885.
- and SMITH, S. I. Notice of the invertebrata dredged in Lake Superior in 1871, by the U. S. Lake Survey, under the direction of Gen. C. B. Comstock, S. I. Smith, naturalist. Amer. Jour. Sci. and Arts (3), II, 1871, pp. 448-454. New Haven.
- ——— Invertebrata of Southern New England; 478 pages, 38 plates. Washington, 1874.
- ——— HARGER, OSCAR, and SMITH, S. I. Catalogue of the marine invertebrate animals of the southern coast of New England and adjacent waters. Report U. S. Commissioner of Fish Fisheries, Pt. 1, 1871-72, pp. 537-747 (243-453). Washington, 1873.
- WALKER, ALFRED O. Crustacea collected by W. A. Herdman in Puget Sound, Pacific coast of North America. Trans. Liverpool Biol. Soc., XII, 1898, pp. 280-281, pl. xv, figs. 7-10.
- WALZ, RUDOLF. Ueber die Familien der Bopyriden mit besonderer Berücksichtigung der Fauna der Adrias. Arbeiten aus d. Zoologischen Institute der Univers. Wien, IV, 1882. Vienna.
- WEBER, FRIDERICO. Nomenclator entomologicus secundum entomologiam systematicam ill. Fabricii adjectis speciebus recens detectis et varietatibus. Chilonii et Hamburgi, 1795.
- WESTWOOD, JOHN O. Observations on the osculant Crustaceous genus *Arcturus* of Latreille; with the description of a British species. Trans. Entom. Soc. London, I, 1835, Pt. 2, pp. 69-75, pl. ix. London, 1836.



- WESTWOOD, JOHN O., and BATE, SPENCE. A History of the British Sessile-eyed Crustacea, II, 1868. London.
- WHITE, ADAM. List of the Specimens of Crustacea in the Collection of the British Museum. 1847. London.
- A Popular History of British Crustacea, comprising a Familiar Account of their Classification and Habits. 1857. London.
- WHITEAVES, JOSEPH FREDERICK. On recent deep-sea dredging operations in the Gulf of St. Lawrence. Am. Jour. Sci. and Arts (3), VII, 1874, pp. 210-219. New Haven.
- Notes on a deep-sea dredging expedition round the island of Anticosti, in the Gulf of St. Lawrence. Canadian Naturalist, 1875 (2), VII, pp. 86-129. Montreal.
- WHITELEGGE, Scientific Results of the Trawling Expedition of H. M. C. S. "Thetis" off the coast of New South Wales in February and March, 1898. Crustacea. Pt. 2. Isopoda. Austral. Mus. Mem., IV, 1901, pp. 201-246. Sydney, 1901.
- WILSON, H. V. Marine biology at Beaufort. American Naturalist, 1900, XXXIV, p. 353. Boston.
- WOOD-MASON J., and ALCOCK, A. Natural history notes from H. M. Indian marine survey steamer *Investigator*, Commander R. F. Hoskyn, R. N., commanding. No. 21. Note on the results of the last season's deep-sea dredging. Ann. Mag. Nat. Hist. (6), VII, 1891, pp. 270-271. London.
- ZADDACH, E. G. Synopseos Crustaceorum Prussicorum prodromus, 1844, pp. 9-21. Regiomonti.
- ZUR STRASSEN, OTTO. Ueber die Gattung *Arcturus* und die Arcturiden der Deutschen Tiefsee-Expedition. Zool. Anzeiger, XXV, 1902, pp. 682-689. Leipzig.
- Zusatz zu meinem Artikel über die Arcturiden. Zool. Anzeiger, XXVI, 1903, p. 31. Leipzig.







# INDEX.

---

	Page.		Page.
Acanthoniscus .....	636	Alloniscus maculosus .....	690, 691
spiniger .....	637	mirabilis .....	594
Acherusia complanata .....	195	perconvexus .....	594, 596
dumerilii .....	195	Alutera schoepfii .....	220, 223
Actoniscus .....	593, 633	Anceus americanus .....	59
ellipticus .....	633, 634	cristatus .....	56
lindahli .....	634, 635	elongatus .....	58
Æga .....	166, 167	birsutus .....	57
alascensis .....	199	Ancinus .....	270, 271
antillensis .....	167, 170	depressus .....	271
arctica .....	167, 182	Anilocra .....	215, 226
belliceps .....	199	laticauda .....	226, 227
concharum .....	95	leachii .....	227
crenulata .....	167, 173	mexicana .....	227
dentata .....	167, 179	occidentalis .....	258
ecarinata .....	167, 171, 173	plebia .....	226, 229
emarginata .....	168	Anonyx .....	102
entailéc .....	168	Anthelura .....	63, 68
gracilipes .....	168, 183	abyssorum .....	68, 69
harfordi .....	109	affinis .....	68, 70
incisa .....	167, 180	elongata .....	69, 71
lecontii .....	167, 176, 186	Anthura branchiata .....	72
longicornis .....	187	brunnea .....	64
loveni .....	187	carinata .....	63, 64
microphthalma .....	168, 186, 187, 189	gracilis .....	63
nordenskioldii .....	187	polita .....	64
polita .....	99	tenuis .....	67
psora .....	167, 168	Anthuridæ .....	2, 54, 62, 63
symmetrica .....	168, 185	Anuropus .....	88, 129
tenuipes .....	167, 177	Apseudes .....	37
tridens .....	172, 173	cspinosus .....	37
ventrosa .....	168, 187	gracilis .....	37, 40
webbii .....	167, 175	intermedius .....	46, 47
Ægacylla lecontii .....	176, 177	propinquus .....	38, 45, 46
Ægathoa .....	215, 216	triangulatus .....	38, 43
linguifrons .....	216	Apseudidæ .....	4, 37
loliginea .....	217	Arcturidæ .....	323
medialis .....	216, 218	Arcturus .....	2, 323, 327
oculata .....	216, 217	anna .....	333
Ægidæ .....	2, 55, 166	baffini .....	328, 337, 340
Ægiochus nordenskioldii .....	187	var. feildeni .....	340
ventrosus .....	187	intermedia .....	340
Agarna .....	215, 243	tuberosus .....	328, 340
carinata .....	244	beringanus .....	327, 328
Alaotanais .....	35	caribbæus .....	327, 335
hastiger .....	35, 36	cornutus .....	333
serratispinosus .....	36	feildeni .....	340
Alcirona .....	156, 157	(tuberosus) .....	342
hirsuta .....	157, 159	floridanus .....	327, 336
insularis .....	161	glaber .....	327, 330
krebisii .....	157	glabrus .....	330
Alloniscus .....	592, 593, 594	hystrix .....	346
cornutus .....	594, 595	intermedius .....	344



	Page.		Page.
<i>Arcturus longispinus</i> .....	329	<i>Balanus</i> .....	8
<i>murdochi</i> .....	342	<i>Bathygge</i> .....	499, 537
<i>purpureus</i> .....	327, 331, 336	<i>grandis</i> .....	537
<i>tuberculatus</i> .....	337	<i>Bathynomus</i> .....	82, 130, 133
<i>Argeia</i> .....	499, 543, 544	<i>döderleini</i> .....	133
<i>calmani</i> .....	545	<i>giganteus</i> .....	130, 132, 133
<i>pauperata</i> .....	544, 551	<i>Bithynis acanthurus</i> .....	557, 559
<i>pugettensis</i> .....	544, 545, 551	<i>obionis</i> .....	559
<i>Armadillididæ</i> .....	2, 584, 638	<i>Bopyrella alpehi</i> .....	559
<i>Armadillidium</i> .....	638, 665, 666	<i>Bopyridæ</i> .....	497, 498
<i>commutatum</i> .....	666	<i>Bopyrina</i> .....	499, 563
<i>quadrifrons</i> .....	666, 668	<i>abbreviata</i> .....	563
<i>vulgare</i> .....	666	<i>latreuticola</i> .....	560
<i>Armadillo affinis</i> .....	648	<i>thorii</i> .....	563, 566
<i>ater</i> .....	666	<i>urocaridis</i> .....	563, 565
<i>brunneus</i> .....	645	<i>virbii</i> .....	564
<i>cacahuamilpensis</i> .....	663	<i>Bopyriscus</i> .....	499, 562
<i>californica</i> .....	653	<i>calmani</i> .....	562
<i>cinctus</i> .....	647	<i>Bopyroidea</i> .....	3, 497
<i>conglobator</i> .....	645	<i>Bopyroides</i> .....	499, 566
<i>cubensis</i> .....	645	<i>acutimarginatus</i> .....	568, 570
<i>depressus</i> .....	641	<i>hippolytes</i> .....	567, 568, 570
<i>dugesi</i> .....	652	<i>latreuticola</i> .....	560
<i>dumorum</i> .....	650	<i>sarsi</i> .....	568
<i>gigas</i> .....	648	<i>Bopyrus</i> (?).....	554
<i>grenadensis</i> .....	651	<i>abdominalis</i> .....	500
<i>murinus</i> .....	645	<i>alpehi</i> .....	559
<i>perlatus</i> .....	644	<i>hippolytes</i> .....	567
<i>pilularis</i> .....	666	<i>latreutes</i> .....	560
<i>pisum</i> .....	653	<i>manhattensis</i> .....	554
<i>silvarum</i> .....	643	<i>mysidium</i> .....	573
<i>speciosus</i> .....	653	<i>palæmoneticola</i> .....	554
<i>tenuipunctatus</i> .....	640	<i>pandalicola</i> .....	554
<i>trivialis</i> .....	666	<i>Brackenridgia</i> .....	693, 699
<i>viticola</i> .....	642	<i>cavernarum</i> .....	699
<i>zigzag</i> .....	649	<i>Branchiophryxus</i> .....	575
<i>Armadilloniscus ellipticus</i> .....	634	<i>Branchuropus</i> .....	82, 88, 128
<i>Ascididæ callosæ</i> .....	31, 32	<i>littoralis</i> .....	88, 128
<i>Asellidæ</i> .....	408, 409, 410	<i>Brevoortia patronus</i> .....	231
<i>Asellodes alta</i> .....	475	<i>tyrannus</i> .....	231
<i>Aselloidea</i> .....	3, 408	<i>Cæcidotea</i> .....	409, 410, 433
<i>Asellopsis tenax</i> .....	415	<i>microcephala</i> .....	434
<i>Asellota</i> .....	3, 408	<i>nickajackensis</i> .....	433, 436
<i>Asellus</i> .....	409, 410, 419, 431	<i>richardsonæ</i> .....	434, 437
<i>aquaticus</i> .....	420, 428, 429	<i>smithsii</i> .....	434, 438
<i>attenuatus</i> .....	420, 426	<i>stygia</i> .....	433, 434
<i>brevicauda</i> .....	420, 423	<i>Calathura</i> .....	63, 71, 75, 79
<i>communis</i> .....	419, 420	<i>branchiata</i> .....	71, 72
<i>entomon</i> .....	348	<i>crenulata</i> .....	71, 74
<i>grönlandicus?</i> .....	428, 429	<i>Callianassa longimana</i> .....	504
<i>heppinæ</i> .....	420, 425	<i>stimpsoni</i> .....	508, 510
<i>intermedius</i> .....	419, 422	<i>Cancericepon</i> .....	516, 518
<i>lineatus</i> .....	416	<i>elegans</i> .....	516, 518
<i>militaris</i> .....	420	<i>Caranx latus</i> .....	254
<i>œstrum</i> .....	254	<i>Carpas</i> .....	449, 452
<i>stygius</i> .....	434	<i>bermudensis</i> .....	452
<i>tenax</i> .....	415	<i>Cassidina</i> .....	273
<i>tomalensis</i> .....	420, 431	<i>emarginata</i> .....	273
<i>vulgaris</i> .....	420, 428	<i>lunifrons</i> .....	273
<i>Aspidophryxus</i> .....	575	<i>typa</i> .....	273
<i>Astacilla</i> .....	323, 324	<i>Cassidinella</i> .....	273
<i>americana</i> .....	324	<i>Cassidisca</i> .....	270, 272, 273, 275
<i>cæca</i> .....	324, 326	<i>lunifrons</i> .....	273
<i>granulata</i> .....	324	<i>ovalis</i> .....	273, 274
<i>Atherina</i> .....	265	<i>Cepon distortus</i> .....	511
<i>harringtonensis</i> .....	265	<i>Ceratothoa</i> .....	215, 233



	Page.		Page.
Ceratothoa deplanata .....	240	Conilera cylindracea .....	116, 120
exocæti .....	234	montagui .....	116
gaudichaudii .....	237	polita .....	99
impressa .....	234	stygia .....	116, 120
linearis .....	234	Corallana antillensis .....	148, 151, 152, 153, 154
rapax .....	237	fissicauda .....	150, 153
Chætodipterus faber .....	220	oculata .....	152
Chelifera .....	3	quadricornis .....	144, 147
Chiridotea .....	346, 347, 352, 353	sexticornis .....	143
cæea .....	353	subtilis .....	146
sabini .....	350	tricornis .....	139, 145, 154
tuftsii .....	353, 354	occidentalis .....	141
Cilicæa .....	271, 299, 307, 308	truncata .....	145
carinata .....	309, 319	warmingii .....	154
caudata .....	299, 308, 309, 314, 315	Corallanidæ .....	55, 156
gilliana .....	313	Coryphæna .....	234
cordata .....	308, 310, 311	Crago alascensis .....	545, 546, 547
gilliana .....	309, 313	elongata .....	545, 547
granulosa .....	308, 309	alba .....	546, 547
hystrix .....	308	communis .....	546, 547
latreilli .....	308	dalli .....	545, 547
linguicauda .....	308, 309	franciscorum .....	551
sculpta .....	309, 318	angustimana .....	545, 547
spinulosa .....	308	munita .....	545, 547
Cirolana .....	82	nigricauda .....	547
albida .....	84, 114	nigromaculata .....	546, 547
borealis .....	82, 83, 101, 102, 105, 107	propinqua .....	547
californica .....	109	Crangon .....	559
chiltoni .....	83, 91	heterochælis .....	559, 560
concharum .....	83, 95	Crossurus vittatus .....	8
cubensis .....	84, 114	Cruregans .....	79
gracilis .....	84, 105	Cryptone .....	499, 520
harfordi .....	84, 109	elongata .....	520
impressa .....	83, 97	Cryptocope .....	4, 16
japonica .....	85, 86	arctica .....	16
linguifrons .....	83, 90	Cryptoniscidæ .....	497, 577, 582
mayana .....	83, 87	Cubaris .....	638, 639, 654, 663
minuta .....	83, 92	affinis .....	640, 645, 648, 654
neglecta .....	105, 107	brunnea .....	645
obtruncata .....	84, 108	californica .....	639, 653, 654
parva .....	84, 92, 93, 94, 111	cincta .....	640, 647
polita .....	83, 99	depressa .....	639, 641
sphæromiformis .....	82, 84	dugesii .....	640, 652
spinipes .....	101	dumorum .....	640, 650
virginiana .....	161	gigas .....	640, 648
Cirolanidæ .....	2, 55, 81	grenadensis .....	640, 651
Cirolanides .....	82, 120	murina .....	639, 645
texensis .....	120	perlatus .....	639, 643, 644
Citharichthys sordida .....	250	pisum .....	640, 653
Cleantis .....	347, 404	silvarum .....	639, 643
heathii .....	404, 407	speciosus .....	654
linearis .....	404	tenuipunctata .....	639, 640
occidentalis .....	404, 406	viticola .....	639, 642
planicauda .....	404	zigzag .....	640, 649
Clibanarius tricolor .....	536, 537	Cyathura .....	63
Clypeoniscus .....	577, 579, 581	earinata .....	63, 64
hanseni .....	582	Cylisticus .....	593, 609
meinerti .....	577	convexus .....	609
Colanthura .....	63, 78	lævis .....	609
tenuis .....	79	Cymodoce .....	308
Colidotca .....	347, 393	Cymodocea bermudensis .....	314
rostrata .....	393	caudata .....	314
Colopisthus .....	82, 133	Cymothoa .....	215, 247
parvus .....	137	caraibica .....	248, 252
Conilera .....	82, 116	dufresnei .....	254
concharum .....	95	elegans .....	253



	Page		Page.
<i>Cymothoa entomon</i> .....	348	<i>Eurydice elegantula</i> .....	125, 126, 127
<i>excisa</i> .....	247, 248	<i>grimaldii</i> .....	125
<i>exigua</i> .....	248, 250	<i>spinigera</i> .....	123, 125
<i>gaudichaudii</i> .....	237	<i>Eusymmerus</i> .....	347, 398
<i>immersa</i> .....	254	<i>antennatus</i> .....	399
<i>impressa</i> .....	234	<i>Exocætus</i> .....	234
<i>lanceolata</i> .....	224	<i>brachycephalus</i> .....	234
<i>lignorum</i> .....	269	<i>exiliens</i> .....	234
<i>oceanica</i> .....	684	<i>lamelliferus</i> .....	234
<i>oculata</i> .....	217	<i>Exocorallana</i> .....	138
<i>œstrum</i> .....	248, 254	<i>antillensis</i> .....	139, 148, 151, 153
<i>olivacea</i> .....	263	<i>fissicauda</i> .....	139, 150, 152, 153
<i>ovalis</i> .....	263	<i>mexicana</i> .....	138, 142
<i>parasita</i> .....	248	<i>oculata</i> .....	139, 152
<i>prægustator</i> .....	231	<i>quadricornis</i> .....	138, 144, 147
<i>triloba</i> .....	263	<i>sexticornis</i> .....	138, 143
<i>Cymothoidæ</i> .....	2, 55, 214, 215	<i>subtilis</i> .....	139, 146
<i>Cymothoidea</i> .....	3, 54	<i>tricornis</i> .....	138, 139, 144, 145, 153
<i>Cynoscion regalis?</i> .....	263	<i>truncata</i> .....	138, 145
<i>Dajidæ</i> .....	497, 572	<i>warmingii</i> .....	139, 150, 154
<i>Dajus</i> .....	572, 573, 575	<i>Exocorallanidæ</i> .....	2, 55, 138
<i>mysidis</i> .....	573	<i>Exosphæroma</i> .....	271, 275, 287, 288, 298
<i>Desmosomidæ</i> .....	408	<i>amplicauda</i> .....	288
<i>Deto</i> .....	637	<i>crenulatum</i> .....	288, 298
<i>Diplectrum formosum</i> .....	209	<i>dugesi</i> .....	283, 294, 295
<i>Dolichochelia forresti</i> .....	23	<i>faxoni</i> .....	288, 292
<i>Dynamene</i> .....	271, 299, 305, 308, 311, 315	<i>octoneum</i> .....	288, 293
<i>angulata</i> .....	299, 302	<i>oregonensis</i> .....	288, 296
<i>benedicti</i> .....	299, 304	<i>rhomburum</i> .....	288, 290
<i>bermudensis</i> .....	299, 314, 315	<i>thermophilum</i> .....	288, 294
<i>dilatata</i> .....	299, 304	<i>yucatanum</i> .....	288, 291
<i>glabra</i> .....	299, 301	<i>Flabellifera</i> .....	3, 54
<i>moorei</i> .....	299, 303	<i>Gadus callarias</i> .....	169
<i>perforata</i> .....	299, 303	<i>ogac</i> .....	169
<i>sculpta</i> .....	318	<i>Galacantha diomedieæ</i> var. <i>parvispina</i> .....	527
<i>tuberculosa</i> .....	299, 310, 311	<i>Gebia</i> .....	543
<i>Edotea</i> .....	347, 394	<i>Glossobius linearis</i> .....	234
<i>acuta</i> .....	394, 395	<i>Glyphocrangon spinulosa</i> .....	537
<i>bicuspidata</i> .....	383, 384, 385	<i>Glyptonotus</i> .....	347
<i>montosa</i> .....	395, 397	<i>cæcus</i> .....	353
<i>nodulosa</i> .....	388	<i>entomon</i> .....	348
<i>triloba</i> .....	395, 396	<i>sabini</i> .....	350
<i>Epelys montosus</i> .....	397	<i>tuftsii</i> .....	354
<i>trilobus</i> .....	396	<i>Gnathia</i> .....	56
<i>Epicaridea</i> .....	3, 497, 525, 527	<i>cerina</i> .....	56, 59
<i>Erichsonella</i> .....	347, 400	<i>cristata</i> .....	56
<i>attenuata</i> .....	400	<i>elongata</i> .....	56, 58
<i>filiformis</i> .....	400, 401	<i>hirsuta</i> .....	57
<i>floridana</i> .....	400, 403	<i>Gnathiidæ</i> .....	54, 55
<i>Erichsonia attenuata</i> .....	400	<i>Grapsicepon</i> .....	498, 512
<i>filiformis</i> .....	401	<i>edwardsii</i> .....	513
<i>Ethelum</i> .....	588	<i>Gyge hippolytes</i> .....	568
<i>americanum</i> .....	588, 589	<i>Gyroleurodus francisci</i> .....	221
<i>modestum</i> .....	588	<i>Hæmulon</i> .....	209
<i>reflexum</i> .....	588, 590	<i>plumieri</i> .....	227
<i>Eubelidæ</i> .....	583, 587	<i>Haliotis rufescens</i> .....	310, 313
<i>Euphiloscia</i> .....	673, 686, 692	<i>Haplarmadillo</i> .....	638, 664
<i>elrodii</i> .....	692	<i>monocellatus</i> .....	665
<i>Eurycope</i> .....	486, 490, 491	<i>Haplophthalmus</i> .....	693, 696
<i>caribbea</i> .....	491, 493	<i>puteus</i> .....	697
<i>cornuta</i> .....	491	<i>Harponyx pranzoldes</i> .....	212
<i>fragilis</i> .....	494	<i>Hemirhamphus</i> .....	265
<i>robusta</i> .....	491	<i>Henopomus muticus</i> .....	469
<i>Eurydice</i> .....	82, 123, 129	<i>tricornis</i> .....	474
<i>caudata</i> .....	123, 124	<i>Heterophryxus</i> .....	575
<i>convexa</i> .....	123, 124	<i>Heterotanais</i> .....	4, 21, 24



	Page.		Page.
Heterotanis limicola .....	21	Iolella libbeyi .....	458, 463
Hippolyte zostericola .....	563, 564	sarsi .....	458, 467
Holophryxus .....	572, 575	speciosa .....	458, 460
alascensis .....	576	spinosa .....	457, 458
Hydrolagus colliei .....	199	triangulata .....	458, 462
Hypergnathus .....	593, 631	Ione .....	498, 503, 504, 543
texensis .....	632	brevicauda .....	504, 505
Hyperprosopon argenteus .....	258	cornuta .....	504, 510
Hyssura .....	79	thompsoni .....	504, 508, 510
Ianthe spinosa .....	458	thoracica .....	505, 510
Idotæga longicauda .....	348	Irona .....	215, 265
Idothea .....	346, 356, 357, 579	nana .....	265
algorica .....	362	Itca lævis .....	694
aquatica .....	428	riparia .....	694
atrata .....	362	Jæra .....	364, 448, 449
baffini .....	337	albifrons .....	450
baltica .....	356, 364	baltica .....	450
bicuspidata .....	384, 385	copiosa .....	450
cæca .....	353	curvicornis .....	479
compacta .....	362	krøyeri .....	450
consolidata .....	383	marina .....	449, 450
entomon .....	348, 364	nivalis .....	450
fewkesi .....	356, 359	wakishiana .....	449, 451
filiformis .....	401	Jæropsis .....	449, 476, 477, 479
gracillima .....	356, 357	brevicornis .....	478
hirtipes .....	370	curvicornis .....	479
irrorata .....	364	dolfusi .....	479
marina .....	364	lobata .....	477, 479
var. phosphorea .....	367	marionis .....	479
marmorata .....	384, 387	neo-zelandica .....	479
media .....	370	rathbunæ .....	477, 478
metallica .....	356, 362	Janira .....	449, 455, 468
montosa .....	397	alta .....	469, 475
muricata .....	390	maculosa .....	468, 469
nodulosa .....	388	minuta .....	469, 471
ochotensis .....	356, 366	occidentalis .....	469, 472
oregonensis .....	370	spinosa .....	458
peloponesiaca .....	362	tricornis .....	469, 474
phosphorea .....	356, 367	Janirella .....	410
pulchra .....	385	Janiridæ .....	408, 409, 448, 479, 485
rectilinea .....	356, 360	Janiropsis .....	449, 454, 457, 465, 468
rectilineata .....	360	breviremus .....	455, 456
resecata .....	369	californica .....	454, 455
robusta .....	362	kincaidi .....	454, 456
rostrata .....	393	Jolanthe libbeyi .....	463
rugosa .....	362	Lachnolaimus maximus .....	220
sabini .....	350	Lagodon rhomboides .....	263
stenops .....	375	Laminaria .....	8
tricuspidata .....	364	Latrentes ensiferus .....	560, 561
triloba .....	396	Leachia granulata .....	324
tuftsii .....	354	Leidya .....	498, 511
urotoma .....	356, 358, 359	distorta .....	511
whitei .....	373	Leptochelia .....	4, 22, 23, 24, 25
wosnesenskii .....	370	algorica .....	26, 27, 29
Idotheidæ .....	323, 346	cæca .....	18
Idotheoidea .....	3, 323	dubia .....	23, 26, 28, 29
Ilyarachna .....	486, 495	edwardsii .....	27
hirticeps .....	495	? filum .....	18, 23, 31
longicornis .....	495	forresti .....	23
Indusa .....	215, 246	incerta .....	28
carinata .....	246	limicola .....	21
Iole .....	457	minuta .....	23
Iolella .....	449, 457	rapax .....	23, 30
alascensis .....	458, 464	savignyi .....	23, 27, 29
erostrata .....	458, 463	Leptognathia .....	4, 17, 18
holmesii .....	458, 465, 468	cæca .....	18



	Page.		Page.
Leptognathia longiremis .....	18, 19	Meinertia gaudichaudii .....	237, 242
sarsi .....	19	gilberti .....	237, 241
Leptophryxus mysidis .....	573	transversa .....	237, 243
Leptotrichus .....	593, 624	Mesarmadillo americanus .....	589
granulatus .....	624	modestus .....	588
lentus .....	625	reflexus .....	590
panzerii .....	625	Mesidotea .....	346, 347
squamatus .....	625	entomon .....	347, 348
tauricus .....	625	sabini .....	347, 350
Ligia .....	608	Metoponorthus .....	593, 625
baudiana .....	678	pruinus .....	625, 627, 628
baudiniana .....	678	saussurei .....	625, 626
(hirtitarsis) .....	608	sexfasciatus .....	626, 629
dilatata .....	682	virgatus .....	626, 630
exotica .....	676, 678	Micropogon undulatus .....	263
hirtitarsis .....	678	Mugil hospes .....	242, 246, 247
gaudichaudii .....	676	Munidion .....	498, 517
grandis .....	676	parvum .....	518
hirtitarsis .....	678	princeps .....	519
(Italica) coriacea .....	676	Munna .....	480
occidentalis .....	681	cæca .....	480, 484
oceanica .....	608, 684, 685	fabricii .....	480
oniscides .....	685	krøyeri .....	480, 483
pallasii .....	682	whiteana .....	483
septentrionalis .....	682	Munnida quadrispina .....	519, 527
stimpsoni .....	682	Munnidæ .....	408, 409, 479
Ligidium .....	673, 686	Munnopsidæ .....	408, 409, 485, 486
gracilis .....	686, 690	Munnopsis .....	486
hypnorum .....	686	typica .....	486
longicaudatum .....	686, 689	Myliobatis .....	221
tenue .....	686, 688	Mysis oculata .....	573
Ligyda .....	673, 674	Mytilus .....	373
baudiniana .....	674, 678	Myxocephalus scorpius .....	169
exotica .....	674, 676	Næsa .....	308
occidentalis .....	674, 681	caudata .....	314
oceanica .....	674, 684	depressa .....	271
olfersii .....	674	ovalis .....	274
pallasii .....	674, 682	Nalicora .....	156, 163
Ligydidæ .....	584, 673	rapax .....	164
Limnoria .....	268	Nectocrangon alascensis .....	545, 546, 547
californica .....	269	crassa .....	545, 546, 547
lignorum .....	269	dentata .....	546, 547
tenebrans .....	269	lar .....	545, 546, 547, 550
uncinata .....	269	nigricauda .....	545
Limnoriidæ .....	55, 268	ovifer .....	545, 547
Livoneca .....	215, 216, 256	Nematocarcinus agassizii .....	520
californica .....	256, 260	Neotanais .....	4, 32, 35
desmarestii .....	261	americanus .....	32
ovalis .....	257, 263	hastiger .....	32, 35
panamensis .....	256, 257	serratispinosus .....	35
redmanni .....	216, 257, 261	Nerocila .....	215, 219
vulgaris .....	256, 258	acuminata .....	219, 220
Loligo pealii .....	217	californica .....	219, 221
Lophohelia .....	60	lanceolata .....	219, 224
Lyprobius .....	592, 598	munda .....	219
pusillus .....	598	Notophryxus .....	575
Malacostraca .....	525	Olencira .....	215, 230
Mancasellus .....	409, 410	lamarkii .....	231
brachyurus .....	410, 411	prægustator .....	231
danielsi .....	411, 417, 419	Oniscidæ .....	2, 584, 592, 638
lineatus .....	410, 416, 419	Oniscoda maculosa .....	469
macrourus .....	410, 413	Oniscoidea .....	3, 583
tenax .....	410, 415, 418, 419	Oniscus .....	592, 598, 599, 600
dilata .....	410, 416, 419	affinis .....	600
Meinertia .....	215, 236, 237	aquaticus .....	428, 429
deplanata .....	237, 240	asellus .....	600, 601



	Page.		Page.
<i>Oniscus balticus</i> .....	364	<i>Philougria</i> .....	692
<i>convexus</i> .....	609	<i>riparia</i> .....	694
<i>cylindræus</i> .....	116	<i>Phryxus</i> .....	498, 499
<i>entomon</i> .....	348	<i>abdominalis</i> .....	500
<i>granulatus</i> .....	621	<i>distortus</i> .....	511
<i>hypnorum</i> .....	686	<i>hippolytes</i> .....	500
<i>lævis</i> .....	614	<i>Phyllodurus</i> .....	499, 539
<i>marinus</i> .....	450	<i>abdominalis</i> .....	540
<i>murarius</i> .....	600	<i>Pinna</i> .....	8
<i>oceanicus</i> .....	684	<i>Plesionika semilævis</i> .....	502
<i>œstrum</i> .....	254	<i>Pleuroprion</i> .....	323, 342
<i>prægustator</i> .....	231	<i>hystrix</i> .....	346
<i>psora</i> .....	168	<i>intermedium</i> .....	342, 344
<i>tridens</i> .....	364	<i>murdochi</i> .....	342, 345, 346
<i>vicarius</i> .....	600	<i>Pomatomus saltatrix</i> .....	263
<i>Oosaccus</i> .....	582	<i>Porcellio</i> .....	593, 611, 612
<i>Ophiodon elongatus</i> .....	258	<i>armadilloides</i> .....	609
<i>Osmerus mordax</i> .....	364	<i>aztecus</i> .....	614
<i>Pagurus longicarpus</i> .....	532	<i>brandtii</i> .....	621
<i>ochotensis</i> .....	523	<i>cinerascens</i> .....	614
<i>Palægyge</i> .....	525, 527	<i>convexus</i> .....	609
<i>borrei</i> .....	524, 525, 526, 527	<i>cotillæ</i> .....	614
<i>Palaemonetes</i> .....	554	<i>cubensis</i> .....	614
<i>exilipes</i> .....	555, 556	<i>degeerii</i> .....	614
<i>vulgaris</i> .....	554	<i>dubius</i> .....	614, 621
<i>Pancolus</i> .....	4, 5	<i>eucercus</i> .....	614
<i>californiensis</i> .....	5, 582, 583	<i>ferrugineus</i> .....	617
<i>Pandalopsis dispar</i> .....	569	<i>formosus</i> .....	612
<i>Pandalus borealis</i> .....	500, 501, 569	<i>frontalis</i> .....	627
<i>jordani</i> .....	570	<i>gemmulatus</i> .....	621
<i>leptocerus</i> .....	500	<i>granulatus</i> .....	621
<i>montagui</i> .....	500, 502, 569	<i>jelskii</i> .....	627
<i>Paradynamene</i> .....	271, 305	<i>lævis</i> .....	609, 612, 614
<i>benjamensis</i> .....	305	<i>maculicornis</i> .....	627
<i>Paralabrax clathrata</i> .....	221	<i>melanocephalus</i> .....	619
<i>Paranthura</i> .....	63, 75, 79	<i>mexicanus</i> .....	614
<i>arctica</i> .....	72	<i>mixtus</i> .....	619
<i>infundibulata</i> .....	75, 76	<i>montezumæ</i> .....	622
<i>norwegica</i> .....	72	<i>nigra</i> .....	621
<i>verillii</i> .....	75, 77	<i>ovatus</i> .....	614
<i>Parapscudes</i> .....	37, 47	<i>parvicornis</i> .....	612, 616
<i>goodei</i> .....	47, 48	<i>paulenses</i> .....	622
<i>latifrons</i> .....	48	<i>pictus</i> .....	619
<i>Parargeia</i> .....	499, 551	<i>poeyi</i> .....	614
<i>ornata</i> .....	551	<i>pruinosis</i> .....	627
<i>Parasellidæ</i> .....	408	<i>rathkei</i> .....	612, 617
<i>Paratanais algicola</i> .....	26	<i>scaber</i> .....	612, 621, 622
<i>cæca</i> .....	18	<i>sexfasciatus</i> .....	629
<i>limicola</i> .....	21	<i>spinicornis</i> .....	612, 619
<i>savignyi</i> .....	26	<i>spinifrons</i> .....	609
<i>Pentidotea</i> .....	346, 368	<i>striatus</i> .....	617
<i>rescata</i> .....	368, 369	<i>sumichrasti</i> .....	614
<i>stenops</i> .....	369, 375	<i>syriacus</i> .....	614
<i>whitei</i> .....	369, 373	<i>tetramærus</i> .....	617
<i>wosncsenskii</i> .....	369, 370	<i>trilineatus</i> .....	617
<i>Petrolisthes sexspinosus</i> .....	531	<i>trivittatus</i> .....	617
<i>Philoscia</i> .....	592, 602, 603, 608, 692	<i>truncatus</i> .....	627
<i>bermudensis</i> .....	603, 607	<i>urbicus</i> .....	614
<i>brevicornis</i> .....	603, 606	<i>zealandicus</i> .....	627
<i>couchi</i> .....	608	<i>Porcellionides flavo-vittatus</i> .....	627
<i>culebræ</i> .....	603, 604	<i>Praniza cerina</i> .....	59
<i>nigricans</i> .....	603, 608	<i>Priacanthus arenatus</i> .....	254
<i>richmondi</i> .....	603	<i>Pristis semisagittatus</i> .....	263
<i>spinosa</i> .....	603, 608	<i>Probopyrus</i> .....	499, 553, 562
<i>tuberculata</i> .....	621	<i>alpei</i> .....	553, 559
<i>vittata</i> .....	603, 605	<i>bithynis</i> .....	553, 557



	Page.		Page.
Probopyrus floridensis.....	553, 555	Sphæroma oregonensis.....	296
latreuticola.....	553, 560	pentodon.....	280, 286
palæmoneticola.....	554	quadridentatum.....	280, 281
pandalicola.....	553, 554	rhomburum.....	290
Prodajus.....	575	sieboldii.....	287
Promierops guttatus.....	221	tenebrans.....	282
Pseudarachna.....	408	thermophilum.....	294
Pseudarmadillo.....	638, 654, 655, 663	vastator.....	284, 285
carinulatus.....	655, 657, 659, 660	yueatanum.....	291
dolfusi.....	655, 657	Sphæromidæ.....	55, 270
gillianus.....	655	Sphæroniscus.....	638, 661, 662, 663
Pseudione.....	499, 522, 523	cacahuamilpensis.....	662, 663
curtata.....	523, 530	portoricensis.....	662
furcata.....	523, 529	Spherillo affinis.....	648
galacanthæ.....	523, 527	Spheroides maculatus.....	220
giardi.....	523	Sphyrapus.....	37, 50, 51
Pseudotriacis mieronon.....	95	mallcolus.....	52, 54
Pterelas webbii.....	175	tudes.....	53, 54
Ptilanthura.....	63, 66	Spirontocaris arcuata.....	569
tenuis.....	66, 67	bispinosa.....	502, 569
Rhinoryetes mirabilis.....	594	biunguis.....	502
Rhoça latifrons.....	48	brevirostris.....	569
Rhyseotus.....	593, 630	fabricii.....	501, 568, 570
turgifrons.....	631	gaimardii.....	500, 502
Rocinela.....	166, 190	beleheri.....	501
alaseensis.....	199	gibba.....	500
americana.....	190, 201	grœnlandica.....	501
angustata.....	191, 204, 206	herdmani.....	570
aries.....	191, 210	liljeborgii.....	500, 568
belliceps.....	190, 199	macrophthalma.....	501, 502
cornuta.....	190, 192	phippsii.....	500, 502
cubensis.....	190, 197	polaris.....	500, 501, 502, 568, 569, 570
dumcrilii.....	190, 195	pusiola.....	500, 568
insularis.....	190, 194	spinus.....	500, 502, 568, 569, 570
laticauda.....	190, 204, 206	suekleyi.....	501, 502, 569, 570
liljeborgii.....	212	townsendi.....	501, 502, 503
maculata.....	190, 198	tridens.....	501, 502
modesta.....	207	Squilla asellus.....	428
oculata.....	190, 191	entomon.....	348
propodialis.....	190, 203	Stegias.....	499, 535
signata.....	191, 209	elibanarii.....	536
tuberculosa.....	191, 208	Stegophryxus.....	499, 531, 537
(?) Saduria entomon.....	348	hyptius.....	532, 537
Schizopoda.....	497	Steindachneria.....	258
Sciæna.....	209	Stenetriidæ.....	408, 439
Scleroerangon proeax.....	551	Stenetrium.....	440
Scorpæna guttata.....	221	antillense.....	440, 446
Seuteloidea.....	272	occidentale.....	440, 441, 446, 447, 448
Scyphacella.....	671	serratum.....	440
arenicola.....	671	stebbingi.....	440, 444, 446
Scyphaeidæ.....	584, 671	Stenomacrus turgifrons.....	631
Serolidæ.....	55, 320	Stenosoma filiformis.....	401
Serolis.....	320	gracillimum.....	356
carinata.....	321	irrorata.....	364
Somniosus microcephalus.....	169, 173, 182	Stenotomus chrysops.....	263
Sparus.....	248	Strombus giganteus.....	254
Sphæroma.....	271, 275, 280, 287, 298	Styloniscus gracilis.....	686, 690, 691
amplicauda.....	288	Synidotea.....	2, 346, 376
crenulatum.....	298	angulata.....	376, 382
destructor.....	280, 282, 286	bieuspida.....	376, 384, 385
dugesii.....	295	consolidata.....	376, 377, 378, 383
egregium.....	290	erosa.....	376, 379
felix.....	286	harfordi.....	376, 387
globicauda.....	298	lævis.....	376, 389
octoneum.....	293	laticauda.....	376, 386
olivacea.....	296	marmorata.....	376, 384



	Page.		Page.
Synidotea muricata .....	376, 390	Thor floridanus.....	566
neculosa .....	376, 381	Thunnus .....	237
nodulosa .....	376, 388, 579	alatunga .....	209
pallida .....	376, 378	Tole .....	457
picta .....	376, 391	holmesi .....	465
ritteri.....	376, 377, 378	libbeyi .....	463
Synuropus.....	592, 598	Trachurops crumenophthalmus.....	254, 263
granulatus .....	599	Triakis semifasciata .....	221
Syncenus .....	166, 212	Trichoniscidæ.....	584, 692, 693
infelix.....	212	Trichoniscus .....	693
liljeborgii .....	212	arenicola .....	671
Tanaidæ.....	2, 3, 4, 583	papillicornis.....	693, 695
Tanaioidea .....	3	pusillus.....	693, 694
Tanais.....	4, 7	Tridentella .....	156, 161
alascensis .....	7, 10, 15	virginiana ..	161
cavolinii .....	7, 8	Tylidæ .....	583, 584
dubius .....	28	Tylos .....	585
edwardsii .....	26	armadillo .....	586
filum .....	26, 31	latreilli .....	585, 586
hirticaudatus .....	8	niveus .....	585
islandicus.....	19	Typhlapseudes .....	37, 49
longiremis .....	19	nereus.....	49
lericatus .....	7	Uca pugilator .....	511
normani .....	7, 14	Upeneus martinicus.....	227
robustus .....	7, 11	Upogebia pugettensis .....	540
savignyi .....	26	Upogebiæ .....	540
tomentosus .....	8	Urocaris longicaudata.....	565
vittatus .....	8	Uropodias .....	638, 669
Tecticeps .....	270, 275	bermudensis .....	670
alascensis .....	276, 280	Valvifera .....	3, 323
convexus.....	276, 278	Zonophryxus.....	575
Thalassochelys caretta .....	11		























