

TERRESTRIAL ISOPODS OF THE FAMILY EUBELIDÆ,  
COLLECTED IN LIBERIA BY DR. O. F. COOK

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Under the auspices of the New York State Colonization Society, a large collection of terrestrial isopods was made in Liberia during the years 1893 to 1895 by Dr. O. F. Cook, custodian of Myriapoda in the U. S. Department of Agriculture. Most of the specimens were collected at Mt. Coffee, at an elevation of three or four hundred feet. This mountain is just above the point of navigation of the Saint Pauls River. Other specimens were collected at Muhlenburg Mission, at Mourovia, and at Sierra Leone. The collections were made in the spring of the year, from January to May.

Through the kindness of Dr. O. F. Cook, the terrestrial isopods were given to me to study. I wish here to express my gratitude to Dr. Cook for this privilege. The present paper is the result of my study on one family in this collection, the *Eubelidæ*. All the specimens collected represent new species, and a new genus is added to the five genera already known.

It may be noticed that the general figures do not seem to correspond with the detail drawings. This lack of correspondence is due to foreshortening in the general figure, caused by the convexity of the specimens. The detail figures give a different perspective.

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### FAMILY EUBELIDÆ<sup>1</sup>

Flagellum of second antennæ more or less obscurely triarticulate, rarely only biarticulate. Eyes distinct, composed of numerous ocelli. Inner lobe of the first or inner maxillæ furnished with numerous plumose processes (5-15). The first segment of the thorax has distinct epimera or coxopodites. Epimera or coxopodites generally present on the underside of the second and third segments.

The terminal abdominal segment is triangular at the base, with the apex triangularly or even quadrangularly produced in a process not extending, or extending very little, beyond the lateral parts of the preceding segment. Uropoda short, not extending, or extending very little, beyond the terminal segment of the abdomen. Basal article large, wide. Outer branch small or minute.

#### ANALYTICAL KEY TO THE GENERA OF LIBERIAN EUBELIDÆ

- a.*—Flagellum of second antennæ composed of three articles.  
*b.*—Coxopodites of first thoracic segment cleft posteriorly, a fissure separating the coxopodite from the post-lateral angle of the segment.  
 Genus *Mesarmadillo*  
*b'*—Coxopodites of first thoracic segment entire, without a fissure separating them from the post-lateral angles of the segment.  
 Genus *Periscyphops*
- a'*—Flagellum of second antennæ composed of two articles.  
*b.*—Coxopodites of first thoracic segment forming a wide border adjacent to and extending along the lateral margin of the segment.  
 Genus *Ethelum*  
*b'*—Coxopodites of first thoracic segment extending along the lateral margin, but arising from the underside of the segment  
 Genus *Ethelumoris*, gen. nov.

#### Genus MESARMADILLO Dollfus

*Mesarmadillo* DOLLFUS, *Annales de la Société Entomologique de France*, 1892, LXI, pp. 385-386. BUDE-LUND, A Revision of "Crustacea Isopoda Terrestria," pt. 1, Eubelum, 1899, p. 10.

Flagellum of second antennæ composed of three articles. Coxopodites of first thoracic segment extending along the lateral margin of the segment and adjacent to it in the form of a border, being

<sup>1</sup> For characters of family see Budde-Lund, A Revision of "Crustacea Isopoda Terrestria," 1899, pt. 1, Eubelum, pp. 2-3.

separated from the segment by a longitudinal groove. The lateral margin of the coxopodite is not sulcate. The coxopodites are cleft posteriorly, a fissure separating them from the post-lateral angle of the segment.

Epimera present on the second and third segments in the form of narrow ridges on the anterior portion of the underside.

Exopodite of the uropoda inserted about the middle of the posterior margin of the quadrangular basal article.

ANALYTICAL KEY TO THE SPECIES OF THE GENUS MESARMADILLO FROM  
LIBERIA

- a.*—Terminal segment of abdomen with apex produced in a process truncate at the extremity.
- b.*—With a marginal band of yellow surrounding the entire body. Length of apical process of terminal abdominal segment to width in ratio of  $4\frac{1}{2} : 2\frac{1}{2}$ . . . . . *Mesarmadillo flavimarginatus*, sp. nov.
- b'*.—Without a marginal band of yellow surrounding the entire body. Length of apical process of terminal abdominal segment to width in the ratio of  $5 : 2\frac{1}{2}$ . . . . . *Mesarmadillo similis*, sp. nov.
- a'*.—Terminal segment of abdomen with apex produced in a process not truncate at the extremity.
- b.*—Terminal segment of abdomen produced in a process which has the sides converging gradually to a triangular extremity.  
*Mesarmadillo hastatus*, sp. nov.
- b'*.—Terminal segment of abdomen produced in a process which has the extremity rounded.
- c.*—Third and seventh thoracic segments with a large yellow spot on either side of the lateral margin. Apical process of terminal abdominal segment narrow.  
*Mesarmadillo quadricoloratus*, sp. nov.
- c'*.—Third and seventh thoracic segments without yellow spots. Color mottled, variegated. Apical process of terminal abdominal segment broad. *Mesarmadillo variegatus*, sp. nov.

MESARMADILLO FLAVIMARGINATUS, sp. nov.

Body smooth, minutely punctate, contractile into a ball. Color, dark brown, with the lateral parts of all the segments light brown or yellow, so that a border of light brown completely encircles the body. The median dark area is slightly broken up on either side of the median longitudinal line by rather indistinct wavy lines of the lighter color. There is a small pearliform granulation on either side of each one of the thoracic segments.

The head is much wider than long,  $3\frac{1}{2}$  mm. : 10 mm. The frontal margin is straight. The eyes are small, round, composite, and situated at the lateral margins. The front of the head is not margined,

but is continuous with the epistome, which is produced on the ventral side in a small tubercular-like convexity. The first pair of antennæ are small and inconspicuous. The second pair have the first article short; the second is twice as long as the first; the third is about as long as the second; the fourth is nearly twice as long as the third; the fifth is a little longer than the fourth. The flagellum is composed of three articles, the middle one of which is somewhat shorter than the other two.



- FIG. 50.—*Mesarmadillo flavimarginatus*, sp. nov. General figure.  $\times 32/5$ .  
 FIG. 51.—*Mesarmadillo flavimarginatus*, sp. nov. Coxopodite of first thoracic segment (dorsal view).  $\times 9\frac{1}{2}$ .  
 FIG. 52.—*Mesarmadillo flavimarginatus*, sp. nov. Coxopodite of first thoracic segment (lateral view).  $\times 9\frac{1}{2}$ .  
 FIG. 53.—*Mesarmadillo flavimarginatus*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 9\frac{1}{2}$ .  
 FIG. 54.—*Mesarmadillo flavimarginatus*, sp. nov. Last three segments of abdomen with uropoda.  $\times 9\frac{1}{2}$ .  
 FIG. 55.—*Mesarmadillo flavimarginatus*, sp. nov. Abdomen with uropoda (ventral view).  $\times 9\frac{1}{2}$ .

The first segment of the thorax is nearly twice as long as any of the others, which are subequal. The first segment is 8 mm. in length. The second is 4 mm. long. The coxopodites of the first segment form a rather wide marginal border, not extending quite to the post-lateral angles of the segment. A longitudinal groove separates them from the dorsal portion of the segment. There is no lateral groove. They are cleft posteriorly by a fissure not very

deep and are unequally cleft, the inner portion being the smaller. Coxopodites are also present on the underside of the second and third segments at the anterior portion of the lateral margin in the form of thickened ridges, more acute and toothlike on the second segment.

The first five segments of the abdomen are about equal in length. The lateral parts of the first two are covered by the seventh thoracic segment. The lateral parts of the three following segments are well developed and extend backward, those of the fifth segment reaching the extremity of the basal article of the uropoda. The sixth or terminal segment is triangular at the base, with the apex produced in a widely quadrangular process, with truncate extremity and parallel sides. It is  $4\frac{1}{2}$  mm. long. The width of the apical process is  $2\frac{1}{2}$  mm. The width of the segment at the base is 7 mm. The basal articles of the uropoda occupy all the space between the apical process of the terminal abdominal segment and the produced lateral parts of the fifth segment and extend to the extremity of the apical process. The basal article is somewhat quadrangular in shape, with the posterior margin deeply excavate in the middle, on either side of which the post-lateral angles extend in the form of rounded lobes. Close to the external margin of the basal article is a well-defined and most-pronounced carina extending the entire length of the article. The outer branch of the uropoda is large, conical in shape, is inserted in the posterior excavation of the basal article, and extends half its length beyond the lateral angles. The inner branch does not reach by some distance the extremity of the terminal abdominal segment and is not visible in a dorsal view. All the legs are ambulatory.

More than forty specimens were collected by Dr. O. F. Cook at Mt. Coffee and Muhlenberg Mission. About ten more were collected by Mr. R. P. Currie, one by Mrs. Sharp, and one by Mr. Collins, in the same locality.

The type is from Mt. Coffee and is in the possession of Dr. O. F. Cook.

The co-type, collected at Mt. Coffee by Mr. R. P. Currie, is in the U. S. National Museum. Cat. no. 38,526.

#### MESARMADILLO SIMILIS, sp. nov.

Body ovate, a little more than twice as wide as long, convex, contractile into a ball. Surface smooth, with a small, pearliform granule on either side of each one of the thoracic segments. Color, brown, with wavy lines of yellow, on either side of the median stripe

of brown. First two articles of the peduncle of the antennæ and the extremities of the fifth articles yellow.

Head much wider than long, 3 mm. : 10 mm. Front not margined, but continuous with the epistome, which is slightly convex. Eyes small, composite, and situated close to the lateral margin. First pair of antennæ inconspicuous and rudimentary. Second pair have the first article short; the second article is three times as long as the first; the third is slightly shorter than the second; the fourth is nearly twice as long as the third; the fifth is nearly one and a half times as long as the fourth. The flagellum is composed of three articles, the second one of which is the longest.

The first segment of the thorax is nearly twice as long as any of the following, which are subequal. The first segment is 7 mm. long. Each of the following segments measures  $3\frac{1}{2}$  mm. in length. The epimera or coxopodites of the first segment are in the form of a moderately wide and thickened plate on either side, and they are separated from the segment by a groove or suture. They do not extend the entire length of the lateral margin, not reaching the post-lateral angles of the segment by some distance. They are cleft posteriorly, being separated from the segment by a fissure, which is not very deep. The post-lateral angles of the segment are not rounded, but angular, and in the form of a right angle. The coxopodites of the second and third segments are in the form of a thickened ridge, on the anterior part of the underside of the lateral portion of the segment. This ridge is thicker on the second than on the third segment.

The first two segments of the abdomen have the lateral parts covered by the seventh thoracic segment. The lateral parts of the three following segments are well developed and are produced backward. The third and fourth segments are each a little longer than either one of the first, second, or fifth segments, which are subequal. The sixth or terminal segment is triangular at the base and has the apex produced in a long process, with parallel sides and truncate extremity. The length of this segment is 5 mm. The width of the apical process is  $2\frac{1}{2}$  mm. The width of the segment at the base is  $7\frac{1}{2}$  mm. The basal article of the uropoda occupies all the space between the apical process of the terminal segment and the lateral parts of the preceding segment. It extends to the extremity of the apical process as well as to the extremity of the post-lateral angle of the fifth segment. The posterior margin is notched about the middle for the reception of the outer branch of the uropoda. On either side of the notch the post-lateral angles

extend in the form of rounded lobes, the inner one being much longer and wider than the outer one. There is a distinct carina, which extends longitudinally along the entire length of the basal article close to the outer margin.

The outer branch of the uropoda is rather large, and extends half its length beyond the post-lateral angles of the basal article. The inner branch does not reach by some distance the extremity of

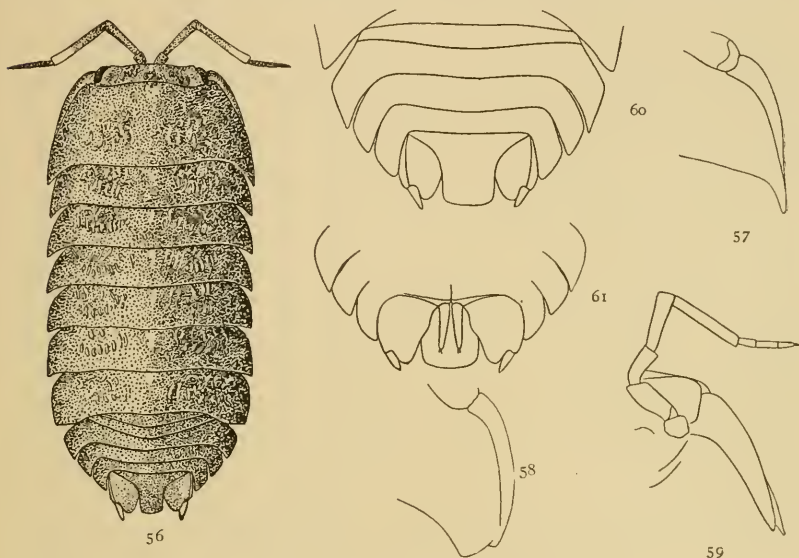


FIG. 56.—*Mesarmadillo similis*, sp. nov. General figure.  $\times 3\frac{3}{4}$ .

FIG. 57.—*Mesarmadillo similis*, sp. nov. Coxopodite of first thoracic segment (dorsal view).  $\times 7$ .

FIG. 58.—*Mesarmadillo similis*, sp. nov. Coxopodite of first thoracic segment (lateral view).  $\times 7$ .

FIG. 59.—*Mesarmadillo similis*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 7$ .

FIG. 60.—*Mesarmadillo similis*, sp. nov. Abdomen with uropoda (dorsal view).  $\times 7$ .

FIG. 61.—*Mesarmadillo similis*, sp. nov. Uropoda (ventral view).  $\times 7$ .

the apical process of the terminal segment or the inner post-lateral angle of the basal article.

About twenty specimens of this species were taken at Monrovia by Dr. O. F. Cook. One specimen comes from Mt. Coffee. Another was collected by Rev. G. P. Goll at Muhlenberg Mission. This species is very close to the foregoing, and differs only in not having the band of yellow surrounding the entire body, so characteristic of the former, and in the longer apical process of the terminal ab-

dominal segment. There is a distinct carina on the basal article of the uropoda, which is also present in *M. flavimarginatus*, but the post-lateral lobes of the basal article of the uropoda differ from those of *M. flavimarginatus*. These characters are not sexual ones, but are constant in both sexes of the two species.

The type is in the possession of Dr. O. F. Cook.

#### MESARMADILLO HASTATUS, sp. nov.

Body ovate, extremely convex, contractile into a ball. Surface smooth, punctate. Color, dark brown, with bands of wavy yellow lines on either side of the median longitudinal stripe of brown, and with the margins of all the segments, the uropoda, the coxopodites of the first segment, the head, and the antennæ all light yellow.

Head wider than long, 3 mm. : 9 mm., with the frontal margin slightly produced in the middle. Front not margined, but continuous with the epistome, which is convex about the middle. The eyes are small, composite, and situated at the lateral margins. The first pair of antennæ are small and inconspicuous. The second pair have the first article short; the second article is twice as long as the first; the third is as long as the second; the fourth is a little longer than the third; the fifth is a little longer than the fourth. The flagellum is composed of three articles, the first one of which is a little shorter than either of the other two, which are subequal in length.

The first segment of the thorax is nearly twice as long as any of the following segments, which are subequal. The first segment is 7 mm. long; the following six segments are each 4 mm. in length. The coxopodites of the first thoracic segment appear as wide and thickened plates extending along the lateral margin, but not reaching by some distance the post-lateral angles. They are separated from the segment by a deep, longitudinal groove, and are cleft posteriorly by a very shallow fissure, the inner portion being much smaller than the outer portion. Coxopodites are present on the anterior portion of the second and third segments on the underside in the form of thickened ridges, with crests sharply carinated.

The first two segments of the abdomen are covered laterally by the seventh thoracic segment. The lateral parts of the three following segments are well developed and are directed backward. The third segment is a little longer than the first, second, and fourth, which are subequal, and the fifth is slightly shorter. The sixth or terminal segment is triangular at the base and has the apex produced in a long triangular process, with sides converging gradually to an acute extremity. The basal article of the uropoda is large, somewhat quadrangular, and occupies all the space between the lateral



angles of the fifth segment and the apical process of the sixth segment. It extends to the tip of the lateral angles of the fifth segment, but does not reach by some distance the extremity of the sixth segment. The posterior margin is excavate between the lateral angles, which are produced in lobes, the inner lobe being the longer. The outer branch of the uropoda is large, conical, and extends to the tip of the apical process of the sixth segment. The inner branch does not

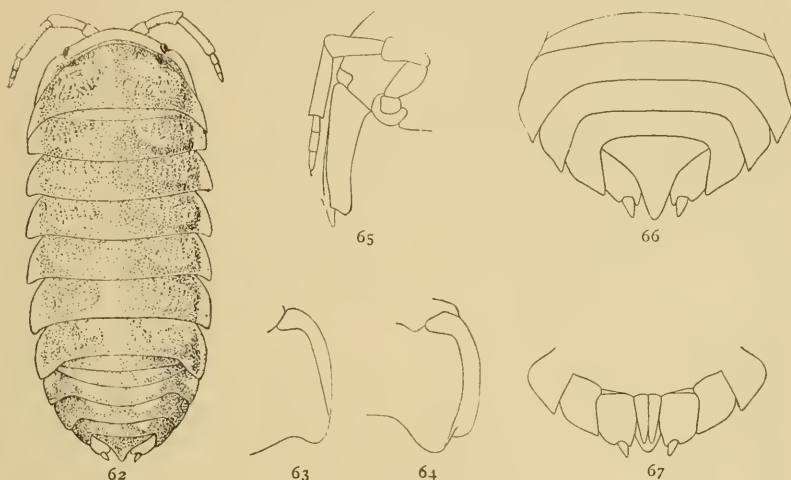


FIG. 62.—*Mesarmadillo hastatus*, sp. nov. General figure.  $\times 3$ .

FIG. 63.—*Mesarmadillo hastatus*, sp. nov. Coxopodite of first thoracic segment (dorsal view).  $\times 7$ .

FIG. 64.—*Mesarmadillo hastatus*, sp. nov. Coxopodite of first thoracic segment (lateral view).  $\times 7$ .

FIG. 65.—*Mesarmadillo hastatus*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 7$ .

FIG. 66.—*Mesarmadillo hastatus*, sp. nov. Last five segments of abdomen with uropoda.  $\times 7$ .

FIG. 67.—*Mesarmadillo hastatus*, sp. nov. Abdomen with uropoda (ventral view).  $\times 7$ .

quite reach the extremity of the apical process of the terminal segment, but extends to the inner angle of the basal article of the uropoda. All the legs are ambulatory.

Three specimens of this species, two males and a female, were collected by Dr. O. F. Cook at Mt. Coffee. The type is in the possession of Dr. O. F. Cook. This species closely resembles *Mesarmadillo marginatus* Dollfus,<sup>1</sup> but differs chiefly in the length of

<sup>1</sup>Annales de la Société Entomologique de France, LXI, 1892, p. 387, pl. 7, figs. 2a, 2b.

the terminal segment, as compared with the uropoda, in the shape and length of the coxopodites of the first thoracic segment, in the antennæ, the fifth article of the peduncle in *M. marginatus* being much longer as compared with the previous article than in the present species and in the absence of the pearl-like granulation on each side of the thoracic segments, characteristic of *M. marginatus*.

**MESARMADILLO QUADRICOLORATUS, sp. nov.**

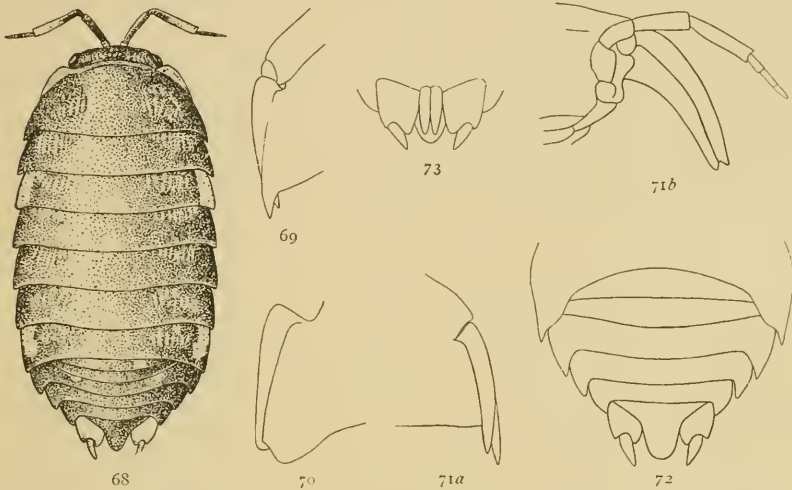
Body convex, contractile into a ball. Surface smooth, but with a small, pearliform granulation on either side of each one of the thoracic segments. Color, dark brown, with wavy lines of yellow on either side of the median line. There is a large spot on either side of the third thoracic segment on the lateral portion of the segment. On the seventh thoracic segment is a similar yellow spot, one on either side, close to the lateral margin. The basal article of the uropoda and the coxopodites of the first thoracic segment are also yellow, and in some of the specimens there are yellow spots in the median longitudinal line of the thorax.

Head wider than long, 3 mm. : 7 mm., with the frontal margin slightly rounded in the middle. Front not margined, but continuous with the epistome, which is slightly convex in the middle. The eyes are small, composite, and situated at the lateral margin. The first pair of antennæ are minute and inconspicuous. The second pair have the first article short; the second article is twice as long as the first; the third is as long as the second; the fourth is one and a half times longer than the third; the fifth is but little longer than the fourth. The flagellum is composed of three subequal articles.

The first segment of the thorax is nearly twice as long as any of those following, which are subequal. The first segment is 5 mm. in length. The second segment is 3 mm. long. The coxopodites form a rather wide lateral border on either side, wider anteriorly than posteriorly and not extending the entire length of the segment on the dorsal side, but almost to the post-lateral angles on the ventral side. The coxopodites are cleft posteriorly, the inner portion being smaller than the exterior portion. Coxopodites are also present on the anterior portion of the second and third segments in the form of a thickened ridge.

The first five segments of the abdomen are about subequal, the lateral parts of the first two being covered by the seventh thoracic segment. The lateral parts of the third, fourth, and fifth segments are well developed and directed backward. Those of the fifth seg-

ment extend about half the length of the basal article of the uropoda. The sixth or terminal segment is triangular at the base, with the apex produced in a long, narrow process, rounded at the extremity. The basal article of the uropoda is large, quadrangular in shape, and does not reach the extremity of the apical process of the sixth abdominal segment. The posterior margin is excavate, with the lateral angles produced on either side in rounded lobes. The outer branch is large, conical in shape, and extends a little beyond the extremity of



- FIG. 68.—*Mesarmadillo quadricoloratus*, sp. nov. General figure.  $\times 33\frac{3}{5}$ .  
 FIG. 69.—*Mesarmadillo quadricoloratus*, sp. nov. Coxopodite of first thoracic segment (dorsal view).  $\times 9\frac{1}{2}$ .  
 FIG. 70.—*Mesarmadillo quadricoloratus*, sp. nov. Coxopodite of first thoracic segment (lateral view).  $\times 9\frac{1}{2}$ .  
 FIG. 71.—*Mesarmadillo quadricoloratus*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 9\frac{1}{2}$ .  
 FIG. 72.—*Mesarmadillo quadricoloratus*, sp. nov. Abdomen with uropoda.  $\times 9\frac{1}{2}$ .  
 FIG. 73.—*Mesarmadillo quadricoloratus*, sp. nov. Abdomen with uropoda (ventral view).  $\times 9\frac{1}{2}$ .

the apical process of the sixth abdominal segment. The inner branch extends almost to the tip of the sixth abdominal segment, but is not visible in a dorsal view. All the legs are ambulatory.

More than forty specimens were collected by Dr. O. F. Cook at Mt. Coffee; two specimens were collected by Mr. R. P. Currie, four by Mrs. Sharp, and two by Mr. Collins, in the same locality.

The type is in the possession of Dr. O. F. Cook

The co-type, collected at Mt. Coffee by Mr. R. P. Currie, is in the U. S. National Museum. Cat. no. 38,523.

This species is close to *Mesarmadillo quadrimaculatus* Budde-Lund,<sup>1</sup> but differs in color and the position of the four spots. The spots are described as being on the second and seventh thoracic segments in *M. quadrimaculatus*, while in the present species they are placed on the third and seventh segments. According to the figure of the uropoda and the sixth abdominal segment of *M. quadrimaculatus*,<sup>2</sup> the present species also differs in the length of the apical process of the sixth segment, being much shorter than that of *M. quadrimaculatus*, and in the shape and length of the basal article of the uropoda, which in *M. quadrimaculatus* is as long as the apical process of the sixth abdominal segment, is much longer than wide, and has the posterior margin truncate, while in the present species the basal article of the uropoda does not reach the apical process of the sixth abdominal segment, is not longer than wide, and has a deep excavation in the posterior margin, on either side of which the post-lateral angles are produced.

**MESARMADILLO VARIEGATUS, sp. nov.**

Body ovate, contractile into a ball. Surface smooth, punctate. Color, light and dark brown, mottled with yellow spots in no definite arrangement and in no constant relation, so that the body appears quite variegated.

Head much wider than long,  $2\frac{1}{2}$  mm. : 8 mm. Frontal margin straight and continuous with the epistome, which is flat. Front not margined. Eyes large, composite, situated at the lateral margins. First pair of antennæ small, inconspicuous. Second pair with the first article short; second article about twice as long as the first; third article about as long as the second; fourth article about one and a half times as long as the third; fifth article about one and a half times as long as the fourth. Flagellum composed of three nearly subequal articles.

The first segment of the thorax is twice as long as any of those following, which are subequal. It is 6 mm. in length, and each of the following segments is 3 mm. long. The coxopodites of the first segment are wide, flat plates not much thickened, separated by a shallow groove from the segment, and not reaching to the post-lateral angles of the segments. They are cleft posteriorly, the inner portion being smaller than the exterior portion, and the

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<sup>1</sup> A Revision of "Crustacea Isopoda Terrestria," pt. I, Eubelum, 1899, pp. 14-15.

<sup>2</sup> *Ibid.*, Tab. III, fig. 15.

fissure not being very deep. The coxopodites of the second and third segments are present on the anterior margin of the segments as narrow thickened ridges.

The first two segments of the abdomen are covered laterally by the seventh thoracic segment. The third and fourth segments are slightly longer than the first, second, and fifth. The third and fourth segments are each  $1\frac{1}{2}$  mm. in length. The first, second, and fifth segments are each about 1 mm. long. The lateral parts of the third, fourth, and fifth segments are well developed and are



- FIG. 74.—*Mesarvadillo variegatus*, sp. nov. General figure.  $\times 3\frac{1}{5}$ .  
 FIG. 75.—*Mesarvadillo variegatus*, sp. nov. Coxopodite of first thoracic segment (dorsal view).  $\times 9\frac{1}{2}$ .  
 FIG. 76.—*Mesarvadillo variegatus*, sp. nov. Coxopodite of first thoracic segment (lateral view).  $\times 9\frac{1}{2}$ .  
 FIG. 77.—*Mesarvadillo variegatus*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 9\frac{1}{2}$ .  
 FIG. 78.—*Mesarvadillo variegatus*, sp. nov. Abdomen with uropoda.  $\times 9\frac{1}{2}$ .  
 FIG. 79.—*Mesarvadillo variegatus*, sp. nov. Abdomen with uropoda (ventral view).  $\times 9\frac{1}{2}$ .

directed backward. The sixth or terminal segment is triangular at the base and has the apex produced in a wide process, widely rounded at the extremity. The basal article of the uropoda is quadrangular in shape and occupies all the space between the lateral angles of the fifth abdominal segment and the produced apical portion of the sixth abdominal segment. It extends to the extremity of the terminal segment and to the tip of the lateral angles of the fifth segment. The posterior margin is deeply excavate about the

middle, on either side of which the lateral angles are produced in rounded lobes, the inner one being the wider. The outer branch of the uropoda is large and extends a little beyond the lateral angles of the basal article. The inner branches are short, not reaching by some distance the extremity of the apical process of the sixth abdominal segment. All the legs are ambulatory.

About twenty specimens were collected by Dr. O. F. Cook at Mt. Coffee. One specimen was collected by Rev. George P. Goll and three by Mrs. Sharp in the same locality. Two specimens were collected by Mr. R. P. Currie in the same locality.

The type is in the possession of Dr. O. F. Cook.

The co-type, collected at Mt. Coffee by Rev. Geo. P. Goll, has been placed by Mr. R. P. Currie in the U. S. National Museum. Cat. no. 38,521.

### Genus PERISCYPHOPS Budde-Lund

*Periscyphops* BUDDE-LUND, A Revision of "Crustacea Isopoda Terrestria," pt. I, Eubelum, 1899, p. 15.

Flagellum of second antennæ composed of three articles. Coxopodites of first thoracic segment adjacent to and extending along the lateral margin of the segment, being separated from it by a longitudinal groove. The lateral margin of the coxopodite is not sulcate. The posterior margin is entire, the coxopodites not being cleft by any fissure separating them from the post-lateral angle of the segment, to which they are united. Coxopodites are present on the anterior portion of the underside of the second and third segments in the form of a narrow ridge.

Outer branch of uropoda inserted about the middle of the posterior margin of the basal article.

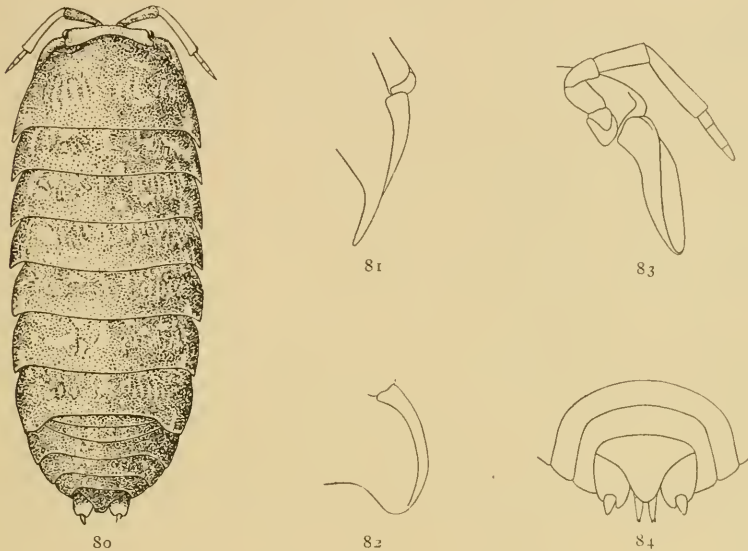
#### ANALYTICAL KEY TO THE SPECIES OF THE GENUS PERISCYPHOPS FROM LIBERIA

- a.—Terminal segment of abdomen with the apex produced in a short triangular process, with sides converging gradually to a rounded extremity, and not reaching the inner post-lateral angle of the basal article of the uropoda. Inner branches of the uropoda conspicuous in a dorsal view, and extending some distance beyond the extremity of the terminal abdominal segment and a little beyond the outer branch of the uropoda. . . . . *Periscyphops brevicaudatus*, sp. nov.
- a'.—Terminal segment of abdomen with the apex produced in a moderately wide process, with sides parallel and rounded at the extremity. Inner branches of the uropoda short, not conspicuous in a dorsal view and not reaching the extremity of the terminal abdominal segment.

*Periscyphops cooki*, sp. nov.

## PERISCYPHOPS BREVICAUDATUS, sp. nov.

Body ovate, convex, contractile into a ball. Surface smooth, punctate, and with a small, pearliform granulation on each side of the thoracic segments. Color, dark brown, with a few light spots longitudinally arranged in the median band of dark brown and with wavy lines of light yellow on either side of the median line. The



- FIG. 80.—*Periscyphops brevicaudatus*, sp. nov. General figure.  $\times 3\frac{1}{5}$ .  
 FIG. 81.—*Periscyphops brevicaudatus*, sp. nov. Coxopodite of first thoracic segment (dorsal view).  $\times 7$ .  
 FIG. 82.—*Periscyphops brevicaudatus*, sp. nov. Coxopodite of first thoracic segment (lateral view).  $\times 7$ .  
 FIG. 83.—*Periscyphops brevicaudatus*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 7$ .  
 FIG. 84.—*Periscyphops brevicaudatus*, sp. nov. Last three segments of abdomen with uropoda.  $\times 7$ .

pearliform granulations are yellow and also the fifth article of the peduncle and the flagellum of the antennæ.

Head wider than long, 3 mm. : 9 mm., with the front slightly produced in the middle, sinuate. Front not margined, but continuous with the epistome, which is produced in a slightly convex tubercle. Eyes small, composite, and situated at the lateral margins. The first pair of antennæ are small and inconspicuous. The second pair have the first article short; the second is nearly twice as long

as the first; the third is 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 three articles, the second one being longer than either of the other two, which are about subequal.

The first segment of the thorax is longer than any of those following, which are subequal. The first segment is  $6\frac{1}{2}$  mm. in length. Each of the following six segments is 4 mm. long. The coxopodites of the first segment form a rather wide and very thickened marginal border on either side, separated from the segment by a deep furrow, wider anteriorly than posteriorly and not extending to the post-lateral angles of the segment. They are not cleft posteriorly and are not represented on the underside by any ridge or fold or thickness of the surface. The posterior margin is entire. The coxopodites of the second and third segments are present on the underside in the form of a slightly thickened ridge on the anterior margin of the segment.

The first two segments of the abdomen have the lateral parts covered by the seventh thoracic segment. The lateral parts of the following three segments are well developed and are produced backward. The third and fourth segments are slightly longer than the first, second, and fifth segments, which are subequal in length. The first, second, and fifth segments are each about  $1\frac{1}{2}$  mm. long. The second and third segments are each about 2 mm. in length. The sixth or terminal segment is triangular at the base, with the apex produced in a short triangular process, the sides converging gradually to a rounded extremity. The basal article of the uropoda is somewhat quadrangular in shape and occupies all the space between the lateral angles of the fifth segment and the produced apical process of the sixth segment. It extends a little beyond the lateral angles of the fifth segment and the apical process of the sixth segment. The posterior margin is excavate between the lateral angles, which are produced in lobes on either side. The inner lobe is slightly longer than the outer lobe. A carina extends longitudinally along the exterior margin of the basal article. The outer branch is rather large and extends half its length beyond the inner lateral angle of the basal article. The inner branch is long, extending beyond the apical process of the sixth abdominal segment and beyond the inner angle of the basal article, almost or quite to the extremity of the outer branch. All the legs are ambulatory.

Only one specimen was collected by Dr. O. F. Cook at Mt. Coffee. The type is in the possession of Dr. O. F. Cook.



**PERISCYPHOPS COOKI, sp. nov.**

Body ovate, convex, contractile into a ball. Surface smooth, punctate, with a small pearliform granulation on each side of the thoracic segments. Color dark brown, mottled with yellow in irregular spots all over the body and in no definite arrangement. The flagellum and fifth article of the peduncle of the antennæ and the coxopodites of the first thoracic segment are yellow.

The head is wider than long, 3 mm. : 9 mm., with the frontal margin produced in the middle, sinuate. The front is not margined, but is continuous with the epistome, which is produced in a rounded convexity. The eyes are small, composite, and situated at the lateral margins. The first pair of antennæ are small and inconspicuous. The second pair have the first article short; the second article is twice as long as the first; the third is about equal in length to the second; the fourth is one and a half times longer than the third; the fifth is a little longer than the fourth. The flagellum is composed of three articles, the second of which is longer than either of the other two, which are subequal.

The first segment of the thorax is about twice as long as any of the following, which are subequal. The first segment is 7 mm. in length. Each of the following segments is  $3\frac{1}{2}$  mm. long. The coxopodites of the first segment form a rather wide marginal border on either side, wider anteriorly than posteriorly, very much thickened and separated from the segment by a deep groove. They disappear posteriorly and do not reach the post-lateral angles of the segment by some distance. The posterior portion is entire, and not cleft. The coxopodites are not represented on the underside of the segment by any thickness of the margin or any ridge. The coxopodites of the second and third segments are present on the anterior portion in the form of a thickened ridge on the underside.

The first two segments of the abdomen are covered laterally by the seventh thoracic segment. The lateral parts of the following three segments are well developed and are produced backward. The third and fourth segments are longer than either the first, second, or fifth segments, which are subequal. The sixth or terminal segment is triangular at the base and has the apex produced in a moderately wide process, with sides parallel and rounded at the apex. The basal article of the uropoda is quadrangular in shape and occupies all the space between the lateral angles of the fifth segment and the apical process of the sixth segment. It reaches the extremity of the lateral angles of the fifth segment, but does not

extend to the tip of the sixth segment. There is a slight carina, longitudinally placed near the outer margin. The posterior margin is excavate between the produced lateral angles. The outer branch is large and extends to the tip of the apical process of the sixth segment. The inner branch does not quite reach the extremity of the sixth segment. All the legs are ambulatory.

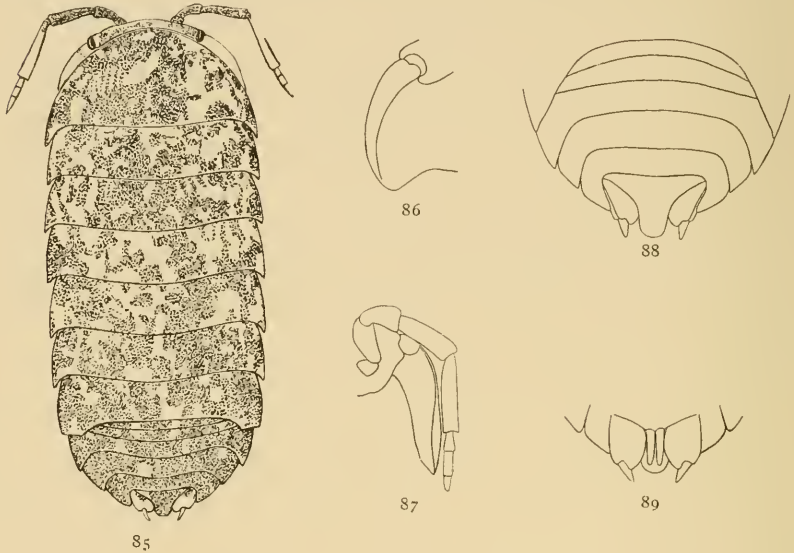


FIG. 85.—*Periscyphops cooki*, sp. nov. General figure.  $\times 4$ .

FIG. 86.—*Periscyphops cooki*, sp. nov. Coxopodite of first thoracic segment (lateral view).  $\times 7$ .

FIG. 87.—*Periscyphops cooki*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 7$ .

FIG. 88.—*Periscyphops cooki*, sp. nov. Abdomen with uropoda (dorsal view).  $\times 7$ .

FIG. 89.—*Periscyphops cooki*, sp. nov. Abdomen with uropoda (ventral view).  $\times 7$ .

Twelve specimens of this species were collected by Dr. O. F. Cook at Mt. Coffee and at Monrovia. One specimen was collected by Mrs. Sharp at Mt. Coffee. The type is in the possession of Dr. O. F. Cook.

This species closely resembles *Periscyphops alluaudi* (Dollfus),<sup>1</sup> but differs in the much shorter apical process of the sixth abdominal segment, in the shorter basal article of the uropoda *per se*, and also

<sup>1</sup> Ann. Soc. Entomologique France, LXI, 1892, pp. 386-387, pl. 7, figs. 1a, 1b, 1c.

in its relation to the apical process of the sixth segment and in the coloration, *P. alluaudi* being almost uniformly brownish gray, with the borders of the segments red, while the present species is brown, mottled with numerous yellow spots.

### Genus ETHELUM Budde-Lund

*Ethelum* BUDDE-LUND, A Revision of "Crustacea Isopoda Terrestria," pt. 1, Eubelum, 1899, p. 24.

Flagellum of second antennæ composed of two articles. Coxopodites of first thoracic segment adjacent to and extending along the lateral margin of the segment, being separated from it on either side by a longitudinal groove. The lateral margin of the coxopodite is not sulcate. The coxopodites are cleft posteriorly, a fissure separating them from the post-lateral angle of the segment.

Epimera are present on the anterior portion of the underside of the second and third segments in the form of a narrow ridge.

The outer branch of the uropoda is usually inserted about the middle of the posterior margin of the basal article.

#### ANALYTICAL KEY TO THE SPECIES OF THE GENUS ETHELUM FROM LIBERIA

*a.*—Apical process of sixth abdominal segment with extremity rounded.

*b.*—Outer branch of the uropoda minute, inserted in a shallow notch at the inner post-lateral angle of the basal article. Without yellow spots on either side of the second and seventh thoracic segments.

*Ethelum rotundatum*, sp. nov.

*b'*—Outer branch of the uropoda not minute, large, inserted in a deep notch in the middle of the posterior margin of the basal article. With a conspicuous yellow spot on either side of the second and seventh thoracic segments. . . . . *Ethelum quadrimaculatum*, sp. nov.

*a'*—Apical process of sixth abdominal segment not rounded at the extremity.

*b.*—Apical process of sixth abdominal segment attenuated, in the form of a long, narrow process. Coxopodites of first thoracic segment shorter than the post-lateral angles. Fifth article of peduncle of second antennæ one and a half times as long as the fourth article.

*Ethelum attenuatum*, sp. nov.

*b'*—Apical process of sixth abdominal segment wide, with extremity truncate. Coxopodites of first thoracic segment longer than the post-lateral angles of the segment. Fifth article of peduncle of second antennæ but little longer than the fourth article.

*Ethelum liberiensis*, sp. nov.

#### ETHELUM ROTUNDATUM, sp. nov.

Body ovate, convex, contractile into a ball. Surface smooth, punctate. Color, dark brown, with indistinct wavy lines of light brown on either side of the median stripe of dark brown. There

is a minute granule on either side of each one of the thoracic segments.

Head wider than long, 3 mm. : 7 mm., with the frontal margin straight. Front not margined but continuous with the epistome, which is flat. Eyes small, composite, and situated at the lateral margins. First pair of antennæ small and inconspicuous. Second pair of antennæ with the first article small; the second article is

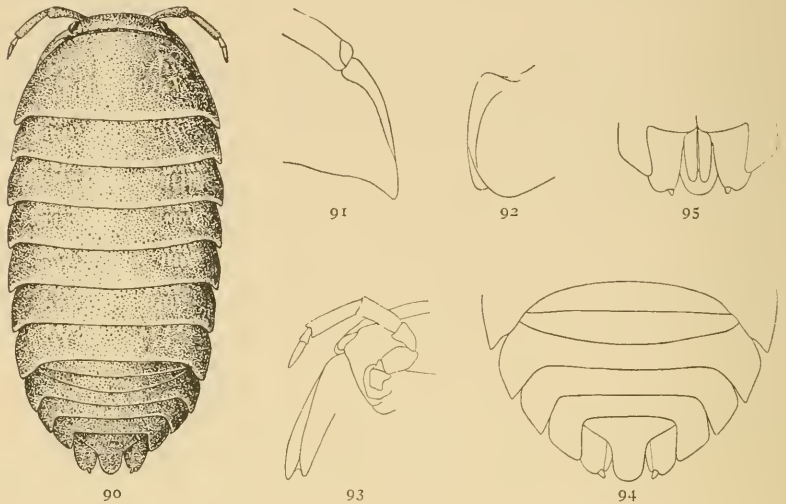


FIG. 90.—*Ethelum rotundatum*, sp. nov. General figure.  $\times 4$ .

FIG. 91.—*Ethelum rotundatum*, sp. nov. Coxopodite of first thoracic segment (dorsal view).  $\times 9\frac{1}{2}$ .

FIG. 92.—*Ethelum rotundatum*, sp. nov. Coxopodite of first thoracic segment (lateral view).  $\times 9\frac{1}{2}$ .

FIG. 93.—*Ethelum rotundatum*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 9\frac{1}{2}$ .

FIG. 94.—*Ethelum rotundatum*, sp. nov. Abdomen with uropoda (dorsal view).  $\times 9\frac{1}{2}$ .

FIG. 95.—*Ethelum rotundatum*, sp. nov. Abdomen with uropoda (ventral view).  $\times 9\frac{1}{2}$ .

about one and a half times longer than the first; the third is about as long as the second; the fourth is a little longer than the third; the fifth is about one and a half times longer than the fourth. The flagellum is composed of two articles, the second of which is about twice as long as the first.

The first segment of the thorax is twice as long as any of those following, which are subequal. The first segment is 6 mm. in length. Each of the following six segments is 3 mm. long. The coxopodites

of the first segment form a narrow border on either side, wider anteriorly than posteriorly and considerably thickened. They are separated from the segment by a rather deep groove, and do not quite reach the post-lateral angles of the segment. They are cleft posteriorly, the fissure not being very deep, and the inner portion is smaller than the outer. The coxopodites are present on the anterior portion of the second and third segments in the form of thickened ridges, that of the second segment being more in the form of a tooth with sharp edge.

The first two segments of the abdomen have the lateral parts covered by the seventh thoracic segment. The lateral parts of the following three segments are well developed and produced backward. The first five segments are about equal in length. The sixth or terminal segment has the base triangular in shape, with the apex produced in a moderately wide process, with parallel sides and rounded at the extremity. The basal article of the uropoda is quadrangular in shape and occupies all the space between the lateral angles of the fifth segment and the apical process of the sixth segment. It extends to the end of the lateral angles of the fifth segment and to the tip of the apical process of the sixth segment. A longitudinal carina extends along the entire length of the article near the inner margin. There is a shallow notch or excavation in the posterior margin near the inner angle, in which the small outer branch is inserted. The inner branch does not reach by some distance the extremity of the apical process of the sixth abdominal segment. The legs are all ambulatory.

One specimen of this species was collected by Dr. O. F. Cook at Mt. Coffee, and four others were collected at Sierra Leone.

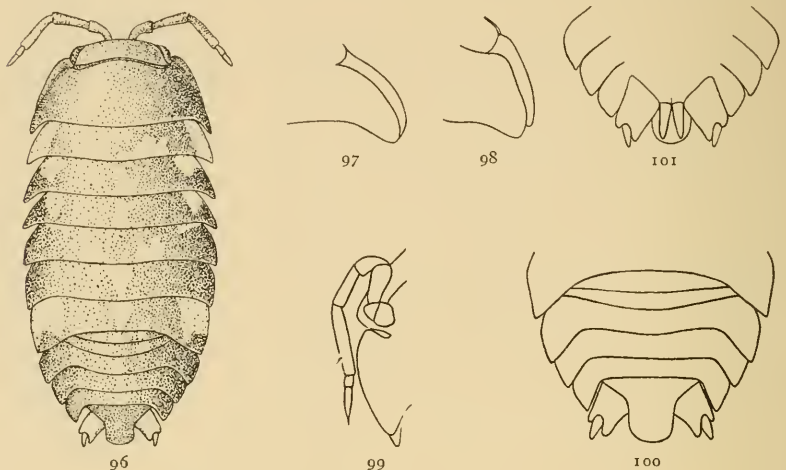
The type is from Sierra Leone and is now in the possession of Dr. O. F. Cook.

All the species of this genus hitherto described are from the West Indies.

#### ETHELUM QUADRIMACULATUM, sp. nov.

Body ovate, slightly convex, contractile into a ball. Surface smooth. Color, brown, mottled with yellow, there being four large conspicuous yellow spots, one on either side of the second thoracic segment and one on either side of the seventh thoracic segment, occupying the entire lateral part of the segment. The uropoda are also yellow, as well as the two basal articles of the peduncle of the second antennæ. There is a minute granule on either side of each one of the thoracic segments.

The head is wider than long,  $1\frac{1}{2}$  mm. : 4 mm., with the front straight and not margined. Epistome flat. Eyes small, round, composite, situated at the lateral margins. The first pair of antennæ are rudimentary and nearly inconspicuous. The second pair have the first article short; the second article is about two and a half times as long as the first; the third article is as long as the second; the fourth is about one and a half times as long as the



- FIG. 96.—*Ethelum quadrimaculatum*, sp. nov. General figure.  $\times 5$ .  
 FIG. 97.—*Ethelum quadrimaculatum*, sp. nov. Coxopodite of first thoracic segment (dorsal view).  $\times 14$ .  
 FIG. 98.—*Ethelum quadrimaculatum*, sp. nov. Coxopodite of first thoracic segment (lateral view).  $\times 14$ .  
 FIG. 99.—*Ethelum quadrimaculatum*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 14$ .  
 FIG. 100.—*Ethelum quadrimaculatum*, sp. nov. Abdomen with uropoda (dorsal view).  $\times 14$ .  
 FIG. 101.—*Ethelum quadrimaculatum*, sp. nov. Abdomen with uropoda (ventral view).  $\times 14$ .

third; the fifth is a little longer than the fourth. The flagellum is composed of two articles, the second one of which is about three times as long as the first.

The first segment of the thorax is nearly twice as long as any of those following, which are subequal. The first segment is  $2\frac{1}{2}$  mm. long; each of the following is  $1\frac{1}{2}$  mm. in length. The coxopodites of the first thoracic segment are wide plates, extending along the lateral margin, but not reaching by a small distance the post-lateral angles of the segment. They are separated by a deep furrow from

the segment and are cleft posteriorly, the fissure not being deep, and the inner portion separated smaller than the outer. Coxopodites are present on the anterior portion of the second and third thoracic segments on the underside in the form of thickened ridges, thicker on the second than on the third segment.

The first two segments of the abdomen have the lateral parts covered by the seventh thoracic segment. The lateral parts of the three following segments are well developed and are directed backward. The first, second, and fifth segments are subequal and are somewhat shorter than either the third or fourth, which are also subequal. The sixth or terminal segment is triangular at the base, with the apex produced in a rather wide process, with sides parallel and extremity rounded. The basal article of the uropoda is quadrangular in shape and occupies all the space between the lateral parts of the fifth abdominal segment and the apical process of the sixth segment. It extends to the extremity of the lateral angles of the fifth segment as well as to the tip of the apical process. The posterior margin has a deep notch about the middle, on either side of which the lateral angles are produced in rounded lobes, the inner one being the longer. The outer branch of the uropoda is large and conical in shape, and extends for about half its length beyond the inner lateral angle of the basal article. The inner branch extends to the extremity of the apical process of the terminal abdominal segment. All the legs are ambulatory.

Three specimens of this species were collected in Liberia—one at Mt. Coffee by Dr. O. F. Cook, another at Mt. Coffee by Mr. Collins, and another by Dr. O. F. Cook from a locality not named.

The type is in the possession of Dr. O. F. Cook.

This species resembles superficially *Mesarmadillo quadrimaculatus* in the color markings, having the four large yellow spots, as in that species, one on either side of the second thoracic segment and one on either side of the seventh thoracic segment. This species, however, belongs unmistakably to the genus *Ethelum*, having but two articles to the flagellum of the second antennæ. *Mesarmadillo quadricoloratus* also has four large yellow spots, but they are placed one on either side of the third thoracic segment and one on either side of the seventh thoracic segment.

#### ETHELUM ATTENUATUM, sp. nov.

Body ovate, convex, contractile into a ball. Surface smooth, punctate. Color, yellow, mottled with brown on the posterior half of the body.

Head wider than long, 2 mm. : 5 mm., with the frontal margin straight and continuous with the epistome, which is flat. Eyes small, composite, and situated at the lateral margins. The first pair of antennæ are small and inconspicuous. The second pair have the first article short; the second is twice as long as the first; the third is about as long as the second; the fourth is one and a half times longer than the third; the fifth is a little longer than the

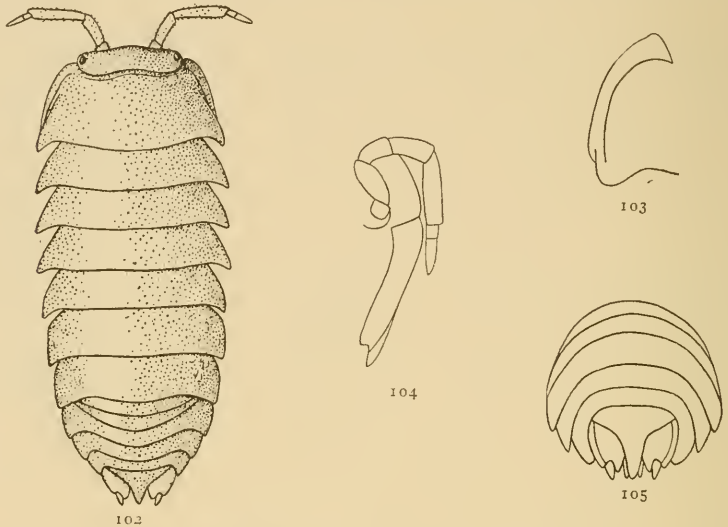


FIG. 102.—*Ethelum attenuatum*, sp. nov. General figure.  $\times 7\frac{1}{5}$ .

FIG. 103.—*Ethelum attenuatum*, sp. nov. Coxopodite of first thoracic segment (lateral view).  $\times 14$ .

FIG. 104.—*Ethelum attenuatum*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 14$ .

FIG. 105.—*Ethelum attenuatum*, sp. nov. Abdomen with uropoda (dorsal view).  $\times 14$ .

fourth. The flagellum is composed of two articles, the second one of which is two and a half times longer than the first.

The first segment of the thorax is about twice as long as any of those following, which are subequal. The first segment is 3 mm. in length. Each of the six following segments is about  $1\frac{1}{2}$  mm. long. The coxopodites of the first segment form a rather wide and thickened border on each side, somewhat wider anteriorly than posteriorly, and separated from the segment by a very deep furrow. They do not reach by some distance the post-lateral angles of the segment, and are cleft posteriorly, the fissure not being very deep and the inner portion smaller than the outer portion. The coxopo-



dites of the second and third segments are present on the anterior portion of the underside in the form of a sharp ridge, more prominent and thicker on the second segment.

The first two segments of the abdomen have the lateral parts covered by the seventh thoracic segment. The lateral parts of the three following segments are well developed and directed backward. The third and fourth segments are a little longer than the first, second, and fifth segments, which are subequal. The sixth or terminal segment is triangular at the base, with the apex produced in a long triangular process, the sides of which converge gradually to a rather acute extremity. The basal article of the uropoda is quadrangular in shape, and occupies all the space between the lateral angles of the fifth segment and the apical process of the sixth segment. It extends to the extremity of the lateral angles of the fifth segment, but not to the extremity of the apical process of the sixth segment by some little distance. The posterior margin is excavate between the produced lateral angles, the inner angle being a little narrower and more acute than the outer one. The outer branch of the uropoda is large, conical, and extends a little beyond the apical process of the sixth abdominal segment. The inner branch just reaches the tip of the apical process. All the legs are ambulatory.

Only one specimen was collected by Dr. O. F. Cook at Mt. Coffee. The type is in the possession of Dr. O. F. Cook.

#### ETHELUM LIBERIENSIS, sp. nov.

Body very convex, contractile into a ball. Surface smooth, with a tiny pearl-like granulation on either side of the second, third, sixth, and seventh thoracic segments and the third abdominal segment. Color, grayish brown, with wavy lines of yellow on either side of the median longitudinal stripe, and with a large yellow spot on either side of the second thoracic segment at the lateral margins. Uropoda yellow, as well as the first three articles of the peduncle of the second antennæ. Head wider than long, with the front straight and not margined, but continuous with the epistome, which is produced in a convex tubercle. The eyes are small, composite, and situated at the lateral margins. The first pair of antennæ are rudimentary and inconspicuous. The second pair have the first article short; the second is twice as long as the first; the third is as long as the second; the fourth is equal in length to the third; the fifth is but little longer than the fourth. The flagellum is composed of two articles, the second of which is more than twice as long as the first.

The first segment of the thorax is about twice as long as any of those following, which are subequal in length. The coxopodites are adjacent to and extend along the lateral margin of the segment, being separated by a longitudinal groove. They extend beyond the post-lateral angles of the segment and are separated from them posteriorly by a fissure, the inner portion cleft being larger than the outer portion. Coxopodites are present on the anterior portion of the underside of the second and third thoracic segments in the form of a sharp tooth.

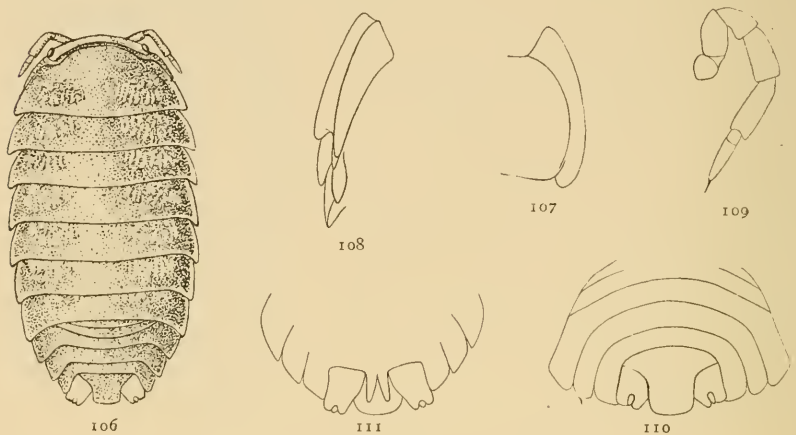


FIG. 106.—*Ethelum liberiensis*, sp. nov. General figure.

FIG. 107.—*Ethelum liberiensis*, sp. nov. Coxopodite of first thoracic segment (lateral view).  $\times 29$ .

FIG. 108.—*Ethelum liberiensis*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 29$ .

FIG. 109.—*Ethelum liberiensis*, sp. nov. Second antenna.  $\times 29$ .

FIG. 110.—*Ethelum liberiensis*, sp. nov. Abdomen with uropoda (dorsal view).  $\times 21\frac{3}{4}$ .

FIG. 111.—*Ethelum liberiensis*, sp. nov. Abdomen with uropoda (ventral view).  $\times 21\frac{3}{4}$ .

The first two segments of the abdomen have the lateral parts covered by the seventh thoracic segment. The lateral parts of the three following segments are well developed and produced backward. The first, second, and fifth segments are subequal in length, and each is a little shorter than either the third or fourth segments, which are also subequal. The sixth or terminal segment is triangular at the base and has the apex produced in a broad process, with parallel sides and extremity truncate, the post-lateral angles being rounded. The basal article of the uropoda is quadrangular and occupies all

the space between the lateral angles of the fifth segment and the apical process of the sixth segment. It extends to the extremity of the lateral angles of the fifth segment as well as to the extremity of the apical process of the sixth segment. There is a deep notch about the middle of the posterior margin, on either side of which the lateral angles are produced in the form of lobes. The outer branch is inserted in the median posterior notch of the basal article and does not extend beyond the lateral angles. The inner branch does not reach by some distance the extremity of the apical process of the sixth abdominal segment. All the legs are ambulatory.

Only one specimen of this species was collected by Dr. O. F. Cook at Mt. Coffee. The type is in the possession of Dr. O. F. Cook.

Genus *ETHELUMORIS*, gen. nov.

Second pair of antennæ short. Flagellum composed of two articles.

First segment of thorax with the epimera or coxopodites arising from the underside and extending in the form of wide plates along the entire lateral margin. They are produced beyond the post-lateral angles of the segment and are cleft posteriorly by a deep fissure, which separates the large inner portion from the smaller outer portion. Second and third thoracic segments produced laterally in a small, triangular lobe on either side, beneath which on the underside the coxopodites are present in the form of a sharp tooth on the second segment and a low ridge on the third segment.

The sixth or terminal segment is triangular at the base, with the apex produced in a triangular process, with sides converging gradually to a rounded extremity. The basal article of the uropoda is quadrangular in shape, with the posterior margin excavated in the middle, in which the outer branch is inserted. The outer post-lateral lobe extends back of the outer branch. The inner branch of the uropoda is not visible on the ventral side, but is hidden by the apical process of the sixth abdominal segment. This branch arises from the inner upper angle of the basal article and is conically produced.

In the form of the coxopodites of the first thoracic segment, this genus approaches *Spherarmadillo* Richardson, but differs in the form and position of the uropoda.

The type is *Ethelumoris parallelus*.

**ETHELUMORIS PARALLELUS, sp. nov.**

Body ovate, extremely convex, contractile into a ball. Surface, with the exception of the abdomen, which is smooth, covered with rugosities, rounded on the head in the form of low tubercles and elongated on the thoracic segments in the form of parallel ridges. Color, light brown, with wavy lines of yellow on either side of the median stripe.

Head is wider than long, 2 mm. :  $4\frac{1}{2}$  mm., with the front straight and margined. Epistome with a shield-like convexity. First pair

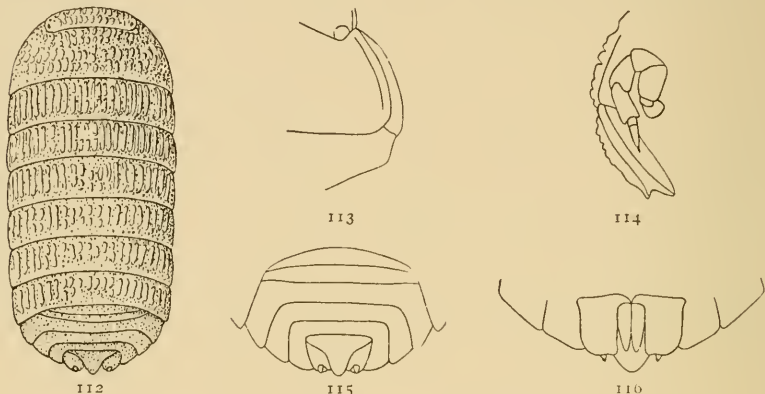


FIG. 112.—*Ethelumoris parallelus*, sp. nov. General figure.  $\times 7\frac{1}{2}$ .

FIG. 113.—*Ethelumoris parallelus*, sp. nov. Coxopodite of first thoracic segment and lateral part of second segment (lateral view).  $\times 14$ .

FIG. 114.—*Ethelumoris parallelus*, sp. nov. Coxopodite of first thoracic segment (ventral view).  $\times 14$ .

FIG. 115.—*Ethelumoris parallelus*, sp. nov. Abdomen with uropoda (dorsal view).  $\times 14$ .

FIG. 116.—*Ethelumoris parallelus*, sp. nov. Abdomen with uropoda (ventral side).  $\times 29$ .

of antennæ small and inconspicuous. Second pair with the first article short; the second article is twice as long as the first; the third is as long as the second; the fourth is equal in length to the third; the fifth is also short and not perceptibly longer than the fourth. The flagellum is composed of two articles, the second of which is about twice as long as the first.

The first segment of the thorax is about twice as long as any of the following segments, which are subequal. The first segment is about 3 mm. long. Each of the following segments is  $1\frac{1}{2}$  mm. in length. The coxopodites of the first segment are placed on the

underside and extend along the entire length of the lateral margin in the form of wide plates, narrower anteriorly than posteriorly. They extend considerably beyond the post-lateral angles of the segment and are rounded posteriorly. A deep fissure separates them posteriorly from the post-lateral angles of the segment, the inner portion being much larger than the outer portion. The lateral margins of the second and third segments are drawn out on either side in a small, triangular lobe, on the underside of which the coxopodite appears in the form of a sharp tooth on the second segment and in the form of a low ridge on the third segment.

The first two segments of the abdomen are covered laterally by the seventh thoracic segment. The lateral parts of the three following segments are well developed and are produced backward. The first five segments are subequal in length. The sixth or terminal segment is triangular at the base, with the apex produced in a triangular process, with sides converging gradually to a rounded extremity. The basal article of the uropoda is quadrangular and occupies all the space between the produced lateral parts of the fifth abdominal segment and the apical process of the sixth segment. It extends to the extremity of the lateral parts of the fifth segment, but not quite to the apex of the sixth segment. There is a deep excavation in the middle of the posterior margin, in which the outer branch is placed, and the outer post-lateral angle of the basal article extends back of the branch. The outer branch extends but little beyond the post-lateral angles of the basal article. The inner branch does not reach the extremity of the terminal abdominal segment, but attains the tip of the inner post-lateral angle of the basal article of the uropoda. All the legs are ambulatory.

Only one specimen was collected by Dr. O. F. Cook at Mt. Coffee. The type is in the possession of Dr. O. F. Cook.