

IANTHE

A NEW GENUS OF ISOPODA

DESCRIBED BY

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WITH THREE PLATES.

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Among the rich collections of arctic Crustacea in the zoological State Museum at Stockholm, kindly entrusted to me for examination by Professor S. Lovén, is a beautiful Isopod, the object of this note, dredged in the Baffinsbay by the Swedish arctic expedition of the year 1871.

Its place in the system is in the tribe of »Isopodes marcheurs» of Milne-Edwards, and the subtribe of »Asellotes homopodes»¹⁾.

In the carcinological system of Dana, it belongs to Isopoda oniscoidea, third family Asellidæ, the subfamily Asellinæ, between Janira and Asellus²⁾.

In the system of Spence Bate and Westwood³⁾, it is to be placed among the Isopoda normalia, the family Asellidæ, next to Janira.

According to Claus, it should be referred to his second tribe of Isopoda, Euisopoda, and the fifth family Asellidæ. The following diagram will give an account of the relations of the new genus.

¹⁾ H. Milne-Edwards. Histoire naturelle des Crustacés T. III. Paris 1840, pag. 120 and 143—147.

²⁾ United States Exploring Expedition 1838—42. Crustacea by James Dana. Part II. Philadelphia 1852, pag. 716.

³⁾ C. Spence-Bate and J. O. Westward. A history of the British sessile-eyed Crustacea. Vol. II. London 1868, pag. 313.

ASEL- LIDÆ. <i>Pleon and urus.</i>	fused together into 1 or 2 joints. <i>Posterior legs</i>	elongated. 1 subf. Munninæ.	----- Henopomus. Guérin.		
			----- Munna. Kr.		
	not elongated. 2d subf. Aselinæ. <i>Dactyli</i>	biunguiculate. <i>Last pair of uropoda</i>	rudimental	----- Jæra. Leach.	
				well developed, styli- form. <i>Mandibles</i>	{
palp 3-arti- culated IANTHE n. g.					
		uniunguiculate. <i>Last pair of uropoda</i>	{	well developed, sty- liform ----- Asellus. Geoffr.	
				rudimental..... Leptapsidia. Sp. Bate. Limnoria. Leach.	
		forming 6 joints. 3 subf. Limnorinæ.....			

Ianthe. nov. gen.

Derivatio: 'Iávθη, the mother of Janira*.

Diagn. gen. *Corpus* convexum, ovato-elongatum.

Cephalon convexum, rostrum gerens longum acuminatum.

Oculi minuti, remoti.

Antennæ internæ conspicuæ.

Mandibulæ validæ, palpo triarticulato.

Dactyli biunguiculati, ungue externo majore.

Pedes primi paris subcheliformes, ceteri subæquales.

Segmenta plei urique in unum coalita.

Uropoda ultima styliformia, laminis binis angustissimis.

Ianthe is a genus well distinguished from its allies: from Asellus by the biunguiculate legs and the form of the pleopoda; from Jæra by the well developed, styli-form last pair of uropoda and the multiarticulate flagellum of the inner antennæ. From the Janira, its closest ally, it is to be distinguished by the great convexity of the body, by the small and distant eyes, by the want of an articulated scale at the peduncles of the inner antennæ and lastly by the fully developed palpiform appendage of the mandibles and by the three-articulated maxillar feet. The most remarkable

* See Ovidii Metamorphoses IX. 714.

peculiarity of the animal is, however, the gradual development of its pleopoda into respiratory organs.

Ianthe speciosa, n. s.

Cephalon rostro brevius, cornua lateralia ferens.

Antennæ interiores externis multo breviores.

Segmenta pereii spinas dorsales ferentia binas.

Latera segmentorum dilatata, valde incisa, cornua formant.

Pleon convexum spinam unicam ferens.

Uropoda ultima lamellis inæqualibus pedunculis brevioribus.

Cephalon shorter than rostrum, the lateral margins produced into flat horns directed forwards.

Inner Antennæ much shorter than the outer.

Every segment of the pereion carrying dorsally two short spines.

Pleon convex with one median dorsal spine.

The last Uropoda with inæqual rami, which are shorter than the peduncles.

The *body* is convex, arched, ovato-oblong.

The *cephalon* is longer than the following segment, but somewhat narrower, with the anterior part produced into a long sharp rostrum, finely denticulated at the upper margins. The rostrum is longer by a fourth than the cephalon; the lateral margins of the cephalon are produced into long flat horns, finely denticulated at the margins, directed forwards, giving the cephalon the appearance of being trilobate. The upper side of the cephalon is highly convex (Pl. I, fig. 1), the surface finely granulated and provided with a few, short, simple hairs. The frontal margins are arched.

The segments of the *pereion* are subæqual in length, their breadth increasing to the fourth segment, then decreasing to the pleon (Pl. I, fig. 1). They are very convex, every one carrying transversally two dorsal spines of a conical form. On the first, second, third, and fourth segments, these are situated at the anterior margin, on the the fifth, sixth, and seventh at the posterior margin. The surface is granulated and has some transversal furrows. The lateral margins are much dilated and deeply incised, forming flat, sharp cornua; the first segment forms one on each side, directed forwards, the second and third two cornua directed forwards, the fourth two directed outwards, and the fifth, sixth, and

seventh each one directed backwards, with a small one at the base (Pl. I, fig. 1). The under median line of the segments forms a distinct carina (Pl. II, fig. 11).

The *pleon* and *urus* are fused together into a broad, clypeate segment with rounded margins, posteriorly produced into two sharp angles, broad, flat, and corresponding with the cornua of the preceding segments (Pl. I, fig. 1, Pl. III, fig. 29). Between these angles, at their base, is a deep hollow for the insertion of the last pair of uropoda. The dorsal side of the segment is convex with a conical spine in the middle and two longitudinal furrows. At the under side, the segment is deeply hollowed to receive the branchial feet.

The *eyes* are small, oval, tolerably prominent, and very distant, situated over the bases of the external antennæ at the base of the lateral cornua (Pl. I, fig. 2).

The *inner or upper Antennæ* are fixed at the under side of the base of the rostrum and separated by it. The peduncle is three-articulated, the basal article longer and broader than the following, fixed on a tuberculous prominence of the cephalon, the second article is equal in length, but much narrower; the upper margin is tipped with some hairs; the last article is shorter and narrower, ciliated at the upper end, carrying one or two auditory bristles (Pl. I, f. 9). The flagellum is multiarticulate (with 60 to 70 articuli), the first and second greater, the second twice as long as the first; the remainder subæqual, decreasing in breadth to the top. Many of the articles carry on their upper margin an olfactory gland and two long, unciliate hairs (Pl. I, fig. 5 a. 6). The length of the inner antennæ is a third of that of the outer ones; they reach to the middle of the last article of the peduncles. The second article of the peduncle carries no appendicular lamina as in the *Janira*.

The *outer or inferior Antennæ* (Pl. I, fig. 7) are fixed under the arched frontal margins of the cephalon. The peduncle is five-jointed; the first article is small and short, the following a little longer; the third is longer and carries at the upper outer margin a long, strong tooth, the fourth article is shorter and narrower, the fifth longer than all the preceding together; the margins are provided with fine, short hairs. The flagellum is multi-articulate, twice as long as the peduncle; the joints are short and broad, almost 280 in number; they

are spirally beset with short bristles (Pl. I, fig. 8); the first joint is greatest and broadest, the last seven long and narrow. The whole length of the outer antennæ is a little shorter than the length of the animal.

The labrum forms a large triangular prominence at the base of the rostrum (Pl. I, fig. 10).

The Mandibulæ (Pl. II, fig. 12) are large and well developed, broad at the bases, decreasing to the tops and strongly arched; the left mandibula has two denticulated processes at the top, the right has one (Pl. II, fig. 13). Under these are two bundles of strongly serrated bristles, 8—10 in each, and a long, single bristle. Then follows the molar tubercle, which is rounded, very prominent, and armed at the under margin with two short, strong teeth. The mandibular palp is the representative of the endopodite; it is long and well developed, as long as the mandible itself. It consists of three joints and is fixed on a rounded tubercle on the side of the mandible, which gives it the appearance of being four-jointed. The first joint is long, with a few hairs at the upper margin; the second is the longest, and ciliated at the outer side; the last is the broadest; at the top it is deeply hollowed, the hollow being surrounded with movable, finely ciliated bristles (Pl. II, fig. 15), possibly serving as an organ of smelling.

The first pair of maxillæ (Pl. II, fig. 16) consist of a great, rounded, basal joint, the protopodite, and two foliaceous plates of inæqual size. The outer plate, the exopodite, is broad and stout, finely ciliated on the outer and inner sides, with the top obliquely truncate and armed with 7—10 strong, denticulate spines (Pl. II, fig. 17 and 18). The inner plate, the endopodite, is as long as the outer, but narrower, richly provided with ciliated hairs at the arched top.

The second pair of maxillæ (Pl. II, fig. 19) is greater and more developed. They consist of a protopodite, produced at the inner upper side into a flat plate or oblong lamina richly supplied at the inner margin with hairs and bristles, and of two narrower plates, which articulate with the protopodite. The last two plates, the endopodite and the exopodite, are long, feebly arched, finely ciliated at the margins and armed at the tips with 5—6 denticulated spines (Pl. II, fig. 20 and 21). The endopodite is longer than the exopodite.

The *maxillipedes* (Pl. II, fig. 22) totally cover the other organs of the mouth; they are fixed at the posterior margin of the excavation, which forms the mouth. Each maxilliped consists of a broad and large protopodite, divided into a short coxa and a long basis. The basis is produced at its upper corner into a lamina, nearly as long as broad, straight at its inner and upper margin, arched at the outer; the upper margin is richly provided with denticulate bristles (Pl. II, fig. 23), every one supported by a little tubercle. At the side of this lamina, at the upper corner of the basis, arises a five-articulated, palpiform appendage, the endopodite, which is longer than the rest of the limb. The first joint or ischium is broad and short; the second, meros, more than twice as long, broad and flat, finely ciliated at the inner margin; the third, carpus, is shorter and narrower, with a furrow at its inner margin for the reception of the following joints. The edges of this ridge are finely ciliated. Propus, the fourth joint, is as long as the second, but much narrower, provided with long hairs at the upper corner. The last joint, the dactylus, is shorter, richly covered with hairs at the top. From the basal joint of the maxilliped extends outwards a great triangular plate, the exopodite, (Pl. II, fig. 22); the inner margin is feebly arched, the outer concave, the lower is nearly straight. At the upper corner the exopodite carries some short, simple hairs.

The first pair of *gnathopoda* (Pl. III, fig. 26) is shorter than the following, and subcheliformed. They are attached to the under side of the flattened, lateral corners of the first segment. The *basis* is tolerably long, directed towards the median line of the body. The *Ischium* is shorter than the basis, but stout. The *meros* is short, anteriorly produced and armed with a short spine. The *carpus* is broad and long, at the inner margin armed with strong, short spines and denticulated. The *propus* is shorter, reaching fully to the middle of the carpus, against which it falls, forming a subcheliform hand. Its inner margin is finely denticulated. The *dactylus* is very short [a fourth of the preceding] with a few, simple hairs. At its top are fixed the two characteristic ungues; the outer stronger, movable (Pl. II, fig. 27), the inner shorter, half the length of the outer. There is no trace of an exopodite.

The second pair of *gnathopoda* is fully equal to the following pereiopoda.

The pereiopoda. The three first pairs are directed forwards, the remainder backwards. They are all nearly equal in size. The coxæ are fixed on the flat under side of the segments. The second pair of *gnathopoda* and the first and second pairs of the pereiopoda are fixed between the cornua of the segments, in a small excavation at their base. The remainder are inserted at the posterior margin of every segment, on the under side of the little secondary spine (Pl. II, fig. 11, Pl. III, fig. 25 and 28).

The second joint or *basis* lies close to the underside of the segment, nearly reaching to the median carina (Pl. II fig. 11); it is long, cylindrical, with narrowed ends, without hairs or bristles; the following joint, the *ischium*, is tolerably long, but shorter than the basis, with slightly arched margins beset with some short, simple bristles; the *meros* is short, the lower margin is straight with shorter and longer bristles, the upper side is produced into a strong process, tipped with long, stout bristles. The *carpus* is long, nearly as long as the basis; the upper margin produced into an angle covered with hairs, the under margin is waved, beset with short hairs and bristles. The *propus* is long, (longest in the fourth pair of pereiopoda), but not so long as the carpus; the inner margin is straight, with short, fine bristles, the outer margin is slightly curved, with bundles of straight, simple hairs. The *dactylus* is very short, a sixth of the length of the propus, with a few, short bristles and the two ungues, of which the outer is much longer than the inner.

The pleopoda. Between the last segment of the pereion and the coalesced pleo-ural segment is no trace to be seen of any preceding segment, as is the case in the Asellus. From the under anterior limit of this coalesced segment, which, for shortness sake, we call pleon, extends the *male organ*, broadest at the base, elongated, reaching nearly to the posterior margin of the excavation, which contains the branchial feet. It is the first pair of pleopoda transformed. At its apex, it is slightly hollowed on the upper (inner) side, and finely ciliated (Pl. III fig. 28). At the middle of the inner side there is a reservoir for the sperma, forming a broad, rounded bulbus, with slightly curved ducts in both sides of the bipartite organ (Pl. II, fig. 24).

Then follows the *second pair of pleopoda*. The *coxal joint* of the protopodite is minute and very short; the *basal joint* is strongly developed, laminated, forming a good operculum for the tender branchial feet; it is rounded at the outer margin, corresponding with the form of the branchial excavation; at the posterior end it is finely ciliated; the inner margin is straight at its posterior part, and slightly concavated at the anterior. At the posterior end of this concavation the endopodite is attached; it consists of three joints, the first of which is oval, nearly concealed in a duplicature of the laminated basis (Pl. III, fig. 30). The following joint is shorter and narrower, nearly cylindrical; the last is longer than either of the preceding, trigonal, narrowed at the apex, and densely beset with stiff hairs, directed *forwards*, contrarily to the direction of the foot (Pl. III, fig. 31). From the basis arises a two-jointed appendage, probably representing an epipodite; the first joint is elongated and directed forwards; the second is short and flask-formed, with an oval aperture. The function of this appendage is possibly respiratory. The first pair of pleopoda seems to have no other relation to the respiration than by this minute appendage; the rest of the leg is partly a protecting covercle, partly it seems to be in the service of reproduction.

The third pair of pleopoda forms great rounded laminae of »branchial» structure, the transformed bases of the legs, and two narrow, flat joints, forming a sort of feet, but of so loose a consistence that it seems to serve to no more than to put the respiratory water in circulation (Pl. III, fig. 32).

The fourth pair is more transformed for the branchial service; the rounded lamina is greater, the foot-like appendage still consists of two joints, but the last is great and tumid and serves apparently as an organ of respiration (Pl. III, fig. 33).

The fifth and last pair consists of two subæqual laminae, so like each other that it is difficult to say, which of them corresponds with the lamina of the preceding pair (Pl. III, fig. 34).

The uropoda (Pl. III, fig. 35) consist of a cylindrical peduncle, elongated, and slightly curved at the anterior end, provided with some short bristles and stiff hairs, and two lanceolate rami, shorter than the peduncle. The inner is broader and

longer than the outer, both carrying small bundles of hairs at the margins.

The only hitherto known specimen of the animal is, as mentioned above, the one in the collections of the Royal Swedish Zoological Museum, dredged in the Baffinsbay the 26 July 1871 at 67° 59' NB, 56° 33' VL. from a stony bottom at a depth of 98 fathoms, by D:r JOSUA LINDAHL, the zoologist of the Swedish arctic expedition of that year.

Measures.

Length of the animal from the tip of the rostrum to the end of the urus.....	21,5	mm.
Cephalon, length.....	1,5	»
» breadth.....	4	»
Rostrum, length.....	2,3	»
» breadth at the base.....	0,9	»
Lateral horns, length.....	1,2	»
Breadth between the eyes.....	2	»
» between the cornua of the cephalon...	6	»
» » » » of the 7:th segment	9	»
» » » » of the urus.....	3,2	»
Pereion, length.....	11	»
» , greatest breadth without the cornua	5	»
Length of the lateral cornua.....	1,5—2,5	»
Height of the dorsal spine at the pereion.....	1	»
Pleon and urus, length without the cornua...	3,7	»
» » » breadth.....	5,5	»
Height of the dorsal spine at the pleon.....	1,4	»
Length of the cornua of the pleon.....	2	»
Peduncle of the inner antennæ.....	1,4	»
Flagellum » » » ».....	2,7	»
Peduncle of the outer antennæ.....	7,5	»
Flagellum » » » ».....	9,6	»
The first pair of gnathopoda, length.....	5	»
The fourth pair of pereiopoda, length.....	10	»
The bases of the pereiopoda, length.....	2,7—3	»
The propus of the second pair of pereiopoda	1,7	»
» » » » fourth pair of pereiopoda.	2	»
The outer unguis » » » »	0,21	»
» inner » » » »	0,11	»
The peduncle..... of the uropoda	2	»
Length of the inner ramus » » »	1,5	»
» » » outer » » » »	1,3	»

EXPLANATION OF THE PLATES.

PLATE I.

- Fig. 1. The animal seen from above. $\frac{4}{1}$
 » 2. Cephalon. $\frac{10}{1}$
 » 3. Inner antenna. $\frac{20}{1}$
 » 4. The first joints of the flagellum of the inner antenna. $\frac{160}{1}$
 » 5. The last joints » » » » » » $\frac{200}{1}$
 » 6. An olfactory gland » » » » » » $\frac{260}{1}$
 » 7. Peduncle of outer antenna. $\frac{15}{1}$
 » 8. Some articles of the flagellum of the outer antenna $\frac{60}{1}$
 » 9. Auditory bristle from the third joint of the peduncle of the inner antenna.
 » 10. Labrum.

PLATE II.

- » 11. The animal seen from the underside. $\frac{4}{1}$
 » 12. The left mandible, with the palp.
 » 13. The tip of the left mandible.
 » 14. A denticulated bristle from the same.
 » 15. The last joint of the mandibular palp.
 » 16. The first maxill. $\frac{30}{1}$
 » 17. }
 » 18. } Serrated bristles from the outer lamina of the first maxill.
 » 19. The second maxill. $\frac{40}{1}$
 » 20. The tip of the outermost lamina of the second maxill. $\frac{260}{1}$
 » 21. Serrated bristle » » » » » »
 » 22. The left maxilliped. $\frac{25}{1}$
 » 23. Bristles from the inner, upper lamina of the left maxilliped.
 » 24. The male organ.
 » 24 a. The posterior end of the male organ.

PLATE III.

- » 25. The animal, seen from the side. $\frac{4}{1}$
 » 26. The first pair of gnathopoda. $\frac{15}{1}$

- » 27. The last joints of the first pair of gnathopoda.
- » 28. The fourth pair of the pereopoda. ¹⁵/₁
- » 29. The pleo-ural segment, showing the male organ, the excavation for the branchial feet and the uropoda with their insertion.
- » 30. The second pair of pleopoda. ¹⁵/₁
- » 31. The last joint of the second pair of pleopoda.
- » 32. The third pair of pleopoda. ¹⁵/₁
- » 33. The fourth pair of pleopoda.
- » 34. The fifth pair of pleopoda.
- » 35. The ramus of uropoda.







