BIHANG TILL K. SVENSKA VET. AKAD. HANDLINGAR. Band 5. N:o 19.

PRELIMINARY REPORT

ON THE

HOLOTHURIDÆ

OF THE EXPLORING VOYAGE OF H. M. S. »CHALLENGER»,
UNDER PROFESSOR SIR C. WYVILLE THOMSON F. R. S.

BY

HJALMAR THÉEL.

PART I.

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KONGL. BOKTRYCKERIET.
P. A. NORSTEDT & SÖNER.

As some time may still pass before the work on Holothuridea which Sir Wyville Thomson has entrusted to me will have advanced so far as to allow me to send it to be published by the British Government, I have thought it necessary by permission of the Lords Commissioners of the Treasury to give some preliminary reports, by means of which a just priority of discovery may be secured to the Challenger Expedition. They will contain summary descriptions of all the new genera and species of Holothuridæ collected during this expedition, and be accompanied by simple outline figures.

The whole collection contains about two hundred species, of which more than half are new. Most of the species living in the great depths offer such considerable peculiarities that I think it convenient to form for them a new order, Elasmopoda, equivalent to those already known, Pedata and Apoda. The Elasmopoda comprehend, besides the two species hitherto described, *Elpidia glacialis* Théel and *Irpa abyssicola* Danielssen & Koren, from thirty to forty new forms, partly of gigantic dimensions, out of which sixteen are here described.

The following courses will give a general notion of the position of the dredging stations:

Stations 1—24, Canaries to West Indies.
» 25—58, West Indies to Halifax.
» 59—83, Bermuda to Madeira.
» 84—128, Madeira to Brazil.
» 129—140, Brazil to Cape of Good Hope.
» 141—161, Cape of Good Hope to South Australia by Antarctic Circle.
» 162—237, Australia, by Philippines, to Japan.
» 238—260, Japan to Sandwich Islands.
» 261—304, Sandwich Islands to Patagonia.
» 305—321, Patagonia to Buenos Ayres.
» 322—354, Buenos Ayres to the Azores.

Order: **ELASMOPODA** [1]).

Body distinctly bilateral. Ambulacra well defined. The lateral ambulacra of the trivium bearing large, slightly retractile pedicels, disposed either in a single row, or sometimes in two rows, along each side of the ventral surface, and sometimes with another series of larger highly elongated not retractile processes placed externally and above the pedicels; pedicels of the two lateral ambulacra symmetrically arranged, being more or less distinctly opposed across the ventral surface. The odd ambulacrum naked or very seldom with a few rudimental pedicels. Bivium provided with very long not retractile processes, often disposed in one or more rows along each of its ambulacra and more or less distinctly opposed across the dorsal surface, or with only a few rudimental ones in its anterior part, or with a single very large one, resembling a broad, branched or unbranched lobe, and near to it some small papillæ. No respiratory trees. Integument naked, spiculous, or plated.

Deima [2]) gen. nov.

Back highly convex; ventral surface flat. Mouth anterior. ventral; anus posterior, ventral. Tentacles small, perfectly retractile, about twenty(?). The lateral ambulacra of the trivium with large pedicels, slightly retractile at their ends alone, disposed in a single row all along each side of the ventral surface. and with another series of highly elongated, conical, rigid, not retractile processes, placed externally and above the pedicels all along each side of the body and directed straight outwards. The odd ambulacrum naked. Bivium with processes, resembling those of the trivium, disposed in a single row all along each of its

[1]) *ἐλαύνω*, to move.
[2]) *δεῖμα*, a fright.

ambulacra. Processes forming transverse rows, more or less distinct. Integument with crowded, irregularly rounded, perforated plates.

Deima validum sp. nov.
Plate II, Figs. 36—38.

Body of an elliptic form, about once and a half as long as its greatest breadth. Pedicels eleven along each side of the ventral surface; the hindmost pair, behind the anus, minute. Processes of the lateral ambulacra of the trivium seven, inflexible, and almost as long as the greatest breadth of the body; behind the anus a rudimental, bipartite one. Processes of the bivium six along the left and eight along the right ambulacrum, resembling the preceding in size and shape. Integument very thick and hard, with two kinds of calcareous deposits: very small spicula of various shapes, and larger and smaller, irregularly rounded, perforated crowded plates, covering one another completely or with their edges alone.

Colour in alcohol, light gray.

Length, abouth 165 mm.

Breadth, about 95 mm.

Station 246, 2050 fathoms, two specimens.

The other specimen differs slightly from the above described, its rudimental process behind the anus being still smaller and not bipartite. The processes of the bivium are eight on the left ambulacrum, and seven on the right; the size of the processes is also a little different, the fourth on the left side being very small.

Deima fastosum sp. nov.
Plate I, Figs. 1—3.

Body of more equal breadth throughout than in the preceding species, elongated, more than twice as long as broad, largest a little behind its middle. Pedicels eleven along each side of the ventral surface; the hindmost pairs small. Processes of the lateral ambulacra of the trivium four, inflexible, and much longer than half the breadth of the body. Processes of the bivium four along each of its ambulacra, resembling the preceding in size and shape. Integument hard and brittle, with crowded, larger and smaller, irregularly rounded, perforated plates, cove-

ring one another completely or with their edges alone; every plate rising toward its middle into a large, conical knob. Colour in alcohol, light gray.

Length, 130 mm.

Breadth, 58 mm.

Station 216, 2000 fathoms, two specimens.

The other specimen, much smaller, 75 mm. long, differs slightly from the above described, the pedicels being twenty-six, thirteen along each side of the ventral surface, and the posterior pairs being very small.

Oneirophanta [1]) gen. nov.

Back highly convex; ventral surface flat. Mouth anterior, subventral; anus posterior, ventral. Tentacles twenty, large and retractile at their ends alone. The lateral ambulacra of the trivium with large pedicels, slightly retractile at their ends alone, disposed in a double row all along each side of the ventral surface, and with another series of highly elongated, conical, more or less flexible, not retractile processes, placed externally and above the pedicels all along each side of the body. The odd ambulacrum with a few more or less rudimental pedicels. Bivium with processes, resembling those of the trivium, disposed in a single row all along each of its ambulacra. Processes not forming transverse rows or very indistinct ones. Integument with crowded, irregularly rounded, perforated plates, often provided with minute processes.

Oneirophanta mutabilis sp. nov.

Plate I, Figs. 4—6.

Body of almost equal breadth throughout, more than twice as long as broad. Tentacles with 6—8 small, unbranched, digitate, retractile processes. Pedicels nineteen along each side of the ventral surface, ten in the outer and nine in the inner row, and on the posterior part of the ventral surface moreover eight, very small, one on each side of the anus, and the six others behind it, in a nearly transverse row; pedicels of the outer row,

[1]) *ὀνειρόφαντα*, a vision.

a little larger, alternating with those of the inner. The odd ambulacrum with four rudimental pedicels, two of which side by side just before the anus. Processes of the lateral ambulacra of the trivium sixteen along the left, and fourteen along the right one, rigid, slightly flexible; their length varying, some being almost rudimental, others as long as half the breadth of the body. As to the foremost processes, it is rather difficult correctly to state whether they belong to these ambulacra or to those of the bivium. Processes of the bivium thirteen along the left, and twelve along the right ambulacrum, resembling the former in size and shape. Integument thin, but rather hard and brittle, with larger and smaller, irregularly rounded, perforated plates, either scattered or crowded, and then covering one another with their edges; each plate bearing near its centre one or more small spines or processes.

Colour in alcohol, light gray.

Length, 200 mm.

Breadth, 86 mm.

Station 146, 1375 fathoms, three specimens.

Two of the individuals obtained, evidently young ones, differ from the above description, the one, thirty-four mm. by ten, as well as the other, fifty-three mm. by twenty, both of them having the mouth more ventral, and being of a peculiar colour, clear like glass; their pedicels and processes are a little different in number and size, the pedicels of the inner row being very small and rudimental, whereas the processes generally are very long.

At stations 157, 160, 241, 244, 281, 299, many individuals have also been obtained, differing however more or less from the specimen described above. They are all of them smaller, and the number of pedicels and processes vary much, not a single individual resembling another in this. The arrangement of the pedicels in double rows on each side of the ventral surface is often not so obvious as has been stated above, and in some individuals some tentacles are shorter than the rest. The calcareous plates of different individuals vary also in appearance, being now destitute of spines and processes, now provided with many unbranched or branched ones.

The specimens obtained from station 157 differ from all the rest by their more or less dark violet colour.

Orphnurgus [1]) gen. nov.

Back convex; ventral surface almost flat. Mouth anterior, terminal, subventral; anus posterior, terminal, slightly dorsal. Tentacles twenty. The lateral ambulacra of the trivium with very large, not retractile pedicels, disposed in a single row all along each side of the ventral surface, and with another series of slender, very flexible, for the most part apparently retractile processes, placed above the pedicels all along each side of the body. The odd ambulacrum naked. Bivium with a crowded series of numerous processes, resembling those of the trivium, apparently disposed in two rows all along each of its ambulacra. Integument with spicula of various forms, but destitute of wheels.

Orphnurgus asper sp. nov.

Plate I, Figs. 7 a—7 e.

Body much elongated, of almost equal breadth throughout, several times longer than broad. Tentacles of almost equal size; one smaller than the others, with its terminal part torn off; terminal part of the tentacles with several retractile branched processes. Pedicels twenty-three along each side of the ventral surface, very large and long, except the posterior that are small.

The only specimen in the collection being in the highest degree contracted and partly incomplete, it is impossible correctly to state how the processes are arranged and distributed; I think, however, that the statement of its generic character agrees with reality. Processes very numerous, in all about two hundred, slender, cylindrical; the largest nearly as long as the breadth of the body. Integument hard and rough, with numerous, small, short spicula of various forms, some smooth, others provided with numerous large spines or processes.

Colour in alcohol, light gray.

Length, about 170 mm.

Breadth, about 35 mm.

Station 23, 450 fathoms, one specimen.

[1]) ὄρφνη, darkness.

Cryodora [1]) gen. nov.

Back highly convex; ventral surface almost flat. Mouth anterior, subventral; anus posterior, terminal, subdorsal. Tentacles fifteen. The lateral ambulacra of the trivium with large, slightly retractile pedicels, disposed in a single row all along each side of the ventral surface. The odd ambulacrum naked. Bivium with slender, flexible, not retractile processes, disposed in a single row all along each of its ambulacra. Integument spongy without calcareous deposits.

Cryodora spongiosa sp. nov.

Plate I, Figs. 15—16.

Body elongated, almost cylindrical and of equal breadth throughout, about four times as long as broad. Tentacles of almost equal size; their terminal part large and discoidal, destitute of visible processes (the terminal part of some evidently torn off). Pedicels fourteen along the left side of the ventral surface, and fifteen along the right one, the hindmost very small and indistinct. Processes of the bivium eighteen along the right, and seventeen along the left ambulacrum, rather long, very soft and flexible; the four anterior on each side not in a row after each other, but two and two, side by side. Integument very thick, soft and spongy.

Colour in alcohol, light sea-green; top of the tentacles light brownish.

Length, 135 mm.

Breadth, 35 mm.

Station 235, 565 fathoms, one specimen.

Lætmogone [2]) gen. nov.

Back highly convex; ventral surface slightly so. Mouth anterior, terminal, subventral; anus posterior, terminal, slightly dorsal. Tentacles fifteen. The lateral ambulacra of the trivium

[1]) *κρύος*, cold.

[2]) *λαῖτμα*, depths of the sea.

with large, not retractile, only a little contractile pedicels, disposed in a single row all along each side of the ventral surface. The odd ambulacrum naked. Bivium with highly elongated, flexible, cylindrical, not retractile processes, disposed in a single row all along each of its ambulacra. Integument with numerous wheel-shaped plates and other calcareous deposits.

Lætmogone Wyville Thomsoni sp. nov.

Plate I, Figs. 12—13.

Body much elongated, cylindrical or fusiform, several times longer than broad. Tentacles of almost equal size; their terminal part large, thick and like a sole, destitute of visible processes. Pedicels twenty along each side of the ventral surface, large and long; the posterior pairs smaller than the others. Processes of the bivium fourteen along the left, and thirteen along the right ambulacra; some of them thirteen to fourteen mm. long, rather slender and very flexible; the middle of the back, a little behind the tentacles, with a smaller process. Integument very thin and soft, with three kinds of calcareous deposits: scattered spicula, very large, frequently rather straight and unbranched; large wheels, about 0,16 mm. in diameter, with about ten spokes; and smaller wheels, 0,028 mm. in diameter, with ten to thirteen spokes, both sorts of wheels concave, the felly being directed outwards, not on the same plane as the nave; the wheels have somewhat the form of a crown. Between the large and small wheels there are many forms, varying much in size and shape.

Colour in alcohol, lighter and darker violet, often inclining to dirty brown. Ends of the tentacles leather-coloured.

Length, 160 mm.

Breadth, 35 mm.

Station 300, 1375 fathoms, several specimens.

Station 147, 1600 fathoms, three specimens.

In consequence of the great variation of the pedicels and processes, there is scarcely one individual that completely resembles another. The individuals from station 147 are distinguished by their dark violet colour, continuing to the ends of the tentacles, which look almost black.

Lætmogone violacea sp. nov.

Plate I, Figs. 14 a—14 d.

Body elongated, about twice and a half as long as its greatest breadth. Tentacles of almost equal size; their terminal part rather large, almost discoidal, destitute of visible processes. Pedicels eleven along the left side of the ventral surface, and twelve along the right one, rather long and large; the posterior small. Processes of the bivium very slender and flexible, in one individual twenty, in another twenty-three along each of the ambulacra; the longest process about as long as the greatest breadth of the body; the middle of the back, a little behind the tentacles, with a small process. Integument very thin and rough with three sorts of numerous calcareous deposits: spinous bodies, cruciform or in the form of an x, with four curved arms, the distance betwen the ends of the arms being about 0,18 mm.: large wheels, frequently with eight spokes, about 0,2 mm. in diameter; and small wheels, sometimes with thirteen spokes, about 0,068 mm. in diameter. Both sorts of wheels resemble those of the preceding species; between the large and small wheels there are many forms, varying much in size and shape.

Colour in alcohol, gray violet. Ends of the tentacles light yellowish brown.

Length, about 90 mm.

Breadth, about 35 mm.

Station 164, 950 fathoms, two specimens.

Ilyodæmon [1]) gen. nov.

Back highly convex; ventral surface nearly flat. Mouth anterior, almost ventral; anus posterior, terminal, subdorsal. Tentacles fifteen. The lateral ambulacra of the trivium with large, not retractile pedicels, apparently disposed in a double row all along each side of the ventral surface. The odd ambulacrum naked. Bivium with a crowded series of very numerous, completely retractile, slender, rather long processes, disposed in three or four irregular close-set rows all along each of its ambulacra. Integument with numerous, wheel-shaped plates and dichotomously branched bodies.

[1]) *ἰλύς*, ooze, *δαίμων*, spirit.

Ilyodæmon maculatus sp. nov.

Plate I, Figs. 9—11.

Body of almost equal breadth throughout, about thrice as long as broad. Tentacles of almost equal size, with large circular discoidal ends, bearing at their edge alone small rudimental processes; the ventral tentacles of one individual a little smaller, and one tentacle of another individual destitute of the discoidal end and pointed. Pedicels varying in number; in one individual twenty-three along each side of the ventral surface, in another twenty-nine along the left side, and about as many along the right; generally they are large and long, the posterior alone are much smaller. Pedicels of the inner row apparently alternating with those of the outer. Processes of the bivium very numerous and close-set, cylindrical or fusiform; the longest as long as the breadth of the body. Back naked along its middle between the processes of both the ambulacra, except on its anterior part a little behind the tentacles, where there is a smaller process. Integument thick and soft, with three sorts of very numerous calcareous deposits: large wheels, 0,14 mm. in diameter, and with about nine spokes; small wheels, 0,036 mm. in diameter, and with about twelve spokes; and irregularly rounded flat discoidal plates, dichotomously branched, nearly of the size of the small wheels, crowded in large numbers in several places. Wheels concave, felly directed outwards, nave towards the inside of the body; between the large and small wheels there are many forms, varying much in size and shape.

Colour in alcohol, white gray, with scattered white spots from crowded calcareous deposits; back and sides with numerous small dark red or brown points and spots; processes with a reddish band and frequently with dark red tops. Terminal parts of the tentacles brown.

Length, about 130 mm.

Breadth, about 45 mm.

Station 209, 100 fathoms, three specimens.

Station 219, 150 fathoms, two specimens.

Achlyonice [1]) gen. nov.

Back highly convex; ventral surface flat or almost concave. Mouth anterior, ventral; anus posterior, dorsal. Tentacles twelve. The lateral ambulacra of the trivium with more or less retractile pedicels, disposed in a single row all along each side of the ventral surface. The odd ambulacrum naked. Bivium with a few very soft and flexible processes in its anterior part alone. Integument thick, spongy, destitute of calcareous deposits.

Achlyonice ecalcarea sp. nov.

Plate I, Figs. 8.

Body ovate, widening behind, about twice as long as broad. Tentacles of equal size; their terminal part very large, discoidal, with small, retractile processes at its edge. Pedicels thirteen along the left side of the ventral surface, and fourteen along the right one. — The two specimens we have had to examine being much dilacerated on the back, it has been impossible correctly to determine the size as well as the position of the processes of the bivium. Integument very thick, soft, spongy, and as it were porous.

Colour in alcohol, light gray, inclining to green.

Length, about 100 mm.

Breadth, about 50 mm.

Station 241, 2300 fathoms, two specimens.

Elpidia Théel.

Mémoire sur l'Elpidia, K. Sv. Vet.-Akad. Handl. Bd 14, N:o 8, 1877.

Body ovate, more or less elongated, sometimes cylindrical. Mouth anterior terminal or subventral, anus posterior, terminal, subventral or subdorsal. Tentacles ten. The lateral ambulacra of the trivium with large, slightly retractile pedicels, disposed in a single row along each side of the ventral surface. The odd ambulacrum naked. Bivium with one or a few pairs of often very elongated, not retractile processes on each of its am-

[1]) ἀχλύς, darkness.

bulacra, or with only a few more or less rudimental ones in its anterior part. Integument with spicula of various shapes.

Elpidia glacialis Théel.

Station 160, 2600 fathoms, one specimen.

Elpidia mollis sp. nov.

Plate II, Figs. 29—30.

Body ovate, about twice as long as broad. Mouth anterior, terminal, slightly ventral; anus posterior, terminal. Tentacles of almost equal size, their terminal part provided with two large retractile, digitate processes, and with several small ones. Pedicels six along each side of the ventral surface, rather large. Processes of the bivium two, rather stout, elongatedly conical, flexible, placed side by side a little before the middle of the body. Integument very thin and soft, with small papillæ; calcareous deposits of two sorts: large, straight, spinous spicula, much scattered; and small ones, more close-set, in the form of a *c*. Compare fig. 35.

Colour in alcohol, light gray, inclining to violet.

Length, about 70 mm.

Breadth, about 33 mm.

Station 160, 2600 fathoms, one specimen.

Elpidia globosa sp. nov.

Plate II, Figs. 17—19.

Body ovate, more or less globular, from once and a half to twice as long as broad. Mouth anterior, terminal, slightly ventral; anus posterior, subventral. Tentacles of equal size, their terminal parts bearing numerous, small, digitate, retractile processes. Pedicels seven along each side of the ventral surface, rather large. Bivium with three processes, disposed on each of its ambulacra; the first pair in the anterior, and the second in the posterior part of the back, both of them very large and elongatedly conical; the third pair, immediately behind the second, small and rudimental Integument very thin and transpa-

rent, with two sorts of calcareous deposits: small spicula, curved in the form of a *c*; and large, straight, spinous ones.

Colour in alcohol, light gray.

Length, about 130 mm.

Breadth, about 70 mm.

Station 299, 2160 fathoms, numerous specimens.

Station 157, 1950 fathoms, one specimen.

The individual from station 157 differs from the others by its gigantic size, 180 mm. by 110; processes of the back comparatively small.

Elpidia verrucosa sp. nov.

Plate II, Figs 26–28.

Body almost ovate, nearly twice as long as broad. Mouth anterior, terminal; anus posterior, slightly dorsal. Tentacles of apparently equal size, (five are torn off in the only specimen, existing in the collection) their terminal part bearing small, digitate, retractile processes. Pedicels rather large, eigth to nine along each side of the ventral surface, (most of them torn off); the anterior part of the ventral surface destitute of pedicels. Bivium with two pairs of processes in the anterior part of the body; being torn off, their length and appearance are unknown. Integument highly brittle and hard, with numerous, rather large, pyramidal papillæ, crowded especially on the back, each papilla containing a calcareous deposit, composed of four long, spinous arcuate arms, directed towards the inside of the body, and one or two central large and straight processes, directed outwards from the body.

Colour in alcohol, light violet.

Length, about 52 mm.

Breadth, about 28 mm.

Station 299, 2160 fathoms, one specimen.

Elpidia nana sp. nov.

Plate II, Figs. 20–22.

Body elongated, from twice and a half to thrice as long as broad. Mouth anterior, terminal, slightly ventral; anus posterior, subdorsal. Tentacles of equal size; their terminal part bearing

several small, digitate, retractile processes. Pedicels eight along each side of the ventral surface. Bivium with three pairs of small processes on the anterior part of the back, close-set in two rows, converging forward. Integument thin and transparent, with minute calcareous deposits, arcuate and frequently provided with small spines.

Colour in alcohol, light gray or white.

Length, about 16 mm.

Breadth, about 5 mm.

Station 50, 1250 fathoms, several specimens.

Elpidia Murrayi sp. nov.

Plate II. Figs. 23—25.

Body oval, about twice as long as broad; back highly convex. Mouth anterior, subventral; anus posterior, terminal. Tentacles of almost equal size; the middle ventral one a little smaller than the others; their terminal part provided with small, digitate, retractile processes. Pedicels short, five along each side of the ventral surface. Bivium with three processes, short, as long as half the breadth of the body or smaller, disposed on each of its ambulacra, one pair in the anterior, and both the others in the posterior part of the body; the hindmost pair rudimental. Integument brittle and glassy from numerous spicula, some small and in the form of a *c*, others large, unbranched, straight and very spinous.

Colour in alcohol, glassy; back with a series of dark spots.

Length, about 20 mm.

Breadth, about 10 mm.

Station 152, 1260 fathoms, one specimen.

Elpidia papillosa sp. nov.

Plate II, Figs. 31—33.

Body ovate, about once and a half as long as broad. Mouth anterior, terminal; anus posterior, slightly dorsal. Tentacles bearing at their terminal part numerous, small, digitate processes. Pedicels eight along each side of the ventral surface. Bivium with two small processes, placed side by side a little before the middle of the back and united by their bases, forming a low

transverse ridge between the two ambulacra, and immediately behind this ridge another pair of rudimental processes. Integument very thin, soft and transparent, with small, light papillæ, scattered on the back; calcareous deposits of two sorts: large, straight, spinous spicula; and small ones, arcuate and much more numerous.

Colour in alcohol, light gray.
Length, 56 mm.
Breadth, 34 mm.
Station 325, 2650 fathoms, one specimen.

Elpidia elongata sp. nov.

Plate II, Figs. 34–35.

Body elongated, cylindrical, several times longer than broad. Mouth anterior, subterminal; anus posterior, dorsal. Tentacles of equal size; their terminal parts bearing numerous, small, retractile processes. Pedicels eight along each side of the ventral surface, and behind the anus an unpaired one, flat and twice as broad as the others, having the obtuse end incised in its middle; the two or three posterior pairs flat, broader and longer than the others. Bivium with a few small papillæ in its anterior part. Integument rather thick, with a few calcareous deposits, composed either of four long, smooth, arcuate arms directed towards the inside of the body and one central large process directed outwards, or of unbranched spicula.

Colour in alcohol, light gray.
Length, about 150 mm.
Breadth, about 25 mm.
Station 299, 2160 fathoms, one incomplete specimen.

Obs. Only a single specimen having been at our disposal, and that one so incomplete as to render a detailed examination impossible, I think it best, at least for the present, to refer it to Elpidia, although it evidently differs very much from the other species of that genus.

Explanation of the plates.

Plate I.

Deima fastosum n.

Fig. 1. Side view; half natural size.
Fig. 2. Ventral surface; half natural size.
Fig. 3 a. Upper aspect of a calcareous plate; highly magnified.
Fig. 3 b. Side view of the same plate; highly magnified.

Oncirophanta mutabilis n.

Fig. 4. Side view; about two thirds of natural size.
Fig. 5. Ventral surface; about two thirds of natural size.
Fig. 6 a—c. Calcareous plate; highly magnified.

Orphnurgus asper n.

Fig. 7 a—e. Spicule, highly magnified.

Achlyonice ccalcarea n.

Fig. 8. Ventral surface; about two thirds of natural size.

Ilyodæmon maculatus n.

Fig. 9. Side view; half natural size.
Fig. 10. Ventral surface; half natural size.
Fig. 11 a. Large wheel; highly magnified.
Fig. 11 b. Dichotomously branched plate; highly magnified.
Fig. 11 c. Small wheel; highly magnified.

Lætmogone Wyrille Thomsoni n.

Fig. 12. Side view; about half natural size.
Fig. 13 a. Large wheel,
Fig. 13 b. Small wheel,
Fig. 13 c. Spicule, all highly magnified.

Lætmogone violacea n.

Fig. 14 a. Large wheel; highly magnified.
Fig. 14 b. Small wheel; highly magnified.
Fig. 14 c. Upper aspect of a cruciform calcareous body; highly magnified.
Fig. 14 d. Side view of the same body; highly magnified.

Cryodora spongiosa n.

Fig. 15. Ventral surface; two thirds of natural size.
Fig. 16. Dorsal surface; two thirds of natural size.

Plate II.

Elpidia globosa n.

Fig. 17. Side view; about half natural size.
Fig. 18. Ventral surface; about half natural size.
Fig. 19. Spicula; highly magnified.

Elpidia nana n.

Fig. 20. Ventral surface; about three times the natural size.
Fig. 21. Dorsal surface; about three times the natural size.
Fig. 22. Spicula; highly magnified.

Elpidia Murrayi n.

Fig. 23. Ventral surface; about twice and a half the natural size.
Fig. 24. Dorsal surface; about twice and a half the natural size.
Fig. 25 a. Spicula; highly magnified.
Fig. 25 b. Small spicula in the form of a *c*; highly magnified.

Elpidia verrucosa n.

Fig. 26. Ventral surface; natural size.
Fig. 27. Dorsal surface; natural size.
Fig. 28 a. Upper aspect of a spicule; highly magnified.
Fig. 28 b. Side view of another spicule; highly magnified.

Elpidia mollis n.

Fig. 29. Ventral surface; natural size.
Fig. 30. Dorsal surface; natural size.

Elpidia papillosa n.

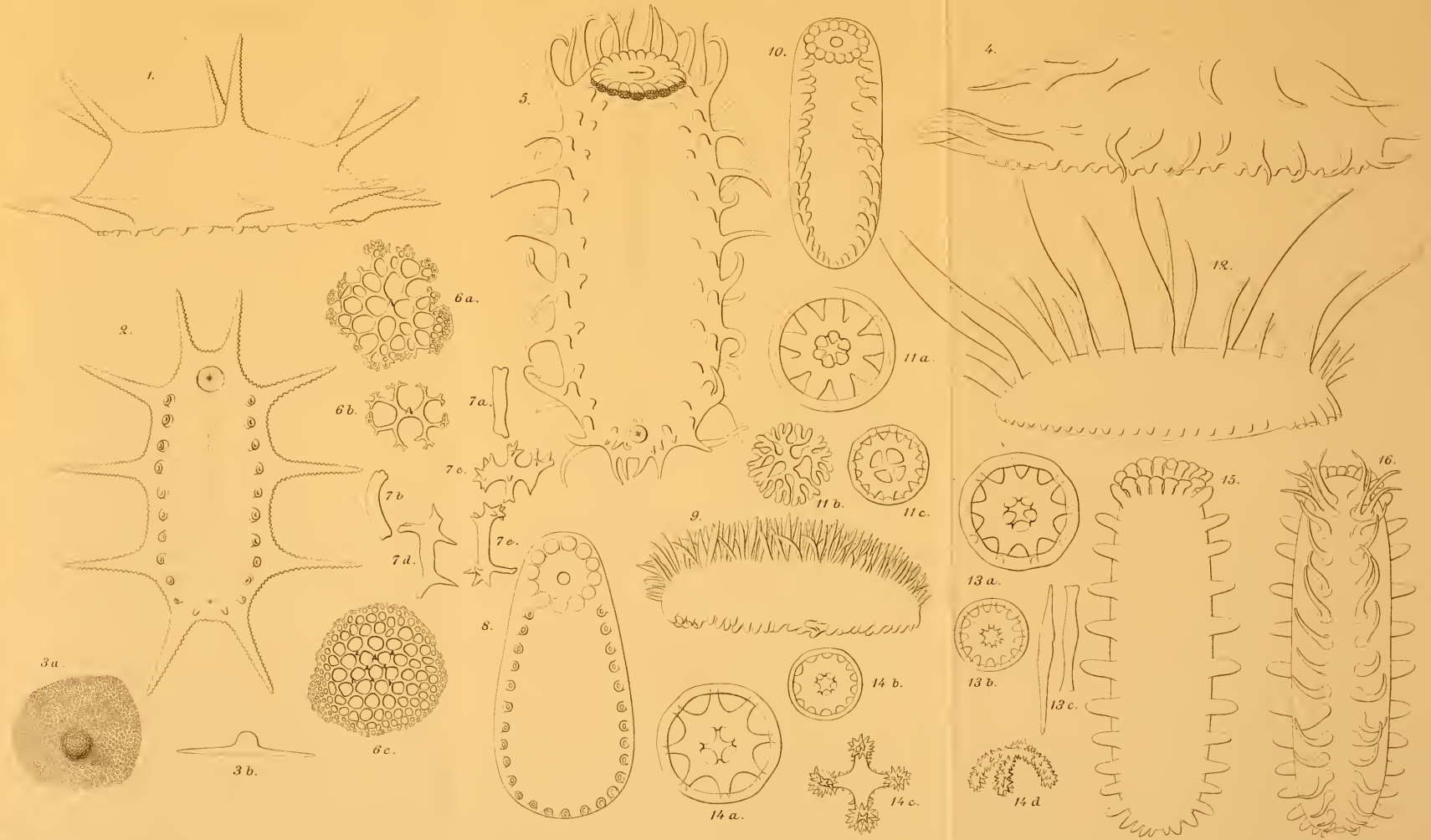
Fig. 31. Ventral surface; natural size.
Fig. 32. Dorsal surface; natural size.
Fig. 33 a. Spicule; highly magnified.
Fig. 33 b –d. Small spicula; highly magnified.

Elpidia elongata n.

Fig. 34. Ventral surface; half natural size.
Fig. 35 a. Side view of a spicule; highly magnified.
Fig. 35 b. Upper aspect of the same spicule; highly magnified

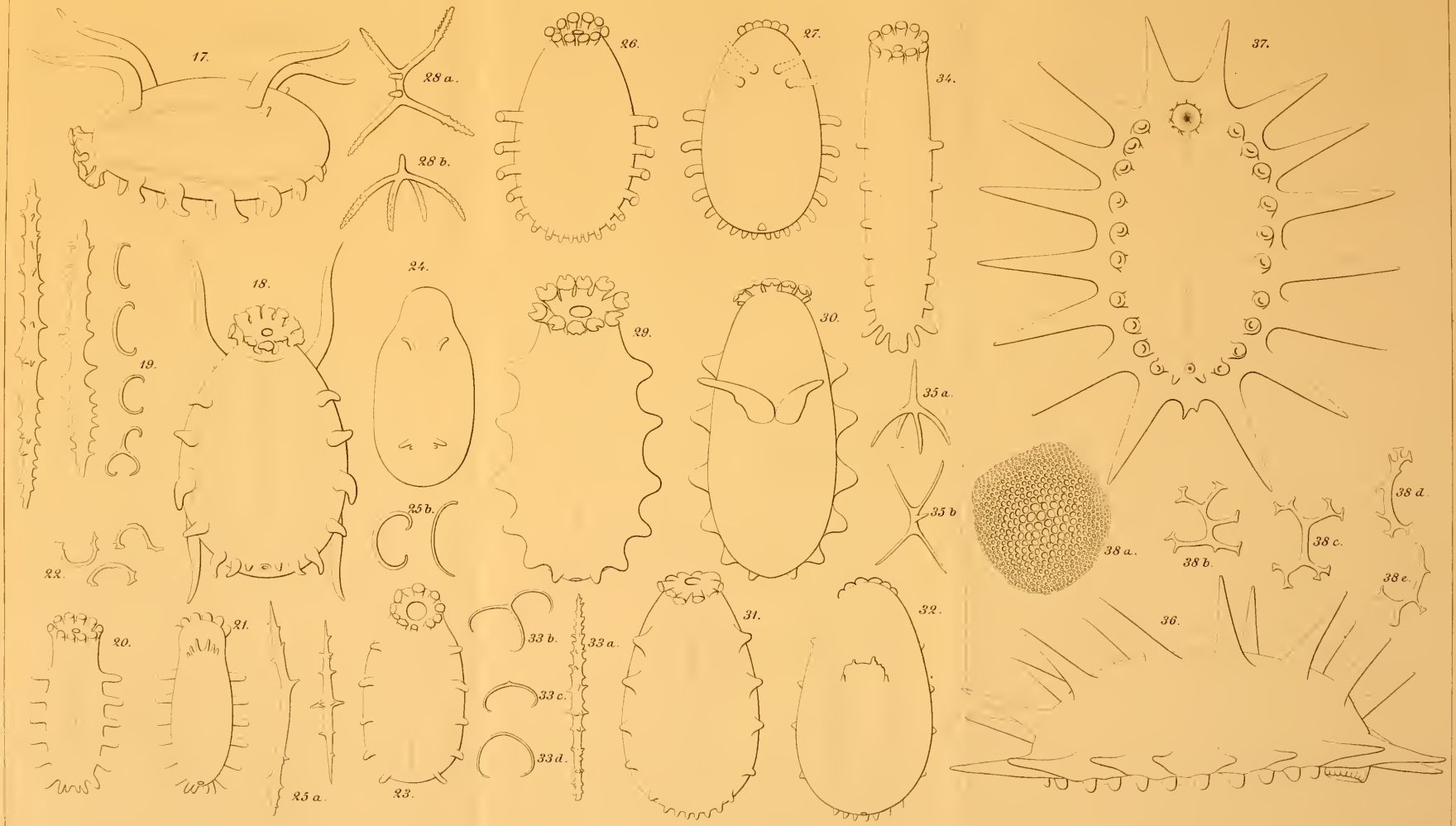
Deima validum n.

Fig. 36. Side view; half natural size.
Fig. 37. Ventral surface; half natural size.
Fig. 38 a. Calcareous plate; highly magnified.
Fig. 38 b – e. Spicula; highly magnified.



Hj. Theel del.

Central-Tryckeriet, Stockholm.



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