

This article was downloaded by: [New York University]

On: 25 April 2015, At: 15:43

Publisher: Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number:
1072954 Registered office: Mortimer House, 37-41 Mortimer
Street, London W1T 3JH, UK



Annals and Magazine of Natural History: Series 5

Publication details, including instructions
for authors and subscription information:
<http://www.tandfonline.com/loi/tnah11>

North-Atlantic Echinodermata

MM.D.C. Danielssen & J. Koren
Published online: 09 Oct 2009.

To cite this article: MM.D.C. Danielssen & J. Koren (1881) North-Atlantic Echinodermata, *Annals and Magazine of Natural History: Series 5*, 8:43, 66-69, DOI: [10.1080/00222938109459842](https://doi.org/10.1080/00222938109459842)

To link to this article: <http://dx.doi.org/10.1080/00222938109459842>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever

caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

As I have indicated elsewhere, striated muscular fibre cannot suffice to characterize either mesoderm, since, in the Tunicata, this element is met with at the same time in the tail of the tadpole and in the cardiac muscular layer (*Perophora*, *Phallusia*, *Ciona*).—*Comptes Rendus*, June 6, 1881, p. 1350.

North-Atlantic Echinodermata.

By MM. D. C. DANIELSSEN and J. KOREN.

MM. Danielsen and Koren describe some Starfishes collected in the late Norwegian expedition for the exploration of the North Atlantic.

1. *Asterias spitsbergensis* is a new species, of which several specimens were taken in Magdalena Bay, Spitzbergen, at a depth of 61 fathoms, on a bottom of dark grey clay, at a temperature of 2°·1 C. (=35°·8 F.). At the first glance it resembles *Stichaster roseus*; and in the structure of the dermal skeleton it presents characters approaching both *Stichaster* and *Asterias*, so that the authors were in some doubt to which of these genera it should be referred.

Asterias spitsbergensis has five arms; and the smaller is to the greater radius as 1 : 4 $\frac{1}{3}$. The arms are rather thick, not much constricted towards the base, somewhat obtuse at the apex, very convex on the back and sides, where they are beset with spines, which form regular longitudinal series on the sides, and irregular transverse rows on the back. Between the spines, both on the disk and arms, the skin is naked and occupied by tentacular pores. The lower surface is flat. The spines on the disk are larger and smaller; in the middle they are grouped circularly round the central anal aperture. The madreporic plate is oblong, very small, placed immediately above the angle of the arms, immersed in the skin and surrounded with spines. Ambulacral furrows bounded by three rows of strong spines, one turned in towards the furrow, another turned outwards, while the middle row has fewer spines, the ambulacral plates bearing alternately two and three. Outside the outer row is another series of spines, nearly as large as those of the furrow. These are surrounded by pedicellariæ on the outside of the base, while the innermost row has them on the inside; and beyond the outer row, more towards the dorsal surface, there are two rows of small spines also surrounded by pedicellariæ. The disk has no pedicellariæ; but the arms are covered with such organs of different forms. Towards the ambulacral furrows the calcareous pieces of the dermal skeleton become more regular in form and arrangement than elsewhere; they form two distinct longitudinal rows, and are imbricated. Those of the inner row are triangular, and have their inner margin in contact with two ambulacral and two adambulacral plates; their outer surface bears the spines forming the first row outside the furrow. They may be regarded as ventral marginal plates. The outer row are nearly T-shaped; their broad part is in contact with the ventral marginal plates, which they partly cover. They may be regarded as dorsal marginal plates, and bear two

spines standing side by side, which form the second row outside the furrow. The colour is orange-yellow, with an intensely red eye at the end of each arm.

2. *Solaster glacialis*, also described as a new species, is known only by a single specimen dredged in N. lat. $72^{\circ} 27'$, E. long. $20^{\circ} 51'$, at a depth of 191 fathoms, on a bottom of sandy mud. Temperature $3^{\circ} 5$ C. ($38^{\circ} 3$ F.). Its character is given as follows:—

Body 7-armed. Proportion of the smaller and greater radius as 1 : 3. Paxillæ on the back rather scattered, forming regular series on the arms. Interbrachial spaces beset with isolated spines, otherwise naked. A row of spines along the ambulacral groove. From every ambulacral piece there issue inwards towards the furrow from three to five longitudinally arranged spines, and outside the furrow a similar number of transversely arranged spines. There are twenty-eight small ventral marginal plates, bearing penicilliform paxillæ. The back is dark red, the ventral surface white.

3. *Asterina tumida*, Stuxberg.—Stuxberg's *Solaster tumidus*, described in 1878 from specimens from Novaia Zemlia, was taken at two stations, in N. lat. $67^{\circ} 24'$ and $74^{\circ} 54'$, E. long. $8^{\circ} 58'$ and $14^{\circ} 53'$ respectively, at depths of 452 and 658 fathoms, in water of a temperature below 32° F. Stuxberg's largest specimen measured 25 millim. across; and its larger radius was 14–15 millim. The expedition obtained one specimen measuring 75 millims. across, with a greater radius of 40 millim. The authors figure this starfish, which, however, they remove from *Solaster* and refer to *Asterina*, although only provisionally, as it differs from that genus in the dermal skeleton, which does not present the peculiar arrangement of the calcareous plates in the dorsal surface, in the great abundance of tentacular pores (which are distributed over the whole dorsal surface right to the margins both on the arms and the disk), and also in the concealed marginal plates and their form.

4. *Asterina tumida*, var. *tuberculata*.—A starfish, about which the authors are in doubt whether to treat it as a distinct species or as a strongly marked variety of the preceding, is described by them under the above name. Specimens were taken at two stations, respectively in $76^{\circ} 22'$ and 80° N. lat., and $17^{\circ} 13'$ and $8^{\circ} 15'$ E. long., at depths of 146 and 260 fathoms, with a bottom temperature of 30° – 34° F. The colour, which in *A. tumida* is tile-red above, white with a yellowish tinge beneath, in the variety is yellowish red with pale yellow spots on the back and yellow on the lower surface; the madreporic plate and the anus are straw-yellow, and the eyes at the extremity of the arms orange-red instead of deep red. There are five arms, which are longer and narrower than in the type form. The proportion of the radii is as 1 : 2. The back is convex, the lower surface flat. On the back, besides the paxillæ, there are many separate round tubercles, closer together on the arms than on the disk. The madreporic plate is nearly round, nearly equidistant from the angle of the arms and the subcentral anus, but rather nearer the former; the ambulacral furrow has three rows of spines, one of which turns in towards the furrow; the margin is pretty strongly marked, and formed

by the ventral marginal plates, which are very distinct; the dorsal marginal plates are less striking; the plates corresponding to the tubercles of the dorsal surface are much thickened and round. In diameter the specimens range from 25 to 51 millim.

5. *Tylaster Willei*, named in honour of Captain Wille, is a new species representing a new genus of the family Asterinidæ, obtained at two stations, in $71^{\circ} 25'$ and $75^{\circ} 12'$ N. lat., and $15^{\circ} 40' \cdot 5$ and $3^{\circ} 2'$ E. long., at depths of 620 and 1200 fathoms on a clay bottom. Temperature -1° and $-1^{\circ} \cdot 6$ C. ($=30^{\circ} \cdot 2$ and $29^{\circ} \cdot 1$ F.).

GENUS TYLASTER.

Body convex, pentagonal. Arms short, robust. Skin of the back with no skeleton, but everywhere beset with fine isolated calcareous spines, between which are tentacular pores. Dorsal marginal plates rudimentary. Ventral marginal plates furnished with spines. The interbrachial space of the ventral surface has small calcareous plates arranged in an arched form and having one or more spines. Anus central. Two rows of ambulacral feet without spicules. No pedicellariæ.

Tylaster Willei.

Body convex on both surfaces. The smaller radius is to the larger as $1 : 1\frac{2}{3}$. Ambulacral papillæ in three series, of which the innermost are the longest. Ventral marginal plates furnished with three rows of spines. In the interbrachial space three curved rows of spines, with isolated spines between the rows. Back tile-red, ventral surface white. Anal aperture and madreporic plate yellow. The species is figured.

6. *Poraniomorpha rosea* is another new species representing a new genus of Asterinidæ, resembling *Porania* at the first glance, but in character approaching nearer to *Asterina*. A single example of this species was taken in N. lat. $61^{\circ} 41'$, E. long. $3^{\circ} 18' \cdot 5$, at a depth of 220 fathoms, on a bottom of mud and clay.

GENUS PORANIOMORPHA.

Body 5-rayed, flat below, not very convex above. Anus subcentral. Both upper and lower surface covered all over with fine isolated calcareous spines. Margins sharp, formed by the ventral marginal plates alone, which bear spines. The dermal skeleton on the back consists of small, oval, calcareous pieces, forming a close reticulation with extremely small meshes; on the ventral surface of oblong, flat, calcareous pieces forming rows. No pedicellariæ; no spicules in the ambulacral feet.

Poraniomorpha rosea.

Radii in the proportion of $1 : 1\frac{2}{3}$. On each adambulacral plate five spines, of which two are directed inwards into the ventral furrow and form one row on each side; the other three form three rows outside the furrow. The ventral marginal plates bear from

three to six short obtuse spines. The madreporic plate is sunk into the thick skin. Back rose-coloured; ventral surface yellowish red.

The authors remark that from their investigations upon the genus *Solaster* they are led to the conclusion that neither Müller and Troschel's division of the genus into *Crossaster* and *Solaster*, nor the new genus *Lophaster*, established for *Solaster furcifer*, can be sustained. Their reasons will be given in a forthcoming part of the general report upon the results of the expedition.—*Nyt Magazin för Naturvidenskaberne*, Bd. xxvi. (1881), pp. 177–194, tab. i. & ii.

On Dr. Karsch's Subdivision of the Phrynidia. By A. G. BUTLER.

My attention has just been called to a short paper in the 'Archiv für Naturgeschichte' for 1880, in which Dr. Karsch makes an effort to answer my criticism upon his previous memoir (see *Ann. & Mag. Nat. Hist.* ser. 5, vol. iv. p. 313); how far he has succeeded may be gathered from the following sketch of it.

Dr. Karsch commences where I left off, with the serious fact that his genus *Charon* was based upon the *Phrynus Grayii* of Gervais, the type of which he had never seen, and which I find does not possess the characters ascribed to this genus; and he says that I am illogical when I state that this fact necessitates the rejection of the generic name "*Charon*." Dr. Karsch proceeds to explain why this is so: he says that the specimens which he calls *P. Grayii* were so named by Dr. Gerstaecker, and they agree with Høeven's figure of *P. medius*. If, then, the species described by M. Gervais is distinct, he proposes the name of *C. Høeveni* for the *P. medius* of Høeven, and regards the latter as the type of his genus. I must be very obtuse; for I fail entirely to see how this subsequent action on the part of Dr. Karsch proves me to have been illogical in rejecting a genus which, for all practical purposes, had no type at the time when I wrote my article.

In the second place, it may be a matter for grave question whether the genus *Charon* can be retained under that name, since the type is the *P. Grayii* of Gervais and not the *P. Grayii* of Gerstaecker or Karsch. When a man relies upon the authority of a friend, who, however learned he may be, has himself not examined the type of a species, and upon that species bases a new genus, he must be prepared to see it overturned. But Dr. Karsch says he thinks the type of *P. Grayii* may be a monstrosity, or it may have had its hind legs broken off and those of another species stuck on; or, in short, any thing may have happened rather than that the generic name *Charon* should be superseded; and, after a little cogitation, he convinces himself that something certainly has happened to this type, and concludes his paper thus:—"Figure 4 is the hind leg of *Charon*, and, indeed, of that species which is identical with *Phrynus medius*, Høeven (nec Herbst), and which I believe must indicate *Phrynus Grayii*, Gerv."

The remainder of Dr. Karsch's paper is taken up with an attempt