

betrieben werden, wenn neben den hochwichtigen Golgi'schen und Ehrlich'schen technischen Methoden auch die Tinctionstechnik, die Osmiumsäurebräunung mit und ohne Verwendung von Holzessig und die Weigert'sche Methode in Anwendung gelangt. Die Phylogenie und die Histophylogenie müssen in den Vordergrund gestellt werden. Daß ferner die morphologische Forschung durch das mit der nöthigen Kritik angewandte Experiment unterstützt wird, ist einleuchtend.

Heidelberg im März 1896.

3. Notice of New Hexactinellida from Sagami Bay.

Dr. I. Ijima, Sci. Coll., Imp. Univ., Tokyo.

eingeg. 20. März 1896.

Semperella stomata n. sp.

Closely allied to *S. cucumis* F. E. S.¹, resembling that species in general shape and structure, in the irregular distribution of rounded efferent openings, in the disposition of macrosclerae, in the nature of uncinates and of prickly oxyptentacts in the septal wall, in the form of the terminal anchors of basal spicules, etc. However the present species is distinguishable by the following characters:

Paratangential rays of hypodermal pentacts always comparatively long, terminating in sharp points.

Distal ray of dermal pinules (length 0.1—0.18 mm, those at the oscular margin reaching 0.3 mm) club-shaped, the spines near the free end being comparatively long and closely surrounding a central cone, whose apex is exceeded by or but slightly projected beyond, the last whorl of spines. Basal cross as in *S. cucumis*.

Macramphidiscs up to 0.42 mm in length and 0.18 mm breadth; the 8-rayed umbel truncated and fez-shaped. Mesamphidisc not found. Micramphidiscs abundant, 0.022—0.088 mm long; their umbel elongated rather than hemispherical.

Instead of spindle-shaped oxydiacts with prickly ends (Schulze, loc. cit., Pl. IX figs. 14—16) there occur in the septal wall uncinateline-like amphioxes with one end rather abruptly pointed and the other gradually attenuated (up to 0.67 mm in length and 0.03 mm in breadth). They are barbed except near the thinner end, the barbs being all turned towards the thicker end.

Several specimens were obtained at different parts of Sagami Bay. The largest specimen before me measures 250 mm in length and 47 mm in breadth of body.

¹ »Hexactinelliden des Indischen Oceanes«. I. Abh. K. Preuß. Acad. d. Wiss. 1894.

Regadrella okinoseana n. sp.

Similar to *R. phoenix* in form and in general arrangement of spicules, but with the following characteristic features:

The spaces between parietal openings (up to 3 mm in diameter and 3—15 mm distant from one another) are elevated into irregular ledges and protuberances that may attain a height of 20 mm. A broad cuff surrounds the arched terminal sieve-plate.

Distal ray of sword-shaped hypoderms short and mostly rounded at end. This and paratangentials sparsely beset with prickles near ends.

Among the parenchymal diacts, there occur in abundance oxyhexacts with finely spinous rays of 0.055—0.14 mm length.

Rosettes are present in three forms: 1) oxytetrasters or occasionally oxyhexasters, 2) graphihexasters and 3) floricoes. In what I have called oxytetrasters the principals form a regular cross and the terminals, usually 4 in number to each principal, end in a point after a diverging, somewhat wavy course. Floricoes similarly shaped as in *R. phoenix*.

Of several specimens collected, but one is in a perfectly uninjured condition. The latter is 185 mm long and 77 mm broad at the cuff.

Chaunoplectella cavernosa n. gen. n. sp.

Of this I have only a fragment of an apparently bowl-shaped or vase-shaped, thick-walled individual with a diameter of at least 160 mm and contracted below to a stalk-like base. The condition of the osculum as well as the mode of attachment of the base is unknown. The texture of the sponge is very light, delicate and cavernous. Both the dermal and gastral skeletons present a rather uneven surface and consist of an irregular network of thin loose strands. Through them are seen the openings of wide afferent or efferent canals as oval or roundish apertures of variable size, some being as large as 12 mm or more in diameter. There is a very wide subdermal cavity.

The principal parenchymals consist of loose hexacts and diacts, usually with roughened ends. Larger parenchymal hexacts have rays more or less bent and often of unequal length. Besides these there are smaller and more slenderly rayed hexacts, one ray of which freely projects into the canalar lumen and may bear a plumicome at its free end. The dermal and gastral skeletons consist solely of hypoderms or hypogastrals which occur in forms of irregular hexacts, pentacts, tetracts or triacts with more or less bent rays.

Rosettes are of two kinds: 1) small plumicoes 0.05 mm in diameter and 2) large discohexasters, 0.275 mm in diameter, with very

short principals, each of which bears 2—4 slender terminals ending in an inverted bell-like umbel composed of 5 recurved and comparatively long teeth (resembling the spicule represented in Schulze's fig. 11, Pl. LXX, Chall. Report, Vol. XXI).

The total absence of proper autoderms indicate that this new genus is to be classed among the Euplectellidae.

Walteria Leuckarti n. sp.

A very elegantly shaped species with a flat basal disc, about 120 mm in diameter, from which arises a slightly bent stem of the thickness of a thumb to a height of over 790 mm. The stem sends out, at about right angles and in all directions, numerous branches (up to 132 mm in length), that may bear secondary branches of variable length. Thus the species has a shape not unlike that of a fir-tree denuded of leaves. The surface of both the stem and branches shows a number of small openings, the margin of which is more or less elevated into a short tube. Such a tube invariably harbours a hydranth of a commensal hydroid colony, as in *W. Flemmingi*. The stem, but not the branches, is hollow and possesses here and there large, round or oval, sharp-edged openings, the oscular orifices.

The principal parenchymals, extensively anchylosed on the stem-wall, are diacts of variable size. These run in general longitudinally in the stem-wall and in the axis of branches. The club-shaped distal ray of sword-shaped hypoderms ends in a conical point and is beset all over with scaly prickles.

Rosettes are of three kinds: 1) spherical discohexasters (Chall. Report, Pl. X, fig. 1); 2) large graphihexasters; and 3) discohexasters of the type of fig. 5, loc. cit. The last mentioned are but of very isolated occurrence. It is remarkable that I have never met with floricores in this species.

More than five specimens had been obtained in all.

Hyalascus sagamiensis n. gen. n. sp.

Through Mr. Owston's courtesy I have been able to examine the only specimen, on which I base this new genus and species. It is a comparatively thin-walled (up to 12 mm) sac of the shape of a vase, bulged out at about the upper third of the body. Total length 500 mm; greatest diameter 230 mm. The oscular region is irregularly expanded and presents a thin simple rim without special marginals. The narrowed inferior end is torn off. Texture of the sponge rather dense and firm, although synapticular fusion of spicules nowhere occurs. On the smooth dermal surface, a number of strands formed by certain sub-

dermal spicules, are visible as streaks that cross one another irregularly. Openings of afferent and efferent canals visible as round apertures with diameter under 2 mm.

Principal parenchymals are long diacts arranged in loose strands. There are hypodermal oxyptentacts with wavy paratangentials; hypogastrally no pentacts are found. Parenchymal microsclerae of two kinds: 1) discohexasters (dia. 0.08 mm) with short principals, each bearing 3 extremely slender terminals that some-what thicken towards the terminal disc, and 2) rough micro-oxyhexacts, semi-oxyhexasters and degenerate oxyhexasters (dia. 0.09—0.12 mm), similar to those known from several Rossellid species. In what I have called semi-oxyhexasters some rays are simple and exactly occupy the position of a regular hexact-ray, while others are so deeply forked into two diverging terminals that the latter seem to spring almost directly from the central node. One terminal of such a forked ray may often be entirely suppressed in development, thus giving rise to degenerate oxyhexasters as already maintained by F. E. Schulze.

The autoderms are rather stout pentacts and hexacts with rays 0.08—0.1 mm long and beset with prongs, of which the more prominent ones are turned towards the ends of rays. The similarly pronged autogastrals are exclusively hexacts with the free proximal ray more strongly developed than the rest, so that they might be called hexact-pinules.

This new genus is probably to be considered as a near ally of *Asconema*, while on the other hand its close affinity to Rossellidae can not be denied.

Aulosaccus Schulzei n. gen. n. sp.

This is a new Rossellid known to me in a single specimen that also belonged to Mr. Owston. It is exquisitely vase-shaped, 450 mm high and broadest at the upper third (about 225 mm). The osculum is irregularly circular, about 150 mm in diameter and with a thin simple margin. The lower end, about 110 mm broad, is cut off. The wall thickens below up to 50 mm. The dermal skeleton had fallen off for the greater part, where the exposed parenchymals present a curly appearance, enclosing comparatively large apertures of afferent canals. Gastral skeleton well preserved, smooth.

The principal parenchymals are diacts of variable size with rough ends; always loose. Rough micro-oxyhexacts (0.088—0.13 mm in dia.), many of which have one or more of the rays bifurcated almost the whole length (semi-oxyhexasters) while others may have less than six rays by reduction, occur in abundance. Micro-discohexasters (of the

form represented in Chall. Report, Pl. LXV, fig. 4) are also common. Besides these there occurs in tolerable abundance a very remarkable form of rosettes. From a spherical centre, about 0.046 mm in diameter, there radiate in all directions innumerable filamentous rays, that may attain a length of 0.44 mm, each terminating in a small cup-shaped disc with serrated edge. The entire rosette is thus sun-shaped and almost 1 mm in diameter.

The dermal skeleton consists of a subdermal network composed of strands of diacts and of autoderma pentacts, rarely tetracts, with rays 0.12 mm in average length and spinous only at ends. The gastral skeleton is similarly constituted with this difference that the autogastrals are mostly hexacts and rarely pentacts or tetracts. These are of about the double size of dermals and spinous all over except at the central node.

Rossella longispina n. sp.

The specimen before me is a pear-shaped, thick-walled sac-narrowed below to a stalk-like base, where it is torn off. Length 51 mm; greatest breadth 37 mm. The osculum at the top is oval, 14 mm by 7.5 mm; its edge thin and simple. The external surface is uneven on account of low conical elevations, from the apex of which strong diact prostalia project in an obliquely upward direction, some to a length of 30 mm or more. There are also some small pentact prostalia, which are nothing else than protruded hypoderms. The simple gastral cavity is lined by a smooth gastral skeleton.

Attached to the diact prostalia there are two very small individuals of the same species. Whether these arose as buds from the large individual or not, cannot be ascertained.

The principal parenchymals are exclusively diacts of various size. Parenchymal microsclerae of three kinds: rough micro-oxyhexacts and their derivatives, viz., oxyhexasters and semi-oxyhexasters (dia. 0.097 mm) that are of such general occurrence in Rossellidae; 2) discohexasters (dia. 0.07—0.13 mm, of the form of fig. 10, Pl. LVII, Chall. Report) with short principals thickened at end, whence arise 4—6 slender terminals ending in a 6-teethed disc; 3) micro-discohexasters of the well-known form.

The hypodermal frame-work is composed of strands of diacts and of pentacts. The latter may, as already noticed, protrude beyond the dermal surface as prostalia. Their paratangential rays (1.5 mm or less in length) are finely rough all over and either form right angles with one another or are pushed, as it were, to one side as in *R. antarctica*.

The autoderms are prickly tetracts and autogastrals, hexacts similarly prickly.

Tokyo, Febr. 3rd, 1896.

II. Mittheilungen aus Museen, Instituten etc.

1. Zoological Society of London.

April 29, 1896. — The sixty-seventh Anniversary Meeting of this Society was held yesterday at their Offices No. 3. Hanover Square. W. The Chair was taken at 4 pm by the President, Sir William H. Flower, K.C.B., F.R.S., who was supported by Sir Joseph Fayrer, Bt., F.R.S., Dr. Edward Hamilton, The Rt. Hon. George Benman, P.C., Sir Hugh Low, G.C.M.G., Lt. Col. Godwin-Austen, F.R.S., Dr. St. George Mivart, F.R.S., Prof. Howes, Herbert Druce, Esq., Joseph Travers Smith, Esq. and other Fellows of the Society. — After the Auditors' Report had been read and other preliminary business had been transacted, the Report of the Council on the proceedings of the Society during the year 1895 was read by Mr. P. L. Sclater, F.R.S. the Secretary. — It stated that the number of Fellows on the 1st of January 1896 was 3027, showing a net increase of 55 Members during the year. The number of new Fellows that joined the Society in 1895 was 197, which was the largest number of elections that had taken place in any year since 1877. — Since the last Anniversary 2 Foreign Members and 7 Corresponding Members had been elected to fill vacancies in those respective lists. — The total receipts of the Society for 1895 had amounted to £ 26.958.9.1, shewing an increase of £ 1851.8.6 as compared with the previous year. This increase was attributable to the prevalence of fine weather during the summer and autumn of 1895 and also to the acquisition of a Giraffe and several other specially interesting additions to the Society's Menagerie. — The ordinary expenditure in 1895 had amounted to £ 23.460.16.10 being £ 155.6.9 less than that of the previous year. Besides this a sum of £ 1649.19.1 had been charged to Extraordinary expenditure. Of this sum £ 1149.19.1 had been devoted to the new scheme of drainage for the Society's Gardens, and £ 500 to the special acquisition of a Giraffe for the Menagerie. Besides this expenditure the sum of £ 1000 had been devoted to paying off the last remaining portion of the Mortgage debt on the Society's Freehold premises, which were now valued at £ 25.000 and were absolutely free and unencumbered. — A second sum of £ 1000 had been transferred to a deposit account. After these payments a balance of £ 1391.1.2 had been carried forward to the credit of the present year. The usual Scientific Meetings had been held during the year 1895, and a large number of valuable communications had been received upon every branch of Zoology. These had been published in the annual volume of »Proceedings«, which contained 1059 pages illustrated by 56 plates. Besides this parts 10 and 11 forming the conclusion of the 13th volume of the Society's Quarto »Transactions« had been published in 1895. — The 31st Volume of the Zoological Record (containing a summary of the work done by Zoologists all over the World in 1894) edited by Dr. David Sharp, F.R.S., had been published and issued to subscribers in November last. A new edition of the list of animals in the Society's collection of which the last (the 8th) was published in 1883, had been prepared under the direction of the

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Autor(en)/Author(s): Ijima Isao

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