TWO NEW CALCAREA OBTAINED FROM SASEHO, JAPAN

By

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(With 4 text-figures)

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The calcareous sponges dealt with in the present report were collected by Professor OHSHIMA of the Kyûshû Imperial University in December 1938, at Saseho, Nagasaki Prefecture, and forwarded to Professor HÔZAWA for identification. Through the courtesy of Professor HÔZAWA, I have had the opportunity of studying these materials.

In the collection there exist two species which seem to be new to science, and I propose to name them *Vosmaeropsis griseus*, n. sp. and *Leucandra ohshimai*, n. sp.

Before proceeding further, I should like to express my hearty thanks to Professor HÔZAWA for his kind guidance and to Professor OHSHIMA for his collection.

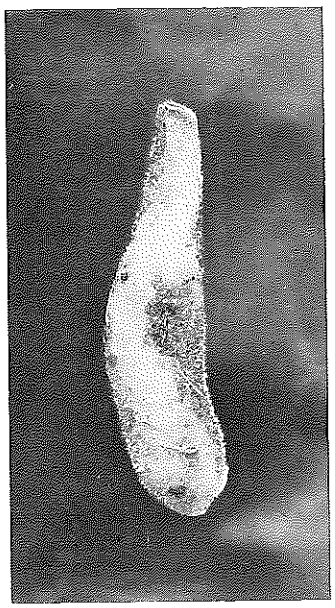
Vosmaeropsis griseus, n. sp.

This new species is based upon two specimens. Each of them represents a solitary person of a cylindrical form, broad at the base and narrowing towards the osculum. The dermal surface hispid from the projecting oxea. The gastral surface appears feebly hispid on account of the projecting apical rays of gastral quadriradiates, and is perforated by apertures of exhalant canals of variable sizes. The colour in alcohol is greyish white, and the texture is fairly firm.

The first specimen (Text-fig. 1) which I make the type of the species is in the form of a nearly straight cylindrical tube, more or less laterally compressed, with a height of about 40 mm. and a maximum diameter of 10 mm. The sponge wall is about 2 mm. thick in the middle parts of the body. The osculum at the upper end is provided with a feebly developed collar, and is about 4 mm. long by 3 mm. broad.

The other specimen is smaller than the former and is strongly bent. It is about 25 mm. in length and is 9 mm. broad in the thickest parts, the wall being about 2.5 mm. in thickness.

Structure. — The canal system is of the leuconoid type, though not very typical, representing some characteristics of the sylleibid type. The flagellate chambers found near the gastral surface are of oval shape, while those situated near the dermal are more elongate. Many of these chambers are thickly and irregularly packed in the chamber layer.



Text-fig. 1. *Vosmaeropsis griseus*, n. sp. $\times 1\frac{1}{2}$.

The skeleton of the dermal cortex consists of tangentially placed triradiates which are rather irregularly and thickly set, and of paired rays of subdermal pseudosagittal triradiates. In addition to these spicules, a number of large oxea and many linear spicules occur in the dermal skeleton standing almost at right angles to the dermal surface. Of the large oxea with their inner ends deeply implanted in the chamber layer, or even projecting into the gastral cavity, their outer ends project beyond the dermal surface to some extent.

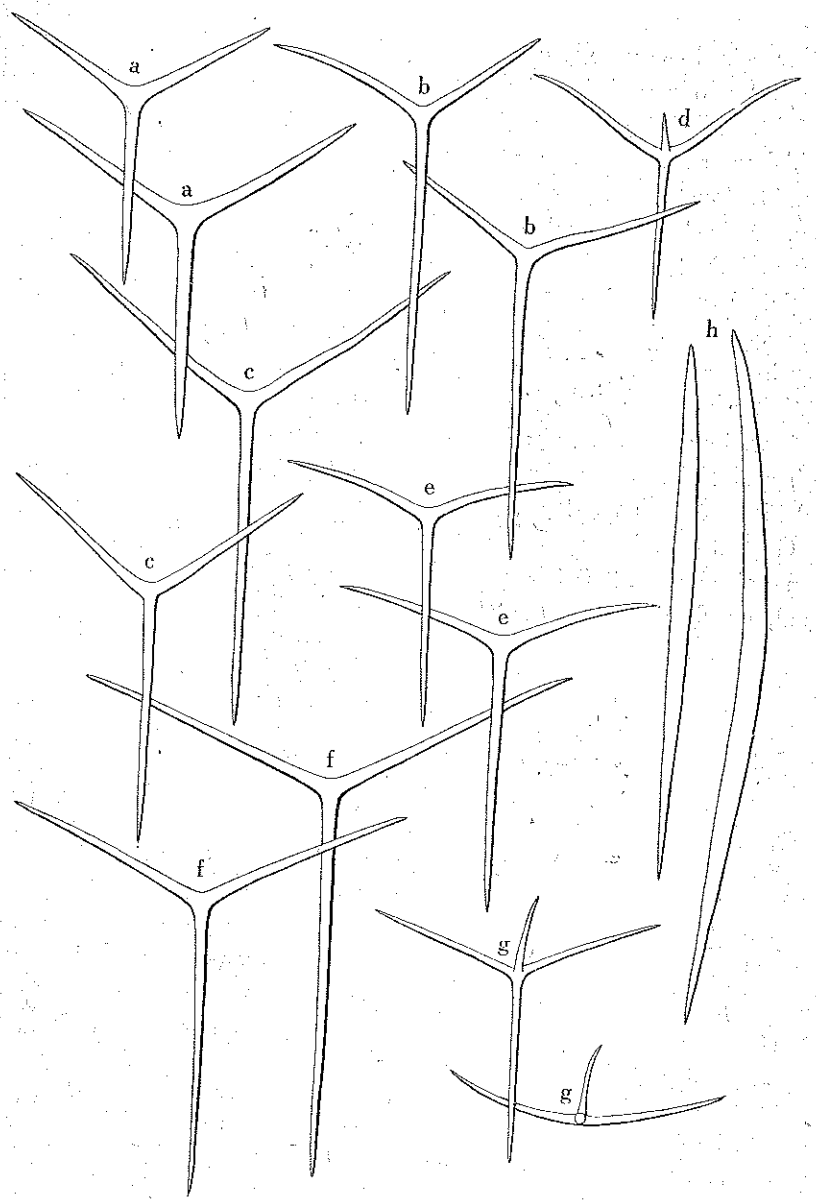
The skeleton of the chamber layer consists of (1) the centripetally directed basal rays of the subdermal pseudosagittal triradiates, (2) tubar sagittal triradiates, (3) tubar quadriradiates which are relatively few in number, (4) the centrifugally directed basal rays of the subgastral triradiates, and (5) the inner portions of the large oxea, whose outer portions project through the dermal cortex.

The gastral skeleton is made up of slender triradiates, quadriradiates with their apical rays projecting into the gastral cavity, and of paired rays of subgastral triradiates. The former two kinds of spicules are arranged tangentially with their basal rays directed downwards.

The oscular margin is supported by large oxea, linear spicules, triradiates and quadriradiates. The first two kinds of spicules run longitudinally and parallel with the basal rays of the remaining spicules. Otherwise there is no any spiculation proper to the osculum.

Spicules (Text-fig. 2). — Dermal triradiates (*a*) slightly sagittal. Rays equally thick, lying in one plane. Basal ray straight, slightly longer than paired rays, 195–250 μ long and 12–18 μ thick at base. Paired rays equal,

either straight or very slightly curved backwards, 180–230 μ long and 12–18 μ thick at base.



Text-fig. 2. *Vosmaeropsis griseus*, n. sp. *a*, Dermal triradiates. *b*, Subdermal triradiates. *c*, Tubar triradiates. *d*, Tubar quadriradiate. *e*, Subgastral triradiates. *f*, Gastral triradiates. *g*, Gastral quadriradiates. *h*, Large oxea. (*a*–*g* ×120; *h* ×60)

Subdermal triradiates (*b*) pseudosagittal. All the rays are of different length, but are nearly equally thick. Basal ray straight, sharply pointed, longer than paired rays, 200–255 μ long and 10–14 μ thick at base. The longer paired ray usually curved forwards, but sometimes irregularly curved, 150–190 μ long and 10–14 μ thick at base. The shorter paired ray nearly straight, 125–160 μ long and 10–14 μ thick at base.

Tubar triradiates (*c*) strongly sagittal and variable in size. Basal ray straight, longer than paired rays, 150–320 μ long and 8–12 μ thick at base. Paired rays equal, curved either forwards or irregularly, 100–260 μ long and 8–12 μ thick at base.

Tubar quadriradiates (*d*) nearly similar to tubar triradiates except in the presence of apical ray. Apical ray straight, finely pointed, about 30 μ long and 10 μ thick at base.

Subgastral triradiates (*e*) sagittal with a wide oral angle. Basal ray straight, longer than paired rays, 250–290 μ long and about 12 μ thick at base. Paired rays almost of equal length, slightly curved forwards, 220–250 μ long and 12 μ thick at base.

Gastral triradiates (*f*) sagittal and slender. Basal ray straight, longer than paired rays, 220–300 μ long and 7–10 μ thick at base. Paired rays equal, nearly straight, 160–240 μ long and 7–10 μ thick at base.

Gastral quadriradiates (*g*) similar to triradiates of the same, differing only in the presence of apical ray. Apical ray sharply pointed, curved upwardly, shorter than the facial rays, 90–180 μ long and 7–10 μ thick at base.

Large oxea (*h*) spindle-shaped, slightly curved, pointed at both ends, variable in length, 650 μ–1.3 mm. long and 20–38 μ thick in the thickest portion. The oxea found in the oscular margin are exactly similar to those seen in the sponge body.

Linear spicules of the dermal surface very fine, straight, sharply pointed at both ends. When they are perfect, they measure up to 600 μ in length and are 2 μ thick.

Remarks. — This species seems to be closely related to RIDLEY's *Vosmaeropsis sericatum*, but may be distinguished from it by the features of the oscular margin, by the canal system, and by the dimensions of the spicules.

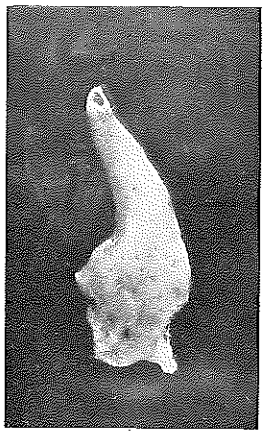
Locality. — Saseho, Nagasaki Prefecture.

Leucandra ohshimai, n. sp.

This species is based on three specimens which were collected by

Prof. OHSHIMA in Saseho Bay on December 29th 1938. They are all of a closely similar appearance. Each of them represents a solitary person of a tubular form, the lower parts broad and laterally compressed and narrowing towards the upper osculum.

The first specimen (Text-fig. 3) which is herewith taken as the type is about 27 mm. in length and is 10 mm. broad at the broadest lower portion. The sponge wall is about 1 mm. thick in the middle of the body. The osculum at the upper end is nearly circular with a diameter of 1.5 mm. and is surrounded by a very feebly developed collar.



Text-fig. 3. *Leucandra ohshimai*, n. sp. $\times 1\frac{1}{2}$.

The dermal surface appears nearly smooth to the naked eye. The gastral surface is also nearly smooth but is perforated by many large exhalant pores. The gastral cavity extends the entire length of the body. The colour is yellowish grey in alcohol and the texture is rigid.

Structure. — The canal system is leuconoid. The flagellate chambers are closely and irregularly packed in the chamber layer. They are spherical or oval in shape with a diameter of 70–130 μ.

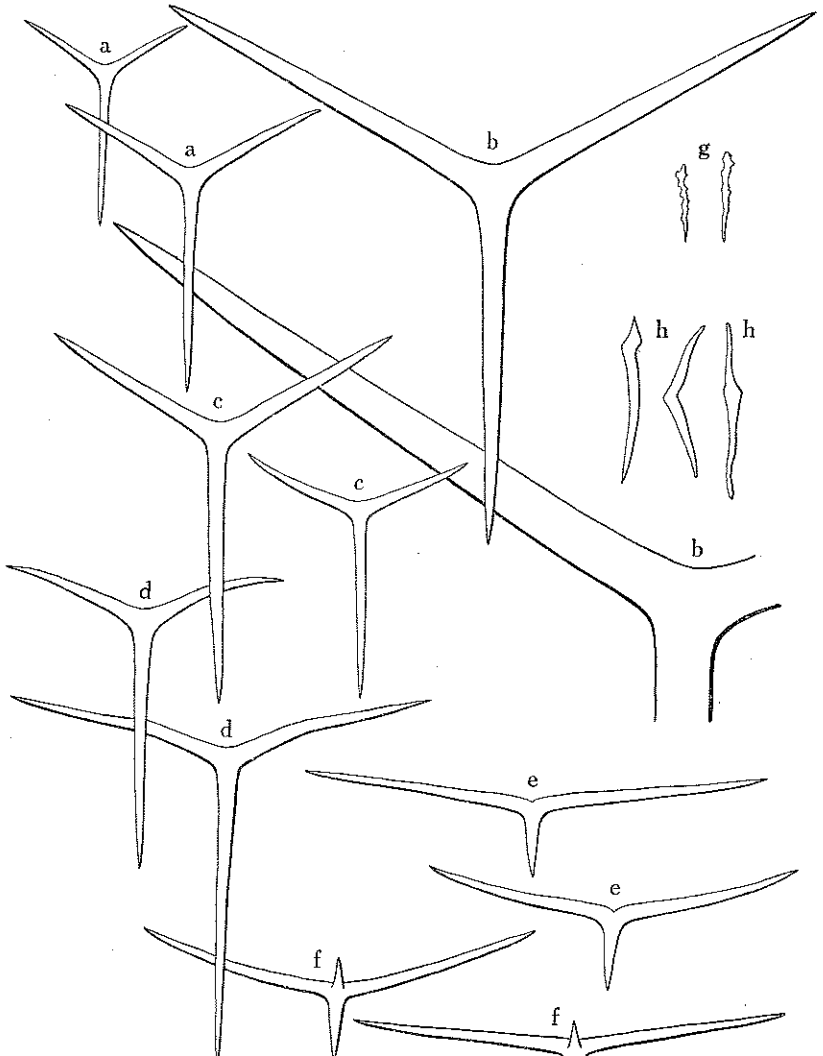
The dermal skeleton is composed of the following elements: 1) smaller sagittal triradiates which are tangentially arranged in a few layers without any orientation, 2) larger regular triradiates which are found among the smaller triradiates above mentioned, and 3) microxea which cover the entire external surface, being disposed at varying angles to the surface.

The tubar skeleton consists of triradiates in an irregular arrangement and of basal rays of subgastral triradiates. In addition to the spicules above mentioned I have met with a few tubar quadriradiates, which do not seem to be characteristic but only occasional. Along the larger exhalant canals there occur some quadriradiates with their apical rays projecting into the canal.

The gastral skeleton is fairly well distinguished from that of the chamber layer. It is made up of paired rays of subgastral triradiates and of tri- and quadriradiates. The latter two elements are arranged tangentially in a few layers with their basal rays pointing downwards.

The oscular margin is composed of gastral triradiates and of microxea which are arranged transversely running parallel with one another.

Spicules (Text-fig. 4). — The smaller dermal triradiates (*a*) sagittal. Rays nearly equally thick, lying in one plane. Basal ray straight, sharply pointed, longer than paired rays, 170–255 μ long and 10–18 μ thick at



Text-fig. 4. *Leucandra ohshimai*, n. sp. *a*, Smaller dermal triradiates. *b*, Larger dermal triradiates. *c*, Tubar triradiates. *d*, Subgastral triradiates. *e*, Gastral triradiates. *f*, Gastral quadriradiater. *g*, Dermal microxea. *h*, Microxea of the oscular margin. (*a–f* ×120; *g–h* ×240)

base. Paired rays equal, straight or slightly curved backwards, 120–210 μ long and 10–18 μ thick at base.

The larger dermal triradiates (*b*) regular. Rays stout, more or less irregular in outline, 390–780 μ long and 38–70 μ thick at base.

Tubar triradiates (*c*) sagittal. Basal ray straight, longer than paired rays, 250–330 μ long and 14–20 μ thick at base. Paired rays equal, either straight or slightly curved forwards, sharply pointed, 160–230 μ long and 14–20 μ thick at base.

Subgastral triradiates (*d*) strongly sagittal. Rays are of equal thickness being 16–20 μ at base. Basal ray straight, much longer than paired rays and 270–340 μ long. Paired rays nearly equal, widely divergent, curved backwards and 170–240 μ long.

Quadriradiates of the larger exhalant canals similar to gastral quadriradiates which will be stated later on.

Gastral triradiates (*e*) strongly sagittal. All rays nearly equally thick, terminating in sharp points. Basal ray straight, much shorter than paired rays, 50–80 μ long and 14–18 μ thick at base. Paired rays widely divergent, slightly curved forwards, 220–270 μ long and 14–18 μ thick at base.

Gastral quadriradiates (*f*) similar to gastral triradiates, differing only in the presence of apical ray. Apical ray sharply pointed, nearly straight, shorter and thinner than facial rays, about 25 μ long and 10 μ thick at base.

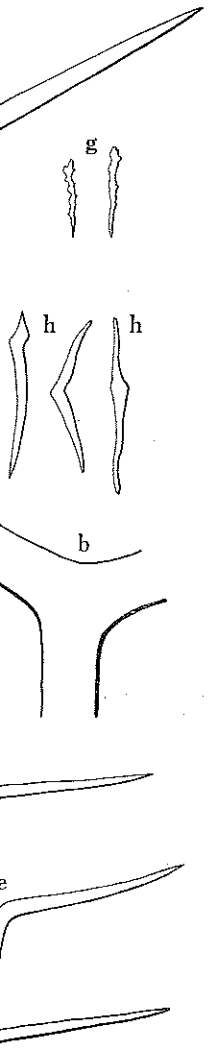
Dermal microxea (*g*) nearly straight, provided with many spine-like protuberances on the surface. Proximally each tapers to a sharp point and distally terminates in a blunt end, measuring about 50 μ in length and 8 μ thick in the thickest parts.

Microxea of the oscular margin (*h*) more or less curved and are variable in shape. Some of these spicules are lance-headed, some others are provided with a nodiform ring in the middle, and some are bent irregularly. Average length of these spicules is about 100 μ.

Remarks. — In the spiculation this new species bears a marked resemblance to HÔZAWA's *Leucandra dura*, but may be easily distinguished from it by the external appearance and by the absence of gastral microxea. The shape of dermal microxea and the arrangement of microxea in the oscular margin appear to be characteristics to this species. I take pleasure in naming this interesting species after Professor OHSHIMA, the collector of the specimens.

Locality. — Saseho, Nagasaki Prefecture.

radiates (*a*) sagittal. ray straight, sharply and 10–18 μ thick at



triradiates. *b*, Larger iates. *e*, Gastral tri- icroxea of the oscular

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