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Report of the Biological Survey of Mutsu Bay.
6. Calcarea of Mutsu Bay.[1]

By

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(With Plate I.)

The Calcarea fauna of Mutsu Bay seems to be very poor, considering the result of the biological survey of this bay. It is represented by only two species, namely *Leucosolenia laxa* Kirk and *Leucosolenia mutsu*, n. sp.

In the present paper I shall deal with these species.

Leucosolenia mutsu, n. sp.

(Pl. I., Figs. 1–3)

There are many specimens of this new species in the collection. They were all taken at Futagojima near the Marine Biological Station of Asamushi, being found attached to the base of *Sargassum thumbergii* (O'Kuntze).

The sponge forms irregular, spreading masses consisting of a loose network of Ascon-tubes with varying closeness of its meshes in different specimens and in different parts of the same colony. The oscula are found as small round apertures distributed here and there on the surfacee of the Ascon-tubes (Pl. I., Fig. 1). The sponge is rather small and attains the leght of 5–12 mm. The diamcter of Ascon-tubes varies a good deal in different parts of the same colony, measuring about 0.15–0.6 mm.

The colour of the sponge is brownish white when preserved in alcohol.

Structure.—the canal system is of Dendy's type *A*.[2]

The skeleton is composed of triradiates arranged in a few confused layers in the walls of Ascon-tubes (Pl. I., Fig. 2). In addition to the

1) A contribution from the Marine Biological Station, Asamushi, Aomori-Ken.

2) Dendy, A. Trans. Roy. Soc. Victoria, Vol III 1891 P. 26.

triradiotes above mentioned I have met with a few quadriradiates, which do not seem, however, to be characteristic but only occasional.

Spicules. (Pl. I., Fig. 3) — Triradiates regular. Rays straght, conical, and gradually sharp-pointed, measuring 60–150μ in length and 8–14μ in thickeness of base.

Locality. — Futagojima.

Remarks. — This new species closely resembles *Leucosolenia dubia* DENDY[1] and *Leucosolenia multiformis* BREITFUSS[2] in general form and canal system, the latter two species differ from the former, however, in spiculation.

Leucosolenia laxa KIRK.

(Pl. I., Figs. 4 and 5)

Leucosolenia laxa, KIRK, Trans. New Zealand Instit., Vol. XXVIII, 1895. p. 208, Pl. IV., fig. 1.

This species is represented in the collection by several specimens obtained at different stations in the bay. I have here chosen a specimen, which was taken by Messrs. TAKATSUKI and SATO off Tairadate by means of a dredge, on which to base further records.

The sponge (Pl. I., Fig. 4) forms an oval shape being broadest at the upper end and narrowed towards the sttachment base. It consists of a massive assembrage of reticulating Ascon-tubes. The reticulation of Ascon-tubes is fairly dense on the outer part and is rather loose in the inner. It is devoid of either an osculum or pseudosculum. Total length about 21 mm ; greatest breadth about 10 mm ; thickness is about 7 mm. as measured in the thickest part. The pseudopores which are distributed on the sponge surface and which are formed by the anastomosing Ascon-tubes vary in both size and shape, measuring from 0.5 mm. upto about 2 mm. in the greatest breadth. The Ascon-tubes measure 0.2–0.4 mm. in calibre.

The colour of the sponge in alcohol is white with a slight brownish tint.

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1) *Lecosolenia dubia* DENDY. Trans. Roy. Soc. Victoria. Vol. III, 1891, p. 50, Pl. I. Fig. 3; Pl. IX, Fig. 3).

Lecosolenia multiformis BREITFUSS. Mémoires de l'Acad. Impér. des Sciences, St. Pétersbourg (Ser. 8) Vol. VI, No. 2 P. 15. Taf. 1. Fig. 2; Taf. IV. Fig. 26.

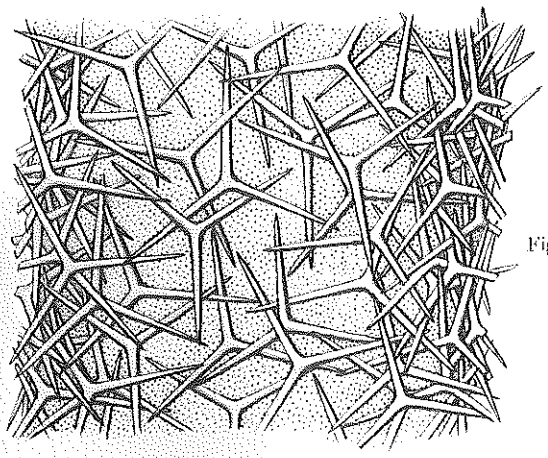


Fig. 2.

Fig. 1.

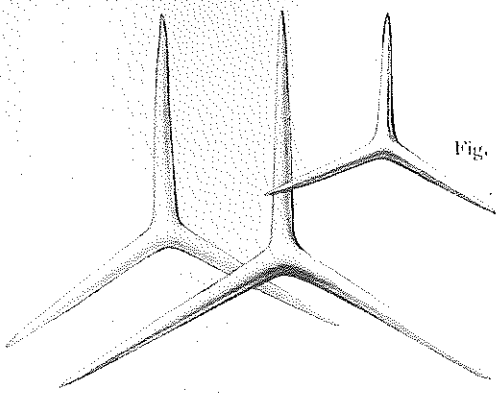


Fig. 3.

Fig. 5.

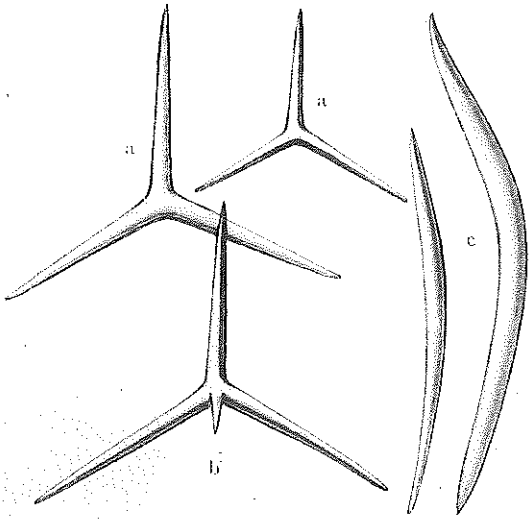
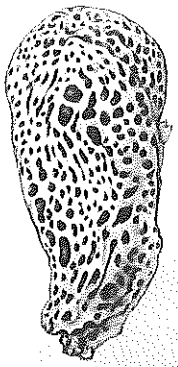


Fig. 4.



B. Sakuma del.

S. Hôzawa: Calcarea of Mutsu Bay.

Structure. — The skeleton is chiefly composed of triradiates, arranged irregularly and in a few layers in the wall of Ascon-tubes. There is no conspicuous difference in size between the spicules of the outher Ascon-tubes and those of the inner ones. A very small number of quadriradiates occur among the triradiates with their apical ray projecting into the cavity of Ascon-tubes. In addition to those spicules above mentioned there are a few oxea and hair-like oxea standing vertically or obliquely to the surface of the Ascon-tubes.

Spicules (Pl. I., Fig. 5). — Triradiates (Fig. 5, a) regular with rays straight and gradually tapering to a sharp point. They measure 110–170μ in length and 10–16μ in thickness at base.

Quadriradiates (Fig. 5, b). — The facial rays are just like triradiates above mentioned, the apical ray is distinctly thinner than the facial rays, and is more or less irregularly curved with a finely pointed end, about 130μ long and 8μ thick at base.

Oxea (Fig. 5, c). — Elongate spindle shaped, with sharply pointed ends, the broadest part often lying nearer one end than the other showing the tendency to become clavate, more or less uneven in outline, 250–320μ long and 16–20μ thick at the broadest part.

Localities. — New Zealand (KIRK); off Tairadate; Takaisozaki near Isa.

Remarks. — The specimens from Mutsu Bay seem to agree well with the present species which was first described by KIRK, using specimens from New Zealand. I am therefore inclined to identify them with that species. As pointed out by KIRK the present species is closely allied to HAECKEL'S species *Leucosolenia reticulum*[1] and is distinguished from it by slight difference in the form of oxeote spicules.

EXPLANATION OF PLATE I.

Fig. 1. *Leucosolenia mutsu*, n. sp. ×4.
Fig. 2. The same. Surface view of a part of Ascon-tube. ×100.
Fig. 3. The same. Triradiate spicules. ×200.
Fig. 4. *Leucosolenia laxa* KIRK. ×2.
Fig. 5. The same. a, triradiates; b, quadriradiate; c, oxea. All ×200.

[1] *Ascandra reticulum* HAECKEL. Kalkschwämme, 1872, p. 87, Taf. 14, Fig. 4 a, 4 f; Taf. 20.