

Report on the Sponges obtained from Tajima District, Southwestern Region of the Japan Sea

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The sponges described in this paper were obtained by Mr. TETSUO OGATA of the Kasumi Branch of the Japan Sea Regional Fisheries Research Laboratory in August, 1965, from the shallow waters of the Tajima District. Only one species was secured by Mr. KATSUCHIYO ITO from the crab-fishing grounds at the depth of about 200 meters using a trawl-net. These collections were entrusted to me for investigation.

The sponges of the southwestern region of the Japan Sea have been little studied, although they are abundant and comprise a large number of interesting forms. The writer reported in 1965 two species of Demospongiae from these waters ; and this is, hitherto, the only record of sponges from this sea region.

Seventeen species are described and two of them are new to science.

Here the writer wishes to express his gratitude to Mr. OGATA and Mr. ITO for their kindness in allowing me to examine their collections.

The following is the list of the species dealt with in the present paper.

Systematic List of Species

Class Calcarea

Order Homocoela

Family Homocoelidae

- 1) *Leucosolenia laxa* KIRK

Order Heterocoela

Family Heteropiidae

- 2) *Grantessa shimeji* HOZAWA
- 3) *Grantessa mitsukurii* HOZAWA
- 4) *Vosmaeropsis sasakii* HOZAWA

Class Demospongiae

Order Haplosclerina

Family Haliclonidae

- 5) *Haliclona permollis* (BOWERBANK)

Family Callyspongiidae

- 6) *Callyspongia confoederata* (RIDLEY)
- 7) *Callyspongia elongata* (RIDLEY and DENDY)
- 8) *Callyspongia variabilis* (DENDY)

Order Poecilosclerina

Family Adociidae

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- 9) *Petrosia ushitsuensis* TANITA
- 10) *Petrosia spheroida*, n. sp.
- Family Myxillidae
- 11) *Myxilla bivalvia*, n. sp.
- Family Microcionidae
- 12) *Anchinoe novae-zealandiae* DENDY
- Order Hadromerina
- Family Choanitidae
- 13) *Spirastrella insignis* THIELE
- 14) *Spirastrella abata* TANITA
- Order Keratosa
- Family Spongiidae
- 15) *Hyattella intestinalis* (LAMARCK)
- 16) *Ircinia fasciculata* (PALLAS)
- 17) *Cacospongia lamellosa* (ESPER)

DESCRIPTION OF THE SPECIES

1. *Leucosolenia laxa* KIRK

(Pl. I, fig. 1)

Leucosolenia laxa, KIRK (1895) p. 208, Pl. 4, fig. 1 ; DENDY and ROW (1913) p. 722; HOZAWA (1928) p. 220, Pl. 1, figs. 4,5; (1940) p. 35 ; TANITA (1941) p. 2, Pl.1, fig. 1 ; p. 265 ; (1942) p.23 ; p.83 ; (1943) p. 383, Pl. 12, fig. 20; (1964) p. 17 ; (1965) p. 45.

The collection contains four specimens of this species which were secured from the shallow waters of Tajima by Mr. OGATA. All of them consist of a massive assemblage of reticulating Ascon-tubes and their colour varies from nearly white to grey in alcohol. The largest one (Pl. I, fig. 1) measures 34×20×20 mm in dimensions.

Previously known distribution : —New Zealand; in Japan— the Pacific and Japan Sea sides of Honshu ; Kyushu.

Remarks : — The present species is one of the commonest Calcarea to be met with along the coasts of Japan.

2. *Grantessa shimeji* HOZAWA

(Pl. I, fig.2)

Grantessa shimeji, HOZAWA (1916) p. 2, Pl. 1, figs. 1,2, Pl.2, figs. 10, 11, text-fig. 1 ; (1929) p. 315 ; TANITA (1942) p. 40, Pl. 3, fig. 13 ; (1943) p. 531, Pl. 14, fig. 44.

Four small specimens of this species are in the collection. Each of them forms an irregular elongated small colony, consisting of from three to six erect and cylindrical tubes, each varying from 1.5 mm to 4.5 mm in diameter. The largest specimen was shown in Pl. I, fig. 2, measures 30 mm in height. The colour of the sponges in alcohol is nearly white.

Previously known distribution : — Misaki ; Shimoda ; Shima-Oshima ; Toba Bay.

3. *Grantessa mitsukurii* HOZAWA

Grantessa mitsukurii, HOZAWA (1916) p. 23, Pl. 1, fig. 7, Pl. 2, fig. 15, text-fig. 5 ; (1929) p. 318; TANITA (1942) p.37, Pl. 2, fig. 11 ; (1943) p. 416, Pl. 15, figs. 47, 48.

This species is represented in the collection by three pieces, which are perhaps parts of the same specimen. The sponge consists of several strongly laterally compressed tubular individuals, each of them is provided with an osculum at the upper end. The colour in alcohol is pale grey and the texture is rather rigid.

Previously known distribution:—Misaki ; Tateyama; Awa-Kominato ; Tanabe Bay ; Amakusa ; Kannoura ; Izumo-Kagamura.

4. *Vosmaeropsis sasakii* HOZAWA

(Pl. I, fig. 3)

Vosmaeropsis sasakii, HOZAWA (1929) p. 319, Pl. 5, figs. 30, 31, text-fig. 16 ; TANITA (1943) p.428.

A single specimen in the collection is assigned to this species. The sponge (Pl. I, fig. 3) is cylindrical in shape with an osculum at the upper end of the body which leads into a large gastral cavity extending throughout the entire length of the sponge. It measures 14×9.5×6mm in dimensions. The osculum is circular in shape with a diameter of 2 mm and the wall of the body is 1 mm thick. The dermal surface of the sponge is very rough. The colour in spirit is pale grey and the texture is rather rigid.

Previously known distribution : — Hakodate.

Remarks : — This species was first described by HOZAWA in 1929, based upon a specimen obtained from Hakodate. This is the second record of this species in Japanese waters.

5. *Haliclona permollis* (BOWERBANK)

Isodictya permollis, BOWERBANK (1866) p. 278 ; (1874) p. 123, Pl. 48, figs. 9,10.
Reniera tubifera, GEORGE and WILSON (1921) p. 145.

Haliclona permollis, DE LAUBENFELS (1936) p. 444 ; (1939) p. 1 ; (1942) p. 263 ; (1949) p. 11 ; TANITA (1958) p. 130, Pl. 1, figs. 3, 4, text-fig. 2 ; (1961) p. 338 ; (1965) p. 45.

This cosmopolitan species is represented in the collection by three specimens, all of them were secured from the shore of Takeno by Mr. OGATA. Each of them has an irregular massive body, with the surface of pale lavender colour.

Previously known distribution:— Cosmopolitan. In Japan— Matsushima Bay ; Kurushima Strait ; Sado Island.

6. *Callyspongia confoederata* (RIDLEY)

Tuba confoederata, RIDLEY (1884) p. 400.

Siphonella laxa, LENDENFELD (1887) p. 803, Pl. 24, fig. 55.

- Siphonella confoederata*, LENDENFELD (1887) p. 803, Pl. 25, fig. 60.
Siphonella typica, LENDENFELD (1887) p. 804, Pl. 24, fig. 54, Pl. 27, figs. 2, 19.
Siphonella elastica, LENDENFELD (1887) p. 805.
Siphonella paucispina, LENDENFELD (1887) p. 805.
Siphonella axialis, LENDENFELD (1887) p. 805, Pl. 24, fig. 53.
Siphonella tuberculata, LENDENFELD (1887) p. 808.
Siphonella extensa var. *dura*, LENDENFELD (1887) p. 806.
Spinosella confoederata, TOPSENT (1897) p. 479, Pl. 19, fig. 20.
Callyspongia confoederata, BURTON (1934) p. 541 ; TANITA (1961) p. 133, Pl. 3, fig. 3, text-fig. 2.

This species is represented by a single specimen in the collection obtained from the shallow waters of Moroyose. The sponge is erect, consists of three tubes connected at the base. Each tubular body has very uneven surface proliferating into numerous blunt out-growths and is penetrated by a wide oscular tube. The total length of the sponge is 90 mm and the breadth 80 mm. The colour in spirit is very pale brown and the texture is coarsely fibrous and elastic.

Previously known distribution :— Australia ; Malay Area ; Penguin Channel ; in Japan—Wagu, Mie Prefecture.

7. *Callyspongia elongata* (RIDLEY and DENDY)

- Pachychalina elongata*, RIDLEY and DENDY (1886) p. 329 ; (1887) p. 23, Pl. 6, fig. 1.
Cladochalina elongata, BURTON (1927) p. 510.
Callyspongia elongata, TANITA (1961) p. 339, Pl. 1, fig. 3 ; (1964) p. 17, Pl. 1, fig. 3.

There are two specimens of this species in the collection, both were obtained from the shallow waters of Moroyose. One consists of two branches and the other of four branches united near the base. The larger sponge is 120 mm in height and the diameter of the branches is about 10 mm. The oscula are small, nearly circular in shape with the diameter of 1—2 mm and arranged almost entirely to one side of the branches. The colour in spirit is very pale brown and the texture elastic and fibrous.

Previously known distribution :— Bass Strait ; in Japan— Kurushima Strait ; Noto Peninsula.

8. *Callyspongia variabilis* (DENDY)

- Pachychalina variabilis*, DENDY (1890) p. 353, Pl. 58, fig. 3, Pl. 60, fig. 2.

Four specimens in the collection are identified with this species. They are secured from the shore of Takeno in August, 1965. They are variable in external form, flabellate, digitate or lobose. Oscula are 1—2 mm in diameters, for the most part thickly scattered over one surface and scarcely on the opposite side. The largest one is flabellate and measures 80×55×12 mm in dimensions. The colour in formalin is pale purplish grey and the texture is fibrous and somewhat elastic.

The dermal skeleton is an irregular reticulation, composed of spiculo-fibre of variable thickness and with polygonal meshes varying in size. The main skeleton is also

an irregular reticulation of spiculo-fibre, containing both a large amount of spongin and numerous spicules. The spicules are polyserially arranged and occur scattered outside the fibres as well as in them.

Spicules only oxeas, nearly straight or very slightly curved, sharply pointed at both ends, variable both in length and in thickness, measuring $125-145 \times 5-10\mu$.

Previously known distribution : — Bahamas.

9. *Petrosia ushitsuensis* TANITA

(Pl. I, fig. 4)

Petrosia ushitsuensis, TANITA (1963) p. 122, Pl. 4, fig. 1, text-fig. 1 ; (1965) p.47, Pl. 1, fig. 4.

The single specimen in the collection is referable to this species. The sponge (Pl. I, fig. 4) is a flattened massive body with three stout branches which terminate bluntly. It measures about 100 mm in height, 155 mm in breadth and 35 mm in thickness. Several small circular oscula are seen on the upper surface but none on the under surface. The colour in the preserved state in spirit is very pale brown and the texture is hard.

The skeleton is composed of two sorts of oxeas, stout and slender, and of bean-shaped microstrongyles.

Previously known distribution : — Noto Peninsula ; Sado Island.

10. *Petrosia spheroida*, n. sp.

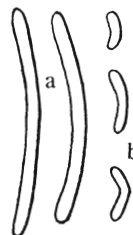
(Pl. I. fig. 5, text-fig. 1)

This new species is based upon a single specimen (Pl. I, fig. 5) which was obtained by Mr. OGATA from the shallow waters off Kasumi in August, 1965. The sponge is a spheroidal mass with a diameter of 73 mm. In the middle portion of the upper side, there is an oval osculum of 12×10 mm. The surface is not smooth and is covered with numerous, minute pores. The colour in formalin is pale yellowish white and the consistency is very hard and incompressible.

The skeleton is that of a typical *Petrosia*. There appears to be no spongin, and the entire skeleton is a very dense reticulation of strongylate megascleres, separate and in bundles, intermingled with microstrongyles. The dermal skeleton is a network of strongyles arranged tangentially.

Spicules (Text-fig. 1) : — Megasclere is of one kind, strongyles (a), smooth, always curved, equally thick throughout the length, rounded off at both ends, measuring $190-235 \times 6-11\mu$. Microscleres also strongyles (b), bean- or sausage-shaped, measuring $35-70 \times 6-8\mu$

Remarks : — This species is very remarkable for its spheroidal external form and its skeleton consisting of strongyles of two kinds.



Text-fig. 1. Spicules of *Petrosia spheroida*, n. sp. a, strongyles ; b, microstrongyles ; A11 \times 120.

11. *Myxilla bivalvia*, n. sp.

(Pl. II. fig. 6, text-fig. 2)

This new species is represented by 46 specimens in

the collection. All of them were obtained by Mr. K. ITO in 1965, using a trawl-net from the crab-fishing grounds at the depth of about 200 meters, off Kasumi, Hyogo Prefecture.

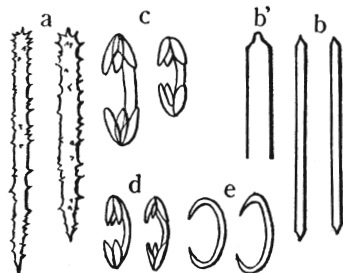
The specimens have the same general external appearance although varying widely in detail of form. Each of them is attached to a shell of a bivalve [*Modiolus margaritaceus* (NOMURA et HATAI)] by its basal portion. The specimen which the writer chose as the type of this species (Pl. II. fig. 6) is erect, massive, pyramidal in shape, measuring 17 mm in height and 12 mm in maximum diameter. The surface of the sponge is not smooth but rather rough. The colour in formalin is dirty grey and the texture hard but friable.

The main skeleton is a compact, sub-isodictyal reticulation of acanthostyles, with triangular meshes having the sides the length of one spicule. No echinating spicules can be found and there is no recognizable spongin. The dermal skeleton is supported by brushes of tornotes, mingled with large numbers of scattered microscleres. Microscleres, isochelas and sigmas, are also scattered throughout the main skeleton.

Spicules (Text-fig. 2):— Megascleres are of two kinds. (1) Acanthostyles (a) straight, sparsely but entirely spined, rather sharply pointed at one end, forming the main skeleton, and measures $200-230 \times 8-11 \mu$. (2) Tornotes (b) smooth, straight, abruptly pointed at one end and the other end (b') not sharply pointed but ends with a small swelling, measuring $165-180 \times 4-6 \mu$, forming the dermal brushes.

Microscleres are of three kinds. (1) Large isochelas (c) tridentate, with curved shaft and measure $45-52 \times 4-5 \mu$. (2) Small isochelas (d) also tridentate, numerous, $18-20 \mu$ in length. (3) Sigmas (e) of the usual shape, measure $22-28 \mu$.

Remarks:— The sponge is undoubtedly referable to the genus *Myxilla*, of which, in both form and arrangement of the spicules, it is a typical member. This species is very remarkable on account of its peculiar substrata and also on account of its structure at the end of the tornote spicules.



Text-fig. 2. Spicules of *Myxilla bivalvia*, n. sp.

a, acanthostyles $\times 150$; *b*, tornotes $\times 150$; *b'*, a head of a tornote $\times 630$; *c*, large isochelas $\times 300$; *d*, small isochelas $\times 630$; *e*, sigmas $\times 630$.

12. *Anchinoë novae-zealandiae* DENDY

(Pl. II. fig. 7, text-fig. 3)

Anchinoë novae-zealandiae, DENDY (1924) p. 360, Pl. 12, fig. 2, Pl. 15, figs. 9—11; BRØNDSTED (1924) p. 466; BERGQUIST (1961) p. 179, fig. 6.

There are two specimens of this species in the collection. They are nearly the same in external appearance.

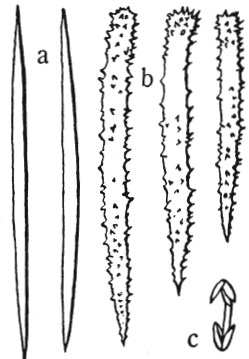
The larger one (Pl. II, fig. 7) is submassive, slightly flattened, somewhat flabellate, attached to some calcareous seaweed, and $30 \times 25 \times 13$ mm in dimensions. The surface of the sponge is uneven, marked by shallow, meandering grooves. Pores and vents inconspicuous. The colour in spirit is pale brown and the texture fibrous and compressible.

The dermal skeleton is composed of radiate tufts of slender oxeas, projecting

beyond the surface for the greater part of their length. The main skeleton consists of stout, close set, plumose columns of acanthostyles, with their bases embedded in spongin. These columns run approximately at right angles to the surface and are connected here and there by short transverse anastomoses, which are also echinated by acanthostyles. The echinating spicules are very abundant and usually project from the fibre nearly at right angles. Many megascleres and small isochelas occur scattered in the ground substance between the fibres.

Spicules (Text-fig. 3): — Oxeas (a) slender, straight, pointed at each end, measuring $155-180 \times 5-6\mu$. Acanthostyles (b) nearly straight, abundantly spined except for the sharply pointed apex, measuring $110-165 \times 7-10\mu$ (at base, including spines). Isochelas (c) small, arcuate, tridentate, about $12-15\mu$ in length.

Previously known distribution: — New Zealand.



Text-fig. 3. Spicules of *Anchinoe novae-zealandiae* DENDY
 a, oxea $\times 300$;
 b, acanthostyles $\times 300$;
 c, isochela $\times 630$.

13. *Spirastrella insignis* THIELE

(Pl. II, fig 8)

Spirastrella insignis, THIELE (1898) p. 43, Pl. 2, fig. 5, Pl. 8, fig. 18 ; TANITA (1961) p. 349, Pl. 4, fig. 17, text-fig. 9 ; (1964) p.18; (1965) p. 50, Pl. 2, fig. 9.

There is a single, large specimen (Pl. II, fig. 8) of this species in the collection. The sponge is massive, $135 \times 130 \times 60\text{mm}$ in dimensions. The surface, except in the neighbourhood of the oscula, is covered with numerous, closely placed, characteristic mammiform papillae. The colour in spirit is dark grey and the texture is rather spongy and cavernous internally.

Previously known distribution: — Sagami Sea ; Kurushima Strait ; Noto Peninsula ; Sado Island.

Remarks: — According to Mr. OGATA, the collector, this sponge is very common in the sea area off Kasumi.

14. *Spirastrella abata* TANITA

(Pl. II, fig. 9)

Spirastrella abata, TANITA (1961) p. 348, Pl. 4, fig. 16, text-fig. 8.

This species is represented by two specimens which were obtained from Kasumi and Takeno. The larger one which came from Takeno (Pl. II, fig. 9) is massive, with several small oscula in the upper surface. It is $80 \times 55 \times 35\text{mm}$ in dimensions. The small warts of the surface are not so distinct as in the type specimen of this species. The colour in spirit is dark brown and the texture spongy and cavernous internally.

Previously known distribution: — Kurushima Strait.

Remarks: — This well-characterized species was originally described by the writer based upon the sponges obtained from Kurushima Strait, Inland Sea. This is the second record of this species from Japan.

15. *Hyattella intestinalis* (LAMARCK)
(Pl. III, fig. 11)

Spongia intestinalis, LAMARCK (1814) p. 439.

Hippospongia intestinalis, DENDY (1905) p. 214 ; DENDY and FREDERICK (1924) p. 512.

Hyattella intestinalis, LENDENFELD (1889) p. 116 ; DE LAUBENFELS (1948) p. 41, Pl. 6, fig. 13.

There are two specimens of this species in the collection, both are from the shallow waters of Moroyose and Takeno in the Tajima district.

The larger one which came from Moroyose (Pl. III, fig. 11) is flattened massive in shape, consists of irregularly anastomosed, low tubular bodies, with dimensions of $90 \times 63 \times 30$ mm. The surface of the sponge, from which the skin is lost, has somewhat the appearance of a honey-comb. The colour in formalin is dirty brown and the texture rather spongy.

The main skeleton is composed of an irregular network of horny fibers. The primary fibers are $55-85\mu$ in diameter and cored with foreign material. The secondary fibers vary greatly in diameter being $25-45\mu$ and are free from foreign inclusions.

Previously known distribution : — Ceylon Seas ; Mascarene Islands ; Amirante Group ; Sandy Isle ; Zanzibar ; Australia ; Mediterranean ; West Indies.

16. *Ircinia fasciculata* (PALLAS)
(Pl. II, fig. 10, Pl. III, fig. 12)

Spongia fasciculata, PALLAS (1766) p. 361.

Hircinia schulzei, DENDY (1905) p. 221, Pl. 16, fig. 3.

Hircinia mutans, WILSON (1925) p. 491, Pl. 44, fig. 2, Pl. 52, figs. 2, 4, 6, 7.

Ircinia fasciculata, DE LAUBENFELS (1948) p. 66, Pl. 13, fig. 27 ; LITTLE (1963) p. 34 ; RÜTZLER (1965) p. 48, fig. 21.

Two specimens in the collection were assigned to this species. Each of them is nearly conical in shape with an osculum at the summit of the body, and attached to the substratum directly by its basal part.

The sponge (Pl. II, fig. 10) is 32×25 mm in horizontal dimensions with the height of 27 mm. The surface is rather uniformly covered with conules of 1—2 mm high. There is a tough dermis containing very small foreign material. The osculum is nearly circular in shape with 5 mm in diameter. The colour in spirit is dark brownish lavender, and the texture extremely spongy and compressible, but when dried, it becomes rather stiff and hard.

The skeleton consists of main fibres, terminating in the conules, and connecting fibres. The primary fibres are cored with foreign material, such as fragments of sponge spicules and sand grains of various sizes, the range in diameter being $130-220\mu$. The secondary fibres are numerous, connected the primary ones with each other, contain no foreign material, and are $50-80\mu$ in diameter. Through the soft tissue, very slender filaments, the characteristic of this genus, are scattered abundantly (Pl. III, fig. 12).

Previously known distribution : — nearly cosmopolitan : Mediterranean ; Indian Ocean ; Australia ; East Indies ; Atlantic coast of North America ; West Indies.

17. *Cacospongia lamellosa* (ESPER)
(Pl. III, figs. 13, 14)

Spongia lamellosa, ESPER (1794) p. 270.

Cacospongia lamellosa, EHLERS (1870) p. 15 ; DE LAUBENFELS (1948) p. 95.

The single specimen of this species was secured by Mr. OGATA from the shallow waters of Takeno, Hyogo Prefecture, in August, 1965.

The sponge (Pl. III, fig. 13) consists of a rather thin, irregular, flattened crust, attached by one side of the body to the substratum and grows laterally forming a leaf-like appearance. There are three oscula at the free end of the body which are nearly circular in shape, and 4—6 mm in diameter. The specimen measures 93 × 72 mm in horizontal dimensions with the thickness of 16 mm.

The surface is feebly conulose, with the conules 0.5 mm high and 1—2 mm apart. The colour in formalin is brown and the texture soft and compressible, but slightly coarse.

The skeleton consists of a reticulation of stratified fibres of brown colour. The primary fibres are 37—50 μ in diameter, cored with foreign inclusions, run vertically into the surface conules. The secondary fibres are free from foreign matter and clear and clean. They vary greatly in diameter, being sometimes as stout as the primaries and sometimes very slender, measuring only about 15 μ in diameter (Pl. III, fig. 14).

Previously known distribution : — Australia ; Southern Pacific region.

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日本海西南海域、但馬地方の海綿

谷 田 専 治

本報告に記載する海綿類は、日水研資源第3研究室の尾形技官が1965年8月に但馬沿岸で採集したものと、伊藤技官が香住沖の水深約200mのズワイガニ漁場から底曳網によつて採取したものである。

日本海西南海域の海綿類については、1965年に著者が2種の尋常海綿を報告した以外は、ほとんど知られていない。この度は石灰海綿綱のもの4、尋常海綿綱のもの13で、12属17種に及び、中に2の新種を含んでいる。

- 1) *Leucosolenia laxa* KIRK カゴアミカイメン (pl. I. fig. 1)
 ニュージーランドから報告された石灰海綿であるが、わが国では本州の太平洋および日本海側、九州沿岸でもっとも普通にみられるものの1である。
- 2) *Grantessa shimeji* HOZAWA ツボシメジカメイン (pl. I. fig. 2)
 三崎・下田・志摩大島・鳥羽湾から知られている。
- 3) *Grantessa mitsukurii* HOZAWA ミツクリクダカメイン
 三崎・館山・安房小湊・田辺湾・天草・出雲沿岸等から知られている。
- 4) *Vosmaeropsis sasakii* HOZAWA ササキボスマールカメイン (pl. I. fig. 3)
 函館から報告されたもので、これが2度目の記載である。
- 5) *Haliclona permollis* (BOWERBANK) ムラサキカイメン
 世界的の広分布種。本邦では松島湾・来島水道・佐渡島などから報告されている。
- 6) *Callyspongia confoederata* (RIDLEY) ザラカイメン
 オーストラリア・マレー地方・ペンギン海峡から知られ、本邦では三重県和具から。
- 7) *Callyspongia elongata* (RIDLEY and DENDY) ホソナガザラカイメン
 バス海峡から報告されたもの。本邦では来島水道・能登半島から知られている。
- 8) *Callyspongia variabilis* (DENDY)
 バハマから報告されたもの。
- 9) *Petrosia ushitsuensis* TANITA ウシツカタカイメン (pl. I. fig. 4)
 能登半島及び佐渡島に分布。
- 10) *Petrosia spheroida*, n. sp. * タマカタカイメン (pl. I. fig. 5, text-fig. 1)
 直径70mmを越す球状体で、上部中央に卵形の大きな1つの口を開く。体表には細かい凹凸があり、多数の微小入水孔がみられる。帯黄白色で質は固い。棍棒体からなる密な網

目状の骨格を有す。骨片は平滑であるが彎曲する棍棒体と、そら豆状またはソーセージ型の微小棍棒体のみ。

- 11) *Myxilla bivalvia*, n.sp.* カイツキネンエキカイメン (pl. II. fig. 6, text-fig. 2)
香住沖のズワイガニ漁場から得られたもので、ほぼ錐状を呈し高さ10~20mm。下部で小型二枚貝のマメヒバリガイに付着する。体表は粗。汚灰色で固いが碎けやすい。体骨格は有棘針状体が三角形網目状にならび、海綿質はほとんどない。体表には両尖体が房状に配列し、多数の微小骨片が散在している。骨片は主骨格を形成する有棘針状体と、体表にならぶ両尖体、および微小骨片として大小2種の等爪状体とシグマ体を有する。両尖体は平滑で一端は尖つているが、他端は先端に小さな膨みがある。
- 12) *Anchinoë novae-zealandiae* DENDY (pl. II. fig. 7, text-fig. 3)
ニュージーランドから報告されていたもので、本邦では最初の記載である。
- 13) *Spirastrella insignis* THIELE オウパンカイメン (pl. II. fig. 8)
相模湾・来島水道・能登半島・佐渡島などから報告されている。尾形枝官によれば、本種はこの地方で極めて普通なものである。
- 14) *Spirastrella abata* TANITA アバタカイメン (pl. II. fig. 9)
来島水道から最初に報告されたもの。
- 15) *Hyattella intestinalis* (LAMARCK) (pl. III. fig. 11)
印度洋・オーストラリア・地中海・西印度諸島などから報告されていて、分布はかなり広いものと思われる。
- 16) *Ircinia fasciculata* (PALLAS) クロトゲカイメン (pl. II. fig. 10, pl. III. fig. 12)
世界的広分布種で、世界各地から報告されている。
- 17) *Cacospongia lamellosa* (ESPER) (pl. III. fig. 13, 14)
オーストラリア・東太平洋地域に分布。

* 和名新称。

EXPLANATION OF THE PLATES

Plate I.

- Fig. 1. *Leucosolenia laxa* KIRK × 1.5
- Fig. 2. *Grantessa shimeji* HOZAWA × 1.8
- Fig. 3. *Vosmaeropsis sasakii* HOZAWA × 2.3
- Fig. 4. *Petrosia ushitsuensis* TANITA × 0.5
- Fig. 5. *Petrosia spheroida*, n. sp. × 0.9

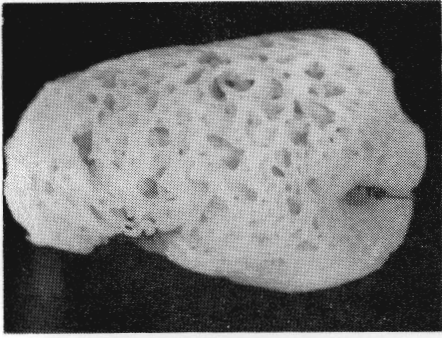
Plate II.

- Fig. 6. *Myxilla bivalvia*, n. sp. × 2.4
- Fig. 7. *Anchinoë novae-zealandiae* DENDY × 1.5
- Fig. 8. *Spirastrella insignis* THIELE × 0.4
- Fig. 9. *Spirastrella abata* TANITA × 1.2
- Fig. 10. *Ircinia fasciculata* (PALLAS) × 1.0

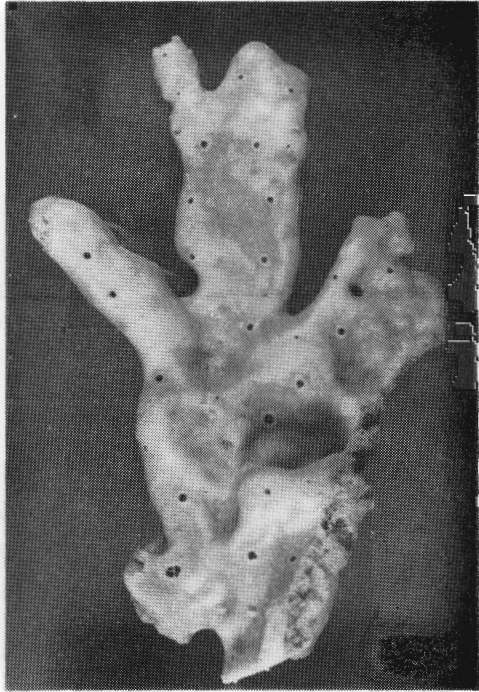
Plate III.

- Fig. 11. *Hyattella intestinalis* (LAMARCK) × 0.8
- Fig. 12. *Ircinia fasciculata* (PALLAS), cross section of showing the fibres and filaments × 80
- Fig. 13. *Cacospongia lamellosa* (ESPER) × 0.6
- Fig. 14. Cross section of *Cacospongia lamellosa*, showing the fibres × 80

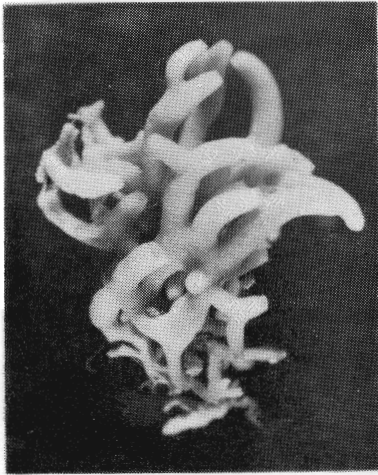
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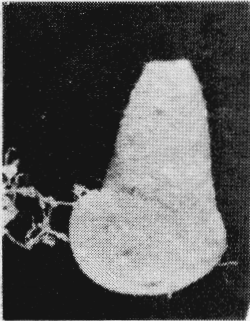
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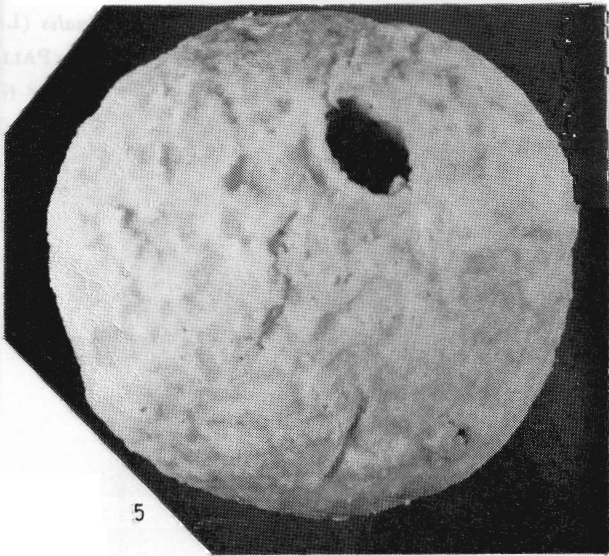
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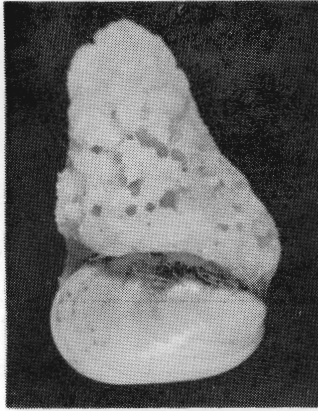


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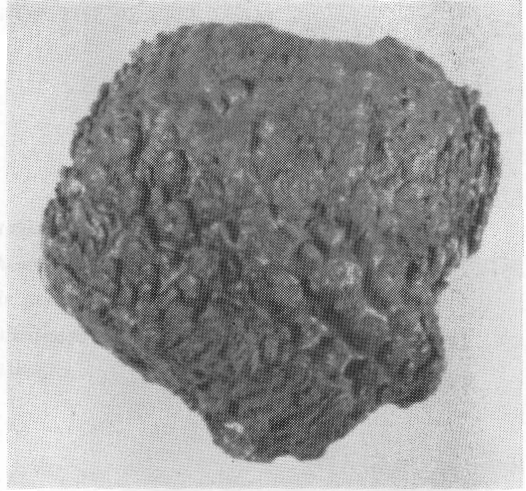


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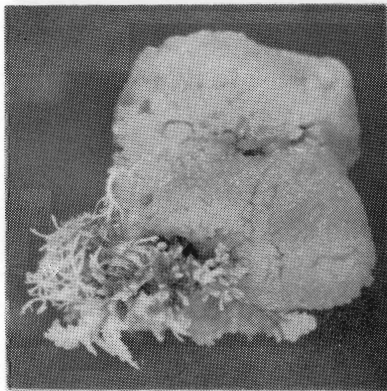
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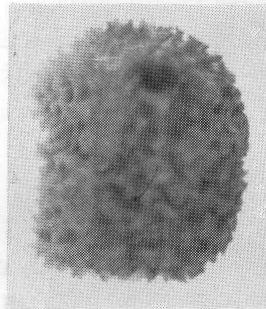
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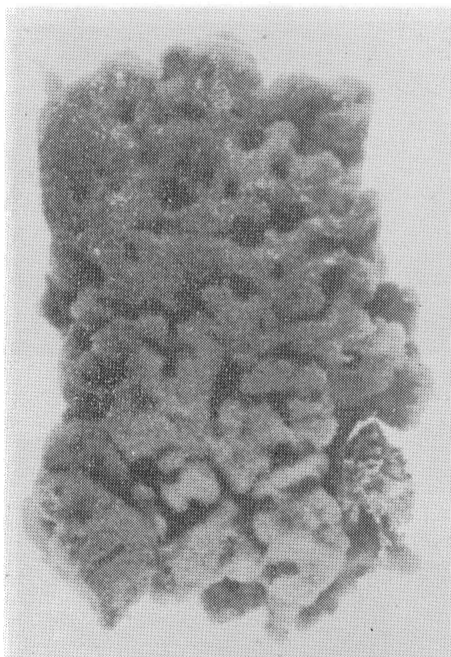


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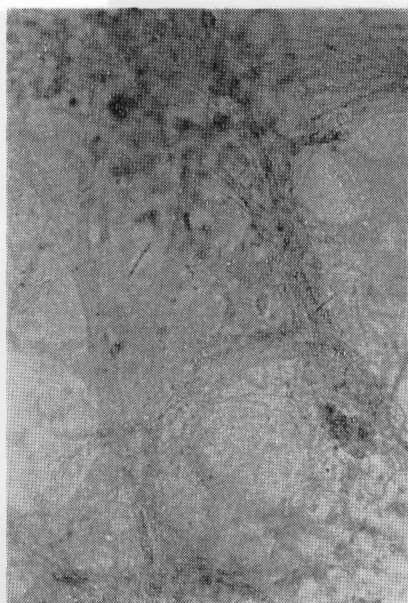


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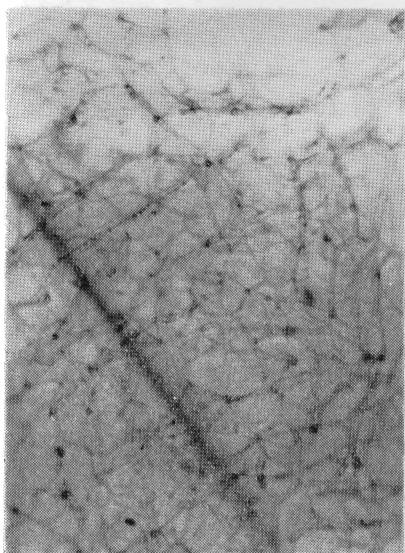
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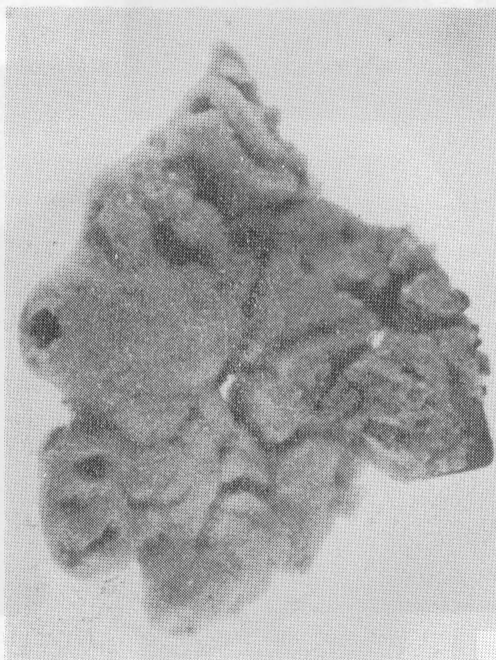
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