

西沙群岛粗胞苔虫属两新种*

刘锡兴

(中国科学院海洋研究所)

1975年3—5月作者参加了中国科学院南海海洋研究所组织的西沙群岛生物调查,获得不少苔藓动物(Bryozoa)标本,发现其中有五号标本与以往报道的粗胞属(*Scrupocellaria* Van Beneden, 1845)内各已知种显著不同,经研究确认系两个新种。新种的模式标本均保存在中国科学院海洋研究所。

1. 独角粗胞苔虫(新种) *Scrupocellaria unicornis* sp. nov. (图1—2)

正模标本 标本号: 75BX002, 1975年4月6日作者采自西沙树岛,水深45米,附于一块死珊瑚上。

副模标本 标本号: 75BX003, 1975年3月29日作者采自西沙琛航岛,水深30米,附于一块珊瑚石上。

其他标本 标本号: 75BX005 (1975年4月13日采自西沙华光礁礁盘内)、75BX006 (1975年4月6日采自西沙群岛的西沙洲,水深45米),均附着在珊瑚及其附生的海藻上。

群体(colony)较纤细,树枝状,分枝不繁茂,高度为10—15毫米,附在珊瑚及海藻上。双歧分枝,分枝由两列虫室(zooecium)构成,虫室细长形。膜下孔(opesium)中等大小,约占虫室前区(frontal area)的1/2左右,长卵圆形,两端较狭,中部较宽。隐壁(cryptocyst)不发达。每一虫室都有一团扇形的盖刺(scutum),着生于膜下孔内缘中部偏下位。通常分枝始端的虫室盖刺较大,远端的虫室盖刺较小,这可能是由发育程度不同而引起。刺腔(scutal cavity)一般复杂,由较粗的中央主腔(central principal cavity)及其分出的边缘盲枝(marginal caecal branches)构成。端刺(distal spines)较粗壮,非受孕虫室(unfertilized zooecium)恒定6根——虫室顶端中央1根顶刺(central distal spine),3根外刺(outer spi-

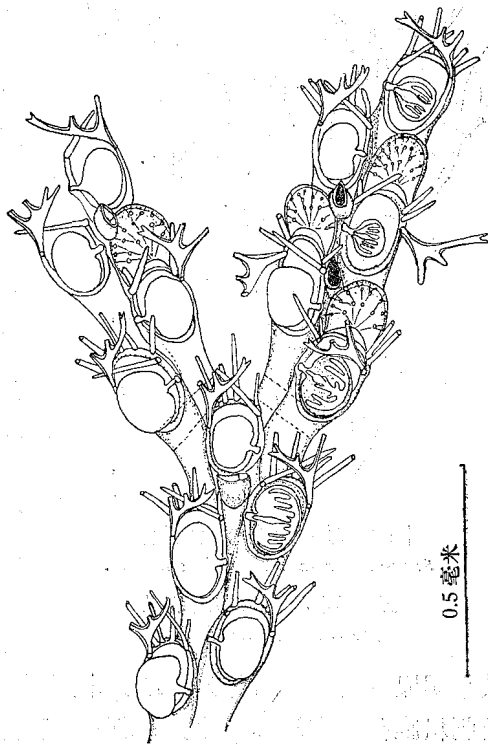


图1 独角粗胞苔虫(新种) *Scrupocellaria unicornis* sp. nov.

正模标本,前面观,表示虫室、端刺、盖刺、卵胞和前鸟头体

* 中国科学院海洋研究所调查研究报告第481号。

该号标本系中国科学院海洋所徐法礼同志采得,特此致谢。

nes), 2 根内刺 (inner spines); 但受孕虫室 (fertilized zooecium) 无中央顶刺。每一虫室始端的 1 根外刺(第三外刺)特别粗壮, 稳定地呈鹿角形(四叉形)。始端的 1 根内刺(第二内刺)通常与鹿角形的第三外刺在虫室远端交错排列。前鸟头体 (frontal avicularium) 中等大小, 位于虫室始端裸壁上, 紧贴相邻虫室膜下孔的内缘, 吻 (rostrum) 和颚骨 (mandible) 都呈三角形, 即使是受孕虫室之远位虫室, 颚骨也都指向远端。在我们所有的标本中, 只有少数虫室有前鸟头体, 但轴虫室 (axillary zooecium) 均有一始端较狭、远端较宽、近乎半球形的前鸟头体, 位于膜下孔的始端下面, 颚骨为简单三角形, 横向侧面。无侧鸟头体 (lateral avicularium)。振鞭体 (vibraculum) 中等大小, 隐藏在虫室背面, 从分枝前表面观察看不到。振鞭 (flagellum) 细短, 不超过一个虫室的长度, 末端呈钩状。鞭沟 (flagellum-groove) 略斜。根孔 (rootlet-foramen) 大小不均。附根 (rootlet) 粗细不均, 光滑, 无钩状物。轴振鞭体 (axillary vibraculum) 单一。卵胞 (ovicell) 球形, 长大于宽, 前表面凸, 饰有许多小孔和放射线。几丁质关节 (chitinous joints) 在分歧处横切外虫室的始端裸壁 (gymnocyst) 和膜下孔的始端。

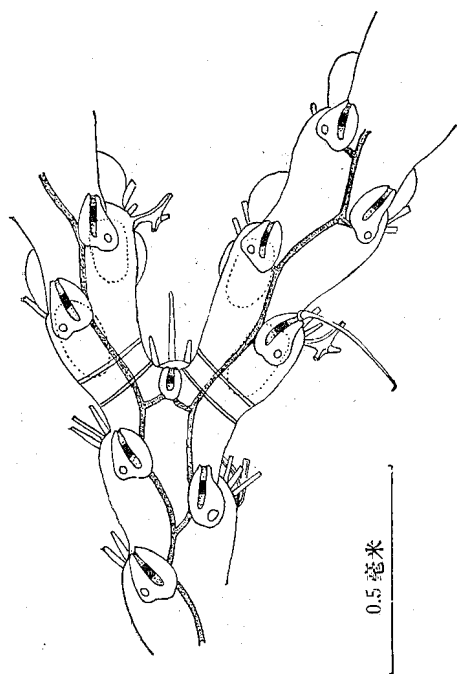


图 2 独角粗胞苔虫(新种)
Scrupocellaria unicornis sp. nov.

正模标本, 背面观, 表示分歧
方式、振鞭体和一根振鞭

本新种和长刺粗胞苔虫 *Scrupocellaria logispinosa* Harmer, 1926 在虫室和盖刺的形状及端刺的数目等特征上较为相似, 但新种轴虫室前鸟头体的颚骨为简单三角形, 和长刺粗胞苔虫具有 3—4 个长尖的颚骨有显著区别。至于端刺, 新种除鹿角状第三外刺特别粗壮外, 其余的刺粗细都比较均匀; 长刺粗胞苔虫的 6 根端刺发育程度不齐, 其中第一外刺和内刺细弱, 第二外刺极长, 第三外刺细弱, 呈双叉或三叉形, 从第二外刺的基部长出。因此, 两者的端刺虽然数目相同, 但排列方式不同, 尤其是长刺粗胞苔虫细弱的双叉或三叉形第三外刺与新种的鹿角状第三外刺显著不同。两者

其它明显区别是: 新种无侧鸟头体, 振鞭体隐藏在虫室的背面, 从群体前面观见不到, 而长刺粗胞苔虫有侧鸟头体, 前面观清晰可见。

2. 拟匙粗胞苔虫(新种) *Scrupocellaria spatulatoidea* sp. nov. (图 3—7)

正模标本 标本号: 75BX001, 1975 年 4 月 7 日作者采自西沙群岛树岛礁盘上, 附着在珊瑚及其附生的海藻上。

群体较粗壮, 分枝繁茂, 呈树丛状, 高度可达 35 毫米, 附着在珊瑚及其附生的海藻上。双歧分枝, 分枝由两列虫室构成。虫室呈细长形, 远端最宽, 始端最狭。膜下孔卵圆形, 占虫室前区 1/2 弱。隐壁不发达。每一虫室均有一大小和形状多变的盖刺, 附着在膜下孔中部或偏下位的内缘裸壁上。有的盖刺呈细棒形, 刺片几乎与刺柄同粗, 刺腔极细, 如一细线, 有的棒形盖刺自由端稍膨大成小球形, 刺腔稍粗但无分枝; 有的自由端膨大成为双叉形,

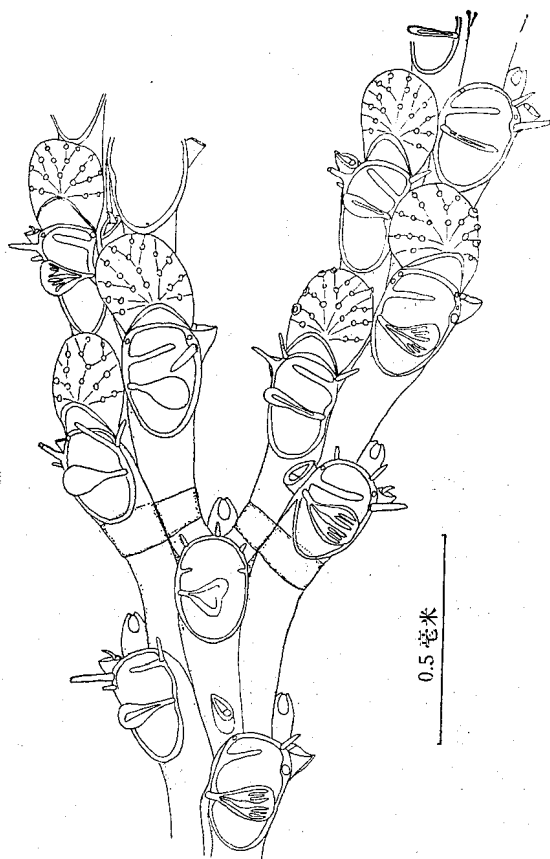


图3 拟匙粗胞苔虫(新种)

Scrupocellaria spatulatoidea sp. nov.

正模标本,前面观,表示虫室、端刺、盖刺和前鸟头体

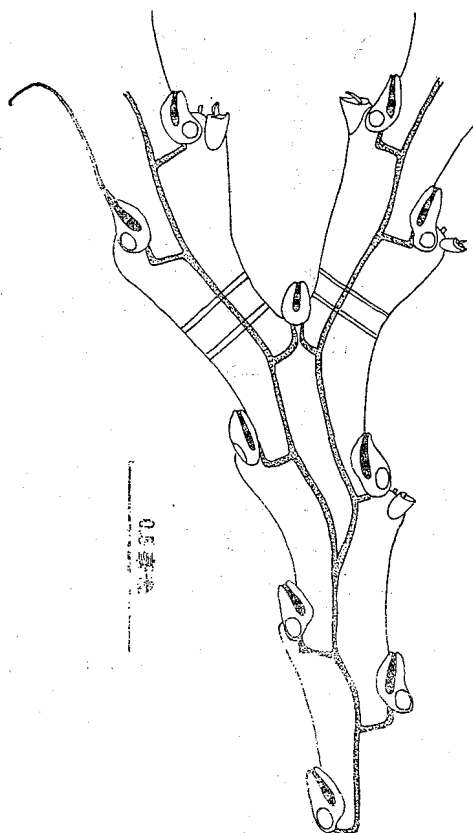


图4 拟匙粗胞苔虫(新种)

Scrupocellaria spatulatoidea sp. nov.

正模标本,背面观,表示分歧方式、振鞭体和一根振鞭

其刺腔边略呈双叉形;有的自由端较膨大但不分叉,呈小扇形;有的自由端极膨大,呈蒲扇形,可分上、下两叶(distal and proximal lobes),刺腔较复杂,可清晰辨出较粗的中央主腔以及分出边缘盲枝。每一虫室有端刺4根或6根——3(或2)根外刺,3(或2)根内刺,但有时刺式也为3—2或2—3;其中第二或第三外刺及内刺较粗长,但均不超过虫室长度,一般短于虫室宽度,其余的刺均细而短。轴虫室的端刺一般每侧2根侧刺和1根中央顶刺,但有时一侧2根侧刺,而另一侧仅有1根侧刺,所有的刺基部均无关节。前鸟头体小形,两侧扁平,位于虫室始端裸壁上,吻和颞骨较细长,均指向虫室远端。并非每一虫室都有前鸟头体。一般轴虫室都有一个前鸟头体,位于虫室始端,颞骨指向始端或远端。侧鸟头体大小变化较大,通常较小。有时侧鸟头体极度增大,增大的侧鸟头体吻加宽成三叶形,但叶尖不呈钩状;颞骨远端不加宽,呈三叉形,叉尖细而长,始端为长三角形。振鞭体较小,形状和匙粗胞苔虫 *Scrupocellaria spatulata* (D'Orbigny), 1851 相近,从前面观清晰可见,但受孕虫室则看不见。鞭沟略斜,根孔较大。振鞭细短,约与虫室同长,末端呈钩状。附根较粗,均有倒钩,末端呈小盘状,盘缘具有若干小刺突。轴振鞭体单一。卵胞球形,长大于宽,前表面凸,饰有许多小孔和放射线,有时边缘小孔呈小管状突出。几丁质关

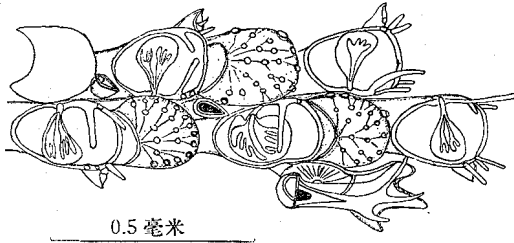


图5 拟匙粗胞苔虫(新种) *Scrupocellaria spatulatoidea* sp. nov.

正模标本,前面观,表示虫室、端刺、盖刺、
卵胞和一个增大的三叶形侧鸟头体

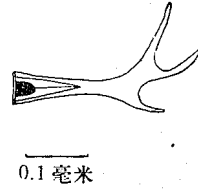


图6 拟匙粗胞苔虫(新种) *Scrupocellaria spatulatoidea* sp. nov.

正模标本,表示一个三叉形颚骨

节在分歧处横切外虫室膜下孔始端。

本新种和匙粗胞苔虫非常相似,两者都有形状相近的、增大的三叶形侧鸟头体,但吻和颚骨都有明显的区别。新种的三叶形吻之叶尖呈钝形、无钩,颚骨始端为长三角形,远端不加宽,呈细长的三叉形;而匙粗胞苔虫之三叶形吻之三叶尖却弯曲成钩状,颚骨始端为短三角形,远端加宽,末端有1或3个尖突(一个中央尖和两个侧尖,见图8a, b)。新种的

盖刺通常较小,形状和大小多变(见上述),但匙粗胞苔虫的盖刺一般较大,皆呈团扇形(就我们所藏标本而言)。至于端刺,新种的端刺细而短,基部均无关节;匙粗胞苔虫的端刺比较粗长,大半都有关节,在我们所藏的标本(如西沙群岛的琛航岛、华光礁、中建岛等地的标本)中始端的两根外刺极粗长,大大超过虫室的长度,使群体外观呈明显的多毛状。虽然新种卵胞周缘的小孔有时呈管状突出,而与匙粗胞苔虫相似,但新种的卵胞前表面凸有放射线。后一特征在我们所藏的16号匙粗胞苔虫(从东海到西沙群岛,由潮间带至水深(62米)的标本中均未发现,然而其卵胞前表面平坦,在卵胞的周缘和前表面管状小孔均较明显。另外,匙粗胞苔虫几丁质关节在

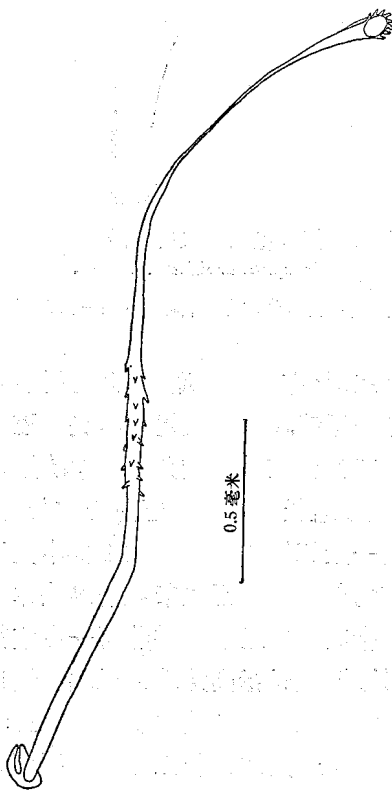


图7 拟匙粗胞苔虫(新种) *Scrupocellaria spatulatoidea* sp. nov.

正模标本,表示一个振鞭体和一根完整的附根,
附根有倒钩,末端呈小盘形,盘缘有小刺突

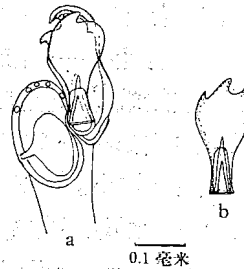


图8 匙粗胞苔虫 *Scrupocellaria spatulata* (D' Orbigny), 1851(产地: 西沙羚羊礁)

前面观 a: 一个增大的三叶形侧鸟头体, 吻呈钩状, 颚骨
末端单尖; b: 一个三尖型(一中央尖, 两侧尖)颚骨

分歧处仅横切外虫室的始端裸壁,未涉及膜下孔,而新种的几丁质关节却横切膜下孔的始端。

参 考 文 献

- [1] Busk G., 1852. Catalogue of the marine Polyzoa in collection of the British Museum. I, Cheilostomata (Part 1), London.
- [2] Canu F. & Bassler R. S., 1929. Bryozoa of the Philippine Regions. *Bull. U. S. Nat. Mus.*, **100**(9): 1—685, 94 pls., 224 text-figs.
- [3] Harmer S. F., 1923. On Cellularine and other Polyzoa. *Journ. Linn. Soc.*, London, Zoology, **35**: 293—361, 4 pls.
- [4] Harmer S. F., 1926. The Polyzoa of the Siboga Expedition, II. Cheilostomata Anasca. *Siboga Exped.*, 28b, Leiden, pp. 1—360 pls. 13—34.
- [5] Hastings A. B., 1927. Report on the Polyzoa. *Trans. Zool. Soc.*, London, **22**: 331—353, 7 text-figs.
- [6] Hastings A. B., 1932. The Polyzoa, with a note on an associated hydroid. *Rep. Great Barrier Exped.*, 1938—39, **4**(12): 299—415, 1 pl., 20 text-figs.
- [7] Hastings A. B., 1943. Polyzoa (Bryozoa) I. Serupocellariidae, Farciminariidae, Bicellariellidae, Aeteidae, Serupariidae. *Discovery Rep.*, **22**: 307—510, 9 pls., 66 text-figs., 8 tables.
- [8] Kluge H. A., 1962. Bryozoa of the North Seas of SSSR. *Esd. Akad. Nauk. SSSR*, Moscow, 1962, pp. 1—524, 404 text-figs. (In Russian)
- [9] Mawatari S., 1956. Cheilostomatous Bryozoa from the Kurille Islands and the neighbouring districts. *Pacific Sci.*, **10**(2): 113—135, 15 text-figs.
- [10] Mawatari S., 1971. Bryozoa. In *New Illustrated Encyclopeida of the Fauna of Japan*, vol. 1, Nokuryyu-Kau, Bryozoa: 585—626. (In Japanese)
- [11] Osburn R. C., 1950. Bryozoa of the Pacific coast of America. Part 1. Cheilostomata-Anasca. *Allan Hancock Pacific Exped.*, **14**(1): 1—269, 29 pls.
- [12] Robertson A., 1905. Non-incrusting cheilostomatous Bryozoa of the west coast of North America. *Proc. Calif. Acad. Sci.*, Zool., **2**(5): 235—320, 13 pls.
- [13] Silén L., 1941. Cheilostomata Anasca (Bryozoa) collected by Prof. Dr. Sixten Bock's expedition to Japan and the Bonin Islands, 1914. *Ark. Zool.*, **33A**(12): 1—130, 9 pls., 183 text-figs.
- [14] Waters A. W., 1913. The marine fauna of British Africa and Zanzibar.... Bryozoa cheilostomata. *Proc. Zool. Soc.*, London, 1913, pp. 458—537, 10 pls.
- [15] Yanagi N. & Okada Y., 1918. On a collection of Japanese Cheilostomatous Bryozoa. I. *Ann. Zool. Jap.*, **9**: 407—429, 7 text-figs.

TWO NEW SPECIES OF *SCRUPOCELLARIA* (*SCRUPOCELLARIIDAE*, ANASCA) OF THE XISHA ISLANDS, GUANGDONG PROVINCE, CHINA*

Liu Xixing

(Institute of Oceanology, Academia Sinica)

ABSTRACT

This paper deals with two new species of *Scrupocellaria* Van Beneden 1845 in the Xisha Islands, Guangdong Province. Their types are all preserved in the Institute of Oceanology, Academia Sinica, Qingdao. The descriptions of new species are following.

1. *Scrupocellaria unicornis* sp. nov. (text-figs. 1—2)

Colony rather delicate, tree-like, less branched, 10—15 mm. in height. The branches dichotomous, consist of two rows of zooecia. Zooecia elongated. Opesia moderate, longioval, occupying about one half of the front, narrower distally and proximally, wider in the middle. Cryptocyst little developed. Scuta flabellate, attached on the inner margin of a opesium at its middle part proximally. Scuta of the zooecia situated in the proximal portion of a branch are inclining to have a larger size. Distal spines well developed, 6 in number on a unfertilized zooecium, of which 1 central distal (this spine lacking on fertilized zooecia), 3 outer lateral, 2 inner lateral. The third outer spine is especially robust and assumes the deer's horns appearance. This outer spine with second inner one usually overarches on the distal portion of a zooecium. Frontal avicularia moderate in size, take their position on the proximal gymnocyst and very close to the inner margin of neighbouring zooecium. Their rostrum and mandible are all triangular, directed distally in both the ordinary zooecia and the successors distal to the fertilized ones. With the exception of the axillary zooecia, many zooecia are absent of these avicularia. The frontal avicularia of the axillary zooecia are semiglobose, wider distally than proximally, just below the opesia. Their mandible simple triangular and directed transversely to side. Lateral avicularia wanting. Vibracula moderate, conceal themselves in the dorsal surface of zooecia, not visible from frontal view. Flagella slender and short, no more than the length of a zooecium, its tip hooked. Ovicells subglobose, longer than wide, have the perforated pores and the radiate lines on their frontal surface. Axillary vibracula single. At a bifurcation chitinous joints tranverse the proximal gymnocyst of the outer zooecia and involve their opesia.

This new species bears some resemblances to *Scrupocellaria longispinosa* Harmer 1926 in shape of zooecia and number of distal spines, but distinguished from that species by its peculiar deer's horn-shaped third outer spine, by the fact that the mandible of the frontal avicularia of the axillary zooecia are simple triangular, the vibracula conceal themselves in the dorsal surface of zooecia, and by its absence of lateral avicu-

* Contribution No. 481 from the Institute of Oceanology, Academia Sinica.

laria.

2. *Scrupocellaria spatulatoidea* sp. nov. (text-figs. 3—7)

Colony rather robust, richly branched, and a tree-like tuft of 35 mm. in height. Branches dichotomous, consist of two rows of zooecia. Zooecia elongated, wide distally, narrowed gradually toward the proximal end. Opesia oval, wider distally than proximally, occupying no more than one half of the front. Scuta variable in both shape and size; sometimes their free end like a slender staff, sometimes expanded more or less into a small ball, or a small fork or a small fan, sometimes expanded greatly into a large fan-palm.

Distal spines 3-3 or 2-2, sometimes 3-2 or 2-3, the second or third outer and inner spines rather robust and long, but no more than the length of a zooecium, the rest spines rather slender. Axillary zooecia provide with one slender central distal spine and two slender lateral spines at each side, but the latter sometimes being two at one side and one at another side. All spines have no joint at their base. Frontal avicularia smaller, compressed, take their position on the proximal gymnocyst, their rostrum and mandible elongate, directed distally. Many zooecia are absent of frontal avicularia. Usually, there is a frontal avicularium in proximal gymnocyst of the axillary zooecia, their mandible triangular and directed distally or proximally. Lateral avicularia variable in size, usually small. This small lateral avicularium is sometimes replaced by an enlarged trifoliate avicularium. The enlarged lateral avicularia have a rostrum widening into trifoliate shape and a mandible, of which the proximal end is longitriangular and distal end is long three-forked. Vibracula are visible from frontal view, flagellum-groove little oblique, but rootlet-foramen larger, flagella slender and short, its tip hooked, approximately equal to the length of a zooecium. Rootlets larger in diameter, with barbing thorns. Axillary vibracular single. Ovicells subglobose, typically longer than wide, their frontal surface convex, having the perforated pores and the radiate lines on the frontal surface, sometimes the marginal pores projected in the shape of tube. At a bifurcation the chitinous joints transverse the proximal end of the opesia of outer zooecia.

This new species is very similar to *Scrupocellaria spatulata* (D'Orbigny), 1851 in having the enlarged trifoliate lateral avicularia, but distinguished from that species by its rostrum and mandible. In *S. spatulata*, the trifoliate rostrum hooked at its end; mandible short triangular in proximal end, widened in distal end, and provides with one or three spikes in its end (see text-figs. 8a, b). But in this new species, trifoliate rostrum does not hook in its distal end, mandible longitriangular in proximal end and does not widen in distal end, and has three long forks. The new species is also different from that species in its chitinous joints transversed the proximal end of the opesia of outer zooecia at a bifurcation.