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NOTE ON THE OCCURRENCE OF *AMSDENOIDES* (Rugosa)
FROM THE JAPANESE SILURIAN

by

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(with 1 plate)

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Abstract

While revising materials described by Sugiyama (1940), the authors found amongst the collection the presence of Lundlovian *Amsdenoides* first founded in the U.S.A. This finding is of some importance on the correlation and the palaeogeographical consideration upon the Japanese Silurian.

The late Dr. T. Sugiyama (1940) described for the first time in this country many coelenterate fossils from the Silurian Kawauchi series developed in the Kitakami mountains, Northeast Japan. Although poorly preserved in general, Sugiyama's materials are still much better than specimens we can collect from the Kawauchi series today.

During the course of our research on the Japanese Silurian, therefore, it became essential to re-examine Sugiyama's original materials which are now stored at the Geological and Paleontological Institute of the Tohoku University, Sendai, Japan.

Through the kind arrangements of Prof. T. Kotaka, Drs. K. Mori and M. Murata of the Institute we could examine all presently available thin sections of rugose corals Sugiyama described.

We found a thin section of a rugose coral which was formerly illustrated by Sugiyama as Gen. et sp. indet., but it was not described then. In our opinion this form is referable, though not typical, to the genus *Amsdenoides* established in the U.S.A. by Sutherland (1965). Henryhouse formation from which *Amsdenoides* was obtained is correlatable with lower Ludlovian according to Sutherland (1965). This Ludlovian age of Henryhouse formation is quite comparable with that of the Kawauchi series of Japan.

In search of literatures, however, we came across a new Eifelian coral established by Spassky (1965) as *Multicarinophyllum* from Zdungarian Alatau. The genus was redescribed in 1968 by Spassky.

Essential characters of *Amsdenoides* and *Multicarinophyllum* seem to us not different with each other, and both genera were proposed in the same year of 1965. The work of Sutherland appeared on Dec. 30, 1965. Actual date of publication of Spassky (1965) is unknown to us. The latter is likely to have published earlier than the former.

In view of the Silurian age of the Kitakami specimen we employ here *Amsdenoides* for our form.

Sutherland (1965) placed his *Amsdenoides* in Streptelasmatidae. Taxonomic position of *Multicarinophyllum* is not quite certain. Spassky (1965) originally placed it under Haliidae, but in Streptelasmatidae in 1968. Subsequently, however, Ivanovsky (1975) put both genera under Dinophyllidae, while recognizing the validity of *Multicarinophyllum*, merges *Amsdenoides* with *Brachyelasma*. We consider *Amsdenoides* (*Multicarinophyllum*) is a member of Streptelasmatidae in a broad sense.

However, we should like to point out here on the fact both *Multicarinophyllum* and *Amsdenoides* have tubercles on septa. Major septa in both genera are forming a sort of axial vortex in the middle of corallite. Also cardinal fossula is not prominent in both genera. These characters, except for tuberculate septa are common features in Streptelasmatids. While, they may show some resemblance to *Pilophyllum* in which the junior author found tubercles on the sides of septa, but they are entirely embedded in and masked by stereoplasmic deposits. Even if *Amsdenoides* and *Multicarinophyllum* lack dissepiments, they have similarity thus to *Pilophyllum* which has axial vortex as well.

We should like to mention on a remarkable fact about the Japanese Silurian rugosa. They are in fact rather scarce in occurrence compared to Tabulata and Stromatoporoids. In spite of the rarity, however, we could recognize *Nipponophyllum*, *Rhizophyllum*, *Spongophyllum*, *Tryplasma* and *Pilophyllum* besides *Amsdenoides* among them. These genera are cosmopolitan and they would indicate Ludlovian association as a whole.

We acknowledge Prof. T. Kotaka, Drs. K. Mori and M. Murata of the Tohoku University for permitting us to examine specimens under their charge. We thank Mr. S. Kumano for photography and Miss E. Mima for typing the manuscript.

Family Streptelasmatidae Nicholson, 1889
Genus *Amsdenoides* Sutherland, 1965

1965 *Amsdenoides* Sutherland, p. 18

1973 *Amsdenoides*, Cotton, p. 18

Type species (by original designation): *Ditoecholasma acutiannulatum* Amsden, 1949

Generic diagnosis: Corallum solitary. Septa are in two orders, and are tuberculated at least in parts. When elongated, axial ends of major septa may meet at the central part of corallite to form "axial vortex" as a whole. Fossulae indistinct. Tabulae domed. Dissepiments absent. Wall is thick, and may be strongly ribbed longitudinally on the external surface.

Remarks: As mentioned in the introductory remarks the genus closely resembles Devonian *Multicarinophyllum* Spassky, 1965. The latter has much larger corallite and numerous septa. Surface characters of wall in the latter genus is not clear. But otherwise both genera have many features in common. Both have tuberculate septa, and major septa extended to the centre to rotate; having arched tabulae, no distinct fossula; no dissepiments. Future investigation may eventually prove their synonymy.

Amsdenoides sp. nov.

(Pl. 1, fig. 1)

1940 Gen et Sp. indet., Sugiyama, pl. XXX (XVIII), figs. 16 & 17

Material: A single transverse thin section (No. 63050(S), Geol. & Palaeont. Inst., Tohoku Univ., Sendai, Japan) of a broken corallite, collected from Kusayami-zawa, Hikoroichi, Ohfunato city, Iwate Prefecture. The coral is embedded in black, slaty, laminated limestone in association with a crinoid stem, bryozoa and a gastropod shell.

Description: Corallum simple, large. Somewhat obliquely cut transverse section shows the longer diameter of 47 mm. Outer wall is very thick, 2.5 mm in thickness. External surface of the wall shows no signs of crenulation. Wall is so recrystallized that outer half of it looks transparent, while the inner margin is grayish white in colour. Septa are in two orders. Both start to grow directly from the wall. Fiftyeight or fiftynine septa in all are preserved. Total number of septa should be more than doubled this figure. Septa are radially arranged. Fossula is not distinct. Major septa are mostly short. Except for a few of them, they fall short to the centre of corallite. Length of short majors is 6 mm. Length of minor septa alternating with the major is less than 2.5 mm. Both septa show strong projections on both sides of each of them. They look as if they are carinae. But in fact, portions of them are detached from septa, so that they are in reality tubercles. Tubercles are confined to the peripheral part of septa and are not found in the axial and central part where elongated major septa are thin. One major at the corner of the corallite shows, however, almost

no sign of tubercles, extending towards the centre of corallite. At the base of this septum there is a oval shaped open space which is bisected by this septum. Distal ends of major septa often lean upon the other neighbouring septa so as to form u-shaped or forked septa in appearance. Extended and elongate septa may reach to the center, but their mode is not clear owing to bad preservation. Connecting the septa there develop tabular plates, which appear to be vesicular at the centre of corallite.

Remarks: The present form has a large corallite and less well developed major septa. These points merit the differentiation of the present form from the type species. Very clear longitudinal ribs on the external surface of the type species of *Amsdenoides* are not seen in the Japanese form.

From the very same reasons above stated the present form is distinct from *Multicarinophyllum multicarinatum* Spassky.

Sugiyama (1940) illustrated a longitudinal section, which we can not examine at present, showing the sign of presence of tubercles appeared as dots in that section.

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Explanation of Plate I

Fig. 1: *Amsdenoides* sp. Transverse section (X 4).

Reg. No. IGPS 63050, Tohoku Univ., Sendai, Japan.

Hor.: Silurian, Kawauchi Series.

Loc.: Kusayami-zawa, Hikoroichi, Ohfunato city, Iwate Pref., Japan.



S. Kumano photo