Corals are abundant locally in the Carboniferous limestones of Southwestern Honshu, Japan. Especially, the three species described in this note, are very rich in individuals.

The stratigraphical horizon of Nagatophyllum, Clisaxophyllum and Amygdalophyllum herein treated, was previously regarded as Uppermost Lower Carboniferous in age, but from their associate fossils the age must now be accepted as Middle Carboniferous.

1. Isa-mura, Prov. Nagato, C. of Y. OZAWA (1925)
2. Tobinosu, Prov. Nagato, C. of Y. OZAWA (1925)
3. Ohkubo, Ohta-mura, Prov. Nagato
4. Omi limestone, V of I. HAYASAKA (1924)
5. Omi limestone, II of I. HAYASAKA (1924)
6. Omi limestone III of I. HAYASAKA (1924)
7. Kuwabara, Prov. Nagato
8. Taishaku limestone, 5 3 of H. HUZIMOTO (1944)
9. Ibuki limestone, Ohtaki Formation of T. SEKI (1939)

Here the writer wishes to express his cordial thanks to Professors T. KOBAYASHI, H. HUZIMOTO, S. HANZAWA and R. TORIYAMA, who have kindly submitted their specimens to the writer for study.

Genus Nagatophyllum OZAWA 1925

Etymology:—The coral was collected and described by the late Dr. Y. OZAWA from a limestone at Tobinosu in Odamura, which is a small village in the Province of Nagato, whence the generic name came.

Genotype: Nagatophyllum satoi OZAWA

The writer examined the original material of Dr. OZAWA, now in the col-
lection of the Geological Institute, Tokyo University. Unfortunately only one thin section of the original material described by him was found. This thin section is identical with the specimen illustrated by Ozawa as fig. 4 in his plate XII.

The original diagnosis runs as follows:

Corallum composed of circular, tapering and prolificous stems; internally it consists of three areas: 1st, a cylindrical, defined complex axis, built up of a medial plate and axial tabellae; 2nd, a zone of strong, vertical and radiating septa, connected by thin oblique transverse dissepiments; 3rd, broad pure dissepimental area between the septal zone and the epitheca, composed of regularly arranged dissepiments extending obliquely upwards and outwards. Septa, of two orders, rest upon a platform of dissepiments and have always their corresponding row of dissepiments. The septal fossula often conspicuous, especially in the young corallite.

Remarks:—Firstly his so-called dissepiments of his dissepimental area (his third area) are not true dissepiments, but mere septal modification. The septa including the major and minor ones, show in this part strong naos trend. True dissepiments existing only in the medial area (his 2nd area), where the naos trend in septa is no more discernible. The axial structure is formed only by axial tabellae and septal lamellae are lacking. The median plate is obsolete in the thin section examined by the writer.

This genus should be regarded to be related to Symplectophyllum, established by Hill (1934, p. 64) on S. mutation, from the Lower Carboniferous of Australia. The criterion distinguishing these two corals is in the construction of the columella, namely Nagatophyllum lacks septal lamellae while they exist in the columella of Symplectophyllum. Since, the columella of the latter genus is variable, the writer doubts whether these two corals should be held distinct.

Nagatophyllum satoi Ozawa

1925. Nagatophyllum satoi OZAWA: Palaeontological and Stratigraphical Studies on the Perm-Carboniferous Limestone of Nagato, p. 79, pl. XII, figs. 1,2,3,4,5.

This species is interesting in showing a strong naos trend in the septa. The columella is formed rather simply by the indistinct median plate and numerous tabellae, the latter of which are slightly thickened by stereoplasmic deposits. This feature is reminiscent of Clisaxophyllum awa Minato.

Remarks:—According to Ozawa, this species was found in a limestone at Tobinosu in Oda-mura in association with his "Lonsdaleia" enormis and Fisutlipora nagatoensis. "Lonsdaleia" enormis is also associated with Lonsdaleia floriformis crassicous at Maruyama in Isa-mura, although some doubt remains as to the specific identification of the latter. Lonsdaleia floriformis crassicous was also found in a few other localities somewhere in Southwest Japan together with Moscovian Fusulinids. The mentioned occurrences were ascertained by Ozawa in the Nagato District.

According to Seki (1939, p. 521) Nagatophyllum occurs in the Ibuki district in association with a Moscovian fauna. Huzimoto (1944 p. 1) found this species in the Taisukyo plateau in association with Lophocarinophyllum sp. and Chaetetes sp. in one locality and with Staffella sp., Lithostrotionella sp., and Thyasanophyllum sp. in another.

Accordingly, the writer now regards this species to denote the oldest Middle
Carboniferous rather than the Upper Viséan as formerly thought by Ozawa and others, although the specific identification of these corals may need revision.

T. Sugiymama (1939, p. 13) once listed a doubtful Nagatophyllum from the Permian deposits at Hirabara and Sisinode (or Kanoide), both in Nagato district. The writer was unable to examine Sugiymama’s specimens and doubts whether this genus ranges back to the Permian.

*Amygdalophyllum naosoidea* Minato, sp. nov.

*Etymology:*—This species is characteristic in the remarkable naos trend in septa, especially in the peripheral area of the corallite. It is related to *Nagatophyllum* and *Symplectophyllum*, except in the construction of the columnella.

*Description:*—Corallum simple. Coralite large, ca 30 mm in calicular diameter. Major septal number 33, alternating with the same number of minor ones; major septa fairly thick, reaching almost to columnella, but never penetrating into it. Axial ends of most major septa shaped in transverse section; minor ones always gradually thinning distally. All septa uniting with outer wall. Major and minor septa of continuous type in distal part but become cavernous in medial area and lastly tend to represent
strong naos trend in peripheral area, where they become modified into horizontal tissue which consist of numerous plates as wide as septum. Columella solid, in which median plate-like structure is observable in thin section.

Triaerial arrangement readily observed in longitudinal section, middle part of which is occupied by columella. Columella composed of median plates (black line in section), and many fibrous horizontal tissue. Medial area with septa and many tabulae steeply ascending toward wall. Small vesicles arranged in outer area facing their convex sides upwards and inwards. Many ascending lines recognized both upwards and outwards in this area, which may be lamellar structure of septa.

Remarks:—This species recalls Amygdalophyllum conicum HILL, from the Lower Carboniferous of Australia, in having of the septa representing naos trend, however the present specimens differ from that species, in possessing larger and stouter columella. This species resembles the genotype of Nagalophyllum in some structures of the corallite but has a different kind of columella. Moreover Nagalophyllum possesses septa which lack cavernous structure.

Locality:—All of the specimens are stored in the collection of the Geological Institute, Tokyo University. They came from Ohkubo, Ohta-mura, according to the label in the late Dr. Y. OZAWA's hand writing.
Some Carboniferous Corals from Southwestern Japan

Clisaxoghyllum awa MINATO, sp. nov.
figs. c1, c2, d1, d2, d3

*Etyymology:*—The columella of this species is composed of vesculated tabulæ and a distinct median plate in transverse section. The former structure recalls water bubbles. We call such bubbles as awa in Japanese.

*Diagnosis:*—Almost identical with the genotype of Echigophyllum, except for the construction of the columella, which is composed of a median plate and numerous vesiculated tabulæ. The septa and dissepimental tissue is identical with the genotype of Echigophyllum.

*Remarks:*—This species was found in the old collection of the Department of Geology and Mineralogy, Hokkaido University, Sapporo. The precise locality of these specimens is unknown. But it evidently came from the Omi-limestone quarry as can be judged from the accompanied label and lithologic character of the specimen.

Meanwhile one imperfect thin section was received from R. Toriyama, it is said to have come from a limestone at Kuwabara, Mine-gun, Yamaguchi Prefecture, it is quite identical with this species. The characteristic arrangement of the dissepiments and the axial structure of this species are also recognizable in Toriyama’s specimen. From his verbal information this species was found in association with a Fusulinella fauna at Kuwabara. Another specimen, which is specifically unseparable from this species, now in consideration, is from Hakuundo, Taisyaku plateau, Hiroshima Prefecture.

According to Huzimoto, Hakuundo is his locality 30 in his paper on the paleontology of the Taisyaku region, and in association with the coral such Moscovian foraminiferas as Staffella sp. and Ozawaiella cfr. angulata (Colani) were found.

In examining of Ozawa’s old collection one of his specimens, especially that from Serita, Kyowa-mura, Akiyoshidai plateau called the writer’s attention. Ozawa named this specimen as Dibunophyllum rugosum var. ofukensis, but it is not conspecific with his holotype, but it is more referrable to Clisaxophyllum awa MINATO. This specimen is now in the collection of the geological Institute, Tokyo University.

References


