

Syringopora fujimotoi, a New Species of Late Silurian Tabulate Coral from the Hitoegane Formation, Gifu Prefecture

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Abstract An auloporid tabulate coral, *Syringopora fujimotoi* sp. nov., is described from the Late Silurian (probably late Ludlow) argillaceous limestone of the Hitoegane Formation in Takayama-shi, Gifu Prefecture. The most diagnostic features of this new species are its relatively large diameter of the axial syrinxes and domical profile of the axial tabellae. Comparable species with *S. fujimotoi* is *S. schmidtii* Chernyshev, 1937, that known from Novaya Zemlya, Estonia, Ukraine, Inner Mongolia and Siberia.

Key words: Late Silurian, tabulate coral, Auloporida, *Syringopora fujimotoi* sp. nov., Hitoegane Formation, Gifu.

Introduction

Previously, Silurian undoubted record of *Syringopora* in Japan was represented by an only single species, *S. utsunomiyai* Niko and Adachi, 2004, from the Wenlock (Lower Silurian) of the Gionyama Formation, Miyazaki Prefecture. Recent fossil collections made by Mr. Yoshitito Senzai from the Hitoegane Formation provide new knowledge concerning this auloporid. *Syringopora fujimotoi* sp. nov. is described on the basis of the Senzai's specimens that are kept in the National Science Museum with a prefix of NSM. The present study is one of a series on Late Silurian (probably late Ludlow) tabulate corals from the formation in the Hitoegane area of Okuhidaonsen-gou, Takayama-shi, Gifu Prefecture, Central Japan.

Systematic Paleontology

Order Auloporida Sokolov, 1947

Superfamily Syringoporoidea Fromentel, 1861

Family Syringoporidae Fromentel, 1861

Genus *Syringopora* Goldfuss, 1826

Type species: *Syringopora ramulosa* Goldfuss, 1826.

Syringopora fujimotoi sp. nov.

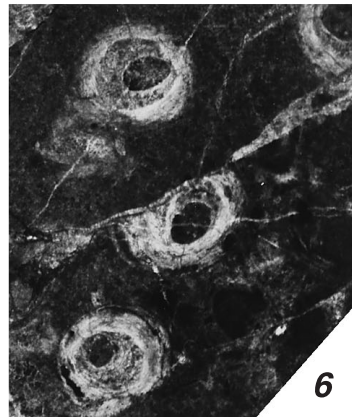
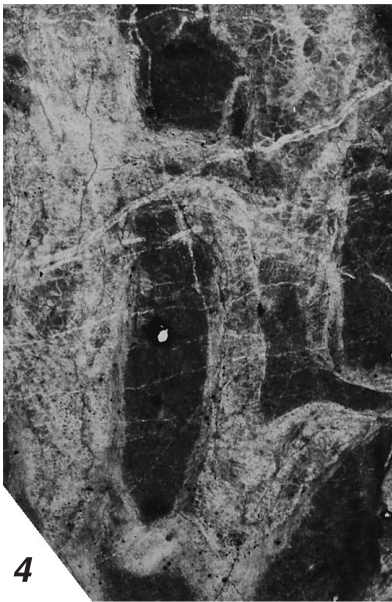
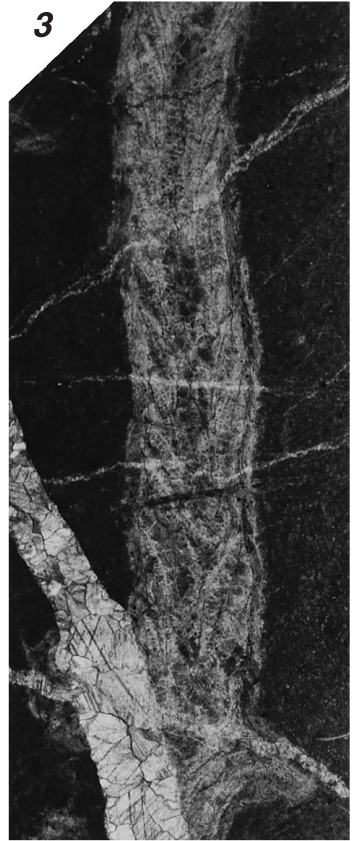
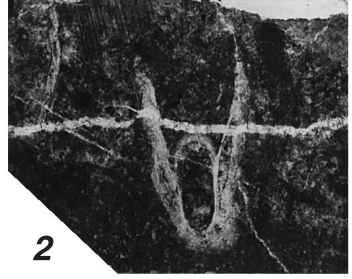
(Figs. 1-1–6)

Holotype: NSM PA16273, from which ten thin sections were made.

Paratype: NSM PA16272, from which six thin sections were made.

Diagnosis: Species of *Syringopora* with closely spaced corallites having approximately 1.2 mm in diameter, and well- to partly frequently-developed connecting tubuli; corallite walls thin, usually 0.12–0.20 mm in thickness; septal spines short, probably numerous; tabulae abundant, 9–12 tabulae in 2.5 mm of corallite length; axial syrinxes relatively large, ranging 0.23–0.46 mm in diameter; axial tabellae very rare, occur at boundary between tabularium and calice, domical.

Description: Coralla thick turf-like in growth form, phaceloid; the largest specimen (holotype) has 65 mm in maximum observed diameter and 40 mm in maximum observed height. Corallites cylindrical with circular to subcircular transverse sections, range from 0.90 to 1.46 mm, with 1.2 mm mean, in diameter; corallite spacing close, usually 1.6–2.1 mm in distance (center-to-center) between corallites; increase of new corallites is



lateral, rare; connecting tubuli well-developed, to frequently-developed in part, occur in nearly same level, horizontal to strongly oblique in rare cases with approximately 0.4–0.9 mm in diameter; length of connecting tubuli mostly short, approximately 0.3–0.8 mm, but strongly oblique ones have up to 1.5 mm in length; tabularia circular to subcircular in transverse section; calices weakly inflated. Corallite walls thin for genus, usually 0.12–0.20 mm in thickness, differentiated into epitheca and stereoplasm; microstructure of stereoplasm is lamellar; septal spines short rod-like, probably numerous, but almost enclosed in stereoplasm; tabulae may slightly thickened, incomplete indicating infundibuliform or dissepiment-like forms, abundant; there are 9–12 tabulae in 2.5 mm of corallite length; axial syringes developed at central, subcentral to rarely marginal position of corallites, subcircular to elliptical in transverse section; diameters of axial syringes are relatively large in comparing corallite diameters, having 0.23–0.46 mm in subcircular portions and approximately 0.33×0.46 mm in elliptical ones; axial tabulae very rare, of which observable three instances are limited at boundary between tabularium and calice; profiles of axial tabellae are domical.

Etymology: The specific name honors the late Dr. Haruyoshi Fujimoto, in recognition of his contributions for stratigraphy and paleontology in the Palaeozoic strata of the Hida Mountains containing the Hitoegane area.

Occurrence: All the material available was collected from the float blocks of argillaceous limestone in talus on an unmanned ridge (see fig. 1 in Niko, 2001).

Discussion: *Syringopora fujimotoi* sp. nov. is readily distinguishable from all other described species of the genus by its relatively large diameter of the axial syringes and domical profile of

the axial tabellae. Besides these respects, this species shows most close affinity to *S. schmidtii* Chernyshev (1937, p. 93, 94, 120, pl. 9, figs. 2a, b), known from the Upper Silurian of Novaya Zemlya (Chernyshev, 1937), Estonia (Klaamann, 1962, p. 52, 53, figs. 16a, b), Podolia in Ukraine (Chudinova, 1971, p. 81, 84, pl. 22, figs. 2a, b, 3, 4) and Inner Mongolia (Tchi, 1976, p. 118, pl. 48, fig. 2) and the Lower Devonian of Altai in southwestern Siberia (Avrov and Dubatolov, 1969, p. 24, 25, text-figs. 7a, b, pl. 5, figs. 4a, b, v), in the general form and spacing of corallites, mode of occurrence of the connecting tubuli and thickness of the corallite walls.

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Fig. 1. *Syringopora fujimotoi* sp. nov., thin sections. **1, 3, 4**, holotype, NSM PA16273. **1**, longitudinal sections of corallites, note frequently developed connecting tubuli, ×10. **3**, longitudinal section of corallite, ×14. **4**, longitudinal sections of corallites, note relatively large axial syringes, ×14. **2, 5, 6**, paratype, NSM PA16272. **2**, oblique section of calice, showing domical axial tabella, ×14. **5**, partial enlargement to show corallite wall structure and dissepiment-like tabula, ×75. **6**, transverse sections of corallites, ×14.

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