

Notes on Indo-Pacific Scleractinian Corals, Part 4 A Second Species of *Stylocoeniella*

JOHN W. WELLS¹

IN 1890 P. W. Bassett-Smith described a new species of *Stylophora*, *S. guentheri*, from two specimens dredged on the Macclesfield Bank, China Sea. His description (1890:362), although unaccompanied by a figure, is of a form so distinct that it cannot be confused with other species of this genus. To the writer's knowledge this species has not been subsequently noticed or referred to. In 1955 an encrusting colony of a *Stylophora*-like form was collected at Eniwetok Atoll (Marshall Islands) by R. T. B. Iversen in the course of making a reference collection for the Eniwetok laboratory. At the time, the writer thought it might be a new species but hesitated because of the possibility that it might be merely the expanded base of one of the species of the normally ramose *Stylophora*. More specimens of the same coral were collected at Eniwetok lagoon in 1960 by E. J. Kuenzler and L. R. Pomeroy, and in the summer of 1964 P. Spencer Davies collected several more at Addu Atoll (Maldives Islands).

From the consistently encrusting growth habit and other characters it is now clear that these specimens represent a species quite different from the common forms of *Stylophora*, such as *S. pistillata* and *S. mordax*, and that Bassett-Smith's recognition of its distinctness was correct, although its relationships appear to be with *Stylocoeniella* rather than *Stylophora*.

The writer expresses his thanks to Dr. W. J. Rees of the British Museum (N.H.) for providing photographs of the type specimen of *S. guentheri* and to Dr. P. Spencer Davies of Glasgow University for permission to use material collected by him.

Family ASTROCOENIIDAE

This familial epithet is used here in a broad sense pending modifications in its scope that will

develop as the relationships of the genera now included in it are better known. *Stylocoeniella* is certainly closely allied to *Actinastrea*, and both genera are nearer to the Pocilloporidae than to the stylocoeniid corals.

Genus *Stylocoeniella* Yabe and Sugiyama 1935

TYPE SPECIES: *Stylocoenia hanzawai* Y. and S. 1933 = *Stylophora armata* Ehrenberg 1834.

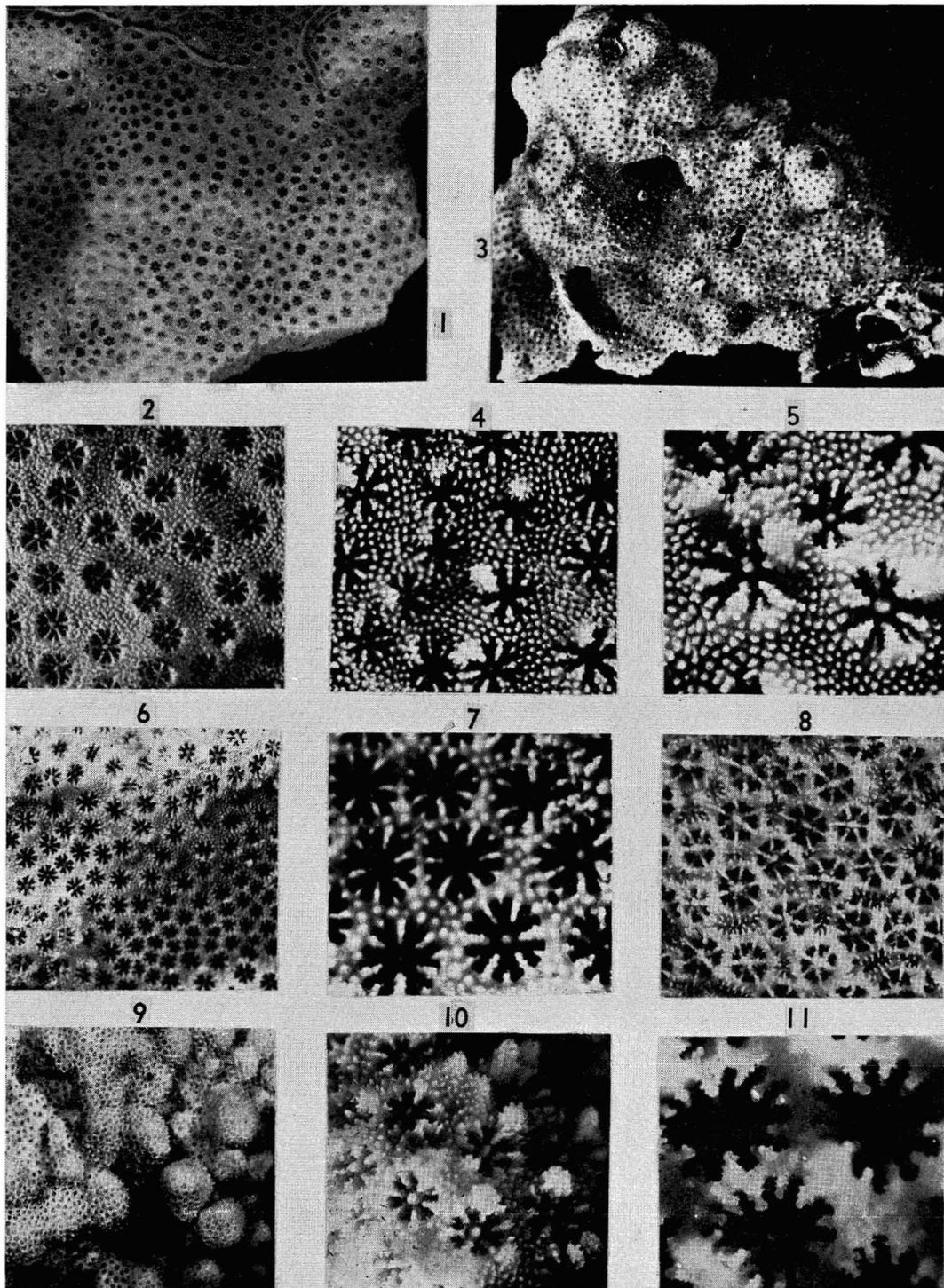
Stylocoeniella guentheri (Bassett-Smith) 1890
Figs. 1-10

Stylophora guentheri Bassett-Smith 1890.
Ann. Mag. Nat. Hist. (6), 6:362.

? *Stylocoeniella* sp. Wells 1964. U. S. Geol. Surv. Prof. Paper 260-DD:1103, pl. 296, figs. 6, 7.

Corallum thin (1-7 mm), encrusting, with basal epitheca. Corallites generally plocoid, cylindrical, 0.5-1 mm apart, united by solid or vesicular coenosteum the surface of which is covered with evenly spaced, minutely granulated spines, 10-15/mm (Figs. 2, 4, 5), but occasionally cerioid (Figs. 6, 7) with closely fused walls where crowded. New corallites arise by extratentacular budding on the surface of the coenosteum between corallites. Calices circular except where crowded and polygonal (cerioid), 0.5-0.75 mm in diam, margins flush with surface of coenosteum. Septa 12 in number, the 6 septa of the first cycle well developed, slightly exsert peripherally, relatively thick and extending from the corallite wall about half way to the axis, their inner edges dropping abruptly to join the columella deep in the calice. The margins of the primary septa bear four or five coarse dentations (Fig. 5), the terminations of trabeculae inclined upward and inward from the wall. In nearly all corallites the outer upper margin of one of the primary septa is elevated

¹ Department of Geology, Cornell University, Ithaca, New York. Manuscript received February 15, 1965.



FIGS. 1-10. *Stylocoeniella guentheri* (Bassett-Smith). 1 and 2, Portions of holotype (B.M.N.H.1889.9.24.-84), 58 m, Macclesfield Bank, $\times 2$, $\times 6$; 3, 4, and 5, corallum and calices, lagoon, 15 m, Gan. I., Addu Atoll, $\times 1$, $\times 10$, $\times 15$; 6 and 7, calices, lagoon, 40 m, Eniwetok Atoll, $\times 4$, $\times 15$; 8, calices, lagoon, 4 m, Eniwetok, $\times 10$; 9 and 10, portion of corallum and calices, lagoon, 6 m, Gan I., Addu Atoll, $\times 1$, $\times 10$.
 FIG. 11. *Stylocoeniella armata* (Ehrenberg). Calices (compare with Figs. 5 and 7), 0.5 m, Heron I., Great Barrier Reef, $\times 15$.

into a prominent, thickened, laterally striated and granulose spine (Figs. 4, 5, and 10), the external base of which may carry up the spinose coenosteum. The second cycle of septa is weakly developed, each septum consisting of a row of fine trabecular spines projecting nearly horizontally inward from the wall and extending about a quarter of the distance to the axis. Columella a prominent solid style rising to the level of the calice rim or slightly exsert (Figs. 5 and 8).

The encrusting rather than ramose growth habit and dentate septa easily distinguish this species from *Stylophora*, but otherwise it has all the characters of that genus: small corallites, few septa, styliform columella, spinose vesicular, tabular, or solid coenosteum, and styliform effusions from one of the primary septa (more columniform in *S. guentheri* than the "hoods" of *Stylophora*). The dentation of the septa is perhaps the most important difference, although the primary septa of *Stylophora* may show traces of such structures, and *S. guentheri* is best placed in *Stylocoeniella* next to the type species *S. armata*, with which it shares the same growth form, styliform septal proliferations, and occurrence as inconspicuous patches on reefs and shallower parts of lagoons. In *S. armata*² (Fig. 11; see also Yabe and Sugiyama, 1935: Pl. 15, and Wells, 1954: Pl. 96, figs. 1-4) the calices are larger (0.75-1.25 mm), more nearly cerioid than plocoid, the 6 septa of the second cycle are more completely developed, frequently

nearly equal to the first cycle, and the trabecular dentation on the inner end of each primary septum adjacent to the columella is often large and paliform.

The fragmentary fossil specimen from the Miocene of Eniwetok recently referred by the writer to *Stylocoeniella* is indistinguishable from *S. guentheri* in all respects except for the slightly larger (1 mm) calices.

HOLOTYPE: British Museum (N.H.) No. 1889.9.24.84:58 m, Macclesfield Bank, China Sea.

DISTRIBUTION: Miocene (?) (Eniwetok). Recent: Macclesfield Bank, 40-58 m; lagoon, 4-40 m, Eniwetok Atoll; lagoon reef slope, 6-26 m, Gan I., Addu Atoll (Maldives Islands).

REFERENCES

- BASSETT-SMITH, P. W. 1890. Report on corals from the Tizard and Macclesfield Banks, China Sea. *Ann. Mag. Nat. Hist.* (6), 6:353-374, pls. 12-14 (maps).
- WELLS, J. W. 1954. Recent corals of the Marshall Islands. *U. S. Geol. Surv. Prof. Paper* 260-I:385-486, pls. 94-187, figs. 119-122, 4 tables.
- 1955. A survey of the distribution of reef coral genera in the Great Barrier Reef region. *Repts. Great Barrier Reef Committee* 6:21-29, chart.
- 1964. Fossil corals from Eniwetok Atoll. *U. S. Geol. Surv. Prof. Paper* 260-DD:1101-1111, pls. 296-300, table.
- YABE, H., and T. SUGIYAMA, 1935. *Stylocoeniella*, a new coral genus allied to *Stylocoenia* and *Astrocoenia*. *Japanese J. Geol. Geog.* 12: 103-105, pl. 15.

² In addition to the previously reported occurrences of this species cited by the writer (1954:410; 1955), subsequent collections indicate its presence in Saipan, Ifaluk Atoll (Caroline Islands), Eniwetok and Arno Atolls (Marshall Islands), and Zamboanga (Philippines).