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A « CAULERPA » NEWLY RECORDED FOR THE WEST INDIES

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The algal genus *Caulerpa* (Chlorophyceae : Siphonales : Caulerpaceae) has long been one of the most famous among algae for its many peculiarities. Structurally the absence of cross-walls as normal elements, with the substitution of trabeculae for their mechanical advantages, is well known. Reproduction by motile cells, presumably sexual, is rarely observed and only known for a few species, so that multiplication may be chiefly vegetative. It is not a very large genus, but at least a few representatives are found in most tropical and subtropical seas. Only a few very distinctive species have severely limited geographic ranges. Most range widely and are very variable in form. Several are found generally around the world at suitable latitudes, in spite of their seemingly vulnerable structure and infrequent reproductive activity.

Among those in an intermediate category in respect to distribution we would hitherto have included *Caulerpa scapelliformis* (R. Br.) C. Agardh. Originally described from the southern coast of Australia (in TURNER, 1811, p. 95), it is now known to occur at least from Japan to the Red Sea and the east African coast (TAYLOR, in press), though the records are as yet rather scattered. The purpose of this note is to report the species from the island of Barbados in the West Indies. It was collected on the Barbados coast during February and March of 1966 by the writer, with Dr. Melvin GOLDSTEIN and Mr. David PATRIQUIN of McGill University, Montreal. It seems previously to have been confused there with *C. mexicana* (Sond.). J. Agardh, which also occurs on the coast of this island, as elsewhere in warmer eastern American seas.

In the fully developed state there is no difficulty about

distinguishing between these two species. The texture of the blade is quite different, that of *C. scapelliformis* being much thicker and firmer. Usually it also attains a larger size, though none brought back on these occasions exceeded 25 cm, and most blades measured about 15 cm from the stolon. Even this would be unusually tall for *C. mexicana*. M^{me} WEBER (1898, p. 286) emphasizes as a distinction that the pinnules of *C. crassifolia* (more correctly *C. mexicana*) are always opposite, those of *C. scapelliformis* characteristically alternate, but this does not seem to be uniform in the material from Barbados and elsewhere available to me. The form of the pinnules is, on the other hand, reliably distinctive. In *C. mexicana* they are typically longer than the breadth of the rachis which bears them, seldom less than twice, sometimes nearly five times this width (TAYLOR, 1960). There is usually a tendency for the pinnules to be contracted toward the base, and the tip of each is more or less abruptly rounded and crowned by a very distinct indurated mucro. In *C. scapelliformis* the pinnules may be only half as long as the width of the supporting rachis, and are not often more than equal in length. Their tendency in shape is to taper somewhat from the base, which is not contracted. At the tips they taper more sharply, but with a rounded end, or may bear very minute simple or forked teeth on the outer margin and end (Figures 1-4). These are by no means constant on any given blade. M^{me} WEBER distinguishes the typical variety, *v. intermedia* Weber-v. Bosse and *v. denticulata* (Decaisne) Weber-v. Bosse. The latter may on occasion be fairly distinctive, as I have seen in specimens from the Red Sea, whence came the original material, but intergrades are so frequent that it seems hardly worth while to maintain *v. intermedia*, to which our Barbadian (colloquially Bajan) plants would probably have been referred by M^{me} WEBER. While there is no possibility of any careful worker familiar with both species confusing *C. mexicana* with *C. scapelliformis* when even moderately well developed, it is possible that dwarf specimens 1-2 cm tall might be confused, especially if a compound microscope should not be available.

A review of the herbarium material of *C. mexicana* immediately available to me has not shown any *C. scapelliformis*

lurking there under a misidentification, so it appears that this is the first record of *C. scapelliformis* from American waters. It is most probably a well-established introduction from eastern seas. The localities on Barbados which yielded specimens are as follows : on the east coast, St. John Parish, Bath Beach (with GOLDSTEIN and PATRIQUIN), frequent as washed ashore, no. 66-153, 28 ii 66; Conset Bay beach and shallows, common attached and washed ashore (with GOLDSTEIN and PATRIQUIN), no. 66-210, 4 iii 66. On the south coast, Christ Church Parish, Oistins Beach, no. 66-117, 23 ii 66; Maxwell Coast beach, no. 66-233, 23 iii 66; St. Lawrence Beach, no. 66-191, 1 iii 66. While numerous stations on the west coast and around the northern end of the island were visited, it was not found there. On Guadeloupe it was collected at Ste. Marie by Fr. C. LEGALLO, no. 152, 8 iii 1961, for a mount of which I am much indebted to the collector. Specimens are filed in the herbaria of the University of Michigan and the writer.

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LITERATURE CITED

TAYLOR, WM. RANDOLPH. — 1960. — Marine algae of the eastern tropical and subtropical coasts of the Americas. Univ. Mich. Sci. Ser. 21 : xi + 870 pp., 14 text-photos., 80 pl. Ann Arbor, Michigan.
— 1967. — Species of *Caulerpa* (Chlorophyceae) collected on the International Indian Ocean Expedition. *Blumea* (in press).
TURNER, DAWSON. — 1811. — *Fuci, sive plantarum fucorum generi a botanicis ascriptarum icones descriptiones et historia*. 3 : 148 + 2 pp., 62 pl., London.
WEBER - VAN BOSSE, ANNA. — 1898. — *Monographie des Caulerpes*. *Ann. Jard. Bot. Buitenzorg*, 15 : 243-401, pls. 20-34.

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Addendum. — Some months after submitting the above note for publication there came to the writer's attention an authentication of the dubious report of the presence of *C. scapelliformis* in Brazilian

waters, though the plants appear to have been dwarf. Cf. JOLY, A. B. et al., Additions to the marine flora of Brazil, V. Arq. Est. Biol. Mar. Univ. CEARA, 5 (1): 65-78. Sept. 1965, but received in the United states of America in February, 1966.

Description of figures.

FIG. 1-4. — *Caulerpa scapelliformis*. Portions of four blades showing variation in form of the pinnules, and of the presence of minute teeth on the outer margin near the tip.

