

A NEW SPECIES OF THE GENUS *CODIUM* STACKH., FROM THE COAST OF PAKISTAN

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Abstract

A new taxon *Codium shameelii* Nizam., characterised by coxcomb-like terminal proliferations has been described from the coast of Pakistan.

Introduction

The representation of *Codium* Stackh., along the coast of Pakistan is both rich in number of species and in variations, from where so far 10 species of *Codium* have been either described or listed (Anand, 1940; Børgesen, 1946; Shameel & Tanaka, 1992; Shameel *et al.*, 1996). The author during algal collections from this coast came across a new taxon and designated it as *C. shameelii* after the name of Dr. Mustafa Shameel, Professor, Department of Botany and Director, Institute of Marine Sciences, University of Karachi for his devotion and contributions in the field of Marine Phycology.

Materials and Methods

Materials collected were either fixed in 4% formalin- seawater solution or mounted on herbarium sheets and deposited in the Herbarium of Seaweed Biology and Phycochemistry Lab., M.A.H. Qadri Biological Research Centre, University of Karachi (KUHSW). For anatomical studies a pinch of material was mounted on a slide and stained in 1% KI₂ solution. Drawings were made using camera lucida.

Description

Codium shameelii Nizam. *sp. nov.*

Syn. *Codium coronatum* Setch. *sensu* Anand 1940: 42.

(Figs. 1-4)

Holdfast discoid (0.6) 1-2 cm diam.; stipe erect up to 2 cm high, terete 5-7 mm diam., distally flattened, expanded 1-4 cm broad, bifurcate. Thallus erect up to 40 cm high, throughout flat, expanded up to 5 cm broad, dichotomously divided (to 5 orders); dichotomies flattened up to 4 cm broad, at 3 cm distant; axils broadly rounded; distally or laterally strongly proliferous, forming coxcomb-like habit. Proliferations simple or dichotomous (2-5 orders) of variable sizes, flat up to 3 cm broad and 20 cm long, dichotomies flattened. Thallus dissecting out into individual utricles.

Utricles slender, cylindrical, clavate to broadly clavate, pyriform, and also branched. Utricles of main thallus: (1) from tip 306-893 μ m long and (77-) 102-255 μ m diam.; L/B 2-5.4 (-7); (2) medial part 434-918 (-1148) μ m long and (51) 102-255 (-

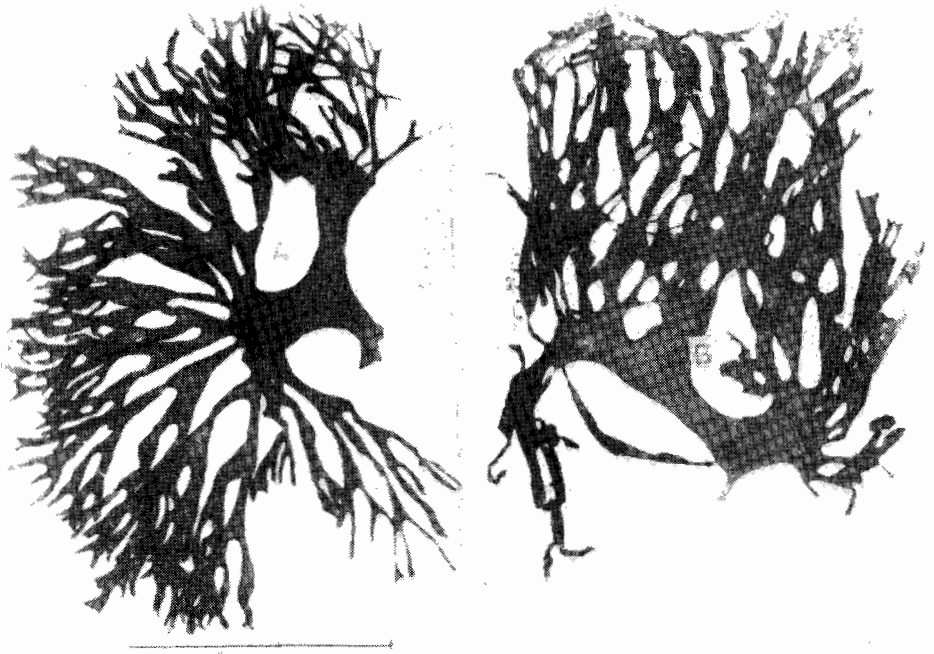


Fig. 1. *Codium shameelii* Nizam. sp. nov.: (A) Habit of the thallus, Buleji (Leg. M. Nizamuddin, 6-2-1993 drift KUH-SW 0007). (B) Habit of the thallus, Buleji (Leg. M. Nizamuddin, 2-2-1992 drift KUH-SW 1234b).

408) μm diam.; L/B 2-7.5 (-11) and (3) stipe 459-1148 (-1326) μm long and (77-) 102-306 (-408) μm diam.; L/B 2-7.5 (-12). Utricles from proliferations: (1) from tip 385-537 μm long and 102-153 μm diam.; L/B 2.5-5.2; (2) from medial part 510-765 (-1020) μm long and 153-306 (-408) μm diam.; L/B 1.9-3.5 and (3) from base (434-) 638-1020 (-1275) μm long and (77-) 153-306 (-510) μm diam.; L/B 2.5-4.6 (-6). Apex smooth, round to broadly rounded, flat, narrow, truncate; utricular wall 2-6 μm thick at apex but in slender form 12.5 μm thick at apex. Medullary filament (12.5-) 25-62.5 μm diam. Hairs lacking or few in 2 rows at 62.5-125 μm below apex of utricles. Gametangia 1-4 per utricle, at 250-400 μm below apex of utricle, cylindrical, elongate, fusiform, lance-ovoid, parabolic 150-350 μm long and (38-) 50-100 μm broad; L/B 2.1-5 (-6).

Holotype: Buleji (Leg. M. Nizamuddin, 6-2-1993, KUH-SW 0007, drift).

Other specimens examined: Manora (Leg. M. Nizamuddin, 9-3-1964, 11-2-1987, 31-12-1986; Leg. Q. Akhtar, 19-2-1964; Leg. K. Usmanghani, 19-2-1964; Leg. S. Perveen, 7-4-1986). Buleji (Leg. M. Nizamuddin, 6-1-1987, 2-2-1987, 2-2-1992, 25-2-1997; Leg. K. Aisha, 30-11-1993 mid-littoral). Paradise Point (Leg. N. Qureshi, 6-2-1972 drift). Always found cast ashore, most probably deep water alga.

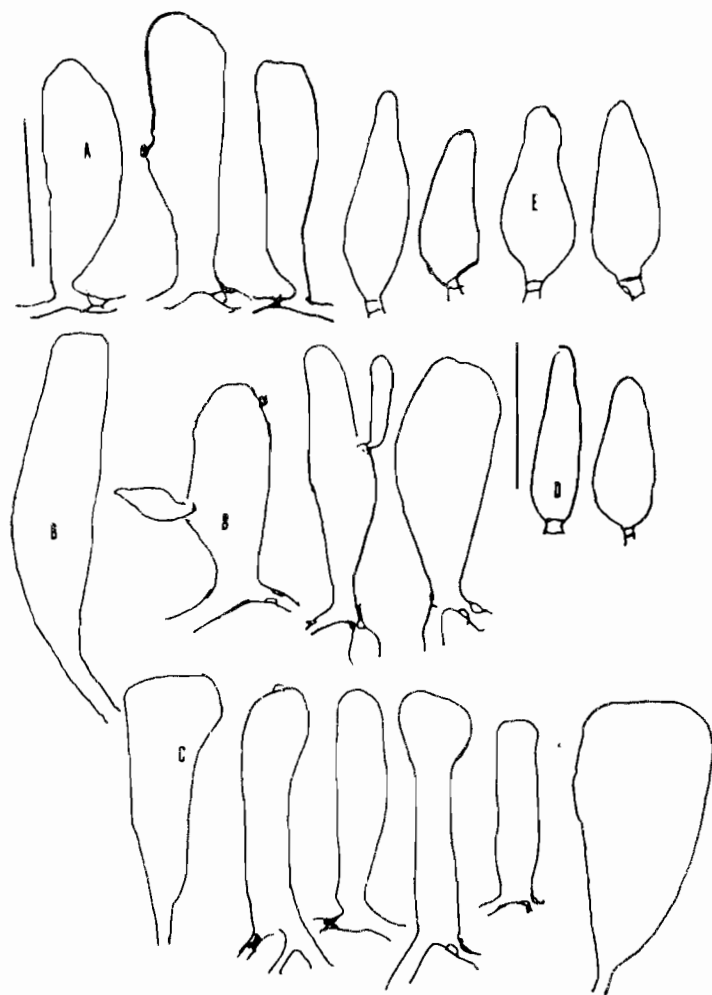


Fig. 2. *Codium shameelii* Nizam. sp. nov.: Buleji (Leg. M. Nizamuddin, 2-2-1992 drift KUH-SW 1234). Utricles of thallus: (A) from tip, (B) from medial part, (C) from stipe. Gametangia: (D) from medial part from tip. (Scale: utricles = 500 μ m; gametangia = 200 μ m).

Diagnosis: *Codium shameelii* resembles *C. indicum* in dimensions of utricles and gametangia but strongly differs in size and habit of thallus, as well as in gametangial position.

Diagnose: *Codium shameelii* Nizam. sp. nov: *dimensio utricles et gametangio*, *C. indicum* Dixit *affinibus similis sed differt magnitudine habitu thallus et positio gametangio*.

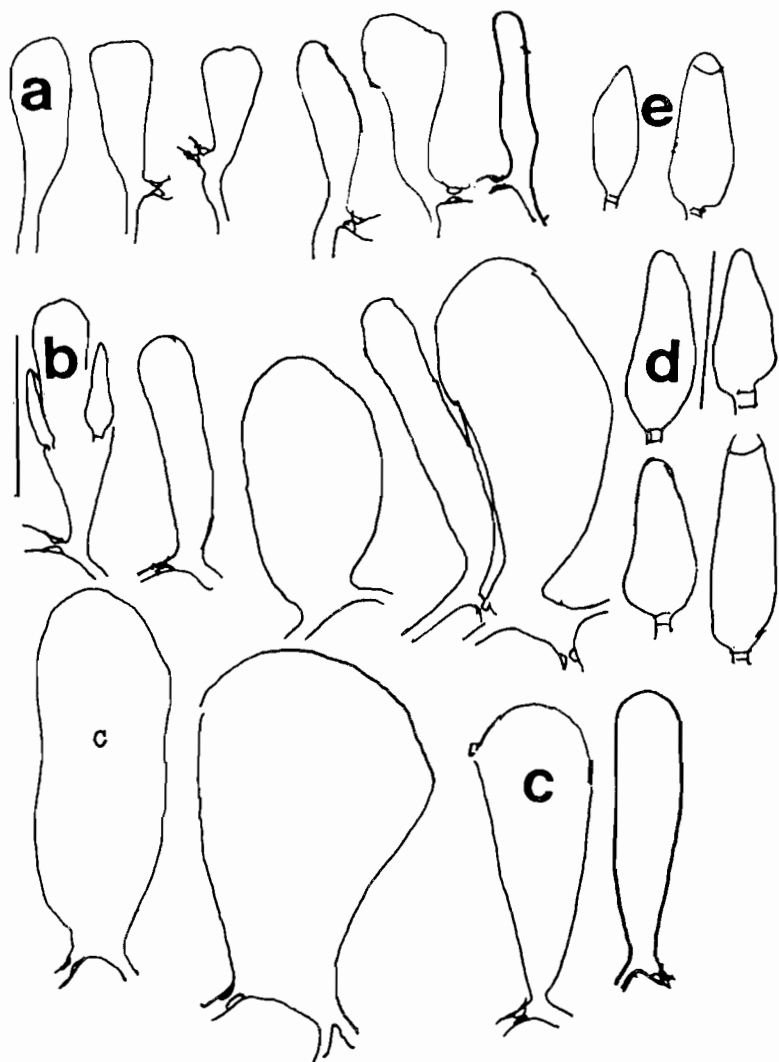


Fig. 3. *Codium shameelii* Nizam. sp. nov.: Buleji (Leg. M. Nizamuddin, 2-2-1992 drift KUH-SW 1234). Utricles of proliferations: (a) from tip, (b) from medial part, (c) from basal part. Gametangia: (d) from medial part from tip. (Scale: utricle = 500 μ m, gametangia = 200 μ m).

Discussion

Codium shameelii is a flat forming species allied to *C. indicum* Dixit 1940 (Malwan Harbour, Bombay, west Indian coast), *C. platyclados* Jones & Kraft 1984 (Lord Howe Island, N.S.W. Australia, Pacific Ocean) and *C. platylobium* (Aresch.) Silva 1960 (Natal and Cape Provinces, South Africa).

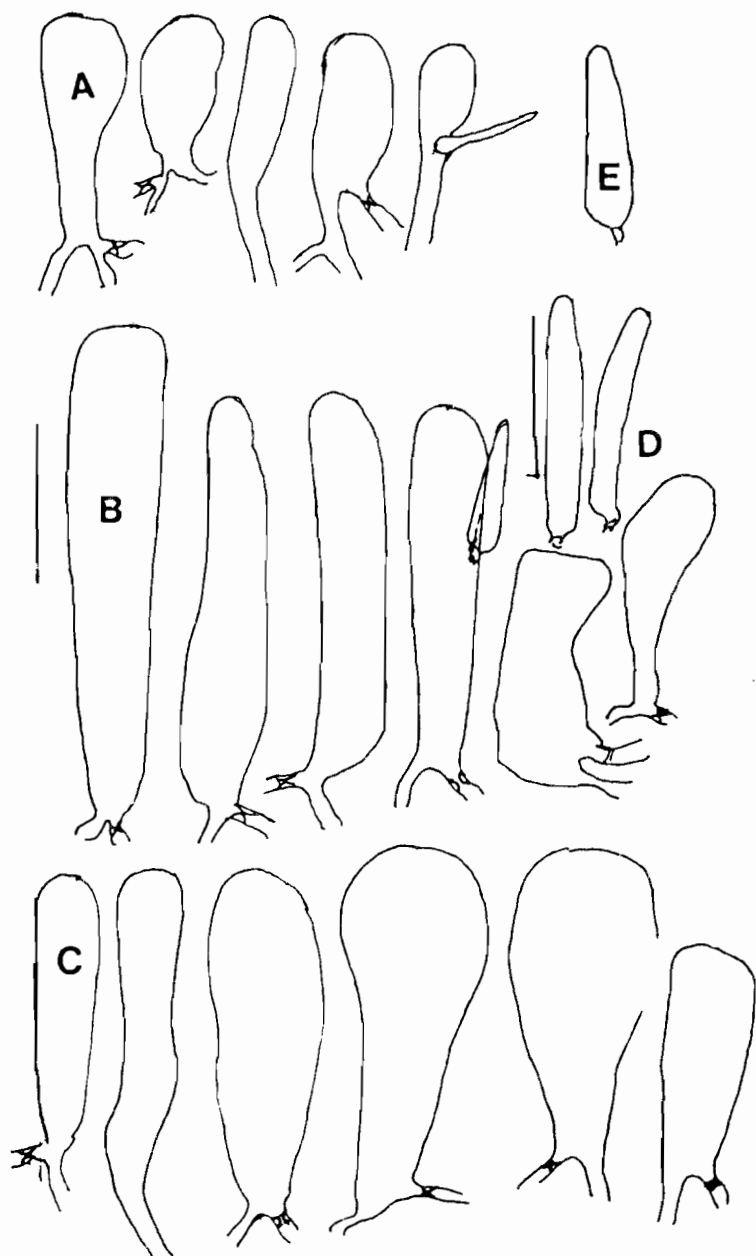


Fig. 4. *Codium shameelii* Nizam. sp. nov: Buleji (Leg. M. Nizamuddin, 25-2-1997 drift). Utricles of thallus: (A) from tip, (B) from medial part, (C) from stipe. Gametangia: (D) from medial part, from tip. (Scale: utricle = 500 μ m, gametangia = 200 μ m).

Early record of *C. shameelii* from Karachi is referred to *C. coronatum* Setchell 1926 by Anand (1940). *Codium shameelii* resembles and is allied to *C. coronatum* (*sensu* Anand, 1940) in flat, irregularly shaped coxcomb-like thallus and also in anatomical structure whereas the type species, *C. coronatum* Setchell (1926) possesses effuse and applanate thallus with hairs in coronate series. The occurrence of *C. coronatum* (a Tahitian alga) is beyond expectance from this coast. Hence it is excluded from this coast.

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