

A NEW CODIUM FROM AUSTRALIA

CODIUM SCHMIDTII N. SP.

By V. VOUK

While inquiring into the group of *Codium dichotomum* (Huds.) Setchell = *C. tomentosum* (Huds.) Stackh. among ample material of the Natural History Museum in Vienna I chanced upon a specimen labelled »*C. tomentosum* Ag. Ad litus peninsulae Lefebvre. Idib. Iulii 1882 Ferd. Müller«, which I identified, according to my system of forms, as *f. furcatum*.

In fig. 1 of the plate the photograph of this specimen is given where the furcate shape of thallus is especially well developed. Yet when subjected to microscopical investigation it showed on the inner side a very peculiar local thickening of the membranal point of utricle which I have never ascertained in any other *Codium*. Also as far as I could gather from literature on *Codium* such a peculiarity of utricle structure has never been recorded. This observation induced me to inquire further into the matter and soon it resulted in giving proof that these thickening excrescences were to be found in all the parts of thallus and that they were invariably peculiar to them. Later on I found some more specimens pertaining to the same collector and locality in the Herbarium of the Botanical Museum in Berlin but these were already classified by O. C. Schmidt as *Codium Mülleri* Kütz. These specimens too showed strikingly furcate exterior. As a preliminary to closer analysis I feel obliged to add that another specimen of *Codium* from the Herbarium of the Natural History Museum in Vienna, displaying the same thickening on the inner wall, had reached my hands. The specimen in question was labelled »*Codium tomentosum*, Busselton-Pries. M. A.« without accurate reference to collector and date. With regard to its habitus this specimen was a typical *f. dichotomum* Vouk (cf. fig. 2, plate). Both specimens are consequently indigenous to Australian region. (Busselton on the South-western coast of Australia and Lefevre in the Loyalty Archipelago of New Caledonia).

Now a few words on the peculiarities of thickening of walls. Thickening of palisades on top are common in Codiaceae. Moreover, they are frequently peculiar to the art. I have but to mention the unmistakably mucronate thickening of walls in *Codium fragile*, or the wartlike membranal structure of *C. foveolatum*, or the caplike swelling in *Codium ga-*

leatum. Also in the group of *C. dichotomum* thickenings of walls are quite common: frequently they are composed of layers and measure up to 40μ in diameter. One of these forms with remarkably thickened membranes has been known as var. *peruvianum* Howe (Mem. Torrey Bot. Club 15) and this is even equipped with an »internal umbo«. Yet it is not possible to compare this »umbo« with our forms of local thickening of walls. The membrane of palisades of our specimens is otherwise uniform and only on the rounded top toward the

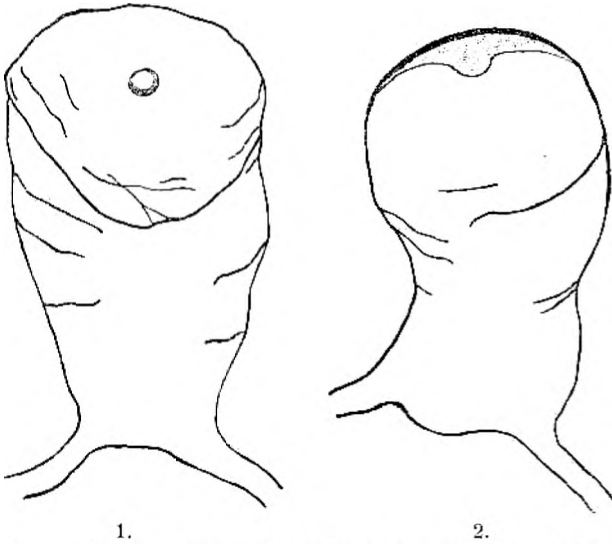


Fig. 1. *Codium Schmidti* Vouk (*C. tomentosum*, Lefebvre, Herb. Vindob.).
Utricles from the basal part of the thallus, 1. local thickening on the surface, 2. the same in profile.

centre at first a slight and then abrupt thickening takes place resembling a pigtail-like protuberance. More adequately than words may convey, this peculiarity of structure is represented on the picture. (Fig. 1 and 2) When the palisades, slightly magnified, are observed from above it appears as if they were dotted in the centre. It is necessary to get the palisades into a sidewise position in order to disclose to view the protuberant thickenings. In Lefebvre specimens all the palisades were set off with thickenings (Fig. 3), whereas in Busselton specimens I could find but few palisades with only slightly developed protuberance (Fig. 4). The thickness respectively length of these protuberances amounted generally to cca 30μ yet I found also some measuring from 42μ up to 55μ in diameter. This peculiarity of structure was so characteristic that I was from the very first convinced that there was a new form before me. Still it was necessary to go through the whole ana-

lysis to arrive at well-founded conclusions with regard to systematical relationship.

The Lefevre-*Codium* shows, as already stated, entirely tomentose habitus. The thallus is upright, from 12 to 14 cm

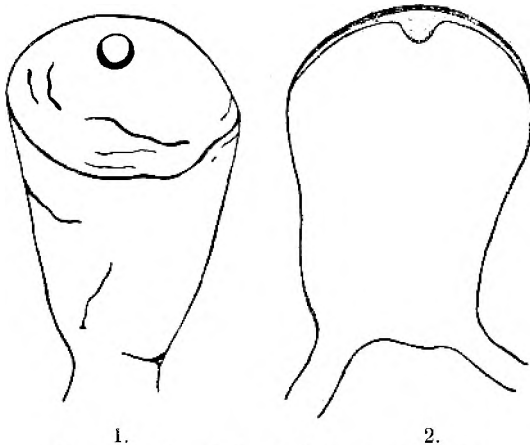


Fig. 2. *Codium Schmidtii* Vouk (C. Mülleri, Herb. Vindob.).
Utricles from the apical part of the thallus.
1. local thickening on the surface, 2. the same in profile.

high, 2—4 mm thick, marginal segments slightly narrowed, up to more than 5 cm long and pronged (f. *furcatum*). Busseton *Codium* shows also *tomentose* habitus yet far more slender, up to 11 cm high, not over 3 mm broad, evenly dichotomic with short marginal segments (f. *dichotomum*).

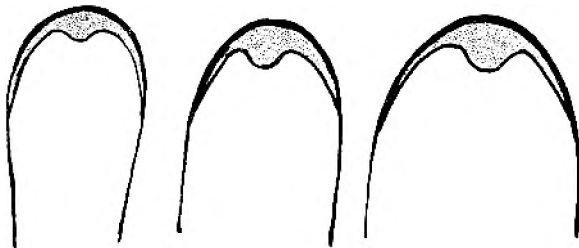


Fig. 3. *Codium Schmidtii* Vouk (C. Mülleri, Lefevre, Herb. Vindobon.).
Terminal portions of utricles with the thickenings, from the basal part of the thallus.

Utricles in Lefevre *Codium* measure in basal respectively middle thallus 403—640 μ in breadth, 660—878 μ in length, and on the edge of marginal segments 165—274 μ , length 476—572 μ .

In Busselton *Codium* the dimensions of utricles (palisades) in basal part of thallus are as follows: breadth 238—512 μ , length 550—878 μ . Protuberant thickenings in both forms are 26—55 μ broad respectively high.

Gamentangies were developed only in Lefevre-*Codium*: they are spindle-shaped, and on top they bear protuberances as it is the case with utricles. Breadth 73—128 μ , length 183—238 μ .

Despite all these characteristics we had no particular reason to mark them as different from *C. dichotomum* (Huds). Setchel, if it were not for the particular circumstance of protuberant thickenings. The proportion of sizes of utricles and gamentangies are corresponding to those of *C. dichotomum*.

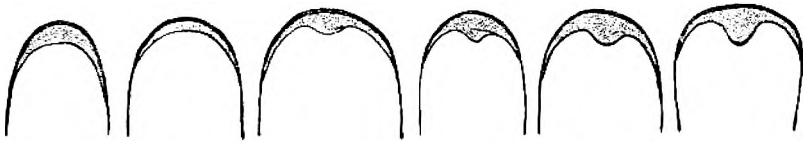


Fig. 4. *Codium Schmidtii* Vouk (*Cod. tomentosum*, Busselton, Pries. Herb. Vindobon.).

Terminal portions of utricles with the different forms of thickenings, from the apical part of the thallus.

This made me instantly inclined toward establishing a new subspecies, yet it is to be called to attention that heretofore in the species of *Codium* the membranous structure has been considered as a characteristic of art. Moreover, the geographical restriction upon the Australian region furnishes an additional reason for establishing a new art.

Diagnosis:

Codium Schmidtii Vouk n. sp.

Thallo erecto, plus minusque regulariter dichotomo vel furcato. Utriculis obconicis vel clavatis, 240—640 μ latis, 550—880 μ longis, apicibus localiter in media parte quasi uva incrassatis.

Gamentangiis clavaeformibus 73—128 μ latis, 185—240 μ longis, in apice quasi utriculi incrassatis.

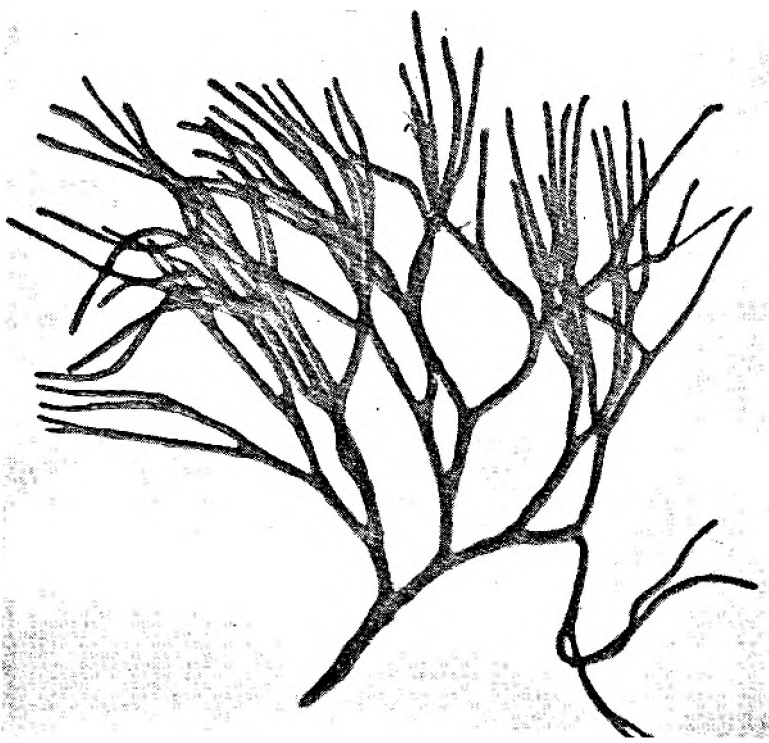
Habitat in Australia: Busselton, Cap Lefevre ad insulam Lifo. Typus in herbario Mus. Palat. Vindobonensi et in Herbario Musei Botanici Berolinensi.

The new species is dedicated to Mr. O. C. Schmidt in Berlin, the meritorious monographer of Codiaceae.

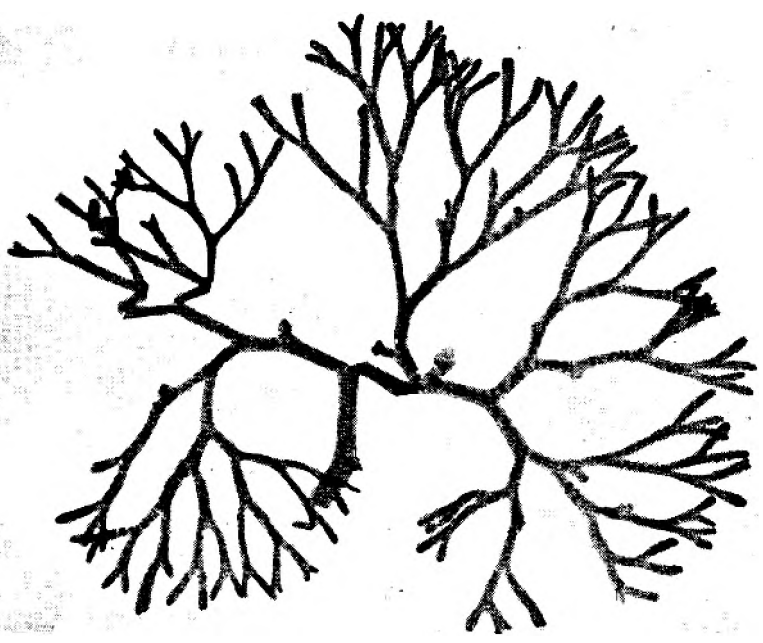
LITERATURE

- Schmidt O. C.: Beiträge zur Kenntniss der Gattung *Codium*. Bibliotheca Botanica. Heft. 91 (193). 1923.
 Vouk V.: Studien über adriatische Codiaceen. Acta adriatica inst. oceanogr Split. No 8. 1936.

1.



2.



Codium Schmidtii Vouk

- 1. (*Cod. tomentosum* Ag. ad litus penins. Lefebre, Herb. Vindob.).
- 2. (*Cod. tomentosum*, Busselton Pries. Herb. Vindob.).