larger specimen is 200 mm. in height and has an average diameter of about 12 mm. *Colour* in spirit dull, yellowish-brown. *Texture* tough and fibrous. *Surface* extremely uneven and minutely hispid. *Oscula* numerous, small and scattered.

Skeleton.—There is a reticulation of very stout horny fibre, echinated by spined stylote spicules, and having the primary lines cored by smooth styli which may also project freely at the ends of the primary fibre. The secondary fibres appear to be without a spicular core.

Spicules.—(*a*) *Megasclera;* (1) smooth styli, very variable in size, measuring up to about 0·54 by 0·024 mm., but often much smaller. These spicules occur in the axis and projecting at the ends of the primary fibre; those at the ends are of large size. (2) Nearly or quite straight, sharply pointed, entirely spined styli (Pl. XXIX. fig. 13), echinating the skeleton fibre; size about 0·072 by 0·006 mm. (*b*) *Microsclera;* of one kind only, viz., smooth toxa (Pl. XXIX. fig. 13, *a*) measuring about 0·029 by 0·0016 mm.

The very characteristic external appearance and the fact that there is only one kind of microsclera present, and that a toxite, are, perhaps, the most characteristic features of this species, by which it may readily be recognized. Although it possesses no chetæ, yet this species agrees so closely with the genus *Clathria* in other respects that we have deemed it advisable to include it in that genus; it is, perhaps, a form that once possessed isochelate microsclera and has now lost them.

Locality.—Station 163A, April 4, 1874; lat. 36° 59′ S., long. 150° 20′ E.; Bass Strait; depth, 150 fathoms; bottom, green mud. Two specimens.

Genus *Rhaphidophlus*, Ehlers (Pls. XXVIII., XXIX., XLVI.).

1870. *Rhaphidophlus*, Ehlers, Die Esper'schen Spongien, Erlangen, pp. 19, 31.
1875. *Echinonema*, Carter, Ann. and Mag. Nat. Hist., ser. 4, vol. xvi. p. 185.

This genus differs from *Clathria* only in the possession of a distinct, dense crust of outwardly projecting spicules, the difference being one of degree rather than of kind.

The original diagnosis (*loc. cit.*, p. 31) runs as follows:—"Schwamm aus netzförmig vereinigten Balken mit dichter Rindenschicht aus stumpf-spitzen Nadeln, darunter im Gewebe ein Netz von Hornfasern, in welchen und um welche die gleichen Nadeln liegen, ausserdem eingepflanzte gedornte Nadeln, daneben gleichendige Doppelanker und mannigfach gebogene Kieselfäden."

This diagnosis is based upon a single species, *Rhaphidophlus cratitius*, Esper, sp., and is perhaps rather too restricted for generic use. The nature of the "Kieselfäden" is elucidated to some extent by the description of the species (*loc. cit.*, p. 19), which speaks of them as "sehr feine haarförmige Kieselfäden, welche ungleich lang und mannigfach gekrümmt sind: einfach spangenförmig, oder mit wieder aufgebogenen Enden, oder auch S-förmig, doch so, dass die Endtheile nicht in eine Ebene liegen."