distinct, cork-like cortex lying immediately below the dermal membrane, about 0·24 mm. thick. *Colour* in spirit light brown. *Texture* corky, internally fibrous. *Surface* fairly smooth. *Dermal membrane* fairly distinct and peeling off readily in strips. *Oscula* apparently few, scattered, each on a small papilla, but the condition of the specimen is such as to make it difficult to be certain of this. *Pores* (?).

Skeleton.—Radiately arranged. From about the centre of the base bands of spiculo-fibre radiate to the surface, where they terminate in brushes of stylote spicules with their points directed outwards and embedded in the dense cortex.

Spicules.—(*a*) *Megasclera;* of one kind only, viz., straight, smooth styli (Pl. XXIII. figs. 8, 8*a*), verging upon tylostyli, fairly gradually and sharply pointed, often with the shaft slightly bulbously dilated at intervals; size about 0·65 by 0·0126 mm. (*b*) *Microsclera;* of one kind only, viz., isochelæ, of very peculiar form (Pl. XXIII. figs. 8*b*, 8*c*, 8*d*), with three distinct, rather palmate teeth at each end and with a diamond-shaped "tubercle" (Carter); often the two anterior teeth are seen to be connected together by their apices (Pl. XXIII. fig. 8*c*); length about 0·044 mm.

In addition to spicules the sponge contains a large amount of sand scattered irregularly through it. Unfortunately there is only a single small specimen and that not in very good condition.

Locality.—Station 320, February 14, 1876; lat. 37° 17′ S., long. 53° 52′ W.; off the mouth of the Rio de la Plata; depth, 600 fathoms; bottom, green sand. One specimen.

Genus *Sideroderma*,[1] Ridley and Dendy (Pls. VIII., IX.).

1886. *Sideroderma*, Ridley and Dendy, Ann. and Mag. Nat. Hist., ser. 5, vol. xviii. p. 348.

Sponge massive, with mammiform processes on the upper surface, provided with a more or less dense external rind, composed of tylote spicules horizontally arranged. Megasclera, tylota; microsclera, isochelæ of various forms, and, at any rate usually, sigmata and trichodragmata.

Only a single species of the genus, and of that only a single specimen, is present in the collection; but this differs so markedly from all other known Desmacidonidæ that it seems advisable to found a new genus for its reception, more especially as we have been enabled, through the kindness of Dr. R. v. Lendenfeld, to examine a second species which occurs in his large collection of Australian sponges. The description of this second species has not yet been published, but an examination of it has enabled us to give a much more satisfactory generic diagnosis than would otherwise have been the case.

[1] From Greek σίδηρος, iron and δέρμα, skin.