owing to its being thus too inclusive that it has not met with general adoption; as used in our scheme of classification the family Pachastrellidæ is nearly equivalent to the group or subfamily Pachastrellina, Carter.

The family is closely allied through *Pachastrella abyssi*, O. Schmidt, with the Theneidæ, its nearest relation in this family being the genus *Pœcillastra;* by the possession of an aphodal chamber-system and sarcenchymatous mesoderm the Pachastrellidæ are, however, raised to a higher grade than the Theneidæ, and thus in framing our phylogeny of the Streptastrosa we have regarded the Theneidæ as the ancestral group.

It is only as a matter of convenience, however, that the Pachastrellidæ are included in the Streptastrosa, since the only genus which possesses the characteristic spiraster is *Pachastrella* itself; the other two genera of the family differ widely from this, first in the absence of rhabdal megascleres, and next in the characters of the microscleres, which in *Dercitus* are a toxa and microrabd, and in *Calthropella* a spheraster; the sole character by which these genera are united with *Pachastrella* lies therefore, so far as the spicules are concerned, in the calthrops, which is common to all. In *Dercitus* the characters of the chamber-system and mesoderm are not known.

Genus 1. *Pachastrella*, O. Schmidt.

Pachastrella, O. Schmidt, Spong. Küste v. Algier., p. 15, 1868.

Pachastrellidæ in which the megascleres are calthrops and oxeas, the microscleres spirasters, microstrongyles, and (?) microxeas.

Type—*Pachastrella monilifer*, O. Schmidt (p. 110).

Genus 2. *Dercitus*, Gray.

Dercitus, Gray, Proc. Zool. Soc. Lond.; p. 542, 1867.
Pachastrella, O. Schmidt, Spong. Atlant. Gebiet., p. 76, 1870.
Battersbya, Bowerbank, Mon. Brit. Spong., vol. iii. p. 347.

Pachastrellidæ in which the microscleres are spined microrabds and toxas.

Type—*Dercitus bucklandi*, Bowerbank (p. 108).

Genus 3. *Calthropella*, n. gen.

Pachastrellidæ with only one form of microsclere, which is a euaster. The only megascleres are calthrops, oxeas being absent.

Type—*Calthropella simplex*, n. sp. (p. 107).