1. *Leptoptychaster kerguelenensis*, Smith (Pl. XXXI. figs. 1 and 2; Pl. XXXII. figs. 1 and 2).

Leptychaster kerguelenensis, Smith, 1876 (February), Ann. and Mag. Nat. Hist., ser. 4, vol. xvii. p. 110.

Archaster excavatus, Wyville Thomson, 1876 (December), Journ. Linn. Soc. Lond. (Zool.), vol. xiii. p. 71, fig. 10 (woodcut).

Leptoptychaster kerguelenensis, Smith, 1879, Phil. Trans., Zool. Kerguelen Island, vol. clxviii. p. 278, pl. xvii. fig. 2.

Rays five. R = 66 mm.; r = 13·5 mm. Breadth of a ray near the base (at the fifth infero-marginal plate), 13 mm.

Rays moderately elongate, usually of a depressed subcylindrical form, rather thick at the base, tapering to a somewhat abruptly pointed extremity. Interbrachial arcs wide, with a tendency to become faintly angular. Abactinal area normally subdepressed, but capable of a slight amount of inflation over the disk and also along the rays; when inflated, more or less clearly defined channel-like depressions are formed along the median interradial lines. Actinal surface subplane or slightly convex, passing into the curvature of the margin. Lateral walls rather tumid and well-rounded.

The abactinal surface of the disk and rays is covered with large, closely crowded paxillæ, consisting of six to nine small subclavate spinelets on the area of the tabulum, surrounded by an outer series of similar but more delicate spinelets, and sometimes with a few additional ones at a still lower level, the whole borne on an elongate delicate pedicle. Towards the centre of the disk, along the median line of the rays, and at the extremity, the paxillæ diminish in size, and they are largest in the region of the interbrachial arcs and at the base of the rays.

The supero-marginal plates, which are quite inconspicuous and more or less aborted, bear a paxilla scarcely distinguishable from those on the abactinal surface generally.

The infero-marginal plates are sixty-five to seventy in number, counting from the median interradial line to the extremity. They are very short, measuring little more than 1 mm. in the direction of the axis of the ray, but their transverse dimension is proportionally great, the breadth and height combined being four or five times the length. They are well rounded at the margin which unites the lateral wall and the actinal surface, and form a broad border to the actinal surface in the interbrachial arc and on the inner part of the ray, but which diminishes in breadth on the outer part of the ray, where the posture of the infero-marginal plates becomes more vertical in the lateral wall. A high, narrow, ridge-like keel traverses the median line of a plate, which is covered with a great number of small, robust, uniform, skin-covered, subclavate or papilliform spinelets. The shortest and thickest are on the ridge of the keel, whilst the sides of the intervening channels are crowded with slightly longer, but very much more delicate, cilia-like spinelets.

The adambulacral plates are very small and widely spaced, consecutive plates being