in diameter, the larger sized particles being found in those soundings nearest the coasts. The frustules of Diatoms made up in every case a large part of the deposit, and along with the siliceous spicules of Sponges, probably as much as 50 per cent. in some of the samples; the soundings farthest removed from the coast contained generally much the larger proportion of siliceous remains. These muds contained but little clayey matter, and when dried were grey-green, slightly coherent, and earthy in aspect.

The dredgings along this coast gave many Sponges, Hydroids, Comatulas, Starfish, Ophiurids, Echinids, Holothurians, Annelids, *Serolis*, Pycnogonids, Lamellibranchs, Gasteropods, Nudibranchs, Polyzoans, Ascidians and Teleosteans; siliceous Sponges (*Rossella*) were in some cases most abundant, over one hundred large specimens being taken in one haul. The absence of Decapod Crustaceans (except one Schizopod, *Pseudomma roseum*) in all these dredgings is very remarkable.

The Spheniscidæ.—A considerable number of Penguins, of different species, was collected at various points of the cruise, and handed to Professor Morrison Watson, F.R.S., who made an elaborate investigation into their anatomy,[1] of which he has furnished the following brief summary:—

"The skeleton of the Spheniscidæ is remarkable in that the bones of the wing are modified in accordance with the alteration of function of that organ, and its conversion from an instrument of aerial to one of aquatic progression. These modifications are manifested in the enormous size of the scapula, which thus affords attachment to the powerful muscles of the shoulder-joint; in the great strength of the coracoid bone, which in *Spheniscus* and *Eudyptes* is perforated by a foramen for the transmission of the nerve to the pectoralis medius muscle; in the lateral compression of all the bones of the wing, a character which obtains among certain other diving birds, but which only reaches its maximum in this group; in the presence of two sesamoid bones, developed in connection with the tendon of the triceps muscle; in the peculiar form and mode of articulation of the carpal bones; in the union of the first or radial metacarpal which, although independent in the embryo, becomes inseparably anchylosed with the second metacarpal bone in the adult; and in the absence of a free pollex.

"The muscular system of the Penguins is characterised by the great development of the cutaneous muscles, which present an arrangement quite peculiar to the group. It has been suggested to me that the large development of the cutaneous muscles is probably a means whereby water may be readily expelled from the interstices of the plumage so soon as the bird quits the water. Were it otherwise, in the low temperature of the Antarctic region which the majority of these birds inhabit, the plumage would soon be frozen into an icy mass, the high temperature of the bird being of itself insufficient to obviate this, seeing that the ready conduction of heat from the interior of

[1] Report on the Anatomy of the Spheniscidæ, Zool. Chall. Exp., part xviii., 1883.