Even in worn individuals the traces of the deciduous scales are always present. There are faint transverse lamellar wrinkles: the broader extremity is not pendulous.

5. DESCRIPTION OF A NEW GENUS OF SPONGE (XENOSPONGIA)
FROM TORRES STRAIT. BY DR. JOHN EDWARD GRAY,
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(Radiata, Pl. XII.)

The Sponge here described was received from Torres Strait with some very interesting Madreporae and Polyzoa.

It is peculiar as being free like the *Fungæ* among the Madreporae, but more concave beneath, for having the upper oscules placed in the diverging forked groove of the upper surface, and for having the whole of the under surface covered with a thick coat formed of agglutinated particles of siliceous sea-sand, this coat being much thicker than the sponge itself; and it is probably used to keep it in its place and position at the bottom of the sea.

Genus XENOSPONGIA.

Sponge free, discoidal, subcircular, concave below, convex above (rarely lobed on the side); the lower surface with a thick coat of agglutinated siliceous sand of nearly equal-sized particles; the upper surface covered with a white leathery coat formed of felted spicula, studded with round tufts of glassy spicula, the tufts of nearly equal size, formed of numerous very fine transparent filiform spicula, forming a roundish brush, each tuft surrounded at the base by a slightly raised edge of the leathery upper coat; the circumference of the disk is surrounded by a uniform series of similar tufts. The centre of the upper surface is marked with a subcentral impressed groove with raised edges enclosing a series of circular oscules; this groove sends out branches diverging towards the edge, which are forked and reformed (or rarely trifid) as the disk enlarges, until they approach the edge of the circumference, which is surrounded by two continuous circular grooves, concentric with the margin, containing between them a single circular submarginal series of tufts of spicula.

When the sponge is young, the forked diverging grooves are few, definite, and evenly spread over the surface of the disk, with several series of tufts between them; but as the sponge increases in age, the grooves become much more numerous, closer together, nearly parallel with each other, and enclosing only a single series of tufts of spicula between the parallel grooves.

The substance of the sponge between the grooves is minutely netted, the interspaces of the network being formed of bundles of very minute spicula, and with a single series of small uniform-sized, equal, roundish oscules.

The upper surface of the adult sponge is sometimes taken posses-

sion of by a species of Barnacle (*Balanus*), which forms a prominence on its surface, and is covered externally with a coat of the sponge.

XENOSPONGIA PATELLIFORMIS (Pl. XII.).

Hab. Torres Strait.

The particles of sand forming the lower coat of the sponge are as if they were imbedded in a kind of plaster, having a smooth uniform surface, exactly as if the sand had been well mixed with a small quantity of fluid mortar and then cast upon a smooth body.

The whole under surface is not perfectly smooth, but with more or less distinct impressed lines or concavities placed parallel with the circumference, showing the periodical increase in the size of the sponge.

There is scattered over the under surface of the larger specimen a few larger dark-coloured stones and a few fragments of shells, which give a variegated appearance to the coat. The larger specimen, after it had reached a certain size, made an irregular growth on one of the sides, forming two rounded lobes which overlap each other, while the whole front retains the concave conical shape.

The lobe, which is expanded on the under surface of the other, is fringed with a continuous series of very close tufts of silky spicula. I have no doubt, as the bases of these tufts are to be seen on the rest of the margin, that similar tufts occupy the whole edge of the sponge in its perfect state, and have been rubbed off; they have been retained in this place, because it is better protected from external injury than the other part of the sponge.

In the larger specimens the grooves are much more irregular, as well as more abundant and more crowded than in the smaller one; and in some few instances they appear to arise in the surface independent of any connexion with the other grooves, which is not the case in the smaller example.

In the same specimen there are a few groups or rather lines of oscules, situated on the surface of the sponge itself, and not placed in the grooves, where all the other oscules are placed.

In the diverging grooves the texture of the sponge seems to be across the grooves, that is, parallel to the outer circumference of the sponge, leaving minute square pits in the network.

In the marginal grooves, on the contrary, the chief fibres of the texture appear to be also across the groove, but that is radiating from the centre towards the margin; this appearance may probably be partly, if not entirely, arising from the manner in which the sponge has contracted when it dried, and may not be apparent in the fresh state; but having only a single specimen of the adult and young form of the sponge, I am disinclined to soak it in water and examine it in a moist state, fearing that it may spoil the specimen, which is now very brittle and inclined to crack from the edge to the centre of the frond.