

exclusively Radiolarian tests; in *Cerelasma lamellosa* (from Station 216A) partly *Globigerina* shells and their fragments, partly siliceous spicules of sponges and mineral particles. The majority of the xenophya have a peculiar horny envelope, a thin-walled yellow or brown sacculus of spongin. Some of the xenophya (probably those which were most recently incorporated) lie immediately in the transparent maltha, and possess no spongin-envelope. It seems as though the thickness of the sacculi increased with age. The spongin-sacculi are so connected with the branched lamellæ of the skeleton that these latter may be regarded as connecting bands between the former.

The canal-system of *Cerelasma* seems to be similar to that of *Spongelia*, with large flagello-chambers; in the two deep-sea species, however, which I have examined, it was not sufficiently well preserved. In the preliminary examination I was inclined to regard as peculiar canals of the sponge the reticulated canal-system, filled with dark phæodia-like masses, which I afterwards recognised as the hydrorhiza of a symbiotic Hydroid (*Stylactis* or a similar Spongoxenia). The strong chitinous tubes of this latter in *Cerelasma* seem to replace the main spongin-fibres of *Spongelia*.

Probably to this genus belongs also the Keratose sponge which Poléjaeff has described as *Psammopemma porosum* in his Report on the Keratosa (p. 48). He says that the foreign enclosures of this species possess a thick envelope of horny substance, "occasionally with very conspicuous outgrowths" (p. 49). The true *Psammopemma* forms no spongin at all.

*Cerelasma gyrosphæra*, n. sp. (Pl. VI. figs. 1-5).

*Habitat*.—Tropical Pacific, Station 271; September 6, 1875; lat. 0° 33' S., long. 151° 34' W.; depth, 2425 fathoms; bottom, *Globigerina* ooze, containing a good many well-preserved Radiolarian shells.

Sponge a globular framework, with mæandric surface, composed of numerous cylindrical, anastomosing, convoluted branches. No distinct dermal membrane. Pseudo-skeleton composed almost exclusively of Radiolarian tests.

*Exterior*.—The body of the single well-preserved specimen is nearly spherical, slightly flattened on the basal side, where it has been attached. The diameter of the globe is between 60 and 70 mm., 66 on an average. The whole surface is similar to that of a gyrencephalon mammalian cerebrum, numerous curved gyri, and between them deep sulci, being turned in all directions. Closer examination shows that this aspect is produced by numerous cylindrical branches, which form a reticular framework by frequent anastomoses. The length of most of the branches is between 6 and 9 mm., the thickness 3 to 4 mm. The sponge, as preserved in spirit, is rather soft and fragile; when dry it is rather hard. The colour is dark brown. The surface of the sponge is rough