Subgenus 1. *Plegmosphærantha*, Haeckel.

Definition.—Inside and outside of the spongy shell-wall smooth, closed by a lattice-plate with polygonal meshes.

1. *Plegmosphæra maxima*, n. sp.

Radius of the spherical shell-cavity eight to ten times as great as the thickness of the thin spongy wall. Inside and outside of the wall smooth, closed by a lattice-plate with irregular polygonal meshes. Only three or four meshes in the thickness of the wall.

Dimensions.—Diameter of the spongy sphere 0·8 to 1·0 mm., of its inner cavity 0·7 to 0·8, meshes 0·01 to 0·02, bars 0·002 to 0·003, central capsule 0·5 to 0·6, nucleus 0·1 to 0·15.

Habitat.—Central Pacific, Station 271, surface.

2. *Plegmosphæra coelopila*, n. sp.

Radius of the spherical shell-cavity eight to ten times as great as the thickness of the spongy wall. Inside and outside of the wall closed by a smooth lattice-plate with irregular polygonal meshes, five to ten times as broad as the bars.

Dimensions.—Diameter of the shell 0·32, of its cavity 0·26, meshes 0·01 to 0·02, bars 0·002.

Habitat.—North Atlantic, Færöe Channel, Gulf Stream, John Murray.

3. *Plegmosphæra pachypila*, n. sp.

Radius of the spherical shell-cavity about equal to the thickness of the spongy wall. Inside and outside of the wall closed by a smooth lattice-plate with irregular polygonal meshes, three to six times as broad as the bars.

Dimensions.—Diameter of the shell 0·24, of its cavity 0·12.

Habitat.—North Pacific, Station 250, surface.

Subgenus 2. *Plegmosphærella*, Haeckel.

Definition.—Inside of the spongy shell-wall closed by a smooth lattice-plate, outside rough, spongy, with prominent thorns.

4. *Plegmosphæra entodictyon*, n. sp.

Radius of the spherical shell-cavity half as great as the thickness of the spongy wall. Inside of the wall closed by a smooth lattice-plate, outside rough, spongy.

Dimensions.—Diameter of the shell 0·24, of its cavity 0·08.

Habitat.—South Pacific, Station 300, surface.