

detailed anatomy of *Periphylla mirabilis*. This species, as well as the following species, *Periphema regina* belong to the family of the Periphyllidæ, these large and highly organised Peromedusæ which have twelve tentacles, sixteen marginal lobes, and thirty-two lobe pouches. Contrasted with these stand the older and more simply constructed Pericolpidæ, which are more closely connected with the Lucernaridæ, and have only four perradial tentacles, besides eight marginal lobes, and sixteen lobe pouches. Each perradial tentacle of the Pericolpidæ is represented in the Periphyllidæ by three tentacles, and two marginal lobes inserted between them. All Peromedusæ have invariably only four interradial rhopalia, and this alone distinguishes them from all other Medusæ. Our *Periphylla mirabilis* is distinguished from all other species of the genus by the eight strong barbous filaments of the margin of the mouth, and may therefore be regarded as the representative of a distinct genus—*Periphenga mirabilis* (περιπέγγα, radiating).

*Periphylla mirabilis*, Hæckel (Pls. XVIII.–XXIII.).

*Periphenga mirabilis*, Hæckel, 1879, System der Medusen, p. 422, No. 424.

Umbrella conical, about one-fourth higher than broad. Pedal zone of the exumbrella somewhat higher than the lobe zone, both together nearly three-fourths as high as the cone zone. Marginal lobes oval, pointed; their distal wings triangular, half as high as their proximal gelatinous swelling. The eight tentacle lobes projecting less than the eight rhopalia lobes on the umbrella margin. Tentacles twice as long as the height of the umbrella, one-third as broad as the marginal lobes at their basis. Œsophagus cubical, one-third as high as the umbrella, reaching only to the coronal muscle, with eight adradial, long, feathered, barbous filaments at the margin of the mouth. Horizontal diameter, 120 mm.; vertical diameter, 160 mm.

*Habitat*.—South Pacific Ocean, near the east coast of New Zealand. Lat. 40° 28' S., long. 177° 43' E. Station 168. The single specimen captured, a mature male, was taken July 8, 1874, at a depth of 1100 fathoms. It was admirably preserved in spirit, was quite perfect; and was, on the whole, of a pale violet colour. The inner or endodermal surface of the gelatinous umbrella was overlaid with dark, violet-brown pigment, which was easily rubbed off, and consisted of small roundish granules in the endodermal cells of the abaxial wall of the gastral space. The tentacles appeared coloured darker violet, the genitalia reddish-yellow. After lying some years in spirit, the colours become fainter.

The umbrella (Pl. XVIII. fig. 1; Pl. XIX. fig. 6; Pl. XX. fig. 8; Pl. XXI. figs. 12–20) of *Periphylla mirabilis*, as of most other Peromedusæ, is high-arched, conical, pointed above, and widened like a funnel below, or almost helmet-shaped. The height (or vertical diameter) of the umbrella—including the marginal lobes, excluding the tentacles—amounted in the uninjured specimen to 16 centimetres; therefore, one-fourth more than the breadth at the opening of the umbrella, 12 centimetres being the largest horizontal diameter. Almost in the middle of its height,—8½ cm. from the umbrella