

referable chiefly to the fact that the forms described had been quite insufficiently studied, and that consequently the systematic characters had been referred to points of secondary moment only. In this condition of affairs no alteration has been effected by the monograph of Angelo Andres; the great abundance of forms cannot be compressed, as he has attempted to compress them, into the three genera, *Zoanthus*, *Palythoa*, and *Sphenopus* (the genera *Verrillia*, *Bergia*, and *Antinedia* having but a doubtful position, so long as we possess such scanty information about them as at present).

I have therefore requested Dr. Erdmann, one of my students in Bonn, to undertake a revision of the Zoanthæ with reference to the following important anatomical characters:—(1) condition of the cœnenchyme; (2) arrangement of the mesenteries; (3) structure of the sphincter; (4) condition of the integument; (5) colony-formation. His conclusions are as follows:—The Zoanthæ may live solitary (Sphenopidæ), or may form colonies (Zoanthidæ); in the latter case the cœnenchyme may either consist of basal stolons more or less branching, sometimes even anastomosing, or of a connecting lamella, or of a mass which unites the polyps almost for their whole height. The integument either consists merely of an epithelium and cuticle, or else there occur on it foreign bodies, which penetrate the mesogloea of the body-wall, and more or less fill it. In the arrangement of the mesenteries two points are of importance: (1) that the pairs of mesenteries, with the exception of the directives, consist of a macro- and a micro-mesentery; (2) that a dorsal and a ventral zone of mesenteries must be distinguished. The two zones may approximate either with small (Microtype) or with large mesenteries (Macrotype). Finally, the sphincter exhibits three modes of formation; it may be (1) endodermal; (2) mesogloæal; (3) it may be mesogloæal, but distinguished by a muscle-free region into upper and lower portions.

With reference to the points above mentioned, Erdmann has distinguished five genera in the colonial Zoanthidæ, the characteristics of which may be followed without further comment in the accompanying table:—

Genus.	Mesenterial arrangement.	Sphincter.	Cœnenchyme.	Integument.	Generative organs.
<i>Zoanthus</i> .	Microtypal.	Mesodermal, duplex.	Stolonar.	Soft.	Hermaphrodite.
<i>Mammilifera</i> .	Microtypal.	Mesodermal, simple.	Stolon-like, with a tendency to form lamellæ.	Soft.	(?)
<i>Epizoanthus</i> .	Macrotypal.	Mesodermal, simple.	Connective, lamellar.	Incrusted.	Diœcious.
<i>Palythoa</i> .	Macrotypal.	Endodermal.	Resembling a ribbon or tongue.	Incrusted.	Diœcious.
<i>Corticifera</i> .	Microtypal.	Mesodermal, simple.	Polyps sunk in the cœnenchyme to their upper ends.	Incrusted.	(?)