

latter, proposed in the Prodrromus, were not quite suitable, I replace them here by the following more convenient names :—

1. Family Stephanida (= Monostephida, 1881, p. 447). Skeleton entirely formed by one simple ring (the primary vertical sagittal ring). The only "gate" is the simple aperture of the ring.
2. Family Semantida (= Dyostephida, 1881, p. 446). Skeleton composed of two rings, perpendicular to one another; the primary vertical sagittal ring bears at the base a horizontal basal ring; between the two rings two or more "basal gates remain."
3. Family Coronida (= Triostephida, 1881, p. 445). Skeleton composed of two crossed vertical or meridional rings, perpendicular to one another—the primary sagittal ring and the secondary frontal ring. Commonly the two vertical rings are united at the base by a horizontal basal ring, and between them remain two or more "basal gates."
4. Family Tympanida (= Parastephida, 1881, p. 446). Skeleton composed of two parallel horizontal rings, an upper mitral ring, and a lower basal ring, both connected by vertical or divergent columellæ, which are parts of vertical rings (primary sagittal, and secondary frontal ring).

The peculiar structure of the central capsule of the *Stephoidea*, and their character as true *MONOPYLEA*, were first recognised by Richard Hertwig, who in 1879, in his *Organismus der Radiolarien*, gave an excellent detailed description of it (*loc. cit.*, pp. 68–72, Taf. vii. figs. 4, 5). He also pointed out the near affinity of these "Acanthodesmida" with the *Spyroidea* or *Zygocyrtida*, uniting the latter with the former family.

A fuller explanation of this affinity, and of the great morphological and phylogenetic importance of the "Acanthodesmida," as ancestral forms of the *Spyroidea* and *Cyrtoidea*, was given in 1882 by Bütschli (*Zeitschr. f. wiss. Zool.*, vol. xxxvi. pp. 495–501). He described in detail some important fossil forms of Acanthodesmida as different species of "*Stephanolithis*," a name which Ehrenberg had employed for various ring-like fragments of Radiolarian shells, sponges, and other fossil bodies. The four fossil species which Bütschli described represent four different genera of *Stephoidea*, viz., *Semantis* (*spinescens*), *Semantrum* (*mülleri*), *Semantidium* (*haeckelii*), and *Tristephanium* (*hertwigii*). On the phylogenetic conclusions, derived from these accurate observations, compare above, p. 893, &c. The topographical signification of the parts, employed by Bütschli, is contrary to mine; he calls my dorsal side the "anterior," and my ventral side the "posterior."

The geometrical fundamental form of the body in nearly all *Stephoidea* (with few exceptions) is distinctly bilateral or "dipleuric," so that we can easily distinguish the