

(the two rings being of different sizes), in the latter parallel (the two rings being equal); the fundamental form of the former is a truncated pyramid, of the latter a prism.

Comparing these differences between the four subfamilies of Tympanida, we may suppose that the common ancestral group are the Protympanida, derived from the Semantida by the formation of a mitral ring. If the two horizontal rings become closed by lattice-work, the Paratympanida arise. When the mitral ring only becomes latticed, the basal ring being simple, the Dystympanida originate. Finally, the fourth subfamily, the Eutympanida, may be derived from the Protympanida by the loss of the two horizontal parts of the sagittal ring.

The two horizontal rings (upper mitral and lower basal) and the two vertical rings (primary sagittal and secondary frontal), which thus compose the loose framework of the Tympanida, are rarely smooth, commonly armed with spines or branches, similar to those of the Coronida. The rods or bars are either roundish (with circular transverse section) or angular (commonly with triangular transverse section). The paired branches of the two vertical rings often preserve the characteristic arrangement inherited from the Semantida and Stephanida. The two horizontal rings sometimes exhibit typical apophyses, which recur in the Spyroidea and Cyrtoidea. The mitral ring may possess one odd apical horn and two paired frontal horns (Pl. 93, figs. 16, 17, 19, 23). The basal ring sometimes bears the three typical feet of *Cortina* (Pl. 93, figs. 16, 22), one odd caudal foot and two paired pectoral feet. Sometimes a fourth (sternal) foot is developed (Pl. 94, fig. 4), at other times only two lateral feet (Pl. 94, figs. 5, 6).

Synopsis of the Genera of Tympanida.

I. Subfamily Protympanida. Two horizontal rings (upper mitral ring and lower basal ring) bi- sected by the complete sagittal ring.	Two horizontal rings con- nected by two columellæ.	{ One complete sagittal ring (no frontal ring), . 425. <i>Protympanium</i> .	
	Two hori- zontal rings connected by four columellæ (the halves of the sagittal and the frontal ring).	No equa- torial ring.	{ No galear and thoracal bows, 426. <i>Acrocubus</i> .
		An equa- torial ring.	{ Galear and thoracal bows, . 427. <i>Toxarium</i> . { Equatorial ring complete, . 428. <i>Microcubus</i> . { Equatorial ring incomplete, 429. <i>Octotympanum</i> .
	Two horizontal rings con- nected by six or eight columellæ (three or four vertical rings).	{ Six columellæ (three meri- dional rings), 430. <i>Tympaniscus</i> . { Eight columellæ (four meri- dional rings), 431. <i>Tympanidium</i> .	
II. Subfamily Paratympanida. Two horizontal rings fenestrated.	Two horizontal rings closed by a lattice-plate, con- nected by numerous columellæ.	{ Two rings unequal (colu- mellæ divergent), 432. <i>Paratympanum</i> . { Two rings equal (columellæ parallel), 433. <i>Lithotympanum</i> .	