This divides into two or more which pass upwards, like the chambers themselves into the glandular organ above (Pl. XXIV. fig. 6; Pl. LVIII. fig. 3—*V*; Pl. LXII.). But a sieve-like axis, such as occurs in *Antedon*, is absent in the stalked Crinoids, which have no cirri just beneath the calyx that require to be supplied with blood.

E. The Genital Glands.

Since the discovery, made independently by Dr. Carpenter and Prof. Semper,[1] that the so-called nerve of Müller, which is situated between the skeleton and the water-vessel of the Crinoid arm, is really a part of the generative system, our knowledge of its minute anatomy has been largely increased by Ludwig.

He discovered that the actual genital tube, the epithelial cells of which develop into ova (Pl. Vb. fig. 1; Pl. Vc. fig. 1; Pl. VIIIa. figs. 4, 5; Pl. LX. fig. 6—*gc.*), is suspended by fusiform or branched cells within a blood-vessel; and he believed this vessel to arise from the vascular plexus underlying the subtentacular canals of the disk.

Dr. Carpenter had previously come to the conclusion, as the result of his dissections, that the genital cord or so-called rachis of the arm is a radial extension of this plexus. He further believed the latter to be in connection with the ventral end of the plexiform gland, having seen the division of this organ in the Pentacrinoid into five branches, one of which passes to each ray, an observation which may be easily confirmed by examination of optical sections of a Pentacrinoid, soon after the appearance of its first whorl of cirri. According to Perrier the body-cavity of a mature Pentacrinoid or recently liberated *Comatula* contains no structures which could be considered as blood-vessels; although he finds within the meshwork of connective tissue that occupies the body-cavity "un petit nombre de cordons cellulaires pleins qui se rendent manifestement aux bras"[2] I have little doubt that these are a further development of the branches from the axial organ of which one passes to each ray, as described by Dr. Carpenter; and that they eventually give rise to the subambulacral plexus of genital vessels (Pl. LVII. fig. 3; Pl. LX. figs. 1, 2—*gv*).

The genital tube of the arm is regarded by Ludwig as a sterile portion of a complex genital organ,[3] the epithelial lining of which only develops into ova or spermatozoa in particular places, usually within the pinnules. The cells lining it are relatively large, and project into its interior, thereby reducing its cavity very considerably.

Dr. Carpenter, who was unacquainted with the blood-vessel ensheathing the true genital cord, spoke of the latter as having a tubular wall and granular contents;[4] and he stated that in the plexus beneath the subtentacular canals of the disk of *Antedon rosacea*

[1] Kurze anatomische Bemerkungen über Comatula, *Arb. zool.-zootom. Inst. Würzburg*, Bd. i. p. 260; translated, with an Addendum by Dr. Carpenter in the *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xvi., 1875, pp. 202–209.

[2] *Comptes rendus*, t. xcviii. p. 445.

[3] Crinoideen, *loc. cit.*, p. 293.

[4] *Proc. Roy. Soc. Lond.*, 1876, pp. 220, 221.