

four interradial pit-like depressions (figs. 6, 7, *ii*) separated from one another by four perradial vertical folds of the subumbrella (fig. 3, *wr*). These are Clark's "circumoral buttresses;" they extend in the form of four free mesenteric lamellæ from the four perradial angles of the œsophagus to the middle of the subumbral wall of the radial pouches, and are best described as reproductive folds or genital mesenteries ("mesogonies"). The four depressions lined with the ectoderm of the subumbrella are the funnel cavities ("infundibula," figs. 2, 6, *ii*). The cæcal ends of these conical or trigonal pyramidal hollow spaces penetrate from the coronal cavity of the umbrella deep into the central gastral cavity, and have occasioned many misapprehensions. Clark calls them "circumoral pouches," Taschenberg "genital pouches," Kling "pyramidal spaces," and Hertwig "intergenital pouches." As these funnel cavities are only lined by the ectoderm and have no connection with the gastrovascular system, but belong much more to the system of the subumbral umbrella cavity, they cannot be termed "pouches" but merely "cavities." They recur in the same way in many other Acraspedæ as "subgenital cavities." In our *Lucernaria* they penetrate so deep into the central gastral cavity as to divide its oral half into four perradial peripheric niches, or "central chambers." The conical funnel cavities between the latter are separated from them by the gastral filaments, and pass directly above into the solid tæniola (fig. 21, *ft*).

The muscular plate of the subumbrella lies immediately under the ectodermal epithelium, from which it is secreted, and consists of a marginal octomeral coronal muscle and of eight separate radial muscles. The coronal muscle ("musculus coronarius"), or circular muscle of the umbrella margin, is homologous with the simple marginal circular muscle of the Tesseridæ and with the large octomeral coronal muscle of the Pericolpidæ, which in the Periphyllidæ is divided into sixteen muscular areæ. The coronal muscle in the eight-armed Lucernaridæ, as in the closely-allied eight-lobed Pericolpidæ, consists of eight separate areæ, the eight "marginal muscles," of which four longer (figs. 2, 3, 12, *mm'*) lie in perradial octants, four shorter (*mm''*) in four interradial octants; as, however, the eight arms (or marginal lobes) are adradial, each coronal muscular area (or each marginal muscle) applies to the two halves of each two adjacent arms turned to each other. It extends on their external or abaxial side, and that of the tentacles running out from them. The separate bundle of muscles, which here pass into the tentacles, therefore extend them and make them arch outwards ("extensores"). If, on the other hand, all the eight marginal muscles contract simultaneously, they narrow the umbrella opening like the simple circular muscle of the Tesseridæ. The coronal muscle is, moreover, in all Lucernaridæ much narrower than in the Pericolpidæ, and has the form not of a broad band, but of a thick cord. In our species this cord shows six to eight deep parallel furrows, divided from each other by the same number of circular folds (fig 20 in radial transverse section). The height of these folds increases from above downwards (from the proximal to the distal margin of the marginal muscle).