

short visceral loop. C. The spawn mass of *Philine exigua*. Al.gld., albumen gland; A.sn.g., anterior sensory ganglia; Buc.g., buccal ganglia; Bu.cop., bursa copulatrix; C.con., cerebral connective; C.g., cerebral ganglia; Eff.dct., efferent genital duct; H.dct., hermaphrodite duct; H.gnd., hermaphrodite gonad; Mc.gld., mucous gland; Mc.gld. 2, lower and histologically distinct region of the mucous gland that is connected to the efferent duct; Ped.con., pedal connective; Ped.g., pedal ganglia; Pl.g., pleural ganglia; Sc.e., sub-epidermal eyes; Sub.g., sub-intestinal ganglion; Sup.g., supra-intestinal ganglion; Vis.g., visceral ganglion.

the Hancock's organs and the anterior part of the body, in the form of ganglia and, like those described in *Pluscula cuica* Marcus 1953, a member of the Philinglossacea, having a distinct sheath. Eyes situated on a short optic nerve arising from the anterior face of the cerebral ganglia. Visceral loop very short and, as in *P. aperta*, supra-oesophageal ganglion joined to the right pleural ganglion. Infra-oesophageal ganglion joined to the visceral ganglion from which the genital and visceral nerves run posteriorly. Buccal ganglia lying immediately behind and ventral to the buccal complex and joined medially. Statocysts situated on the pedal ganglia but supplied with nerves from the cerebral ganglia having a single statolith.

**RENOPERICARDIAL SYSTEM:** Kidney entirely confined to the visceral hump. It is a lobed sac lying predominantly on the right side of the body immediately above the nidamental gland mass of the reproductive system. It discharges into the mantle cavity near the anus. Heart situated on the right side of the body on the same level but anterior to the kidney to which it is connected by a short, well-defined renopericardial duct. Auricle and ventricle well developed, the aorta running forward from the latter alongside the gut.

**REPRODUCTIVE SYSTEM (Fig. 3a):** Hermaphrodite gonad lying dorsally above the digestive gland, contained entirely within the head shield, composed of numerous follicles, some of which are concerned solely with the production of oocytes and some solely with the production of spermatozoa. Bulk of female portion of gonad situated antero-dorsally though a number of female follicles are also symmetrically arranged on either side at a slightly more ventral level. Major male portion of gonad restricted to its posterior dorsal region. Ventrally these specialised regions of the gonad discharge into a wide common atrium in which both ova and sperm occur imultaneously. From this atrium the hermaphrodite duct arises. The duct loops completely across the body to the right side then returns to the left where it turns sharply again and opens directly into the lumen of the albumen gland. This structure opens in turn into the histologically more complex mucous gland from which the efferent genital duct travels to the genital aperture on the right side of the mantle cavity. Shortly before reaching the genital aperture the efferent duct gives off a branch which widens into a prominent spermatheca which lies on the right side of the genital mass.

Although it is not impossible that the genital products actually follow the convoluted lumen of the nidamental gland mass, a detailed examination of the ciliation of the lumen of the different regions and the way in which these are connected to each other suggests that these products follow the shortest path to the outside through the central region of the gland mass. The secretions generated by the nidamental glands appear to come into contact with the ova within this central pathway. *P. exigua* differs in this respect from *P. aperta* where the secretions of these glands discharge on to the ova immediately before these are liberated to the outside.

Penis situated on the right side of the head in a muscular penis sheath opening a little to the right of the mouth in the anterior transverse portion of the lateral groove. Prostate gland in the form of a long, coiled tube, which is connected to the penis posteriorly. Seminal duct entering the body adjacent to the penial opening joining the anterior end of the prostate. There appears to be no specialised seminal groove connecting the seminal duct with the genital aperture along the right lateral