**C101** Ultrastructure of fertilized egg envelope in the Pale Chub, *Zacco platypus*

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Ultrastructure of fertilized egg envelope in the pale chub was examined by mean of light, scanning and trasmission electron microscopies.

The fertilized egg of pale chub is transparent, spherical, adhesive and demersal type. The outer surface of fertilized egg envelope is arranged by pores irregularly. The fertilized egg envelope has a micropyle, sperm entry site, in the area of the animal pole. This micropyle is surrounded by 5 peaks of hill. The fertilized egg envelope consists of three layers, an outer adhesive layer, a middle electron dense layer and an inner lamellae layer consisting of 9 layers. These ultrastructural characters of fertilized egg envelope can be utilized in the taxonomy of teleost and as fundamental data for study on early development of fertilized egg.

**C102** Structural Differentiation of Testis and Upper Vas Deferens in the Tobacco Budworm, *Helicoverpa assulta* (Lepidoptera: Noctuidae)

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Developmental aspects of testis and upper vas deferens in *Helicoverpa assulta* are investigated. The paired larval testes are bean-shaped having four follicles and they fuse into a single testis consisting of eight follicles in the prepupal stage. The torsion phenomenon occurs immediately after a fusion, resulting in a spherical pupal and adult testis. The membrane of testis consists of outer capsule layer, inner follicular layer, and interfollicular septa which separates the intratesticular follicles. In adult, each upper vas deferens, a swollen portion immediately below the testis are consists of muscle layer and epithelial cell layer and they connect with each intratesticular follicle through vas efferens converging at the hilum of the testis. The apical cytoplasm of the epithelial cell exhibits various secretory granules showing different electron density.