

**ULTRASTRUCTURE OF THE EMBRYOS OF THE DILEPIDID CESTODE
KOW ALEWSKIELLA GLAREOLA (BURT, 1940) LOPEZ-NEYRA, 1952**

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Purpose: The ultrastructural characteristics of embryogenesis have been proposed as phylogenetic indicators in the analysis of cestode evolution I. The aim of this study is to describe the fine structure of the embryos of dilepidid cestode *Kowalewskiella glareola*

Methods: Adult specimens of dilepidid cestode *Kowalewskiella glareola* (Burt, 1940) Lopez-Neyra, 1952 were removed from the intestine of wood sandpiper, *Tringa glareola* L. collected near Black-Sea Biosphere Reserve, Ukraine. Small pieces of mature and gravid proglottids were fixed in 4% glutaraldehyde in cacodylate buffer (pH 7.4), rinsed in the same buffer, postfixed for 2 h in 1% OsO₄ and routinely processed for TEM.

Results: Three primary envelopes, the capsule and the outer and inner envelope, are formed around developing embryos of *K. glareola* in the preoncospherical phase of embryogenesis (Figs. 1-4). The initially delicate, membranous early outer capsule of the early embryos, becomes rapidly impregnated by a granular, electron-dense material and its surface is transformed into rough surfaced mature outer capsule or "outer shell" (Figs. 2-4). The outer envelope is a syncytial, cytoplasmic layer formed from two macromeres. In the maturing oncospheres, only the remnants of the outer envelope are observed (Figs. 2-4). The thickness of the outer envelope varies with age of embryos and amount of distortion from other embryos. The syncytial inner envelope is formed by three mesomeres. Its cytoplasm contains numerous free ribosomes and mitochondria.

Conclusion: The origin and fine structure of embryonic envelopes of *K. glareola* in the preoncospherical phase of embryogenesis differs from that observed in other dilepidids, *Dilepis undula*. The rigid and dense outer shell resembles shells described in eggs of hymenolepidids².

References:

1. Swiderski Z. (1968) Experimental Parasitology 23, 104-109
2. Swiderski Z. (1981) In: Advances in Invertebrate Reproduction (eds. Clark WH & Adams T.S.). Elsevier/North Holland, Oxford.

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Fig.1. Semithin sections through the uterus of mature proglottid showing several differentiating oncospheres (DO). **Fig.2.** Part of differentiating oncosphere (DO) surrounded by the outer sheath (OS), outer (OE) and inner (IE) embryonic envelopes. **Fig. 3.** Peripheral part of the differentiating embryo (DO) adjacent to uterine wall (UW). **Fig. 4.** Differentiation of blastomeres within the embryo. **Abbreviations:** Ch- chromatin islands; DO -developing oncospheres; IE -inner envelope; L -lipids; m -mitochondria, N - nucleus; n -nucleolus; OE -outer envelope; OS -outer shell.

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