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日本沼虾胚胎发育的形态及组织学观察

The morphological and histological observation of embryonic development in the oriental river prawn *Macrobrachium nipponense*

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中文摘要:

在解剖镜和显微镜下对日本沼虾胚胎发育进行了形态学和组织学观察。根据日本沼虾胚胎发育过程中的形态特征,将其划分为受精卵、卵裂期、囊胚期、原肠期、前无节幼体期、后无节幼体期、前溞状幼体期以及膜内溞状幼体期。日本沼虾卵裂属于完全卵裂和不完全卵裂之间的过渡类型,无囊胚腔。3对附肢原基在前无节幼体期形成,胚胎在前溞状幼体期腹部开始分节,复眼色素也在前溞状幼体期出现,随后复眼色素区域逐渐增加,到膜内溞状幼体期孵化时复眼结构成熟。腹部分节和复眼色素的出现表明胚胎进入前溞状幼体期。随着胚胎发育的进行,由于附肢的形成和分化,与前几个时期相比,胚胎发育的最后4个时期所持续的时间较长。

英文摘要:

In this study, morphological and histological methods were used to observe the embryonic developmental process of the oriental river prawn *Macrobrachium nipponense*. According to its morphological characteristics, the embryonic developmental process can be divided into eight stages: (a) Fertilized egg, (b) Cleavage stage, (c) Blastula stage, (d) Gastrula stage, (e) Embryonized nauplius stage, (f) Embryonized metanauplius stage, (g) Embryonized protozoa stage, and (h) Embryonized zoea stage. The cleavage pattern of the oriental river prawn was the transitional pattern between complete cleavage and meroblastic cleavage. The embryo has no blastocoel. Rudiments of the three paired naupliar appendages were organized at the embryonized nauplius stage. The abdominal region was organized into segments at the embryonized protozoa stage. Pigments of compound eyes appeared at the embryonized protozoa stage, and then the pigmental region continued to increase. At the embryonized zoea stage, structures of the compound eyes reached relative maturity. The segmentation of the abdominal region and the appearance of the pigments indicated that the embryo has been in the embryonized protozoa stage. The duration of last four embryonic developmental stages were longer than that of other stages, owing to the formation and differentiation of the appendages at later stages.

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