

**Fine structures of spermatozoa of two lampreys, *Lampetra reissneri* and  
*L. japonica* (Petromyzontiformes, Petromyzontidae)**

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The spermatozoan ultrastructures of two species, *Lampetra reissneri* and *L. japonica* were very similar and closely resemble those of Petromyzontidae spermatozoa. They were characterized by the saccular acrosome, the elongated rod-shaped nucleus, the deep nuclear fossa, the elongated perforatorium and endonuclear canal, and two parallel centrioles. However, the most significant differences between two species were observed in the ultrastructures of the mitochondria and flagella. The acrosome in both species consisted of a vesicle and located at the blunt anterior end of the nucleus. The acrosomal material appeared heterogenous material. The subacrosomal space contained postacrosomal ring and perforatorium which emerged from an endonuclear canal. The perforatorium consisted of bundles of filament material arranged parallel to each other. The endonuclear canal ran longitudinally through the central axis of the nucleus penetrating roughly the anterior of the axoneme. The nucleus in both species was rod-shape and the chromatin was completely compact. The deep nuclear fossa was located at the posterior end of the nucleus and contained two parallel centrioles. In *L. japonica*, one of these gave origin to the typical 9+2 flagellum bearing 9 accessory fibers. However, in *L. reissneri*, two centrioles all gave rise to flagellum. The fused mitochondria of *L. reissneri* were arranged longitudinally along the proximal portion of the tail. In *L. japonica*, fused and separated forms of mitochondria were observed in a spermatozoa. In conclusion the spermatozoan ultrastructure of both species was very similar to each other and the ultrastructural characteristics of the spermatozoa can be considered taxon-specific character for the family Petromyzontidae. However, there were interspecific differences in mitochondria and flagellum.

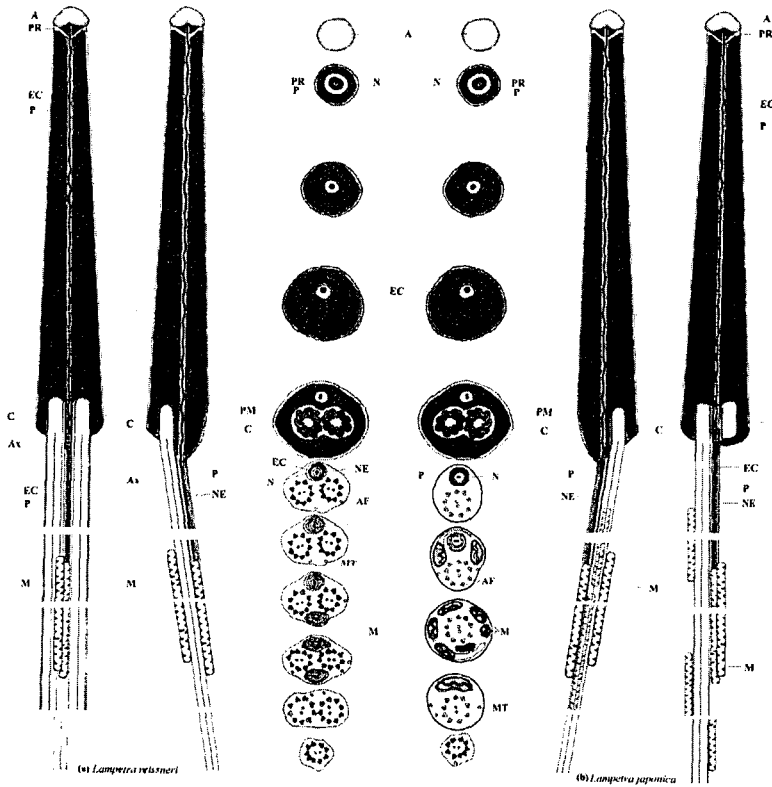


Fig. 1. Diagrammatic representation of Lamprey spermatozoa showing transverse levels from anterior to posterior.