

## **Feeding convergence among ray-finned fishes: Teeth of the herbivorous actinopterygians from the latest Permian of East European Platform, Russia**

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A unique functional adaptation to herbivory within early ray-finned fishes is exemplified by the late Permian actinopterygians within the family Eurynotoiidae with policuspid teeth strongly modified with respect to the primitive actinopterygian conditions. Here we report additional finds of multidenticated teeth from the fluvial latest Permian deposits of Russia. The teeth belong to the members of endemic Eurynotoiidae and show rather high morphological diversity. We confirm that the Russian forms are the earliest known ray-finned fishes with substantial modifications of teeth adapted to the processing of food. These finds confirm some previous suggestions that the adaptation to herbivory first developed in freshwater fishes, not marine. We found very similar dental adaptations in some groups of Recent freshwater teleosts, especially in characiforms and cichlids. It suggests that sympatric species of Permian Eurynotoiidae explored various herbivorous niches like modern fish in East African lakes. Apparently, this first pulse of adaptive radiation in ray-finned fishes was probably caused by diversification of Permian aquatic vertebrate community.

**Key words:** Actinopterygii, Eurynotoiidae, multicuspid teeth, herbivory, convergence, Permian, Russia.

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