ACTA PALAEONTOLOGICA POLONICA

A review of Neogene and Quaternary pikes of southeastern Europe and a new species from the early Pleistocene of Nogaisk, Ukraine

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Acta Palaeontologica Polonica 62 (1), 2017: 121-135 doi:https://doi.org/10.4202/app.00311.2016

The fish genus *Esox* (Teleostei, Esocidae) has been recorded from thirty late Miocene, Pliocene, and Pleistocene localities where forty-one bone-bearing strata are exposed in the territory of Ukraine, Russian Federation, and Republic of Moldova. From eight localities the genus is reported or described for the first time. A detailed description and morphological analysis of the currently available osteological material demonstrates the presence of four species in the studied area: (i) *Esox sibiricus* (late Miocene–early Pliocene); (ii) *Esox moldavicus* (early Pliocene–early Pleistocene); (iii) *Esox nogaicus* sp. nov. (early Pleistocene, Calabrian); (iv) *Esox lucius* (early–middle Pleistocene). The Northern Pike (*Esox lucius*) is recorded for the first time in the early Pleistocene fossil record of southeastern Europe. The new species *E. nogaicus* is characterized by a massive dentary with deep symphysis and the possible presence of a pair of fixed canine-like teeth near the anterior end of the vomer. Such canine teeth are seen also in certain species known only from North America, the extant *Esox masquinongy*, the fossil species *E. columbianus*, and an unnamed Miocene form. However, unlike in *E. nogaicus*, in the three North American species fixed canines also occur anteriorly on the palatines. The Miocene, Pliocene, and Pleistocene pikes from southeastern Europe document a greater diversity of morphologies in the past than exists today in the pike species of Europe. Changes in the predominant species of *Esox* in southeastern Europe are hypothesized to be driven by changing global and regional climates.

Key words: Esociformes, Esocidae, *Esox*, Miocene, Pliocene, Pleistocene, Ukraine, Russia, Moldova.

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