



New species of *Sangiorgioichthys* Tintori and Lombardo, 2007 (Neopterygii, Semionotiformes) from the Anisian of Luoping (Yunnan Province, South China)

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Abstract

We report on a new species of the neopterygian genus *Sangiorgioichthys* Tintori and Lombardo, 2007, from middle Anisian (Pelsonian) deposits in South China (Luoping County, Yunnan Province). *Sangiorgioichthys* was previously known from a single species, *S. aldae*, from the late Ladinian of the Monte San Giorgio (Italy and Switzerland). The recognition of the new species helped to improve the diagnosis of the genus, which is mainly characterized by the presence of broad posttemporal and supracleithral bones, one or two suborbital bones occupying a triangular area ventral to the infraorbital bones and lateral to the quadrate, and elongate supramaxilla fitting in an excavation of the dorsal border of the maxilla. *Sangiorgioichthys sui* n. sp. differs from the type species in having two pairs of extrascapular bones, the medial pair usually fused to the parietals, maxilla with a complete row of small conical teeth, long supramaxilla, more than half of the length of the maxilla, only two large suborbital bones posterior to the orbit, and flank scales with finely serrated posterior borders. With the discovery of *S. sui* n. sp., the number of fish genera shared by the Anisian/Ladinian deposits in the Alps and the Anisian deposits in South China increases, including not only the cosmopolitan *Birgeria* and *Saurichthys*, but also, among others, the subholosteans *Colobodus* (so far only in Panxian), *Luopingichthys* (so far only in Luoping), *Peltopleurus*, *Habroichthys*, and the very specialized neopterygians *Placopleurus* and *Marcopoloichthys* (only in Luoping). Therefore, although several fish taxa remain to be studied in the Chinese faunas, the so far available evidence indicates close biogeographic relationship between the Middle Triassic marine faunas of the Western Tethys region.

Key words: taxonomy, Actinopterygii, Middle Triassic

Introduction

Constrained between two of the biggest mass extinction events on Earth, around the Permo–Triassic and the Triassic–Jurassic boundaries, the Triassic period is one of the most important, though poorly studied times in the history of actinopterygian fishes. As is the case with other groups of organisms, the actinopterygians experienced profound faunal changes during this time. The typical actinopterygian faunas of the Palaeozoic, dominated by cheirolepidiforms, elonichthyiforms, amblypterids and palaeonisciforms, were rapidly replaced by the faunas of subholosteans and neopterygians (Tintori 1998). These fishes rapidly diversified during the Triassic and, although the subholosteans almost disappeared at the end of the Triassic, with only one taxon in the Early Jurassic lakes of the Newark Supergroup in eastern North America (Schaeffer & McDonald 1978, Olsen *et al.* 1982), the neopterygians went on diversifying and became dominant in our modern fish faunas.

The semionotiforms count among the earliest neopterygians and include the semionotids, macrosemiids and lepisosteids (Olsen & McCune 1991, Brito 1997, Cavin and Suteethorn 2006). The group is very well represented through the Mesozoic, but almost disappeared during the Late Cretaceous. Only the Recent lepisosteid genera (*Lepisosteus* and *Atractosteus*) are represented with a few fossil species after the middle Cretaceous. On the other hand, the Late Permian *Acentrophorus* Traquair, 1877 has been regarded as the oldest semionotiform. However,