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Chondrichthyan remains from the Lower Carboniferous of Muhua, southern China

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The shallow water assemblage of chondrichthyan microremains, teeth, tooth plates and scales, from the middle Tournaisian (Mississippian) of the vicinity of Muhua village, Guizhou province, southern China, is thus far the richest and most diverse association of this age collected from a single locality and horizon, and represents a chondrichthyan community very restricted in time and space. It was recovered from a small bioclastic limestone lens, MH-1, occurring among basinal marls near the base of the Muhua Formation, and dated as to the *Siphonodella crenulata* conodont Zone. The majority of the fauna presented here consists of teeth with euselachian-type bases and crushing crowns belonging to bottom-dwelling durophagous chondrichthyans, most probably feeding on shelly invertebrates such as the abundant brachiopods. We assigned most of these teeth to Euselachii (six species, among them *Cassisodus margaritae* gen. et sp. nov.), Petalodontiformes (two species), Holocephali (five species), and Euchondrocephali incertae sedis (*Cristatodens sigmoidalis* gen. et sp. nov.). We also identified primitive polycuspid, clutching teeth representing Phoebodontiformes (*Thrinacodus bicuspidatus* sp. nov.), Symmoriiformes, and Ctenacanthiformes. The scales are typical growing, compound forms of the protacrodont, ctenacanth, and hybodont types. Two problematic denticulated plates were found, one of which resembles mandibular or palatal plates of *Sibyrhynchus* (Iniopterygii). Several of the identified chondrichthyan taxa have hitherto been known only from Laurussia, especially from the British Isles and central USA. In particular we found the first record of *Chondrenchelys* sp. and *Diclitodus denshumani* outside their type locality. *Th. bicuspidatus* sp. nov., also known from Nevada, Iran, and NW Australia, appears to be a cosmopolitan, middle Tournaisian index fossil.

Key words: Chondrichthyes, Elasmobranchii, Euchondrocephali, teeth, tooth plates, Carboniferous, Tournaisian, China.

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