

An enigmatic chondrichthyan with Paleozoic affinities from the Lower Triassic of western Canada

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Listracanthus pectenatus sp. nov. represents the youngest record of the enigmatic chondrichthyan *Listracanthus*. This new species is the only Mesozoic record of this genus and highlights survival of a rare and enigmatic group of cartilaginous fishes across the Paleozoic-Mesozoic boundary. In the Vega-Phroso Siltstone Member of the Sulphur Mountain Formation (western Canada), two kinds of numerous dermal denticles identified as *Listracanthus* occur predominantly in strata probably of early Smithian age. The new species differs from all other known species of the genus in the structure of the anterior and posterior borders of the large denticles. The small denticles appear to be less diagnostic than the large ones and are readily distinguished from small denticles generally assigned to the genus *Petrodus*. Histology reveals that the largest denticles were originally hollow, probably secondarily ossified as acellular bone. The conclusion drawn by previous authors that *Listracanthus* may be a petalodontid shark, based on ambiguous non-skeletal associations with *Deltoptychius*, *Petrodus*, or *Calopodus* is not supported by this study. The large number of denticles, the size of both types of denticles and their arrangement suggest that *Listracanthus pectenatus* sp. nov. was a large chondrichthyan of aberrant body shape and yet uncertain systematic position.

Key words: Chondrichthyes, denticles, *Listracanthus*, Smithian, histology, British Columbia.

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