
The multielement apparatus of the conodont genus *Gladigondolella* in the Anisian

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Abstract

The conodont genus *Gladigondolella* (Spathian to Carnian) is an important component of the Middle Triassic conodont fauna, and the species *Gladigondolella tethydis* has previously been suggested as an auxiliary proxy for recognising the Olenekian-Anisian Boundary. However, the composition of the multielement apparatus of this genus remains uncertain, and it has been variously reconstructed by different researchers. In an effort to ascertain which elements belong to the *Gladigondolella* apparatus, multivariate statistical analysis of elements previously ascribed to the apparatus by other authors has been undertaken. Utilizing new material from the Anisian of Romania, China, Oman, and Turkey, together with published occurrences from more than a dozen other locations, Bray-Curtis and Jaccard indices both demonstrate that *Cratognathodus* elements occur as frequently with other elements belonging to the *Gladigondolella* apparatus as those elements do with each other. This lends support to the hypothesis previously advanced by some authors that *Cratognathodus* elements also belong to the *Gladigondolella* apparatus and the genus name *Cratognathodus* should be restricted to the form species only. In the present reconstruction, the multielement apparatus in the Anisian has 8 different element types, including multiple P2 elements: *Cratognathodus* sp. (P2a) and *Ozarkodina saginata* (P2b); this likely represents dimorphism, such as that observed in some Paleozoic conodont genera. The recognition that *Cratognathodus* belongs to the same genus as *Gladigondolella* has significance for conodont biostratigraphy in the Anisian, and implications for the recognition of the Olenekian-Anisian Boundary.

Keywords: Gladigondolella, Cratognathodus, multielement, Anisian, Bray, Curtis index, Jaccard index

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