
The first discovery of Lochkovian (Lower Devonian) conodonts in central Guangxi, South China and its geological implications

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Abstract

The Lochkovian, Pragian and basal part of the Emsian, which represent the post-Kwangian Orogeny strata in the South China Block, are mainly composed of siliciclastic rocks. This lithology impedes the investigation of Pragian and Lochkovian conodont biostratigraphy in the South China Block, which results in a persistent controversy on the age of relevant lithological units. The present study provides new evidence by reporting for the first time Lochkovian conodonts obtained from the South China Block, specifically the Gaoling Member of the Nahkaoling Formation at the Lingli section, central Guangxi. The conodont fauna consisting of *Pandorinellina exigua lingliensis* n. subsp., *Pandorinellina exigua exigua* (Philip, 1966), *Zieglerodina? tuojiangensis* n. sp., *Amydrotaxis praejohnsoni* Murphy and Springer, 1989, and *Eognathodus* cf. *E. irregularis* Druce, 1971, dates the studied interval of the Gaoling Member as the lower or middle Lochkovian (contingent upon varying definitions of the base of the middle Lochkovian) to lower Pragian. Moreover, *Amydrotaxis praejohnsoni*, which was previously reported only in North America and eastern Australia, is herein also recorded in the South China Block, and thus may play an important role in the intercontinental biostratigraphical correlation. By shedding light on the age of the upper limit of the underlying Lianhuashan Formation at the Lingli section, the present study indicates that the Kwangian Orogeny ended before the late Lochkovian. This age is slightly older than the previously estimated late Lochkovian based on the studies of fossil plants from the siliciclastic rocks deposited after the Kwangian Orogeny.

Keywords: Lochkovian, Pragian, South China, Nahkaoling Formation, Kwangian Orogeny

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