



Palynological assemblages from Hongguleleng Formation of Western Junggar, Northwest China and their correlation with conodont zonation

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Abstract

The Upper Devonian Hongguleleng Formation is a significant stratigraphic unit near the Frasnian/Famennian and Devonian/Carboniferous boundaries of the Kazakhstan Paleoplate. However, its age is still under debate. A new palynostratigraphic analysis was conducted at the Gennaren section to provide a more accurate biostratigraphic assignment. In this study, we identified 43 species belonging to 26 spore genera, including those in open nomenclature. Despite the poor preservation of the palynofloras, the spore taxa were categorized into two assemblages. Assemblage I is established at the lower part of the lower member of the Hongguleleng Formation, containing *Cornispora varicornata*, cf. *Auroraspora pseudocrista*, and *Cyrtospora cristifera*. Assemblage II is from the upper part of the lower member of the Hongguleleng Formation, including *Grandispora cornuta*, *Grandispora famennensis* var. *famennensis*, *Grandispora* cf. *famennensis* var. *minutus*, *Grandispora microseta*, and *Rugospora radiata*. These assemblages are compared with the Western European DV Opper Zone (lower-middle Famennian), and the GF to VCo Opper zones. The assemblages are equivalent to the conodont *crepida-rhomboida* and *marginifera* to Lower *trachytera* zones (middle-upper Famennian).

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1. Introduction

Western Junggar is currently located in northern Xinjiang, Northwest China. However, during Late Devonian, this area was part of the Kazakhstan Plate within the Cen-

tral Asian Orogenic Belt (CAOB). The Upper Devonian and Lower Carboniferous strata found in this region are of great significance, because they recorded the globally famous Kellwasser and Hangenberg events. The Zhulumute Formation of the Frasnian, the Hongguleleng Formation of Famennian, and the Heishantou Formation of Early Carboniferous, are well-exposed in Western Junggar region (Lu, 1999; Ma et al., 2017; Zheng et al., 2020; Zong et al., 2020; Stachacz et al., 2021). However, due to its iso-

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