

## Geochronology of Yuechengling Gneissic Granite Pluton in the Northeastern Guangxi, China

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The Yuechengling batholith is located in northeastern Guangxi Zhuang Autonomous Region of south China. The batholith is 86 km long in a northeast direction and 18 km wide from east to west with an exposed area of 1,390 km<sup>2</sup>. The main body of the batholith is a medium-coarse-grained, porphyritic biotite granite. The Yuechengling gneissic granite constitutes the western margin of the batholith. It is predominantly a fine- to medium-grained biotite granite. It is characterized by a set of generally NE-striking gneissic foliation throughout the granite, herein named “gneissic granite”. Another important geologic feature in the area is the large-scale, NE-striking Ziyuan-Xinnin greenschist-facies ductile shear zone. The shear zone is superimposed on the gneissic granite and has a long and episodic fault history.

In this study, we selected zircon grains from the gneissic granite samples and performed SHRIMP U-Pb geochronological analysis at Beijing SHRIMP Center, in order to constrain age of the gneissic granite and to understand regional igneous history. The result yields a  $429.6 \pm 4.3$  Ma age for the gneissic granite, indicating a late Caledonian igneous event. This age is close to the age of the main body of the batholith reported by previous workers (412-421 Ma). It is also coeval or near-coeval to ages of several batholiths located in northeastern Guangxi, for example, the Haiyangshan batholith ( $431 \pm 7$  Ma), the Yinshanling pluton ( $426.3 \pm 4.2$  Ma), the Guiling pluton ( $424.4 \pm 5.6$  Ma), and the Daning pluton ( $419.1 \pm 6.4$  Ma). It is suggested that, first, the gneissic granite, because its yielded age is even older than the main body of the batholith, is an earlier phase of the Yuechengling batholith and the gneissic foliation was most likely generated by a younger ductile shearing event at an upper greenschist-facies; and second, it confirms that there existed a regional-scale tectonothermal event in northeastern Guangxi in late Caledonian time.

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