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Geochronology of the Igneous Intrusions in Dayaoshan Uplift, Southeastern Guangxi: Implication on the Early Paleozoic Wuyi-Yunkai Orogeny and Related Metallogeny

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1 Geological Background and Analytical Results

1.1 Geological background

The region we study lies in the southwest margin of Cathaysia, adjacent to the northwest margin of the Yunkai

terrane. It is also a part of Dayaoshan uplift.

12 igneous intrusion samples from Cambrian strata were collected for zircon age analysis, including 1 granite, 5 granodiorites, 4 tonalites, 1 quartz diorite and 1 quartz monzodiorite. Figure 1 summarizes their location and dating results. On the regional perspective, these



Fig. 1. Simplified geological map of southeastern Guangxi, showing the location of the region studied.

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intrusions are arranged in circularity, whose areas range from 1 to 13.5 km^2 . They are generally altered and denudated, and many of them also have W-Mo mineralized alteration

1.2 Analytical results

LA-ICP-MS zircon U–Pb dating was completed at the Institute of Mineral Resources of the Chinese Academy of Geological Sciences.

The diagenetic ages of igneous intrusions in Dayaoshan uplift range from 475 to 450 Ma. There are also two groups of magmatic and metamorphic zircons.

2 Discussion

2.1 The metallogeny of igneous activities

According to the previous researches (Chen et al., 2011; Li et al., 2009; Wang et al., 2011) and the field evidence (gold bearing veins cut through Paleozoic W-Mo quartz veins (Shedong deposit, Wujie occurrence) or granite porphyry (Shedong deposit)), magmatism and minerogenesis in Dayaoshan may need to re-studied and appreciated. The metallogenic series of ore deposits in Paleozoic is predominantly W-Mo-Cu instead of Au-Cu. All these deposits are genetically related to Paleozoic granitic intrusions. Considering of the abundant early Paleozoic igneous intrusions characterized by the small

volume, shallow denudation, mineralized alteration in Dayaoshan uplift, the metallogenic potential of these rocks could be expected hopefully.

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