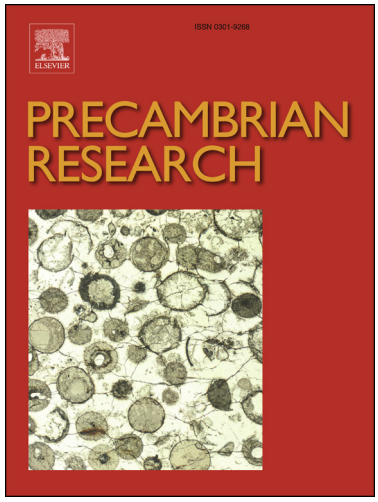

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Mesoproterozoic (Grenville-age) granitoids and supracrustal rocks in Kaokoland, northwestern Namibia

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Abstract

We identified and describe rocks of a late Mesoproterozoic Grenville-age igneous province and associated supracrustal sequence in northwestern Kaokoland, Namibia. These rocks are ca. 1176 to 1534 Ma in age and mostly consist of pinkish granitic and trondhjemitic plutons that are unfoliated within the Palaeoproterozoic Epupa Metamorphic Complex but become progressively deformed farther west together with late Neoproterozoic rocks of the Pan-African Kaoko orogen. Furthermore, a supracrustal assemblage of clastic sedimentary rocks and felsic volcanic rocks, known as Okapuka Formation, unconformably overlies the Epupa gneisses and also became deformed in the west during the Kaoko orogeny. A zircon age of ca. 1320 Ma for an Okapuka felsic schist is suggested to date volcanism and deposition of sediments in an intracontinental basin that may have extended into southern Angola where similar rocks of the Chela Group are exposed. Some granites have A-type chemical characteristics, and it is likely that granitoid magmatism and Okapuka basin formation in northwestern Kaokoland was related to crustal extension as also documented by emplacement of the 1385±8 Ma Kunene Gabbro-Anorthosite Complex.

Key Words: Kaokoland, Namibia, Mesoproterozoic, zircon dating, granitoids, Okapuka Formation

1. Introduction

The basement rocks of Kaokoland in the northweastern part of Namibia are amongst the least known Precambrian assemblages of southern Africa due to their remoteness, lack of access, and the hilly to mountainous character of the region. The major rock types are variably migmatized granitoid gneisses with rare intercalations of metasediments known as Epupa Metamorphic Complex and extending northwards across the Kunene River into Angola (Fig. 1). Some of these rocks were described and dated as part of a reconnaissance study in 2002-