

Geology and Stratigraphy of the Mupamadzi River Area and correlation with the adjoining areas within the Irumide Belt

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Abstract

Geological mapping in the Mupamadzi River area has provided additional information in the understanding of the Irumide Belt of Zambia. Correlations can now be attempted based on the geological mapping work, petrographic studies and structural interpretations. The metasedimentary sequence found in the Mupamadzi River area, can be correlated with the metasedimentary rocks described in the adjoining areas. The gneissic varieties found in the Mupamadzi River area are similar to the different gneisses described in adjoining map sheets. The lithological and structural similarities of the younger porphyroblastic gneisses throughout the study area, allow a tentative correlation between them. As structural evidence in the Serenje, Chisomo, Nabwalya and Mupamadzi River area shows that the metasediments are older than the gneisses the stratigraphy in these areas is revised.

Introduction

In this paper the geology of the Mupamadzi River area is described and a correlation is attempted between the Mupamadzi River area and thirteen different areas within the Irumide Belt (Fig. 1). Due to its central position it is important to attempt a correlation with the map areas to the north as well as to the south, thus correlating a large part of the Irumide Belt. Correlation of the Precambrian rocks of the Mupamadzi River area in the Irumide Belt, can only be based on structural and petrographical studies as no fossils have been preserved within the metamorphosed rocks. The limited extent of the metasediments in the Mupamadzi River area, in comparison with the adjoining sheets, does not allow a detailed subdivision and correlation is therefore done purely on structural and lithostratigraphical grounds. The metasediments between Kapiri Mposhi and Serenje have been correlated with the Muva rocks of the Zambian Copperbelt (Ackermann, 1950 and 1960). All areas seem

to have an apparently older gneiss group that was not distinguished by some authors from the younger porphyroblastic gneisses. The granitic and gneissic bodies have for a long time been assigned to the Basement Complex (Smith, 1966; Stillman, 1965; Cvetkovic, 1973; Smith and Kerr, unpublished; Kerr, unpublished; Cordiner, 1975 and 1977; Page, 1977; Mosley & Marten, unpublished; Mosley, unpublished.) while some authors have shown that these granitic and gneissic bodies are much younger than presumed and, at least partly, originated from the anatexis of the metasediments of the Muva Supergroup (Klinck, unpublished; Mapani and Moore, unpublished; Mapani, 1992; Harding, unpublished; Daly et al., 1984; Daly, 1986; Cahen et al., 1984 and De Waele and Van De Velde, unpublished.).

Geology of the Mupamadzi River Area

The Mupamadzi River area, covered by quarter degree sheet 1231, SW quarter and