



**ECONOMIC GEOLOGY  
RESEARCH UNIT**

University of the Witwatersrand  
Johannesburg

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**BIBLIOGRAPHY OF THE GEOLOGY AND  
MINERAL RESOURCES OF THE  
CENTRAL AFRICAN COPPERBELT AND  
KATANGAN SEQUENCE (1877-1995)**

**S. MASTER**

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AND ZIMBABWE (1877-1995)**

**BIBLIOGRAPHIE DE LA GÉOLOGIE ET DES RESSOURCES  
MINÉRALES DE LA "COPPERBELT" DE L'AFRIQUE CENTRALE,  
ET DE LA SÉQUENCE KATANGIENNE EN ZAMBIE,  
ZAIRE, ANGOLA ET ZIMBABWE (1877-1995)**

by

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## INTRODUCTION

The Central African Copperbelt of Zambia and Zaire is one of the great metallogenic provinces of Africa. It contains some of the largest and richest copper, cobalt and uranium deposits in the world. These deposits are hosted mainly by metasedimentary rocks of the Late Proterozoic Katangan Sequence. In addition to the Cu-Co and U deposits, there are also major deposits of Pb-Zn-Cu ( $\pm$ Ga,Ge) and Fe hosted by Katangan rocks. Other metals found in lesser abundance include Au, Ag, Pt, Pd, Mo, Se, Bi, V, Th and Ni. Metamorphism of the Katangan Sequence has given rise to deposits of talc and kyanite, while tropical weathering has produced many clay deposits. Katangan carbonate rocks, aside from being primary sources of agricultural and industrial lime, dolomite and gypsum, are also the major aquifers in Zambia and Shaba.

The Katangan Sequence is thus the most economically important stratigraphic entity in Central Africa. It is found outcropping over an area stretching from the Haut Zambeze region of Eastern Angola, through the Lufilian Arc and Kundelungu Plateau of Shaba Province, Zaire, the Domes Region and the Copperbelt of Zambia, much of south-central Zambia, across the Mwembeshi Dislocation to the Zambezi belt of southern Zambia, and finally across the Zambezi rift to the Makuti Group of northwestern Zimbabwe.

This comprehensive bibliography attempts to put together for the first time all the references dealing directly or indirectly with the geology and mineral resources of the Central African Copperbelt and the Katangan Sequence. The sources quoted include papers in scientific journals, popular (scientific and mining) publications, books, theses and dissertations (doctoral, master's and bachelor's), and conference abstracts, in a total of nine languages (English, French, Portuguese, Flemish, Dutch, German, Russian, Swedish and Japanese). Also included in the bibliography are unpublished reports of mining companies, Geological Survey Departments, universities, and other research institutions, which have been quoted in the published literature.

The bibliography aims at being exhaustively inclusive, and it spans the time range from 1877 (when the first account of the mineral wealth of Katanga [now Shaba, Zaire] was published by Cameron), to papers that are in press in 1995. The topics covered include geology, geophysics, geochemistry, geomorphology, soils, geobotany, remote sensing (aerial photography and satellite imagery), mineralogy, crystallography, stratigraphy, sedimentology, structural geology, tectonics, metamorphism, metallogeny, cartography, hydrology, palaeontology, geochronology, computerization, mineral economics, exploration, and the archaeology and history of the mines. Papers dealing with mining and metallurgy have also been included, if they have a bearing on geology or mineralogy. Papers dealing exclusively with technical aspects of mining and metallurgy (like ventilation, mechanical equipment, reagents, etc.) have been excluded. Many previous bibliographies on the geology of Zambia, Zaire and Angola have been consulted- these have also been referenced in the present bibliography. Some references are incomplete, because they are obtained from previous citations or bibliographies, or are in obscure publications (especially the early Belgian literature). [Annotations and editorial comments, such as this one, are given in square brackets].

During the period 1877 to 1995, which is covered by this bibliography, many name changes have occurred in Central Africa. Zaire was previously known as République Démocratique du Congo (c.1961-1974), and before that it was Congo Belge. In the 1890's and 1900's it was known as the Congo Free State (État Libre du Congo, or Kongo Vrijstaat). Shaba Province of Zaire was previously known as Katanga. In the 1880's, prior to Belgian occupation, Katanga was also known as Garenganze. In the Shaba copperbelt, the mining towns of Lubumbashi and Likasi were previously known as Elisabethville and Jadotville, respectively. The mines

Kipushi and Musonoi were previously known as Mine Prince Léopold and Ruwe, respectively. Zambia was known as Northern Rhodesia before 1965. The Konkola Mine was known previously as Bancroft Mine. Zimbabwe was previously known as Rhodesia (1965-1980), and before that it was called Southern Rhodesia. Harare was previously called Salisbury (1893-1981).

Some parallel uses are found, both in place names (Kirilabombwe/ Chililabombwe), and in stratigraphic names (Mwashya/Mwashia). The Katangan Sequence has been variously referred to as the "Katangan", "Katangan Supergroup", "Katanga Supergroup", "Katanga Group", "Groupe du Katanga", "Supergroupe du Katanga", "Séquence du Katanga", "Katangienne", "Katanguienne", "Système du Katanga", "Katanga System", "Katangan System", "Systeem van de Katanga", etc.

Because of the multinational and multilingual nature of this bibliography, users may find it helpful to have a basic vocabulary of key-words in several languages. These are listed below.

English	French	Portuguese	Flemish	German
central	centrale	central	centraal	zentral
cobalt	cobalt	cobalto	kobalt	Kobalt
copper	cuivre	cobre	koper	Kupfer
deposit	gisement	depósito	deposiet	Lagerstätte
east	est	este	oost	Ost
easterly	orientale	oriental, leste	oostelijk	östlich
lead	plomb	chumbo	lood	Blei
mine	mine	mina	mijn	Mine
mineral	mineral	mineral	mineraal	Mineral
north	nord	norte	noord	Nord
northern	septentrionale	do norte, setentrional	noordelijk	Nordlich
ore	minerais	minério	erts	Erz
report	rapport	relatório	bericht	Bericht
rock	roche	rochas	rots	Gestein
south	sud	sul	zuid	Süd
southerly	méridionale	do sul, meridional	zuidelijk	südlich
west	ouest	oeste	wes	West
westerly	occidentale	ocidental	westerlijk	westlich
zinc	zinc	zinco	zink	Zink

Numerous other Late Proterozoic sequences of Central and Southwestern Africa have been correlated with the Katangan Sequence. These include the West Congolian sequences of Gabon, Congo, Bas Zaïre and NW Angola; the Lindian of Northern Zaire; the Bushimay sequence of southern Kasai Province, Zaire; the Rushinga and associated sequences of the Zambezi Belt of NE Zimbabwe; and the Damara sequence of Namibia and Botswana. These correlated sequences were not deposited in the same basin as the Katangan Sequence, but were broadly contemporaneous with it. In some cases, eg. Damara Belt of N. Namibia, Zambezi Belt of NE Zimbabwe, deformation and/or younger cover has obscured any connections these sequences may have had with the Katangan. For the benefit of any researcher who wishes to follow up on the correlative sequences to the Katangan, some key references are given in the following section, grouped by region.

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