A HISTORY OF EARLY COPPER EXPLORATION IN KATANGA (D.R. CONGO)

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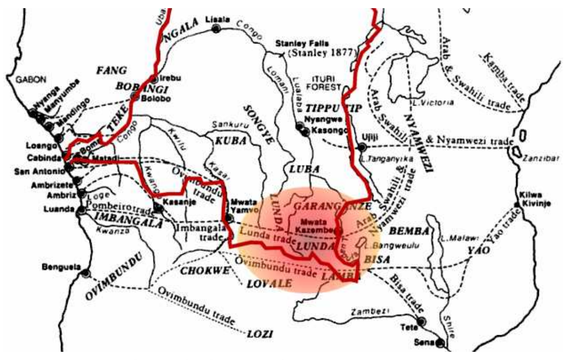
Unexplored Garanganze

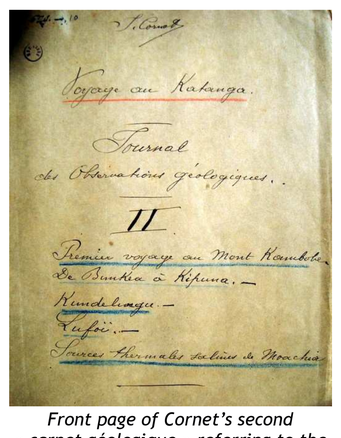
Archeological evidence

The latest archeological findings suggest that malachite outcrops have been mined as early as the Vth century A.C. in Garanganze a province known nowadays as Katanga [1]. Local tribes used to seasonally mine these outcrops and cast copper hansas that were used as exchange good and have been found all over the African continent even reaching Europe as early as the XVIth century.

Traditional copper hansa

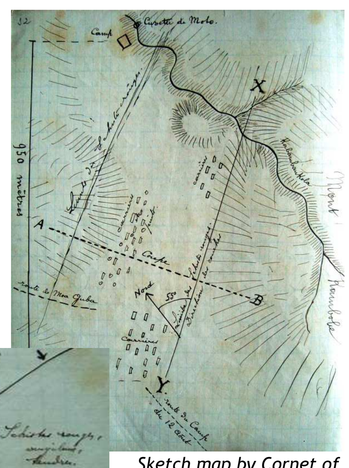


Central Africa trade routes 1800-1880 with borders of modern DR Congo(after Oliver et al. 2005)

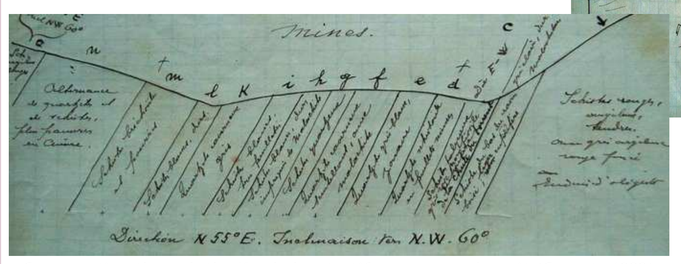


Front page of Cornet's second « carnet géologique » referring to the first visit of Kambobe.

Jules Cornet



Sketch map by Cornet of the Kambobe site with indication of indigenous workings



Cross section through the Kambobe stratiform copper deposit (Cornet, 1892)

First European exploration

The german expedition of Reichard in 1883 is considered to be the very first to penetrate Katanga. Reichard plots two copper mines on his map : Djola and Kamare (Kamwali).
A series of Belgian expeditions were set up in 1890 to explore the region and obtain the alledgeance of the powerful autochtonous chief: M'Siri. One of the most successful ones was directed by Alexandre Delcommune and included a young mining engineer named Norbert Diderrich, a former student of Professor de La Vallée Poussin at Louvain University. He made some obervations but, as most geologists of that time, was searching for gold and came back rather disappointed.

First geological description

Jules Cornet, considered to be the founder of Congolese geology, joined the Bia-Francqui expedition (1891-1892) at the request of King Leopold II. Cornet not only made numerous observations but was gifted with an impressive "coup d'oeil géologique" that very much impressed all his followers. Under extreme conditions and with very limited time and means, he managed to get a good idea of the geology of Katanga. A series of eleven "carnets géologiques" are preserved at the Museum for Central Africa (Tervuren). The first visit to a copper mine (Kambove) is mentioned on February 17th 1892. More detailed observations were made between August 8th and September 21st of that same year.

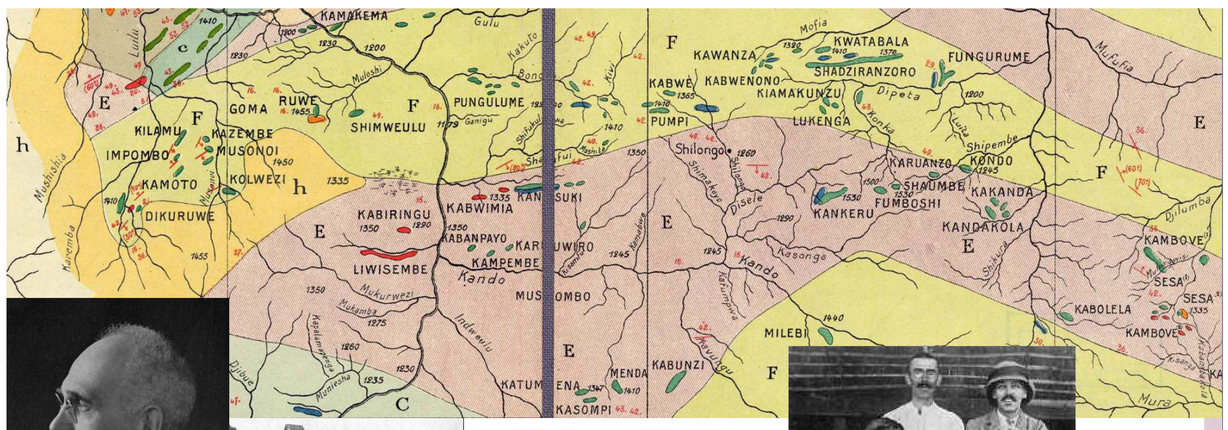
Comité Spécial du Katanga

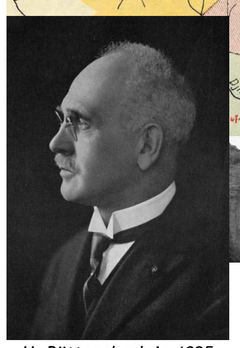
Systematic exploration

Due to the scarcity of gold occurrences and the crisis affecting Transvaal mines, geological exploration of Katanga is halted for about ten years.
In 1900, under the impulse of R. Williams (Tanganyika Concessions Ltd) and the Comité Spécial du Katanga (CSK), a systematic exploration campaign is set up involving a series of experiences English geologists (George Grey; Franz-Eduard Studt; John Michael Holland;…). CSK mandates a young Belgian mining engineer to supervise the workings and evaluate mineral resources: Henri Büttgenbach.

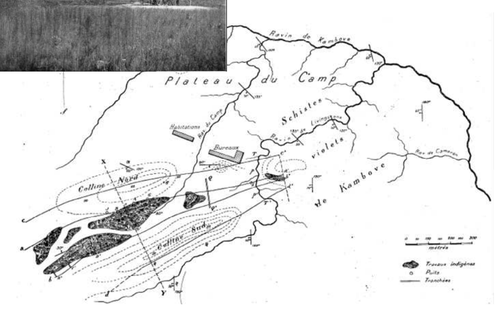
The copper rush

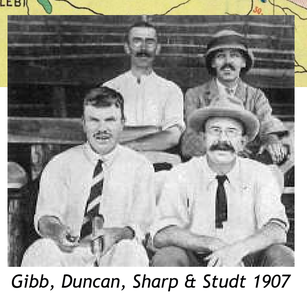
During the last decade of the XIXth century, world copper production reached only 300 000 t/yr. With the emergence of electricity, this amount was going to quadruple in only twenty years time. After two years spent in Katanga, H Büttgenbach is convinced that the superficial reserves of malachite (est. 15Mt with 14%Cu) are only the visible part of large sulphide deposits extending in depth (but unknown to exploration pits limited to 40m). He tours all over Belgium to motivate young geologists and engineers to emigrate to Congo.



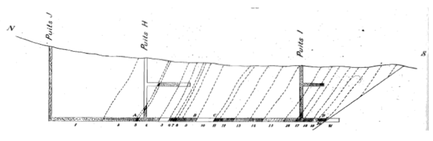


H. Büttgenbach in 1925





Gibb, Duncan, Sharp & Studt 1907



Union Minière du Haut-Katanga

From nowhere to world leadership

A systematic drilling campaign is started in 1906.
A sample of 10 tons of ore is sent to the University of Liege (Montefiore) by end of january 1906 to test the possibility of processing with an electric furnace.
On October 28th 1906, a company is created between TCL (50%) and a series of Belgian investors among which the Société Générale de Belgique. Henri Büttgenbach is member of the first board, representing CSK and will remain member of the same board until 1956!
The first mine to be operated is « Etoile du Congo » because of its proximity with the future railway track coming from Capetown.
In 1922, Congo is already ranked as the thirld world producer of copper!

Etoile du Congo mine in 1910 (Sharp, 1956)

First locomotive at Etoile du Congo mine in 1910 (Sharp, 1956)

Essential References

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- ***Robert, M.**, 1956, Géologie et géographie du Katanga, Bxl*
- ***Studt, F.-E., Cornet, J. & Büttgenbach, H.**, 1908, Carte géologique du Katanga et notes descriptives, Annales Musée du Congo, Série II, 94pp*
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- ***Sharp, R.R.**, 1956, En prospection au Katanga il y a 50 ans.*
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