

STUDIED MATERIALS

SHINKOLOBWE-CHLORITITES

A thick layer, conformably interstratified in the deformed strata of the Shinkolobwe uranium mine, is found from level -47 m to level -154 m. (Thoreau and du Trieu, 1933; Derriks and Vaes, 1956). It is mainly composed of a greyish clinocllore, which gives the rocks a characteristic greasy touch. However, there are textural and chemical differences between the available samples (for example: sample H47, which is green and contains garnierite). Thin sections examined at low magnification show ghost textures of volcanic shards, but the chloritization overwhelms any chemical characterization. This layer has a still problematic stratigraphic position, and probably represents a tectonically intruded wedge between the RAT and the RSF. It was recognized by Thoreau and du Trieu (1933) as richly PGE-endowed, but the PGM went unrecognized until now (du Trieu, 1956).

Samples SHINKO-1 to SHINKO-6 are massive rocks of whitish-grey colour without visible layering, with small black spots (Pt-heterogenite). Mohs hardness equals 1, but it is difficult to break with the hammer. Sampling locations are quite precisely known by X, Y and Z coordinates (Z=50m70), but date(s) of collection are unknown. However, it should be before 1940, since the locality is labeled as: "Chinkolobwe-Kasolo", as in early times.

Items: H47, H72, SHINKO-1 to SHINKO-6

Locality: Chinkolobwe-Kasolo.

Original description/label: « H47: schiste dolomitique; H72: schiste talqueux aurifère et palladifère » (auriferous and palladiferous talcose schist). SHINKO-5 : « Puits A. X=85 cm ; Y=13m75 ; Z=50m70. L'axe des X étant l'axe de la galerie principale. L'axe des Y étant l'axe du travers-banc 1. »

Stratigraphy/lithology: Intruded wedge between the RSF (Roches Siliceuses Feuilletées) and the RAT (Roches Argilo-Talqueuses), Lower Roan, Mines Series. (Derriks & Vaes, 1956 ; François and Cailteux, pers. communication).

Collector and year: H47 and H72: Thoreau, 1929. SHINKO-1 to 6: UMHK staff, undated.

References: Thoreau and du Trieu, 1933 (first mention of high PGE-contents); Derriks and Vaes, 1956 (tectonics, position in the mine, garnierite); Lefebvre and Cailteux, 1975 (volcanic rocks in Katanga); François, 1987 (stratigraphic position); Jedwab, 1994, 1995, 1997.

SHINKOLOBWE-SIEGENITE/VAESITE VEINS

A set of 30 samples of sulphides collected by the late J. Vaes has been preserved by his son Frank Vaes, and eventually donated to the present author. According to their composition, they belong to the siegenite-vaesite veins (Derriks and Vaes, 1956). The samples have probably been used for polished sections (lost), according to their sawed slab forms. A handwritten list gives summary descriptions, probably based on reflected light microscope observations, among which the following minerals have been observed by J. Vaes: molybdenite, pyrite, vaesite, siegenite, and a red, semi-transparent mineral, which he determined tentatively as "pyromorphite", and which has now been

determined as Pb-S-Se-Cl compounds (Jedwab et al., 1999). A final note added to the list by J. Vaes states in Dutch: "Belangrijk" (important).

Items: SHINKO-V-1 to SHINKO-V-30

Locality: Shinkolobwe.

Original description/label: none (handwritten list of cursory mineral descriptions).

Stratigraphy/lithology: CMN (Calcaire à Minéraux Noirs)?

Collector and year: J. Vaes, undated.

References: Thoreau and du Trieu, 1933; undated manuscript list by J. Vaes; Derricks and Vaes, 1956; Jedwab et al., 1999.

RUWE-BUTTGENBACH SAMPLE

Buttgenbach donated a vial containing about 5 g. of a gold-platinum concentrate to the Gregoire Geology Museum, located at the Maredsous Abbey, at an unspecified date. His connection to the museum is he used to study a rich collection of calcite crystals there. This black sand was very rich in native gold, and in several black minerals (Fe hydroxides, mottramite and palladinite (Pd, Cu)O). This grossly sifted material should correspond to the very rich Au-Pt-Pd eluvial accumulation found at the beginnings, since Buttgenbach did not return to Ruwe after 1905. Since the black sand is devoid of the characteristic yellow vanadates (earthy powder and pisoliths), it is assumed that it has been washed.

Item: RUWE-BUTTGENBACH SAMPLE

Locality: Ruwe

Original description/label: "Minerai d' or, platine et palladium".

Stratigraphy/lithology: Washed superficial black sand (eluvium)

Collector and year: Buttgenbach, 1904?

References: Buttgenbach, 1904, 1905, 1908, 1947; Jedwab et al., 1993; Jedwab, 1995, 1997.

RUWE-SCHUILING SAMPLE

When discovered in 1903, the site of Ruwe was covered with a yellow earth, first described by Buttgenbach as limonite, but in which he determined high concentrations of lead, copper and vanadium, and eventually crystals of descloizite. He found also metallic tin (Buttgenbach, 1913). The sample is mainly composed of a mixture of earthy descloizite and pisolithic to stalactitic centimeter-sized pieces of the same (named "psittacinite" by Schuiling). The texture is fibro-radiating/ concentric. With this sample was a handwritten letter by Schuiling to du Trieu, dated April 4th, 1933 (during the "Precious Metal Era"). The sample was taken at du Trieu's request from a sluice concentrate. The gold, determined on a split from the same batch, assayed 3250,561 g/T. Several small nuggets of gold and native tin have indeed been found under the binocular microscope in this sample by the present author.

Item: RUWE-SCHUILING SAMPLE

Locality: Ruwe

Original description/label: « Terre jaune à psittacinite » (yellow psittacinite earth) .

Stratigraphy/lithology: Eluvial mottramite found on superficial slope.

Collector and year: Schuiling, 1933.

References: Buttgenbach, 1908, 1947 (vanadates); Buttgenbach, 1913 (tin); du Trieu, 1956 ("Precious Metal Era").

Item: RUWE-LENK SAMPLE

Locality: Ruwe

Original description/label: «H-274- Psitacinit des R.S.F. »

Stratigraphy/lithology: Eluvial mottramite found on superficial slope.

Collector and year: Lenkchevitch, 1937.

References: Buttgenbach, 1908, 1947 (vanadates); Buttgenbach, 1913 (tin); du Trieu, 1956 ("Precious Metal Era").

RUWE-FOLIATED SILICEOUS ROCKS (RSF)

Cornet described such rocks with which the copper ores were associated in 1894. Buttgenbach and Studt analysed numerous rock samples at Ruwe, and some strata were recognized at a very early stage as extremely enriched in Precious Metals (Au, Ag and Pt+Pd). Gold was easily separated from the crushed rocks by panning, but Pt+Pd were never seen, and were determined by assaying (cf. Frontispiece).

Items: H271 and H272.

Locality: Ruwe

Original description/label: "Roches siliceuses feuilletées-RSF.Série des Mines.

Minéralisation Pt, Pd, Au..."(Foliated siliceous rocks-Mines Series. Pt, Pd, Au,...mineralization).

Stratigraphy/lithology: Grey to white silicified dolostone

Collector and year: Thoreau, 1929.

References: Cornet, 1894; Buttgenbach, 1908; UMHK, 1956; François, 1987; Jackson et al., 2003.

Items: H273 and H1664

Locality: Ruwe

Original description/label: "Roche argilo-talqueuse" (argilo-talcoose rock)-RAT

Stratigraphy/lithology: R.1. Red porous sandstone

Collector and year: Lenkchevitch, 1937

References: ibid.

Items: K1666 and K1673

Locality: Ruwe

Original description/label: Roches siliceuses feuilletées-RSF

Stratigraphy/lithology: Grey to white silicified dolostone

Collector and year: Anonymous, 1948.

References: ibid.

MUSONOI-NORTH RIDGE

This unaltered stratified rock is mineralised in carrollite. The accompanying analysis gives the following metal contents: sulphidic Cu and Co: 6.98 and 0.01 wt.%; oxidized Cu and Co: 0.24 and 0.01, respectively. It comes from an unspecified place in the "North Ridge", area where high precious metal values have been mined in superficial alteration deposits (du Trieu, 1956; Demesmaeker, 1963).

Item: MUSONOI-NORTH RIDGE-G721

Locality: Musonoi-North Ridge

Original description/label: Roche Siliceuse Feuilletée" (Foliated Siliceous rock).

Stratigraphy/lithology: Yellowish silicified dolostone

Collector and year: Anonymous, before 1960 ?

References: du Trieu, 1956; Demesmaeker, 1963; François, 1987.

MUSONOI-EXTENSION

A richly mineralised pocket of U-Cu-Se ore had been found but not mined, and was eventually buried, except for a few kilograms, which found their way into a few collections. This is the ore in which osterboschite and verbeekite have been found along with several other new minerals.

Item: Bulk samples

Locality: Musonoi-Extension

Original description/label: bulk ores

Stratigraphy/lithology: ?

Collector and year: Coussement, 1963/4.

References: Johan et al., 1970; Gauthier et al., 1989; Lhoest and Van der Meersche, 1992; Roberts et al., 2002.

MINDINGUI-GOSSAN

Hard massive rocks of dark brown colour, with a main composition of Fe-hydroxides enclosing separate euhedral quartz prisms. This locality is well known from collectors for its variety of large, well developed species, but not for any PGE/PGM.

Item: MINDINGUI

Locality: Mindingui

Original description/label:

Stratigraphy/lithology: cavity fillings

Collector and year: du Ry, 1960

References: Gauthier et al., 1989; Lhoest and Van der Meersche, 1992.

KAMBOVE-DOLOSTONE

A drill core from the dolomitic shales-DS, belonging to the R.2 Group. The rock is very fresh, and seems devoid of ore minerals under the naked eye, but a great variety of these appear after HF-concentration. Although no PGM or PGE-containing minerals have been found, this rock is interesting, since it contains Cu-, Sn-, V- and Ge-sulfides of hydrothermal affinity (colusite, sulvanite and kuramite). They constitute a link with other occurrences, where these elements appear as oddities (Pb-Cu-vanadates in Ruwe, sulvanite in Lufunfu-Kengere, South Katanga, and renierite-briartite in Kipushi, East Katanga).

Item: KAMBOVE-OUEST

Locality: Kambove

Original description/label:

Stratigraphy/lithology:

Collector and year: François, undated.

References: Buttgenbach, 1908; Jamotte, 1938; Gauthier et al., 1989; Jedwab, 1997.
