MINERALS ON POSTAGE STAMPS: A MIX OF ART, HISTORY, ECONOMICS AND GEOGRAPHY

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Introduction

"All science is either Physics or stamp collecting.“

Ernest Rutherford physicist
and Noble Laureate

"Stamp Collecting dispels boredom, enlarges our vision, broadens our knowledge, makes us better citizens and in innumerable ways, enriches our lives“

President Roosevelt

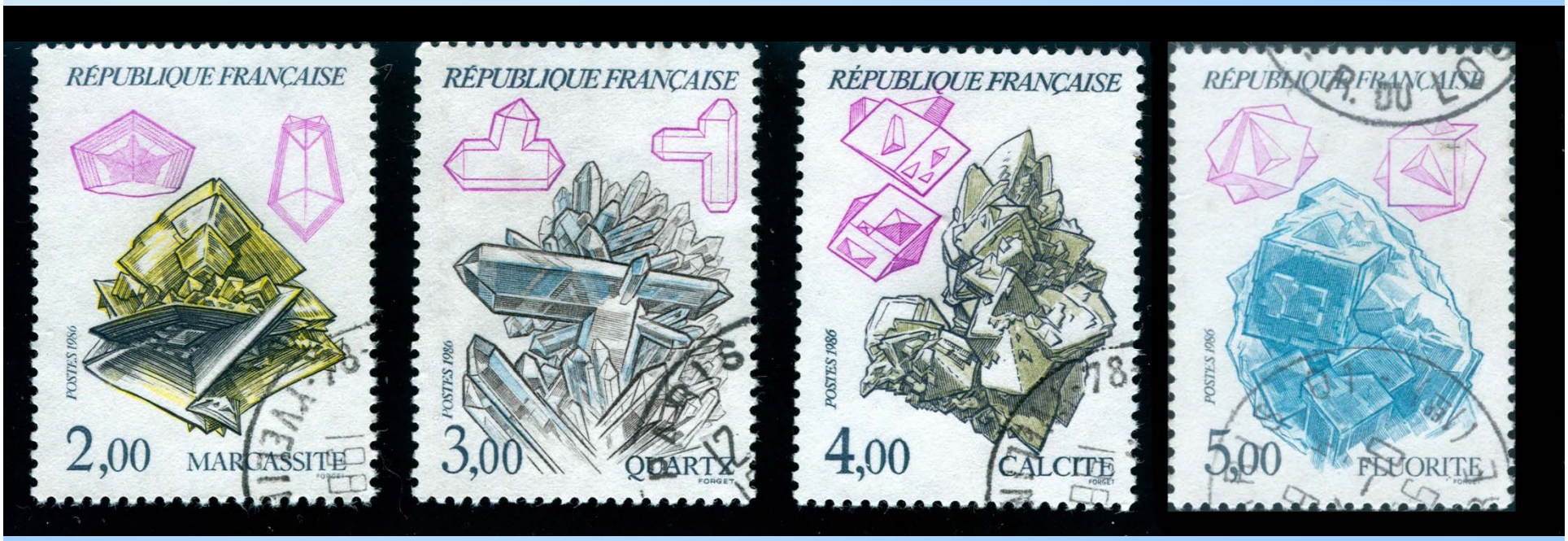
Introduction

Most people would agree that minerals represent some of the most beautiful natural objects known to mankind, especially in the form of precious and semi-precious gemstones.

It is hardly surprising, therefore, that they are often illustrated on stamps.

Introduction

I aim in this talk to introduce the beautiful world of mineral illustrations on stamps – introducing the range of minerals depicted on stamps…



France, 1986

…then looking in some greater detail at several sets from France, Southern Africa and East Germany.

1958: pyrites, garnet, quartz.

1959: agate, verdelite tourmaline, amethyst.

1960: smoky quartz, orthoclase, azurite.

1961: fluorite/cuprite, lazurite.

Switzerland, 1958-1961

Introduction

Minerals become the subject of sets of stamps for many reasons.

To depict of the whole of the natural history of their country in stamp form.

The 1986 French issue was an example of this, following sets of stamps that had already portrayed insects, flowers, trees and birds.

To mark the importance to their economy of mining particular minerals.

Sierra Leone issued over 35 stamps on the subject of diamonds between 1965 and 1978.

Over 77% of mineral stamps come from countries with major mining interests.

To mark the traditional links with the history of the study of geology and mining.

Usually European countries with a long record of the study of the Earth (e.g., Germany and Switzerland, but oddly not the UK).

Small illustrations of coloured stones

Range of minerals

The range of minerals depicted on stamps is very large.

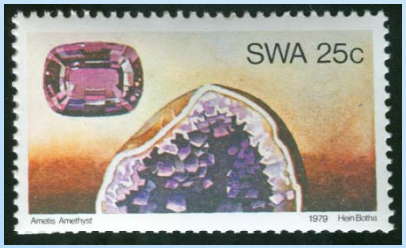
At least 200 mineral types recorded, ranging from

diamond
(>100 separate issues)

boltwoodite [SW Africa, 1989],
euxenite [Mozambique, 1979]
aurichalcite [Congo, 1970]

Range of minerals

The various forms of quartz are also well represented (over 76 separate issues), including the popular amethyst (18), citrine (4), agate (22) and opal (2).



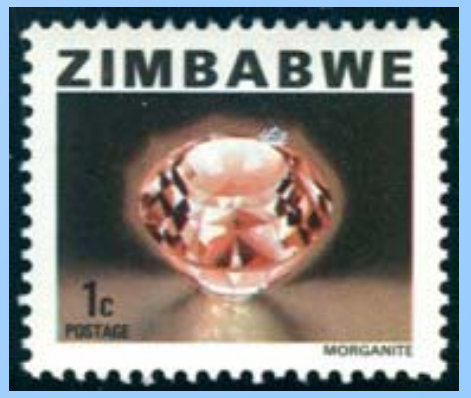
Range of minerals

Sapphire [USSR, 1971] and ruby [Sri Lanka, 1976], both of which are gem-quality forms of corundum, Al_2O_3.

Emerald [Brazil, 1977] and aquamarine [SW Africa, 1979]: beryls ($Be_3Al_2(Si_6O_{18})$) which are deep green and pale blue to pale green due to trace chromium and ferrous iron, respectively.

Yellow/brown heliodor [SW Africa, 1961]
Pink morganite [Rhodesia, 1978; Zimbabwe, 1980]
Deep violet red beryl [Mozambique, 1971].

The colours from the substitution of aluminium with ferric iron, caesium/other alkali metals, or manganese.



Range of minerals

Other minerals include garnet, topaz and tourmaline, arragonite, dolomite, pyrite, galena, wulfenite, cinnabar and bournonite (the endellionite or wheel ore of Cornwall).

$Ca_3Al_2(SiO_4)_3$

Sulphur

HgS

$CaCO_3$

$CuPbSbS_3$

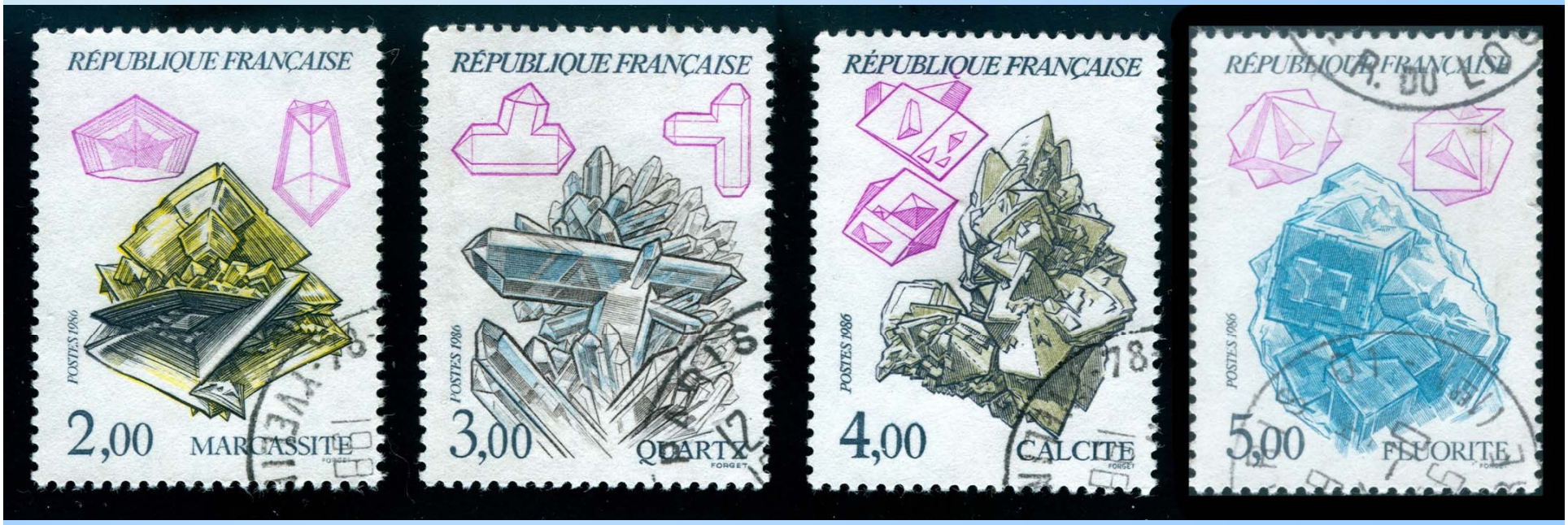
$(Al_2(F,OH)_2(SiO_4))$

National Natural History

National Natural History

France 13 September 1986

Four “French” minerals had been issued. Adding to the already rich series of stamp sets on French natural history.

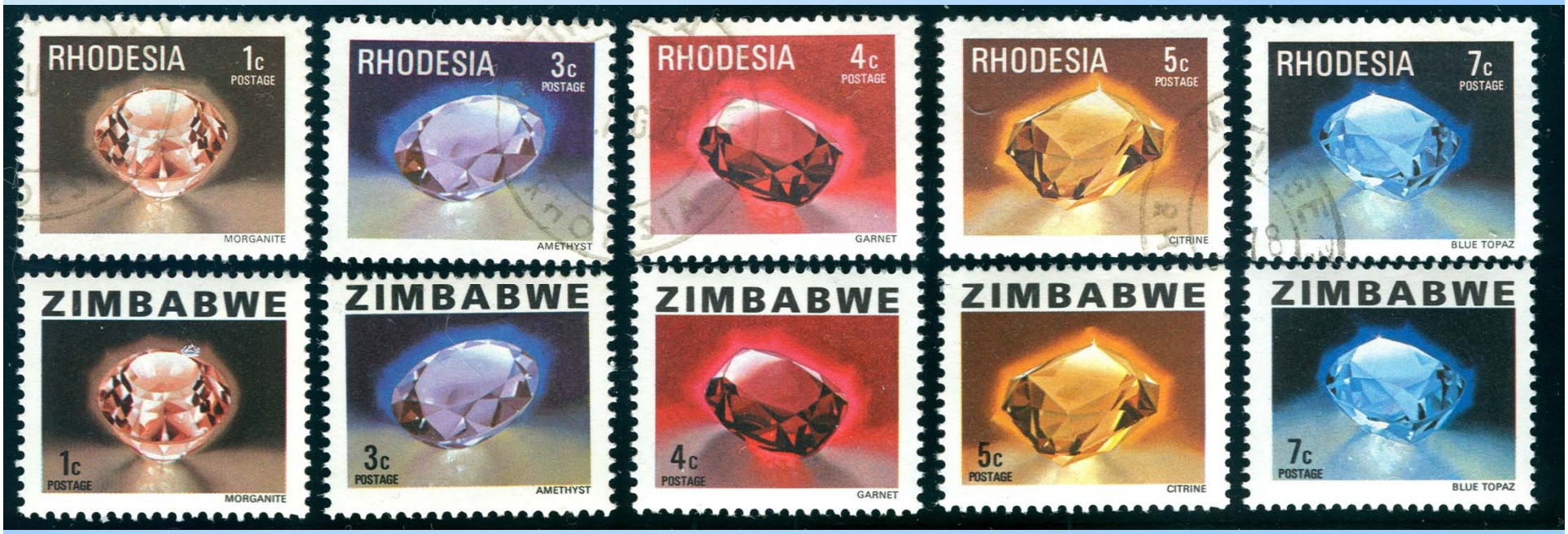


An exhibition, entitled 'The World of Minerals through Postage Stamps', was arranged on the first day of issue at the Paris University Mineral Collection. It contained more than 400 stamps and over 1175 philatelic references and produced the only significant reference work on stamps depicting minerals.

Nationhood, Politics and Resources

Political statements

Stamps are affected by changes in the political structure or government of a country because, despite their seemingly insignificant size, by being printed with the name of the country and some monetary value, stamps are a symbol of the sovereignty and government of the country.



In 1978, Rhodesia brought out a set of five stamps (morganite, amethyst, garnet, citrine, blue topaz). In 1980 these were reissued on independence only changing the name of the country.

Political statements

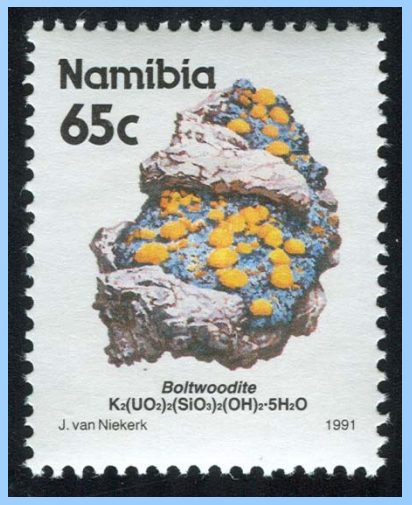
In 1959, Ghana produced a 4d stamp depicting a cut diamond above a diamond mine. In 1965, the UK government decreed a change of currency in Ghana. The old 4d stamp was overprinted with the words 'Ghana New Currency, 26th July 1965' and reissued.

Political statements

A particularly beautiful and unusual set of stamps was issued in 1989 by SW Africa. It is unusual in several respects:

- Large number of stamps
- Fine illustrations
- Includes chemical equations
- Rare SWA set
- Mistake on the boltwoodite stamp
- Corrected months before independence – very rare.

Boltwoodite • Boltwoodiet
$K(H_3O)(UO_2)(SiO_4)$



The original 18c boltwoodite stamp from the 1989 SWA set had a mistaken chemical equation $K(H_3O)(UO_2)(SiO_4)$. The error was noted, and the printers, J. van Niekerk, instructed to print a correct stamp. In 1990, the corrected 18c boltwoodite stamp was issued with the correct chemical equation, $(K_2(UO_2)(SiO_3)(OH)_2.5H_2O)$.

Boltwoodite
$K_2(UO_2)_2(SiO_3)_2(OH)_2 \cdot 5H_2O$

South West Africa (1989): gypsum, fluorite, mimetite, cuprite, azurite, boltwoodite, dioptase, diamond, wulfenite, gold.

South West Africa (1989) before independence, and Namibia (1991) after independence.

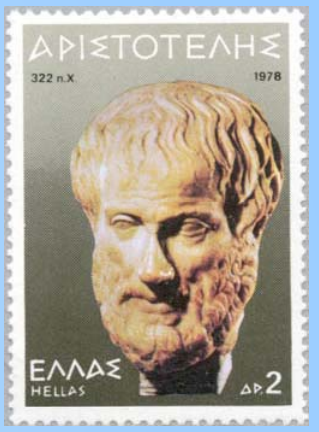
Namibia (1991): gypsum, fluorite, mimetite, azurite, dioptase, diamond, boltwoodite, wulfenite, gold, willemite.

Minerals and Mining History

Minerals and Mining History

The first development of mining as a modern technology, and geology as a systematic study of earth materials occurred in the ancient Dukedom of Saxony.

1450 -1550 An explosion silver mining in the Erzgebirge, stimulating the formation of Freiberg, St Joachimstahl and Chemnitz.



Georgius Agricola (1494-1555) was the miner and technologist from the area of St Joachimsthal and Chemnitz who is widely called the Father of Mineralogy.

In 1546, he published *De Natura Fossilium*, which was primarily a treatise on mineralogy but also touched on petrology and palaeontology.

Agricola reviewed the classifications of minerals by Aristotle (384-322 BC), Avicenna (about 1021 AD) and Albertus Magnus (about 1260), and proposed one too.

In 1557, *De Re Metallica* described the contemporary mining technology, and was set to become a standard work of mining for over four centuries.

Minerals and Mining History

German Miners from the Erzgebirge went to the England of Elizabeth I, two or three centuries before James Hutton published his *Theory of the Earth* (1788), William Smith published his studies of the strata of England, Wales and part of Scotland (1815), and Charles Lyell wrote The Principles of Geology (1830).

The Freiberg Bergakademie was established in 1765 under the guidance of A.G. Werner, and was commemorated in 1965 by a set of stamps.

Minerals and Mining History

Werner`s pupils travelled to all parts of the world.

Among them were such men as von Buch, Cotta, Lomonosov and Humboldt, as well as Goethe and Greenough, one of the founders and the first President of the Geological Society of London (1807).

The Erzgebirge well deserves to be called the 'Cradle of Geology'.

proustite, a silver arseno-sulphide ore (Ag_2AsS_3) which is also known as Saxon Silver

sulphur with quartz

Minerals and Mining History

In 1969, 6 more mineral stamps: fluorite (CaF_2), galena (PbS), smoky quartz, calcite ($CaCO_3$), native silver and erythrite, a deep carmine-coloured hydrous cobalt arseniate ($Co_3(AsO_4)_2 \cdot 8H_2O$).

Fluorite, which is also known as 'miners' fluorspar, is often associated with metallic ores in veins, and was put to good use as a fusing agent in metallurgy.

Minerals and Mining History

In 1972, 6 more stamps: gypsum ($Ca(SO_4).2H_2O$), zinnwaldite, malachite ($Cu_2(CO_3)(OH)_2$), amethyst, halite (NaCl) and proustite.

Zinnwaldite is an iron-lithium-rich mica whose colour varies through white, silvery, nacreous pink, brown and black. It represents one of the most important ores for the production of lithium.

Minerals and Mining History

In 1974, 6 more stamps, this time including jasper (a blend of cryptocrystalline silica and iron oxides), smoky quartz, topaz, amethyst, aquamarine and agate.

All 4 sets (21 stamps) from 1965-1974 were based on actual specimens from the unrivalled Bergakademie mineral collection, and commemorated German`s contribution to the study of geology over 250 years.

Finally

It is often said that the study of stamps is the most catholic of pastimes …
educating the collector in the appreciation of the art of illustration, geography, foreign languages and cultures, and history.

I hope this presentation has shown that the collection of minerals on stamps can also include geology in that list.

Finally

"Consider the postage stamp, its usefulness consists in the ability to stick to one thing till it gets there“

American humorist John Billings

"The postage stamp is a flimsy thing
No thicker than a beetle's wing
And yet it will roam the world for you
Exactly where you tell it to"

EV Lucas

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