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ON THE MINERAL SPECIES FIRST DESCRIBED FROM THE CARPATHIAN REGION

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ABSTRACT

A historical study on the mineral species first described from the Carpathian region is written by the author. Main stages of the research history (first description, major changes in the status of the species, discreditation etc.) are reviewed on the basis of original publications. This paper is an extended and modified version of the preface to that study. After a brief survey of the previous works (regional and international) the geographical and mineralogical scope of this research is discussed. The most important problems of the topic are demonstrated with the examples of several mineral species. A list of valid mineral species first described from the Carpathian region is also given together with some statistical considerations based on this list.

INTRODUCTION

The Commission on Museums of the International Mineralogical Association (IMA CM) launched a project in 1978 to compile all mineral type specimens in an international catalogue (Catalogue of Type Mineral Specimens, CTMS). The project was run by H. J. RÖSLER (Freiberg), later by H. A. STALDER (Bern). The search for type specimens raised the need for a systematic review of the mineral species first described from a given country. As a result of this international activity several papers related to this topic have been published recently (STALDER et al., 1994; DELIENS & STALDER, 1995; PETERSEN, 1996; RAADE, 1996; STALDER et al., 1996). These kinds of studies fill a certain gap in the mineralogical literature, i. e. the lack of a comprehensive data collection on the discovery and research history of the mineral species. HINTZE'S Handbuch der Mineralogie was probably the last significant mineralogical textbook that gave detailed information on the history and synonymy of all known mineral species. The historical part of later reference works is usually not more than the bibliographical data of the original papers describing or redefining a given species.

The collection of data of the CTMS is organised by countries, since the members of the IMA are the mineralogical associations of each country. Nevertheless papers on the history of mineral species are not always confined to present-day political boundaries. The list of mineral species first described from the former Soviet Union is compiled by Russian scientists (see STALDER et al., 1996), however, the type localities of about one-fourth of the reviewed species is outside of Russia.

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One has to face similar situation in the Carpathian region. The type localities of about three-fourth of the mineral species first described form here belonged to Hungary at the time of description. This ratio is even higher when the invalid names (species) are concerned. This heritage of the history, the fairly good availability of early mineralogical papers in Hungary and the personal interest made possible to create a comprehensive review on the history of the minerals first described from this geographical-geological unit.

PREVIOUS PAPERS ON THIS FIELD

KOCH (1926) wrote possibly the first, very short paper on the minerals first described from the territory of former (historical) Hungary. A more detailed review was published by ENZSEL & GAZDA (1978), a list of valid species was given by SZAKÁLL & GATTER (1993). Comprehensive reviews on (or lists of) the minerals first described from the present-day territory of Romania were published by MUREŞAN et al. (1990), UDUBAŞA et al. (1992), and NICOLESCU (1996). These papers have usually been written in local languages and even the most comprehensive ones are more or less incomplete both in geographical and mineralogical respect. Some of their data are inaccurate because reference books were frequently used as sources instead of original papers.

THE GEOGRAPHICAL AND MINERALOGICAL SCOPE OF THIS RESEARCH

The Carpathian area in geographical and geological sense traditionally comprise the Carpathian mountain arc stretching from the Danube near Bratislava till the Iron Gate again at the Danube, the mountains and Neogene basins on the inner, and the flysh and molasse zones on the outer side of the arc. The delimitation of the Carpathian area from the adjacent areas of the Alpian system (the Alps, Dinarides and Balkanides) show differences according to the different authors, but practically none of the important mineral localities is affected in this respect. E part of Austria, SE part of the Czech Republic and Poland, the entire Slovakia and Hungary, SW part of the Ukraine, most of the territory of Romania and NE parts of the former Yugoslavia lie within the Carpathian area. The research covered all valid and invalid names first used for a mineral found in the discussed area (except for a few very old terms used in the 18th century). Our aim was to review the history (first description, major changes in the status of the species, discreditation etc.) of these minerals. The initial data set of our research was collected from the well-known reference works of DANA (1892), HINTZE (1897–1968), EMBREY & FULLER (1980) and CLARK (1993), some of the papers quoted above was also used. During the research we made every effort to reach back to the original publications, especially those containing the first description of a mineral. This study is purely historical in character, however, data regarding the status of a few species were taken from other unpublished experimental studies of the author.

EXPERIENCES WITH INTERNATIONAL REFERENCE WORKS

The ultimate aim of our work is to provide detailed information on the research history of the minerals first described from the Carpathian region, as mentioned above. However, in most cases one has to begin with the amendment of the basic data published in international reference books.

Two kinds of frequent errors are found in these books. In the first case the type locality (hereafter abbreviated as TL) itself is wrong: e.g. NICKEL & NICHOLS (1991) gives Alabanda, Caria, Turkey as TL of alabandite and Oruro, Bolivia as TL of andorite, whereas the true TLs are Săcărâmb (former Nagyág), Transylvania, Romania and Baia Sprie (former Felsőbánya), Romania, respectively.

In the other case, which is by far the most frequent, the problems stem from the name of the TL. It is usually derived from a previous reference work or from the original description of the mineral. Because of the drastic territorial changes these names are frequently obsolete ones, so the identification of the actual name and its localisation may cause problems. We show only one example to this type of errors; in this case the same TL (Nagybörzsöny [former Deutschpilsen], Börzsöny Mts., Hungary) is misnamed and/or misplaced in different countries:

– „Plseň (Pilsen), Czechoslovakia" (p. 166 in NICKEL & NICHOLS, 1991)
– „Deutsch-Pilsen, Germany" (p. 85 in CLARK, 1993)
– „Deutsch-Pilsen (=Borszony), Hungary" (p. 747 in CLARK, 1993)

TYPE LOCALITY AND FIRST DESCRIPTION OF A SPECIES – CASE STUDIES

For the discussion of the history of the minerals first described from the Carpathian region, first we have to answer the apparently simple question: which is the first description of a given species? It is a frequent problem in the case of „old" minerals, i.e. those species that had already been known before they got their recently used name. To diminish the role of subjectivity, the appropriate parts of DANA's (1892) rules on priority (Introduction, IV. Nomenclature, 13. Limitations of the Law of Priority, points c., d., and f.) have been applied in these cases. Accordingly, one can regard the earliest account on the mineral as the first description of a valid species is, unless

1. „a name is put forth without a description";
2. „the description is so incorrect that a recognition of the mineral by means of it is impossible (...)";
3. „a name has been lost sight of and has found no one to assert its claim for a period of more than fifty years; especially if the later name adopted for the species has become intimately incorporated with structure of the science or with the nomenclature of rocks."

The examples of different cases are as follows:

Case 1. Both the oldest description and the recently used name refer to a mineral from the Carpathian region: 1.1. nagyágite, 1.2. tellurite.

Case 2. The oldest description is from the Carpathian region, but the recently used name was originally applied to a mineral from another locality: 2.1. alabandite, 2.2. rhodonite, 2.3. bournonite, 2.4. tremolite.

Case 3. The recently used name was originally applied to a mineral from a locality in the Carpathian region, however, the mineral was first mentioned from another (or unknown) locality: 3.1. rhodochrosite, 3.2. hemimorphite (special case).

Case 4. Simultaneous description from two localities: 4.1. krautite, 4.2. kotoite.

Case 5. First description from a meteorite that fell or was found in the Carpathian region: 5.1. cohenite.

Case 6. First description from an unknown or uncertain locality of the Carpathian region: 6.1. whewellite, 6.2. hörnesite.

Detailed reviews of the history of the discussed species will be given by Papp (in prep.).

Case 1. Both the oldest description and the recently used name refer to a mineral from the Carpathian region.

Example 1: nagyágite

Latest TL data: „Săcărâmb (Nagyág), Transylvania, Romania" (NICKEL & NICHOLS, 1991), „Nagyag, Transylvania, Romania" (CLARK, 1993)

HAIDINGER (1845)* is mentioned as the author of nagyágite in handbooks that have no lists of synonyms, like that of STRUNZ (1982) or NICKEL & NICHOLS (1991). Actually HAIDINGER only introduced the recently used name (without any further investigation of the mineral). In other manuals like that of PALACHE et al. (1944) or HINTZE (1904) one can find SCOPOLI and BORN (1772) as first describers of this mineral and the term *Aurum Galena, Ferro, et particulis volatilibus mineralisatum* as the oldest denomination of the mineral. The very first author, who published analytical data on the later nagyágite was really SCOPOLI (1769) who named it *Minera aurifera Nagyayense [sic].* The very first – though rather vague – reference to the mineral, however, is a little bit earlier. FRIDVALSZKY (1767) wrote in his Transylvanian Mineralogy that „at Nagyág a miraculous sort of mineral is found, which resembles the pure or slightly argentiferous antimony, but it is much heavier and having placed in fire, following the volatilisation of the antimony, gives some silver and a great amount of gold".

One can debate whether FRIDVALSZKY or SCOPOLI is the discoverer of nagyágite, but the TL is undoubtedly Nagyág (now Săcărâmb in Transylvania, Romania), whoever the first describer was.

Example 2: tellurite

Latest TL data: none (Nickel & Nichols, 1991), „Sibenburgen, Transylvania, Romania" (CLARK, 1993)

NICOL (1849) is given as the author of tellurite by STRUNZ (1982) or NICKEL & NICHOLS (1991). As a matter of fact this term was used first by HAIDINGER (1845) for the mineral described by PETZ (1842) without locality data (but obviously from the present Fața Băii, cf. HAIDINGER, 1845) as *„tellurige Säure"* (cf. CLARK, 1993). Tellurite formed finely striated, yellowish white spherules. Long before this paper STÜTZ (1803) already observed very small, wax-yellow, glassy, translucent, radiating nodules in tellurium ore from Sigismundi Mine at „Faczebaia". He supposed the mineral to be a „sparry tellurium". However, the oldest data to the mineral is published by ESMARK (1798), who found in the

* For brevity the bibliographical data of the original papers quoted among the examples are omitted.

same mine yellowish grey, translucent, elongated, six-sided platelets with adamantine lustre. Tellurium being unknown that time he considered it to be antimony ocher.

Again the TL is Facebánya near Zalatna (now Fața Baii near Zlatna), in Transylvania, Romania, whoever the first describer was.

Case 2. The oldest description is from the Carpathian region, but the recently used name was originally applied to a mineral from another locality.

Example 1: alabandite

Latest TL data: „Alabanda, Caria, Turkey" (NICKEL & NICHOLS, 1991), „Nagyag, (Transylvania), Romania" (CLARK, 1993)

The first identifiable description (MÜLLER, 1784) of the later alabandite, including simple physical and chemical tests, was based on specimens from Nagyág. MÜLLER named the mineral *schwarze Blende.* Further chemical studies on Nagyág samples were published by BINDHEIM (1784), KLAPROTH (1802) and PROUST (1802). In 1804 DEL RIO described the mineral from Mexico (parish of Quezaltepeque) as *alabandina sulfúrea.* This later name was transformed to alabandine by BEUDANT (1832) who cited analytical data on specimens from Nagyág and gave the localities as follows: Nagyág, Mexico, Cornwall.

In this case the TL must be Nagyág (now Săcărâmb, Transylvania, Romania) according to the principle of priority.

Example 2: rhodonite

Latest TL data: none (NICKEL & NICHOLS, 1991; Clark, 1993)

The first quantitative analysis of the mineral was published by RUPRECHT (1783). He analysed the „reddish gangue or so-called feldspar" from Kapnikbánya (now Cavnic in Romania) known also as *Kapniker Feldspath* (feldspar from Kapnik). He regarded the mineral as a quartz (or jasper) „penetrated" with manganese, however, others, like KARSTEN (1800) regarded it as distinct species. There was a lot of confusion between rhodonite and rhodochrosite (see below). The term rhodonite was first used by JASCHE (1819) to a mineral from Elbingerode (Harz Mts., Germany).

TL should be Kapnikbánya (now Cavnic in Romania) according to the principle of priority.

Example 3: bournonite

Latest TL data: „Wheal Boys, Endellion, Cornwall, England" (NICKEL & NICHOLS, 1991); „Huel (=Wheal) Boys, Endellion, Cornwall, England" (CLARK, 1993)

Bournonite is generally known to has been described and depicted first as „ore of antimony" by RASHLEIGH (1797) from Cornwall; its recent name was given by JAMESON (1805).

Nevertheless this mineral was described a few years before from Kapnikbánya (now Cavnic in Romania) as well. FICHTEL (1791) mentioned a variety of *Weisgülden* (silver-containing fahlore) from „Kapnik" forming small, short, lengthways striated cylinders of plate-like discs with cut or striated rim. Earlier FERBER (1789) also described a *Weissgülden* specimen from „Kapnick" as prisms that are striated on their opposite sides, like the cog-wheels of a cylindrical pocket-watch.

Although ESMARK (1798) citing FICHTEL also supplied a detailed morphological description of this „curiously crystallized" *Fahlerz,* the contemporary scientists obviously

overlooked these early observations, thus one cannot regard Kapnik as the TL of bournonite.

Example 4: tremolite

Latest TL data: „Tremola valley, St. Gotthard, Switzerland" (NICKEL & NICHOLS, 1991), „Val Tremola, St. Gotthard, Switzerland" (CLARK, 1993)

According to the available reference works tremolite was named by PINI in DE SAUSSURE (1796) after Val Tremola in Switzerland, however, 5 years before FICHTEL (1791) already raised objections against this name in a footnote of his book proposing the term schebeschit(e) instead. Schebeschite corresponds to his earlier *Säulenspath* or *Sternspath* (FICHTEL, 1782) that he found at „Unter-Schebesch" (Oltalsósebes, now Sebeşu de Jos in Romania). The detailed description of these varieties was published together with two chemical analyses of BINDHEIM. These observations were quickly forgotten, and DANA (1892), HINTZE (1897), CLARK (1993), etc. mention only sebesite of BREITHAUPT (1847) what refers to the same mineral from the same locality. Curiously enough, Val Tremola is also questionable as real TL, because, according to HINTZE (1897), tremolite is not found in Tremola valley itself but in the Campolungo area some 20 km SE from there.

Case 3. The recently used name was (or thought to have been) originally applied to a mineral from a locality in the Carpathian region, however, the mineral was first mentioned from another (or unknown) locality.

Example 1: rhodochrosite

Latest TL data: none (NICKEL & NICHOLS, 1991), „Kapnik, Siebenbürgen, Transylvania, Romania" (CLARK, 1993)

The first reference to this mineral is usually attributed to BERGMAN (1782), who used the term *Magnesium acido aereo mineralisatum* without any description or locality data (see e.g. DANA, 1892; or HINTZE, 1927). It is to be noted, however, that BERGMAN (1780) already described *magnesium aëratum* as the matrix of *minera Nagyayensis* (nagyágite). Rhodochrosite from Nagyág (now Săcărâmb in Romania) was described later in details by FICHTEL (1794). His and others' observations were published together with RUPRECHT's analytical data of rhodonite (see above) by LENZ (1794). This confusion between manganese silicate and carbonate lasted for decades. The new term rhodochrosite was introduced by HAUSMANN (1813) referring to the results of the first correct quantitative analysis made by LAMPADIUS (1800) on a specimen from Kapnik (now Cavnic in Romania).

TL should be Nagyág (now Săcărâmb in Romania) according to the principle of prioity.

Example 2: hemimorphite

Latest TL data: none (NICKEL & NICHOLS, 1991), „Rezbanya, Hungary" (CLARK, 1993)

The confusion with zinc silicate and carbonate was as complete as with manganese silicate and carbonate for a long time. The ambiguity began in the antiquity: *Cadmia* of Pliny corresponds to hemimorphite and smithsonite as well (and also to ZnO). The first rough quantitative chemical analysis of the two kinds of native calamine was published by BERGMAN (1780). The silicate he examined was a *lapis calaminaris hungaricus,* i.e. a

specimen from Hungary (without closer locality data). The first accurate comparative chemical analysis of the later hemimorphite and smithsonite was published by SMITHSON (1803). The electric calamine (i.e. hemimorphite) he studied had come from Rézbánya, Hungary (now Băiţa [Bihor] in Romania). Hemimorphite name was introduced only in 1853 by KENNGOTT without further studies and without referring to a locality.

In this case the TL is not determinable.

Case 4. Simultaneous description from two localities

Example 1: krautite

Latest TL data: „Cavnic, Crisana-Maramures, Romania" (NICKEL & NICHOLS, 1991), „Nagyag (Sacaramb) and Kapnik (Cavnic), Transylvania, Romania" (CLARK, 1993)

Krautite was described by FONTAN et al. (1975) using specimens both from Săcărâmb (former Nagyág) and Cavnic (former Kapnikbánya), however, only Săcărâmb was designated as TL („type deposit") by the authors.

Example 2: kotoite

Latest TL data: „Hol Kol Gold Mine, Wall Rock of „New Ore Body", Suan, Korea" (NICKEL & NICHOLS, 1991), „Hol Kol mine, Suan Co., Korea" (CLARK, 1993)

The new mineral was first found by Watanabe in specimens from Hol Kol gold mine near Suan, Korea (now in PRK). At the same time he recognised it in a szaibelyite-containing marble from Rézbánya (Băiţa [Bihor] in Romania) as well. Results of investigation of kotoite from both localities were reported together. TL was not designated explicitly by Watanabe, but he obviously regarded Hol Kol as TL (see especially author's abstract in Fortschr. Min. Krist. Petr., vol. 23, cxlvi–cxlvii).

Case 5. First description from a meteorite that fell or was found in the Carpathian region

Example: cohenite

Latest TL data: „Uivfaq, Disko, Greenland" (NICKEL & NICHOLS, 1991), „first observed in the Arva iron" (CLARK, 1993)

Cohenite was described by WEINSCHENK (1889) from the so-called Arva or Magura meteorite that had been found in 1840 near Szlanica in the Árvai-Magura Mts. (now Slanická Osada in Oravská Magura Mts., Slovakia).

Case 6. First description from an unknown or uncertain locality of the Carpathian region

Example 1: whewellite

Latest TL data: „Havre (near), Montana, USA" (NICKEL & NICHOLS, 1991), „unknown" (CLARK, 1993)

Whewellite was described by BROOKE (1840) from a specimen that was supposed to had been found in Hungary. Accepting this supposition the most probable locality of the mineral is Cavnic (former Kapnikbánya) where several big whewellite crystals were found in this century.

Example 2: hörnesite

Latest TL data: „Oravița (Oravicza), Banat, Romania" (NICKEL & NICHOLS, 1991), „Banat, Hungary" (CLARK, 1993)

Hörnesite was described by HAIDINGER (1859, 1860) and KENNGOTT (1860) from a museum specimen that had earlier been purchased from the collection of VON NÜLL (or NULL). According to the catalogue of this collection (MOHS, 1804) the specimen came from an unspecified mine in the Banat. KENNGOTT (in HAIDINGER, 1860) supposed „Oravitza" (now Oravița in Romania) as locality on the basis of the garnet crystals grown in the accompanying calcite. One has to remark, however, that this paragenesis in not uncommon in other localities of the Banat as well.

STATISTICAL CONSIDERATIONS

The number of the species (more than 50, Table 1) allows us to make some statistical considerations.

Regarding the distribution of species among mineral classes (Fig. 1), the predominance of elements (incl. some meteoritic minerals) and sulphides and their alteration products (sulphates and phosphates, incl. arsenates) is striking. This fact evidently corresponds to the character of the most important ore occurrences mined in the last centuries, i.e. hydrothermal vein- or stockwork-type deposits with non-ferrous metals and gold; the importance of skarn-related deposits is demonstrated by two borate species but these mines of course supplied new minerals belonging to other classes as well. The most „productive" localities of new species are Săcărâmb (former Nagyág), 7; Baia Sprie (former Felsőbánya), 6; Băița [Bihor] (former Rézbánya), 4; L'ubietová (former Libetbánya/Libethen) and Smolník (former Szomolnok/Schmöllnitz), 3 new species.

The greatest number of new species from the Carpathian area was described by J. KRENNER (8). W. HAIDINGER is the most prominent „godfather"; he described two new species from the area, but renamed five earlier discovered ones.

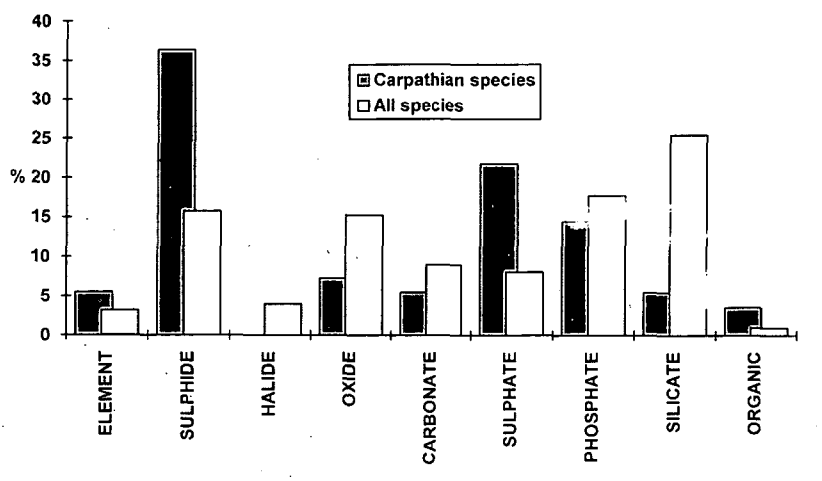

Fig. 1. Distribution of mineral species first described from the Carpathian area versus distribution of all species* among mineral classes (* percentages were counted on the basis of HÖLZEL, 1990)

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TABLE 1 Valid* mineral species first described from the Carpathian area

species name	c	first described by	in	renamed by	in	type locality (recent name)	type locality (former names)	country
alabandite	2	Müller von Reichenstein, F.J.	1784	Beudant, F.S.	1832	Săcărâmb	Nagyág	ROM
alloclasite	2	Tschermak, G.	1868			Oraviţa Montană	Oravicabánya/Orawitza	ROM
andorite	2	Krenner, J.	1892			Baia Sprie	Felsőbánya	ROM
ardealite	6	Schadler, J.	1931			Cioclovina cave	Csoklovina	ROM
cohenite	1	Weinschenk, E.	1889			Slanická Osada (meteorite)	Szlanica/Slanica	SLK
cyanotrichite	6	Werner, G.A. in Karsten, D.L.G.	1808	Glocker, E.F.	1839	Moldova Nouă	Újmoldova	ROM
dietrichite	6	Schröckinger, J.	1878			Baia Sprie	Felsőbánya	ROM
euchroite	5	Breithaupt, A.	1823			Ľubietová	Libetbánya/Libethen	SLK
evansite	5	Forbes, D.	1864			Železník near Sirk	Vashegy (nr Szirk)	SLK
felsőbányaite	6	Kenngott, A.	1853			Baia Sprie	Felsőbánya	ROM
fizélyite	2	Krenner, J. & Loczka, J.	1913			Chiuzbaia	Kisbánya	ROM
fülöppite	2	Finály, I. & Koch, S.	1929			Baia Mare	Nagybánya	ROM
hauerite	2	Haidinger, W.	1847			Kalinka (part of Vígľašská Huta-Kalinka)	Végleskálnok/Kalinka	SLK
hodrushite	2	Koděra, M. et al.	1970			Banská Hodruša (part of Hodruša-Hámre)	Hodrusbánya/Hodritsch	SLK
hörnesite	5	Kenngott, A.	1860	Haidinger, W.	1860	Banat	Bánság	ROM
karpathite	9	Piotrovskiy, G.L.	1955			Оленеве (Oleneve)	Szarvaskút/Olenovo	UKR
klebelsbergite	6	Zsivny, V.	1929			Baia Sprie	Felsőbánya	ROM
koktaite	6	Sekanina, J.	1948			Žeravice u Kyjova	Žeravice u Kyjova	CZE
kornelite	6	Krenner, J.	1888			Smolník	Szomolnok/Schmöllnitz	SLK
krautite	5	Fontan, F. et al.	1975			Săcărâmb	Nagyág	ROM
krennerite	2	Krenner, J.	1877	vom Rath, G.	1877	Săcărâmb	Nagyág	ROM
libethenit	5	Leonhard, C.C.	1812	Breithaupt, A.	1823	Ľubietová	Libetbánya/Libethen	SLK
ludwigite	7	Tschermak, G.	1874			Ocna de Fier	Vaskő/Moravicza	ROM
makovickyite	2	Žák, L. et al.	1994			Băiţa (Bihor)	Rézbánya	ROM
mátraite	2	Koch S.	1958			Gyöngyösoroszi	Gyöngyösoroszi	HUN
merrihueite	4	Dodd, R.T. et al.	1965			Mădăraş (meteorite)	Mezőmadaras/Madaras	ROM
monsmedite	6	Götz, A. et al. in: Manilici, V. et al.	1965			Baia Sprie	Felsőbánya	ROM
mrázekite	5	Řídkošil, T. et al.	1992			Ľubietová	Libetbánya/Libethen	SLK
muthmannite	2	Zambonini, F.	1911			Săcărâmb	Nagyág	ROM
nagyágite	2	Scopoli, G.	1769	Haidinger, W.	1845	Săcărâmb	Nagyág	ROM

species name	c	first described by	in	renamed by	in	type locality (recent name)	type locality (former names)	country
paděraite	2	Mumme, W.G. & Žák, L.	1985			Băiţa (Bihor)	Rézbánya	ROM
parajamesonite	2	Zsivny, V. & Náray-Szabó, I.	1947			Herja mine (near Chiuzbaia)	Herzsa-bánya (nr Kisbánya)	ROM
petzite	2	Petz, W.	1842	Haidinger, W.	1845	Săcărâmb	Nagyág	ROM
pilsenite	2	Born, I.	1790	Kenngott, A.	1853	Nagybörzsöny	Nagybörzsöny/Deutschpilsen	HUN
pseudobrookite	3	Koch A.	1878			Uroi	Arany	ROM
rhodochrosite*	7	Bergman, T.	1780	Hausmann, J.F.L.*	1813	Săcărâmb (*Cavnic)	Nagyág (*Kapnikbánya)	ROM
rhodonite*	4	Ruprecht, A.	1783	Jasche, C.F.* in Germar, E.F.	1819	Cavnic (*Elbingerode, GER)	Kapnikbánya (*Elbingerode, GER)	ROM
rhomboclase	6	Krenner, J.	1891			Smolník	Szomolnok/Schmöllnitz	SLK
rozenite	6	Kubisz, J.	1960			Mt. Ornak and Rudki	Mt. Ornak and Rudki	POL
rutile	3	Born, I.	1772	Werner, G.A. in Ludwig, C.F.	1803	Revúca (?)	Nagyrőce/Rauschenbach (?)	SLK
schafarzikite	3	Krenner, J.	1915			Pernek	Pernek	SLK
schreibersite	1	Haidinger, W.	1847			Slanická Osada (meteorite)	Szlanica/Slanica	SLK
semseyite	2	Krenner, J.	1881			Baia Sprie	Felsőbánya	ROM
stützite	2	Schrauf, A.	1878			Săcărâmb?	Nagyág?	ROM
sylvanite	2	Gerhard, C.A.	1786	Necker, L.A.	1835	Baia de Arieş	Aranyosbánya/Offenbánya	ROM
syngenite	6	Zepharovich, V.	1872			Калуш (Kalush)	Kalusz	UKR
szaibélyite	7	Peters, C.	1861			Băiţa (Bihor)	Rézbánya	ROM
szmikite	6	Schröckinger, J.	1877			Baia Sprie	Felsőbánya	ROM
szomolnokite	6	Krenner, J.	1891			Smolník	Szomolnok/Schmöllnitz	SLK
tellurite	3	Petz, W.	1842	Haidinger, W.	1845	Faţa Băii near Zlatna	Facebánya/Facebay (nr Zalatna)	ROM
tellurium	1	Müller von Reichenstein, F.J.	1785	Klaproth, M.H.	1802	Faţa Băii near Zlatna	Facebánya/Facebay (nr Zalatna)	ROM
tetradymite	2	Wehrle, A.	1830	Haidinger, W.	1831	Župkov	Erdősurány/Zsubkó/Schubkau	SLK
vashegyite	5	Zimányi, K.	1909			Železník near Sirk	Vashegy (nr Szirk)	SLK
veszelyite	5	Schrauf, A.	1874			Ocna de Fier	Vaskő/Moravica	ROM
whewellite	9	Brooke, H.J.	1840	Brooke, H.J. & Miller, W.H.	1852	Cavnic??	Kapnikbánya??	ROM??
wollastonite*	4	Stütz, A.	1793	Léman, J.*	1818	Ciclova Montană (*Capo di Bove, ITA)	Csiklovabánya/Cziklowa (*Capo di Bove, ITA)	ROM

* Generally accepted and officially not discredited species (before 1959); species approved by IMA CNMMN (after 1959).
c: Mineral classes; 1: elements (incl. carbides, etc.), 2: sulphides (incl. tellurides, etc.), 3: oxides, 4: silicates, 5: phosphates (incl. arsenates), 6: sulphates, 7: borates, 8: halides (none), 9: organic minerals
the species was renamed using a specimen from another locality
abbreviations: nr: near, CZE: Czech Rep., HUN: Hungary, POL: Poland, ROM: Romania, SLK: Slovakia, UKR: Ukraine