

A catalogue of the mineral species in the National Museum of Natural History, Sofia (Part 3): Borates; Phosphates, Arsenates and Vanadates; Wolframates and Molybdates; Sulphates, Selenites and Tellurites; Chromates; Carbonates; Nitrates and Iodates; Organic minerals

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Abstract. The third part of the catalogue includes mineral species from the last eight mineral classes: Borates; Phosphates, Arsenates and Vanadates; Wolframates and Molybdates; Sulphates, Selenites and Tellurites; Chromates; Carbonates; Nitrates and Iodates; Organic minerals, in the collection of the National Museum of Natural History, Sofia. The collection comprises 319 species and 17 varieties.

Key words: Catalogue, Collections, Mineral species, National Museum of Natural History, Sofia

The new museum catalogue of the mineral species is based on the systematics of KOSTOV (1993), and the names of mineral species are given by MANDARINO (1999). The catalogue includes all specimens registered in the main museum fund until 2004 year. Part 3 of the mineral catalogue includes mineral species from the last eight mineral classes: Borates; Phosphates, Arsenates and Vanadates; Wolframates and Molybdates; Sulphates, Selenites and Tellurites; Chromates; Carbonates; Nitrates and Iodates; Organic minerals, according to the systematics of KOSTOV (1993). Here are presented 319 species in 2838 pieces and 17 varieties.

Legend: Column: **Mineral classes, sub-classes, assemblages, groups, species and varieties**

- Names of mineral species are given after MANDARINO (1999) and KOSTOV (1993), following their Bulgarian translation in brackets.
 - All mineral species are in bold. For example: **Sassolite (Сасолит)**
 - The mineral varieties are in bold and italic. For example: - ***Oxykertschenite (Оксикерчинит)***
 - Mineral species or variety followed by “II” means a species or variety of secondary importance in the sample. For example: **Gormanite II (Горманит II)**
- Column: **Localities, region, country:** The list of localities follows the scheme: it always begins with localities in Bulgaria, followed by localities in other European countries, Asia, Africa, North and South America, Australia and Antarctica.
- All localities in one region are separated by commas.
 - All localities in one country are separated by semicolons.
- Countries are separated by dots.

Table 1
 A catalogue of the mineral species in the National Museum of Natural History, Sofia (KOSTOV 1993) (part 3) - Borates; Phosphates, Arsenates and Vanadates; Wolframates and Molybdates; Sulphates, Selenites and Tellurites; Chromates; Carbonates; Nitrates and Iodates; Organic minerals

Mineral classes, sub-classes, assemblages, groups, species and varieties	pieces	Localities, region, country
1	2	3
CLASS 6. BORATES		
Sassolite (Саколин)	1	Sasso Pisano, Tuscany (Italy).
6.1. Be-Al-Mg assemblage		
6.1.1. Hambergite-Fluoborite group		
Fluoborite (Флуоборит)	2	Bodnar quarry, Rudeville, Sussex Co., New Jersey (USA).
6.1.2. Kotoite-Sussexite group		
Suanite (Суанит)	2	Liaoning (China).
Szabelyite (Саїбелит = Анарум)	1	Liaoning (China).
Clinochrochotovite (Клинокурчатовит)	1	Sayak IV dep. (Kazakhstan).
6.1.3. Ludwigite group		
Ludwigite (Лудвигит)	5	Krumovo vill., Yambol reg. (Bulgaria). Pohla, Erzgebirge (Germany). Yakutia, Siberia (Russia).
Vonsenite (Вонсенит)	1	Riverside Co., California (USA).
6.1.4. Boracite group		
Boracite (Борацит)	1	Lüneburg, Niedersachsen (Germany).
Londonite (Лондонит)	1	Antsongombato, Mahaiza (Madagascar).
6.2. Ca-Na-Mg assemblage		
6.2.1. Inderite-Hydroboracite group		
Preobrazhenskite (Преображенскит)	2	Inder (Kazakhstan).
Hydroboracite (Хидроборацит)	7	Panderna (Turkey). Nordhausen, Harz (Germany). Inder (Kazakhstan).
Inderborite (Индерборит)	2	Inder (Kazakhstan).
6.2.2. Colemanite group		
Colemanite (Колеманит)	6	Panderna (Turkey). Copenaok Mt., (Serbia).
Meyerofferrite (Майероферит)	1	Death Valley, California (USA).
Inyoite (Иньоит)	2	Inder (Kazakhstan).
Priscite (Прайссит = Пангермит)	1	Inder (Kazakhstan).
6.2.3. Larderellite-Ulexite group		
Kaliborite (Калиборит)	4	Inder (Kazakhstan).
Ulexite (Улексит)	6	Bigadic (Turkey). Inder (Kazakhstan). Boron open pit, Kern Co., California (USA).

1	2	3
6.2.4. Borax group Kernite (Кернит)	2	Boron open pit, Kern Co., California (USA).
Tincalconite (Тинкалконит)	2	Lunenburg, Niedersachsen (Germany). Boron open pit, Kern Co., California (USA).
6.2.5. Hilgardite group Nemmilite (Хеммилит)	2	Fuka mine, Okayama Pref. (Japan).
6.2.6. Sulfoborite group Lunenburgite (Луненбургит)	1	Russia
Gaudefroyite (Годфруаит)	3	Tachgagalt (Morocco). N'Chwaming-II mine, Kalahari manganese field (S. Africa).
Borcarite (Боркарит)	1	Russia
Sakhaite (Сахаит)	2	Russia
Canavesite (Канавесит)	2	Brosso mine, Piemonte (Italy).
CLASS 7. PHOSPHATES, ARSENATES AND VANADATES		
7.1. Be-(Al, Fe)-Mg assemblage 7.1.1. Axial		
7.1.1.1. Monesite group Monesite (Монаесит)	1	Smilovene quarry, Koprivshitsa reg. (Bulgaria).
Uralolite (Уралолит)	1	Brandrucken, Koralpe, Carinthia (Austria).
7.1.1.2. Wavelite group Angelite (Анжелит)	2	Rapid Creek, Yukon (Canada).
Wavelite (Веделит = Ваделит)	21	Madzharovo reg.; Spahievo mine, Haskovo reg. (Bulgaria). Milina (Poland). Kladno; Trenice (Czech Republic). Schlottwitz, Vogtland; Lichtenberg, Ronneburg, Thuringia; Langenstriegis, Freiberg; Hagendorf-Sud (Germany). Highdown quarry, Devonshire (England). Tom's Phosphate Quarry, Kapunda (Australia).
Kingite (Кингит)	2	Tom's Phosphate Quarry, Kapunda (Australia).
Souzalite (Сузалит)	1	Rapid Creek, Yukon (Canada).
Gormanite II (Горманит II)	1	Rapid Creek, Yukon (Canada).
7.1.1.3. Althausite group Wagnerite (Вагнерит)	2	Skrinarov, Moravia, (Czech Republic). Naxos (Greece).
Satterlyite (Сатерлиит)	1	Fish Creek, Yukon (Canada).
7.1.2. Planar		
7.1.2.2. Senegalite-Alvanite group Senegalite (Сенегалит)	1	Kouroudiako, Faleme River (Senegal).
7.1.2.3. Candalite group Crandallite (Крандалит)	3	Beaton (Belgium).
Goyazite (Гояцит)	2	Lengbach quarries, Binnal (Switzerland). Rapid Creek, Yukon (Canada).
Gorceixite (Горсеиксит)	1	Les Montmins Allier (France).
7.1.2.4. Wardite-Foggite group Wardite (Уордит)	3	Rapid Creek, Yukon (Canada). Fairfield, Utah (USA).
Taranakite (Таранакит)	2	Magura Cave, Rabisha vil., Vidin reg.; Yubileyna Cave, Peshtera reg. (Bulgaria)

1	2	3
Montgomeryite II (Монтгомериум II)	2	Brugera, Catalonia (Spain). Milgun Station (Australia).
Fogbite II (Фогит II)	1	Milgun Station (Australia).
Minyulite (Минюлит)	4	Pereta mine, Grosseto, Tuscany (Italy). St. Johns Quarry, Tom's Phosphate Quarry, Kapunda (Australia).
7.1.2.6. Newberyite-Russlerite group	5	Skipton Caves, Ballarat, Victoria (Australia).
Newberyite (Ньюберит)	1	Rapid Creek, Yukon (Canada).
Baricite (Баричит)	3	Skipton Caves, Ballarat, Victoria (Australia).
7.1.2.7. Struvite-Hurnesite group	1	Skipton Caves, Ballarat, Victoria (Australia).
Struvite (Струвит)	1	Skipton Caves, Ballarat, Victoria (Australia).
Hannayite (Ханейт)	1	Skipton Caves, Ballarat, Victoria (Australia).
7.1.3. (Pseudo) isometric		
7.1.3.1. Hurlbutite group		
Herderite (Хердерит)	2	Minas Gerais (Brazil).
Roscherite (Рошерит)	1	Brandrucken, Weinebene Pass, Koralpe, Carinthia (Austria).
7.1.3.2. Variscite group		
Variscite (Варисцит)	5	La Floquère, Lode Atlantique (France). Fairfield, Utah; Avant, Arkansas (USA). Iron Monarch mine (Australia).
Strengite (Штрэнгит)	6	Rotlaufchen, Waldgirmes; Hagendorf, Bavaria (Germany). Mangualde (Portugal).
Phosphosiderite (Фосфосидерит)	2	Hagendorf, Bavaria (Germany). Bull Moose, South Dakota (USA).
Trolleite (Тролеит)	1	Congo
7.1.3.3. Lazulite-Childrenite group		
Lazulite (Лазулит)	9	Hollgraben, Werfen, Salzburg (Austria). Irkutsk (Russia). Gatumba (Rwanda). Big Fish River, Rapid Creek, Yukon (Canada).
Scorzalite (Скорцалит)	2	Buranga pegmatite, Gatumba (Rwanda). South Dakota (USA).
Barbosalite (Барбосалит)	2	Hagendorf, Bavaria (Germany).
Childrenite (Чиладельит)	1	Hagendorf, Bavaria (Germany).
7.1.3.4. Lacroixite group		
Tilasite (Тилазит)	1	Langban (Sweden).
Brazilianite (Бразилианит)	3	Gatumba (Rwanda). Sapucaia mine, Minas Gerais (Brazil).
7.1.3.5. Pharmacosiderite-Berzelite group		
Pharmacosiderite (Фармакосидерит)	1	Majuba Hill mine, Pershing Co., Nevada (USA).
7.2. Li-Fe-Mn assemblage		
7.2.1. Axial		
7.2.1.2. Rockbridgeite-Strunzite group		
Rockbridgeite (Рокбриджейт)	8	Hagendorf, Bavaria (Germany).
Frondelite (Фронделит)	8	Hagendorf, Bavaria (Germany). Buranga pegmatite, Gatumba (Rwanda).
Whitmoreite (Уитморейт)	1	Hagendorf, Bavaria (Germany).
Strunzite (Штрэнцит)	5	Hagendorf, Bavaria (Germany). Blaton, Haimant (Belgium).
Ferrostrunzite (Фероштрэнцит)	1	Marnton, New Jersey (USA).
Graftonite (Графтонит)	3	Pobezovtice; Pribyslavice; Otov (Czech Republic).

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Saxosinite (Какосеним)	9	Spahievo vil., Haskovo reg. (Bulgaria). (Czech Republic). Rotlaufchen, Waldgirmes, Hagendorf, Bavaria (Germany). St. Johns quarry, near Kapunda (Australia).
7.2.1.3. Kankite-Eveite group		
Smoliapinovite (Смоляниновит)	1	Dome Rock mine, Widgiemootha (Australia).
7.2.2. Planar		
7.2.2.1. Vivianite-Laueite group		
Vivianite (Вивианит)	16	Hagendorf, Bavaria (Germany). Kerchenskoye, Crimea (Ukraine). Anloua, N'goundere (Cameroun).
-Oxykertschenite (Оксикерцинит)	1	Rapid Creek, Yukon (Canada).
Metavivianite (Метавивианит)	3	Hagendorf, Bavaria (Germany). Blackbird mine, Idaho (USA).
Ludlamite (Лудламит)	1	Hagendorf, Bavaria (Germany).
Laueite (Лауеит)	3	Hagendorf, Bavaria (Germany).
Stewartite (Стьюартит)	2	Bruguera, Catalonia (Spain).
7.2.2.2. Dufrenite group		
Dufrenite (Дюфренит)	2	Ponikla; Tisnov (Czech Republic).
Syrilovite (Сироловит)	1	Hagendorf, Bavaria (Germany).
Jahnite (Джансит)	1	Tip Top pegmatite mine, Custer Co., South Dakota (USA).
Whiteite (Вайтит)	3	Rapid Creek, Yukon (Canada).
Mitridadite (Митридадит)	3	Hagendorf, Bavaria (Germany). Tuchkovo, Moscow reg. (Russia).
Bermanite (Берманит)	1	Tip Top mine, S. Dakota (USA).
7.2.3. (Pseudo) isometric		
7.2.3.1. Amblygonite-Triphtylite group		
Amblygonite (Амблизонит)	15	Nova Ves, Rozna, Dobra Voda, Moravia; As (Czech Republic). Golpejas, Salamanca (Spain). Monteras (France). Siberia; Kola pen. (Russia).
Montebrasite (Монтебразит)	2	Siberia; Khibiny, Kola pen. (Russia).
Tavorite (Таворит)	2	Hagendorf, Bavaria (Germany).
Triphtylite (Трифилит)	5	Přibyslavice, Caslave (Czech Republic). Hagendorf, Bavaria (Germany). Alto Ligonha (Mozambique).
Lithiophilite (Литиофилит)	1	Synthetic, Institute of crystallography, Moscow (Russia).
Ferrisicklerite II (Ферисиклерит II)	1	Hagendorf, Bavaria (Germany).
7.2.3.2. Heterosite-Triphtylite group		
Heterosite (Хетерозит)	2	Hagendorf, Bavaria (Germany). Otov (Czech Republic).
Purpurite (Пурпурит)	1	Gatumba, (Rwanda).
Wolfeite (Волфеит)	6	Hagendorf, Bavaria (Germany). Big Fish River, Yukon (Canada). Wilson's pegmatite, Thackaringa, Broken Hill (Australia)
Zwieselite (Цвицелит)	4	Hagendorf, Bavaria (Germany).
Switzerite (Свитуцерит)	1	Iron Monarch mine (Australia).
Bergauite (Бергауит)	7	Blaton, Hainant (Belgium). Leveaniami mine, Svappvaara (Sweden). Rotlaufchen, Waldgirmes; Hagendorf, Bavaria (Germany).
7.2.3.3. Reddingite-Alluaudite group		

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Reddingite II (Реддингит II)	1	Hagendorf, Bavaria (Germany).
Phosphoferrite (Фоссоферит)	2	Hagendorf, Bavaria (Germany). Capricorn, Kimberley (Australia).
Krizhanovskite (Крижановскит)	2	Hagendorf, Bavaria (Germany). Rapid Creek, Yukon (Canada).
Landsite (Ландесит)	1	Hagendorf, Bavaria (Germany).
Hureaulite (Хуролит)	2	Hagendorf, Bavaria (Germany).
Alluaudite (Алюоудит)	2	Alavus (Finland). Buranga (Rwanda).
Hagendorffite (Хазендорффит)	6	Hagendorf, Bavaria (Germany). South Dakota (USA).
Leucosphosphate (Левкофосфит)	3	Tishnov (Czech Republic). Hagendorf, Bavaria (Germany).
Arrojadite (Ароядит)	4	Rapid Creek, Yukon (Canada). Wilson's pegmatite, Thackaringa, Broken Hill (Australia)
7.2.3.4. Retzian-Magnusonite group		
Grischunite (Гришунит)	1	Falotta, Graubunden (Switzerland).
7.3. Na-Ca-Ba assemblage		
7.3.1. Axial		
7.3.1.1. Penikisite group		
Kulanite (Куланит)	1	Rapid Creek, Yukon (Canada).
Vitusite (Витусит)	1	Lovozero, Kola pen. (Russia).
7.3.1.2. Pharmacolite group		
Pharmacolite (Фармаколит)	2	Ste.-Marie-aux Mines, Alsace (France). Jachymov (Czech Republic).
Picropharmacolite (Пикрофармаколит)	1	Andes (S. America).
7.3.2. Planar		
7.3.2.1. Fairfieldite group		
Fairfieldite (Фейрфилдзит)	4	Hagendorf, Bavaria (Germany). Mangualde (Portugal). Brandrucken, Koralpe, Carinthia (Austria).
Messelite II (Меселит II)	1	Brandrucken, Koralpe, Carinthia (Austria).
Collinsite (Коллинсит)	2	Rapid Creek, Yukon (Canada). Milgun Station (Australia).
Anapaite (Анапаит)	5	Bellver de Cerdana, Lerida (Spain). Kerchenskoye, Crimea (Ukraine). Zheleznyi Rog, Tamanskii pen. (Russia).
7.3.2.2. Brushite group		
Brushite (Брушит)	3	Skipton Caves, Victoria (Australia).
7.3.2.3. Haidingerite-Roselite group		
Brandite (Брандит)	1	Sterling Hill, New Jersey (USA).
7.3.3. Pseudoisometric		
7.3.3.1. Apatite group		
- Apatite (Апаит)	73	Mogilata, Orikovo mines - Madan reg.; Cherveno zname mine, Burgas reg.; Smilovene quarry, Koprivshitsa reg.; Vladya vill, Kladrnitsa vill., Sofia reg.; Ardino reg.; Urdini Lakes, Rila Mt.; Krumovo vill., Yambol reg.; Relyovo vill., Samokov reg. (Bulgaria).
- Fluorapatite (Флюороапаит)	1	Fibbia, St. Gotthard (Switzerland). Kiruna (Sweden). Hagendorf, Bavaria (Germany).
- Staffelite (Стаффелит)	3	Untersulzbachtal, Salzburg (Austria). Bruguers, Catalonia. Jumilla, Murcia (Spain). Kirovskii mine, Kukisvumchorr Mt., Apatitovui Tzirk, Rasvumchorr Mt., Khibiny, Kovdor, Lovozero, Kola pen.; Slyudyanka, Siberia; Chupa, Karelia; Dal'negorskoye

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		dep. (Russia). Kvanefeld (Greenland). (Zimbabwe). Big Horn Co., Wyoming (USA). Iron Monarch mine (Australia). Alluiv Mt., Lovozero, Kola pen. (Russia). Vuonnemijok river, Khibiny, Kola pen. (Russia).
Belovite (Беловит)	1	
Arctite (Арктиит)	1	
7.3.3.2. Monazite group		
Monazite (Монацит)	6	Zlatograd reg.; Vishteritsa quarry, W. Rhodope Mts. (Bulgaria). (Norway). Rauris, Salzburg (Austria). (Mozambique). Hopffeldboden, Obersulzbachtal (Austria). Ilimaussaag (Greenland).
Xenotime (Ксенотим)		
Rhabdophane (Работрофан)	1	
7.3.3.3. Olymprite-Maricite group		
Dorfmanite (Дорфманит)	1	Kamasurt Mt., Lovozero, Kola pen. (Russia).
Natrophosphate (Напрофосфат)	2	Kamasurt Mt., Lovozero, Kola pen. (Russia).
Olymprite (Олимпит)	1	Rasvumchorr Mt., Khibiny, Kola pen. (Russia).
Maricite (Маричит)	1	Big Fish River, Yukon (Canada).
Olgite (Олгит)	1	Alluiv Mt., Lovozero, Kola pen. (Russia).
Nastrophite (Настрофит)	1	Alluiv Mt., Lovozero, Kola pen. (Russia).
Nacaphite (Накафит)	2	Rasvumchorr Mt., Khibiny, Kola pen. (Russia).
7.3.3.4. Yagoverite group		
Curtonite (Куретонит)	1	Golconda, Humboldt Co., Nevada (USA).
7.3.3.5. Chernovite-Weilite group		
Svabite (Свабит)	1	Ultevis (Sweden).
7.4. Zn-Cu-Pb(U) assemblage		
7.4.1. Axial		
7.4.1.1. Libethenite-Adamite group		
Libethenite (Либетенит)	7	L'ubietova (Slovakia). Hagendorf, Bavaria (Germany). Kakanda mine; Shitura, Shaba (Congo). Cap Garonne, Var (France). Laurium (Greece) Clara mine, Oberwolfach (Germany). Majuba Hill mine, Nevada (USA).
Olivinite (Оливинит)	5	
Euchroite (Евхроит)	1	Svatoduska (Slovakia).
Adamite (Адамит)	3	Laurium (Greece) Durango (Mexico).
- <i>Cyproadamite (Кипроадамит)</i>	1	Cap Garonne, Var (France).
Tarbutite (Тарбутит)	1	Tsumeb (Namibia).
7.4.1.3. Austinite-Conicalcite group		
Conicalcite (Коникалит)	3	Gold Hill mine, Tooele Co., Utah (USA). Dome Rock mine (Australia).
Duffite (Дуффит)	4	Plakinitza mine, Vratsa reg. (Bulgaria). Cap Garonne, Var (France). Broken Hill; Mount Bonnie mine, Grove Hill, Northern Territory (Australia). Dome Rock mine (Australia).
Austinite (Аустинит)	2	Dome Rock mine (Australia).
Cobaltaustinite (Кобалтаустинит)	1	Dome Rock mine (Australia).
7.4.1.4. Mixite-Carminite group		
Mixite (Миксит)	2	Moldava, Krusne Hory (Czech Republic). Gold Hill mine, Tooele Co., Utah (USA).

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Arthurite (Артурит)	2	Cornwall (England). Majuba Hill mine, Nevada (USA).
Carminite (Карминит)	1	Cap Garonne, Var (France).
Bayldonite (Бейлдонит)	1	Dry Gill mine, Cumbria (England). Broken Hill (Australia).
Mowbyite (Моубиит)	1	Kintore open cut, Broken Hill (Australia).
7.4.1.5. Vesigniete group		
Vesigniete (Весиниет)	2	Vancice (Czech Republic). Pinal Co., Arizona (USA).
Duhamelite (Духамелит)	1	Navajoa, Sonora (Mexico).
7.4.2. Planar		
7.4.2.1. Hopeite group		
Parachopite (Парахопит)	1	Hagendorf, Bavaria (Germany).
Veszelyite (Вецелеит)	2	Esperanza mine, Zacapoaxtla, Puebla (Mexico). Black Pine mine, Phillipsburg, Montana (USA).
Phosphophylite (Фосфофилит)	5	Hagendorf, Bavaria (Germany).
7.4.2.2. Turquoise group		
Turquoise (Туркуз) (туркоаз)	8	Spahievo mine, Haskovo reg. (Bulgaria). Karamazar (Tadzhikistan). (Uzbekistan). (Russia). Erdenet (Mongolia). Sahara desert (Algeria).
Reichenbachite (Райхенбахит)	1	Brown's prospect rum (Australia).
Chalcosiderite (Халкоцидезит)	1	Hagendorf, Bavaria (Germany).
Sampleite (Самплеит)	1	Lake Boga, Victoria (Australia).
7.4.2.4. Dumontite group		
Parsonsite (Парсонсит)	1	Saone et Loire (France).
7.4.2.5. Torbernite-Zeunerite group		
Torbernite (Торбернит)	6	Buhovo, Sofia reg. (Bulgaria). Les Bois Noirs, Pui de Dome (France). Hagendorf, Bavaria (Germany).
Autunite (Омунит)	6	Dolen vill., Zlatograd reg.; Samitsa vill., Dospat reg. (Bulgaria). St. Priest-la-Prugne, Loire (France). Hagendorf, Bavaria (Germany).
Metatorbernite (Метаторбернит)	4	St-Priest-la-Prugne, Loire (France). Cuna Baixa mine (Portugal). Hagendorf, Bavaria (Germany). El Sherana mine, Northern Territory (Australia).
Uranocircite (Ураноцирцит)	2	Bergen, Vogtland (Germany). Autun, Saone et Loire (France).
Ulrichite (Улрихит)	3	Lake Boga, Victoria (Australia).
Furkalite (Фуркалит)	1	Dartmoor (England).
Salleite (Салеит)	1	Christa mine, Gross-schloppen, Bavaria (Germany).
Bergelite (Бергелит)	1	Bergen, Vogtland (Germany).
Metazeunerite (Метациоэнерит)	2	Wheal Edward, Cornwall (England). Majuba Hill mine, Nevada (USA).
7.4.2.6. Carnotite group		
Carnotite (Карнонит)	5	Lussargues, Auvergne (France). Uabo, Mudug (Somalia).
Tuyamunite (Тюямунит)	1	Grants, New Mexico (USA).
7.4.2.7. Koritnigite-Erythrite group		
Leiteite (Лейтеит)	1	Tsumeb (Namibia).
Erythrite (Ерүмприт)	13	Vatya mine, Sofia reg. (Bulgaria). Medenec, Jachymov (Czech Republic). Hartenstein,

1	2	3
Annabergite (Анабергит)		Schneeberg, Saxony (Germany). Skinnskatteberg (Sweden). Leogang, Salzburg (Austria). Bou-Azzer (Morocco). Mt. Cobalt mine, Queensland; Dome Rock mine (Australia). Dobsina (Slovakia). Laurium (Greece) Medenec; Jachymov (Czech Republic). Atrevida mine, Catalonia (Spain). Hiterberg, Salzburg (Austria).
7.4.2.8. Clinoclase-Luethelite group		
Clinoclase (Клиноклаз)	13	Novoveska Huta (Slovakia). Wheel Unity, St. Day, Cornwall (England). Majuba Hill mine, Nevada (USA). Dome Rock mine (Australia).
Strashimirite (Страшимирит)	5	Zapachitsa dep., near Bov vill., Sofia reg. (Bulgaria). Novoveska Huta (Slovakia). Majuba Hill mine, Nevada (USA).
Tyrolite (Тиролит)	7	Zapachitsa dep., near Bov vill., Sofia reg. (Bulgaria). Penamellera (Spain). Novoveska Huta (Slovakia). Cap Garonne, Var (France).
Lavendulan (Лавендулан)	24	Iran.
7.4.2.9. Schultenite group	1	South West Africa.
Jamesite (Джеймсит)	1	Pucher-Schacht, Wolfgang mine, Schneeberg, Saxony (Germany).
7.4.2.10. Pucherite-Blossite group	1	
Pucherite (Пухерит)	1	
7.4.3. Pseudoisometric		
7.4.3.1. Pseudomalachite-Cornwallite group		
Pseudomalachite (Псевдомалахит)	3	L'ubietova (Slovakia). M'Sesa, Shaba (Congo). Spring Creek Copper mine (Australia).
Ludjibaite (Луджибаит)	1	Shitira, Shaba (Congo).
Cornetite (Корнетит)	5	Star of the Congo mine, Shaba (Congo). Empire-Nevada mine, Nevada (USA). Great Australia mine, Cloncurry reg., Queensland (Australia).
Kipuschite (Кипушит)	2	Snowshoe Claim, Battle Mt., Nevada (USA).
Cornwallite (Корнвалит)	8	Wheel Unity, St. Day, Cornwall (England). Avellanes, Catalonia; Estropiman, Huesca; Lerida (Spain). Majuba Hill mine, Nevada (USA).
Liroconite (Лироконит)	1	Alpbach (Austria).
7.4.3.2. Pyromorphite group		
Pyromorphite (Пироморфит)	20	Madzharovo reg.; Chepelare, Smolyan reg.; Pcheloyad mine, Haskovo reg. (Bulgaria). Nontron, Dordogne (France). Bohutin, Pribram (Czech Republic). Bunker Hill, Kellogg Co., Idaho (USA). Brown's Prospect, Rum Jungle, Northern Territory; Kintore open cut, Broken Hill; Sylvester mine, Zeehan, Kosminsky mine, Dundas, Tasmania; Black Star open cut, Mount Isa, Queensland (Australia).
- Campiglitite (Кампиглит)	3	Tsumeb, (Namibia). West comet mine, Dundas, Tasmania; Sabines shaft, Mount Bonnie mine, Grove Hill, Northern Territory (Australia).
Mimetite (Миметезит)	12	Mibladen (Morocco). Holmes claim, Arizona (USA).
Vanadinite (Ванадинит)	6	Los Lamentos, Chihuahua (Mexico).
- Endlichite (Эндлицит)	1	Vranice (Czech Republic).
7.4.3.4. Volborthite group	2	
Volborthite (Фолборфит)	2	
7.4.3.5. Descloizite group		
Descloizite (Деклозит)	4	Obir, Carinthia (Austria). Tsongo, Niari (Congo). Berg Aukas (Namibia).
Mottramite (Мотрамит)	2	Vranice (Czech Republic). Tsumeb (Namibia).

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Cechite (Чехум)		Vrančice, Příbram (Czech Republic).
7.5. Phosphates, arsenates and vanadates with additional anions	3	
7.5.1. With sulphate anions		
7.5.1.2. Planar		
Bukovskite (Буковскитум)	2	Kutna Hora (Czech Republic).
Chalcopyllite (Халкофилитум)	1	Novoveska Huta (Slovakia).
Parnauite (Парнаум)	3	Zapachitsa dep., near Bov vill., Sofia reg. (Bulgaria). Cap Garonne, Var (France).
Hinsdalite (Хинсдалитум)	1	Sylvestre mine, Zeehan, Tasmania (Australia).
Orpichte (Орпичитум)	1	Madzharovo reg. (Bulgaria).
Corcite (Корцитум)	2	Madzharovo reg. (Bulgaria). Broken Hill (Australia).
Beudantite (Бюдантитум)	1	Kintore open cut, Broken Hill (Australia).
Woodhouseite (Вудхаузейтум)	1	White Mountains, Mono Co., California (USA).
7.5.1.3. Pseudoisometric		
Diadochite (Диодохитум)	5	Richelle, Vise (Belgium). Prague reg. (Czech Republic).
7.5.2. With other anions		
Bonshitedite (Боншегититум)	1	Vuonemijok river, Khibiny, Kola pen. (Russia).
Sideronkite (Сидоренкитум)	3	Alluav Mt., Lovozero, Kola pen. (Russia).
Mendozavilite (Мендозавилитум)	1	Rustler mine Tooele Co., Utah (USA).
Gartrellite (Гартрелитум)	2	Anticline dep. Ashburton Downs (Australia).
CLASS 8. WOLFRAMATES AND MOLYBDATES		
8.1. Wolframite group		
Hubnerite (Хюбнеритум)/Ferberite (Ферберитум)	18	Polski Gradets vill., Sliven reg.; Babyak vill., Belitsa Reg. (Bulgaria). Cinovec mine; Krasno (Czech Republic). Baggetorp (Sweden). Cumbria (England). Bayan, Ondorhaan; Modoto (Mongolia). (China). Nyakabingo (Rwanda). Akjoujt reg. (Mauritania). Pasto Bueno; Cerro de Pasko (Peru). Gatumba; Nyakabingo (Rwanda). Nyakabingo (Rwanda).
Anthoinite (Антоинитум)	3	
Tungstite (Тунгститум)	1	
8.2. Scheelite group		
Scheelite (Шеелитум)	22	Narechenski bani vill., Smolyan reg.; Bliznaka Lake, Rila Mt.; Velingrad reg.; Govezhda mine, Diva Slatina vill., Mihaylovgrad reg; Polski Gradets vill., Sliven reg.; Zlata mine, Tran reg. (Bulgaria). Cinovec mine (Czech Republic). Schellgaden, Salzburg (Austria). Costabonne massif (France). Chukotka (Russia). Yakhton (Uzbekistan). (China). Akjoujt reg. (Mauritania).
Powellite (Побелитум)	3	Gualba de Dalt, Catalonia (Spain).
Stolzite (Штолцитум)	6	Hagendorf, Bavaria (Germany). La Tala (Spain). Reaphook Hill; Cordillera mine., Crokwell (Australia). Cordillera mine., Crokwell (Australia).
Raspite (Распитум)	1	
8.3. Wulfenite group		
Wulfenite (Вульфенитум)	18	Mezica (Slovenia). Bleiberg, Carinthia (Austria). Los Lamentos, Chihuahua (Mexico).

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Lindgrenite (Линдгрениум)	1	Planet mine, Arizona (USA). Whim Creek (Australia). Simmons Gap mine, Kiewa, Victoria (Australia).
CLASS 9. SULPHATES, SELENITES AND TELLURITES		
9.1. Sulphates		
9.1.1. AlFMg-Na(K) assemblage		
9.1.1.1. Alunogen group		
Alunogen (Алуноген)	4	Dubnik (Slovakia). Zlate Hory (Czech Republic).
Aluminite (Алуминит)	2	Newhaven, Sussex (England).
9.1.1.2. Halotrichite group		
Pickerengite (Пикеренгит)	4	Canigon, Pyrenees orientales (France). Libros-Terrel (Spain).
Halotrichite (Халотрихит)	1	Chelopech dep., Pirdop reg. (Bulgaria).
9.1.1.3. Alunite group		
Alunite (Алунит)	9	Stomanovo vill., Smolyan reg.; Madzharovo reg. (Bulgaria). Beregovo, Zakarpatska Prov. (Ukraine). Zaglik (Azerbaidzhan). Java isl. (Indonesia). Bassejour (France).
Ettringite (Емрингит)	1	Libros-Terrel (Spain).
9.1.1.4. Alum group		
Tschermigite (Цермигит)	2	Valtiera, Navarra (Spain).
9.1.1.5. Kieserite-Epsomite group		
Hexahydrate (Хексахидрат)	1	Lord Brassey mine, Heazlewood, Tasmania (Australia).
Regerisite (Регерисит)	6	
9.1.1.6. Langbeinite-Picromerite group		
Langbeinite (Лангбейнит)	3	Merkers, Rhon (Germany). Stebnik, Zakarpatska Prov. (Ukraine).
Kainite (Кайнит)	1	Kalush dep. (Ukraine).
Blodite (Блодит)	1	Soda Lake, California (USA).
9.1.2. Fe-Mn-(Na, K) assemblage		
9.1.2.2. Coquimbite group		
Coquimbite (Кокимбит)	1	Alcaparrosa, Antofagasta (Chile).
9.1.2.4. Copiapite group		
Copiapite (Копианит)	2	Seslavtsi vill., Sofia reg. (Bulgaria). Dubnik (Slovakia).
Slavikite (Славикит)	2	Valachov, near Skrivan (Czech Republic).
Botryogen (Ботриоген)	1	Quetena mine, Antofagasta (Chile).
9.1.2.5. Jarosite group		
Jarosite (Яросит)	4	Tsar Asen mine, Panagyurishte reg.; Spahievo mine, Haskovo reg. (Bulgaria). Pisek (Czech Republic). San Simon, Tarapaca prov. (Chile).
9.1.3. Na(K)-Ca-Ba assemblage		
Sideronatrite (Сидеронатрит)	1	
9.1.3.1. Thenardite-Mirabilite group		
Aphthitalite (Афтилит)	2	Nyiragongo, volcano (Congo).
- Glaserite (Глазерит)	1	Merkers, Rhon (Germany).

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9.1.3.2. Sulphohalite-Burkellite group		
Sulphohalite (Сульфохалит)	2	Lake Kalve (Botswana). Seattles Lake, California (USA).
Hanksite (Ханксит)	2	Seattles Lake; Borax Lake, California (USA).
Jouravskite (Журавскит)	1	Tachagalt (Morocco).
Rapidcreekite (Рапидкрѣкит)	1	Crosscut Creek, Rapid Creek, Yukon (Canada).
Peretaite (Перетайт)	1	Pereta mine, Tuscany (Italy).
9.1.3.3. Glauberite group		
Glauberite (Глауберит)	3	San Adrian, Navarra (Spain). Bertram Siding, Imperial Co., California (USA).
Syngenite (Сингенит)	1	Kalush dep. (Ukraine).
Gorgonite (Гьоргонит)	1	Inder dep. (Kazakhstan).
Polyhalite (Полухалит)	3	Merkers, Rhon (Germany). Stebnik, Zakarpatska Prov. (Ukraine).
9.1.3.4. Anhydrite-Barite group		
Anhydrite (Анухит)	15	Chervena mogila; Radka, Elshitsa mines- Panagyurishte reg. (Bulgaria). Stassfurt, Saxony; Nordhausen, Harz (Germany). Wieliczka; Inowroclaw - Klodawa (Poland). Campiano mine, Tuscany (Italy). Inder dep. (Kazakhstan). Norilsk, Siberia (Russia). Faraday mine, Ontario (Canada).
Gypsum (Гипс)	117	Popinsi vill., Panagyurishte reg.; Kremikovtsi dep., Katina vill., Sofia reg.; Chernozem vill., Elhovo reg.; Koshava vill., Vidin reg.; Plevan reg.; Sedmochislenitsi dep., Vratisa reg.; Maritsa-Iztok mine, Gledachevo vill., Troyanovo mine, Radnevo reg.; Enyovche mine, Kurdzhali reg.; Konstantinovo vill., Varna reg.; Polski Gradets, Sliven reg. (Bulgaria). Velke Nemce; Strkovice (Czech Republic). Hannover (Germany). Saragossa (Spain). Raddusa, Sicily; Tuscany (Italy). Slawkow; Inowroclaw - Klodawa; Dobrzyn, Wisla (Poland). Gorodishte vill., Stebnik, Zakarpatska Prov. (Ukraine). Ozernaya Mt., Siberia; Ulyanovsk; Optimisticheska Cave; Gaiskoye, Ural (Russia). Inder dep. (Kazakhstan). Gaurdak (Turkmenia). Tigris and Euphrates (Iraq). Grand Erk Oriental; Sahara (Algeria). (Tunisia). Estrada de Sumbe (Angola). Tooele Co., Utah (USA). Hill End mine, New South Wales (Australia).
Celestine (Целестин)	50	Ustritsa vill., Veliko Tamovo reg.; Krucheto vill., Gornooryahovo reg.; Shumen reg.; Goritsa vill., Popovo reg. (Bulgaria). Mansfeld, Thuringia (Germany). Monte Amiata, Tuscany; Sicily (Italy). Machow mine, Tamobrzeg (Poland). Winterswyk (Netherlands). L'vov reg. (Ukraine). Beineu (Turkmenia). Chaltash (Tadzhikistan). Abu Naim (Libya).
Barite (Барит)	143	Chiprovtsi mine, Montana reg.; Gyurgen dere mine, Madzharovo reg.; Chelopech dep., Pirdop reg.; Mihalkovo, Yugovo villages - Smolyan reg.; Spoluka, Golyam Palas mines-Madan reg.; Kremikovtsi dep., Eliseyna mine, Zverino, Bov, Seslavtsi villages - Sofia reg.; Drumchevill., Zvezdel dep., Kurdzhali reg. (Bulgaria). Blagill mine, Alston Moor, Cumbria (England). Buda (Hungary). Tisnov-Kocnice; Pribram (Czech Republic). Banska Stavnica (Slovakia). Kratovo reg. (Macedonia). Machow mine, Tamobrzeg; Polkovice mine, Stanislawow, Silesia (Poland). Cavnic; Bata Mare (Romania). Brunnodobra, Klingental, Vogtland; Brand mine, Halsbrucke, Freiberg; Dreislar, Sauerland; Rockenberg, Taunus; Hessen; Pohla. Wolkenstein, Erzgebirge; Ohrenstock, Ilmenau, Ronneburg;

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		Thuringia; Ilfeld, Harz; Wittichen, Schwarzwald; Eisern, Siegen, Westphalia (Germany). Korabl', Cape , Kola pen. (Russia). Beregovo (Ukraine). Akhaltsikhe (Georgia). Tyuya-Muyun (Kirghizia). (Tadzhikistan). Beineu (Turkmenia). Buzhaber mine (Tunisia). Morocco massif, Aberti dep.; Mibladen (Morocco). Norman, Cleveland Co., Oklahoma; Elmwood mine, Tennessee; Nye Co., Nevada (USA). Capelinha, Minas Gerais (Brazil). Commissioners Flat Heathcote, Victoria (Australia).
Hannebachite (Ханебахит) 9.1.4. Zn-Cu-Pb(U) assemblage	1	Hannebacher Ley, Eifel (Germany).
9.1.4.1 Goslarite-Zincaluminite group		
Goslarite (Госларит)	1	Goslar, Harz (Germany).
Glaucocerinite (Глаукоцеринит)	2	Laurium (Greece)
9.1.4.2. Chalcanthite-Brochantite group		
Chalcanthite (Халкантит)	4	Madzharovo reg. (Bulgaria). Hayden, Gila; Planet mine, Arizona (USA).
Antlerite (Антлерит)	1	Kremikovtsi dep., Sofia reg. (Bulgaria).
Brochantite (Брошантит)	6	Seven Rila Lakes, Rila Mt. (Bulgaria). L'ubietova (Slovakia). Cap Garonne (France). Bou Beker mine, Oujda (Morocco).
Langite (Лангит)	4	Zapachitsa dep., near Bov vil., Sofia reg. (Bulgaria). L'ubietova; Spania Dolina (Slovakia).
Connellite (Конелит)	2	Fontana Rossa, Corsica (France). Sold Hill mine, Tooele Co., Utah (USA).
Klebsbergite (Клебсберзит) 9.1.4.3. Chalcocalumite group	2	Pereta mine, Grosseto, Tuscany (Italy)
Spangolite (Спанголит)	4	Fontana Rossa, Corsica (France). Sonora (Mexico). Yerington, Mineral Co., Nevada; Bingham, Socorro Co., New Mexico (USA).
Aubertite (Обертит) 9.1.4.4. Kruhnkite group	1	La Compania mine, Sierra Gorda (Chile).
Devilline (Девиллин) 9.1.4.5. Anglesite-Linarite group	2	Bisbee, Arizona (USA). Spania Dolina (Slovakia).
Anglesite (Англезит)	8	Otechestvo mine, Iskrets vill., Sofia reg. (Bulgaria). Broken Hill (Australia). Shaba (Congo). Mibladen; Touissit mine, Oujda (Morocco).
Linarite (Линарит)	2	Hansonburg, Socorro Co., New Mexico (USA). Cotter Copper mine (Australia).
Schuetzite (Шуецит)	1	Oceanic mine, San Luis Obispo Co., California (USA).
Osarizawite (Осаризавит)	5	Spahievo mine, Haskovo reg. (Bulgaria).
Elyite (Елит) 9.1.4.6. Uranopilite group	1	Lauthenthal, Harz (Germany).
Uranopilite (Уранопилит)	1	Les Bois Noirs, Limouzat, Puit de Dome (France).
Zipete (Ципетит)	1	Grants, New Mexico (USA).
CLASS 10. CHROMATES		
Crocoite (Крокотит)	35	Berezovsk, Ural (Russia). Sankt Egidien, Callenberg, Saxony (Germany). West Comet, Adelaide, Red Lead mines - Dundas, Tasmania (Australia).
Phoenicochroite (Феникохроит)	1	West Comet mine, Dundas, Tasmania (Australia).

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Vauquelinite (Вокелитум)		West Comet mine, Dundas, Tasmania (Australia).
CLASS 11. CARBONATES		
11.1. Al-Mg-Fe(Na) assemblage		
11.1.1. Hydrocalcite group		
Stichtite (Стихтитум)	4	Siberia (Russia). Serpentine Hill, Renison Bell mine, Tasmania (Australia).
Reevesite (Ривеситум)	4	Lord Brassey mine, Heazlewood, Tasmania (Australia).
Coalingite (Коалинцитум)	1	San Benito Co., California (USA).
Dawsonite (Даусонитум)	5	Bolzano; Valle Benedita, Livorno, Tuscany (Italy). Francon quarry, Montreal Isl., Quebec (Canada).
Stenonite (Стенонитум)	1	Ilimaussaq (Greenland).
11.1.2. Magnesite group		
Magnesite (Магнезитум)	17	Gornoslav vill., Asenovgrad reg. (Bulgaria). Leogang, Hohe Tauern, Salzburg; Zillertal, Tyrol (Austria). Titov Veles, Skopje (Macedonia). Piemonte (Italy).
- <i>Breunnerite</i> (Бройнеритум)	2	Djebel vill., Kurdzhali reg. (Bulgaria). Greiner, Tyrol, Zillertal (Austria).
Gaspeite (Гаспейтум)	3	Kambalda (Australia).
Pokrovskite (Покровскитум)	1	Hunting Hill quarry, Rockvill (USA).
Otwayite (Отвейитум)	3	Lord Brassey mine, Heazlewood, Tasmania (Australia).
Dyppingite (Диппинцитум)	4	Lord Brassey mine, Heazlewood, Tasmania (Australia).
11.2. Na(K)-Ca(TR)-Ba assemblage		
11.2.1. Nahcolite-Thermonatrite group		
Natron (Наптон)(сога)	1	Egypt.
Natrite (Напритум)	1	Kamasurt Mt., Lovozero, Kola pen. (Russia).
11.2.2. Shortite group		
Shortite (Шортитум)	1	Vuonnemijok river, Khibiny, Kola pen. (Russia).
Gaylussite (Гейлюситум)	1	Amboselli (Kenya).
11.2.3. Calcite-Aragonite group		
Calcite (Кальцитум)	892	Strashimir, Borieva Reka, Gyudyurska, Gradishte, Fabrika, Sharenka, Petrovitsa, Erma reka, Murzyan, Mogilata, Oikovo, Konksi Dol, Kroushev Dol mines- Madan reg.; Goritsa vill., Popovo reg. Chelopech dep., Pirdop reg.; Druzhhba mine, Govedarnika mine, Luki reg.; Kenan dere mine, Trigrad gorge, Teshel, Stoikite, Mihalkovo, Yugovo, villages- Smolyan reg.; Krichim reg.; Sedmochislenitsi dep., Vratsa reg.; Byal Izvor vill., Ardino reg.; Avren vill., Krumovgrad reg.; Madzharovo reg.; Sushevo vill., Momchilgrad reg.; Enyovche mine, Gledka, Gruevo, Podkova villages- Kurdzhali reg.; Ruen mine, Osogovo Mt.; Palat vill., Blagoevgrad reg.; Rupite vill., Petrich reg.; Petlite summit; Bliznaka Lake, Rila Mt.; Orel'yak summit, Pirin Mt.; Kaliakra Cape, Dobrich reg.; Banevo vill., Kostin vill., Chemomoret's quarry; Sumeshko kladenche, Rosen, Meden Rid mines- Burgas reg.; Kremikovt'si dep., Lipata quarry, Vitosha Mt., Varnitsite quarry, Iskrets, Marchaevo, Klisura, Gara Lakatnik villages- Sofia reg.; Preslavt'si vill., Siistra reg.; Strandzha mine, M. Turnovo reg. (Bulgaria). Idrpa (Serbia). Idria (Slovenia). Dognecea, Banat; Cavnic; Herja; Brad (Romania). Istanbul reg.; Murat - Dag (Turkey).
- <i>Manganoalcite</i> (Манганокальцитум)	16	
- <i>Cobaltoalcite</i> (Кобальтокальцитум)	1	

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		<p>Laurium (Greece). Ilmenau, Mansfeld, Thuringia; Ilfeld, Andreasberg, Goslar, Harz; Halsbrücke, Freiberg; Hammerunterwiesental, Erzgebirge; Schlena, Schneeberg, Saxony (Germany). Olomucany, Blansko; Kozakov; Predborice, Francice, Příbram; Kladno; Habří, Slavkovice, Bukov, Moravia; Usti nad Labem; Kvetnice, Tishmov; Jachymov (Czech Republic). Machow mine, Tamobzeg; Czestochowy (Poland). Elbachalm, Amertal; Rotgulden, Lungau (Austria). Moscona mine, Asturias; Malaespera mine, Bilbao; Almaden (Spain). Fontainebleau, Seine-et-Marne; Alsace (France). Raddusa, Sicily; Monastir, Capurru quarry, Sassari prov., Sardinia; Montalto di Castro, Lazio; Osa, Rome (Italy). Binnital (Switzerland). Winterswyk (Netherlands). Arendal (Norway). (Iceland). Blagill mine, Cumbria; King George isl., South Shetland islands (England). Ukrainka vill., Crimea; L'vov reg. (Ukraine). Aldan, Yakutia; Kovdor; Kola pen.; Dal'negorskoye dep.; White sea reg.; Tazheran, Slyudyanka, Siberia (Russia). Dashkesan (Azerbaijan). Dzhezkazgan (Kazakhstan). Shor - Su (Uzbekistan). Khandivali quarry, Bombay; Poona (India). Bayan Obo (China). Fuka mine, Bitchu, Okayama pref. (Japan). Franklin, New Jersey; Cave in Rock, Illinois; Green River, Wyoming; Elmwood mine, Tennessee; Sweetwater mine, Missouri (USA). Mt. St-Hilaire, Francon quarry, Quebec; Codroy, Newfoundland (Canada). Mapimi, Durango; Chihuahua (Mexico). Huanini (Bolivia). Hammam, N'Bails (Algeria). Mavoyo (Angola). Belaora (Madagascar). Tsumeb (Namibia). Sidi Bou Atuan; Hamman Zriba mine (Tunisia). Tachgagalt (Morocco). Broken Hill; Prospect quarry, New South Wales; Tylden quarry, Victoria (Australia).</p>
Rhodochrosite (Pogoxpozum)	57	<p>Beatants, Oikovo, Mogilata, Gradishte mines - Madan reg.; Davidkovo, Smolyan reg.; Kremikovtsi dep., Sofia reg.; Orogovo Mt.; Enyovche mine, Kurdzhali reg.; Obrochishite vill., Dobrich reg. (Bulgaria). Hagendorf, Bavaria (Germany). Trepcá (Serbia). Sacaramb; Cavnic (Romania). Kerchenskoye, Crimea (Ukraine). Dzhida, Buryat, Siberia (Russia). Mt. St-Hilaire, Quebec (Canada). Santa Eulalia, Chihuahua (Mexico). Inakuraishi mine, Hokkaido (Japan).</p>
Siderite (Cugepum)	61	<p>Madzharovo; Breze vill.; Kremikovtsi dep., Sofia reg. (Bulgaria). Dobrovo vill., Kratovo reg. (Macedonia). Horhausen, Westerwald; Dreislar, Sauerland; Freiberg; Neudorf mine, Harz; Ems; Hagendorf, Bavaria (Germany). Nova Ves, Moravia; Příbram (Czech Republic). Rudnany; Roznava (Slovakia). (Hungary). Binnschlucht, Wallis (Switzerland). Ribes, Catalonia; Malaespera mine, Bilbao (Spain). Iser (France). Kola peninsula (Russia). Volodarsk-Volynskii (Ukraine). Ilimaussaq (Greenland). Gwynedd, Wales (Great Britain). Mt. St-Hilaire, Quebec; Rapid Creek, Yukon (Canada). Clackamas Co., Oregon (USA). South Comet mine, Dundas, Tasmania (Australia).</p>
- <i>Sphaerosiderite (Сферосидерит)</i> <i>Aragonite (Арагонит)</i>	4 78	<p>Kremikovtsi dep., Sofia reg. (Bulgaria). Erdobenyé, Szorencs (Hungary). Mihalkovo vill., Smolyan reg.; Rupite vill., Petrich reg.; Otchestvo mine, Iskrets vill., Sofia reg.; Gruovo vill., Kurdzhali reg.; Kresna defile, Blagoevgrad reg.; Brusevtsi vill., Haskovo reg. (Bulgaria). Karlovy Vary; Svrčovec I Klátov; Hřidelec; Bretove Hory (Czech Republic). Podrečany (Slovakia). Clausthal, Harz; Andreasberg (Germany). Schwaz, Tyrol; Eisenerz, Styria; Leogang, Salzburg (Austria). Molina de Aragón; Minglanilla, Cuenca (Spain). Bastennes, Landes; Puy de Dome (France). Montalto di</p>

1	2	3
- <i>Цайрицит</i> (<i>Zeiringit</i>) - <i>Тарновитзит</i> (<i>Tarновичит</i>) Strontianite (Стронцианит) Witherite (Витерит) Monohydrocalcite (Монохидрокалцит) 11.2.4. Dolomite-Barytocalcite group Dolomite (Доломит) - <i>Ferrodolomite</i> (<i>Ферродоломит</i>) - <i>Ferromangandolomite</i> (<i>Ферроманганодоломит</i>)	1 1 6 2 1 42 58 15	Castro, Lazio; Levane, Aresso; Sicily (Italy). Cumbria (England). (Turkey). Slyudyanka, Siberia (Russia). Sesron (Morocco). Mine de Ticali (Mexico). Beaver Creek, Iron Hill, Colorado; Burnt Cabin Creek, Oregon (USA). Ober-reyting, Stiermarken (Austria). Tsumeb (Namibia). Clausthal, Harz; Hamm (Germany). Leogang, Salzburg (Austria). Alston, Cumbria (England). Rosiclare, Hardin Co., Illinois (USA). Kutna Hora (Czech Republic). Orikovo, Mogilata mines- Madan reg.; Kremikovtzi dep., Sofia reg.; Djebel vill.; Gabrovo mine, Kurdzhali reg.; Sedmochislenski dep., Vratsa reg. (Bulgaria). Grund, Harz; Freudenstadt, Schwarzwald; Hammerunterwiesental; Annaberg, Erzgebirge (Germany). Hohe Tauern, Salzburg; Tyrol (Austria). Lengenbach quarries, Binntal (Switzerland). Jachymov (Czech Republic). Banska Stiavnica; Podrečany (Slovakia). Zhimik (Hungary). Eugui, Navarre (Spain). Egremont, Cumbria (England). Belorechensk reg. (Russia). Fujioka, Gumma pref. (Japan). Sainte Clotilde, Portage, Quebec (Canada). Lovell, Big Horn Co., Wyoming; Arkansas (USA). Rose of Denmark mine, Victoria (Australia). Strashimir, Petrovitsa, Orikovo, Mogilata mines- Madan reg., Govedamika mine, Luki reg.; Rosen mine, Burgas reg. (Bulgaria). Himmelfurst mine, Freiberg; Schneeberg, Saxony (Germany). Kladno (Czech Republic). Orogovo Mt. (Bulgaria). Kutna Hora; Chvalceice (Czech Republic). Arezzo, Tuscany (Italy). Mihalikovo vill., Smolyan reg. (Bulgaria). Svrcovec i Klatov; Koksnn, (Czech Republic). Kremikovtzi dep. Sofia reg. (Bulgaria). Magnet Cove, Ozark Mts., Arkansas (USA). Vlastejovice (Czech republic). Gakara (Burundi). Hopffeldboden, Obersulzbachtal (Austria). Mt. St-Hilaire, Quebec (Canada). Mt. St-Hilaire, Quebec (Canada). Francon quarry, Quebec (Canada). Alluav Mt., Lovozero, Kola pen. (Russia). Ebounja, near Kribi (Cameroon).
Ankerite (Анкерит)	30	
Kutnahorite (Кутнахорит)	6	
Huntite (Хънтит)	3	
Norsethite (Норсетит)	1	
Benstonite (Бенстонит)	1	
11.2.5. Bastnäsïte group		
Bastnäsïte (Бастнаезит)	3	
Synchysite (Синхизит)	2	
Cordylite (Кордулит)	1	
Weloganite (Велоганит)	2	
Shomlokite (Шомлокуит)	1	
Remondite (Ремондит)	1	
11.3. Zn-Cu-Pb(U) assemblage		
11.3.1. Smithsonite group		
Smithsonite (Смунсонит) - <i>Cobaltsmithsonite</i> (<i>Кобальтсмунсонит</i>)	11 7	Sedmochislenski dep., Vratsa reg. (Bulgaria). Dossena, Lombardy; Sardinia (Italy). Mondragon, Gipuzkoa (Spain). Moresnet (Belgium). Laurium (Greece). Kipushi, Shaba (Congo). Tsumeb (Namibia). Broken Hill; Olary (Australia). Musonoi mine, Kolwezi, Shaba (Congo).
Sphaerocobaltite (Сферокобаллит)	4	

1	2	3
Hydrozincite II (Хидроцинкит II)	1	Olkusz, Silesia (Poland).
Hellierite (Хеллерит)	4	Lord Brassey mine, Heazlewood, Tasmania (Australia).
Zaratite (Заратит)	5	Kladno (Czech Republic). Lord Brassey mine, Heazlewood; Dundas, Tasmania (Australia).
Minrecordite (Минрекордит)	1	Tsumeb (Namibia).
11.3.2. Malachite group		
Malachite (Малахит)	110	Zapachitsa dep., near Bov vill.; Kremikovtsi dep.; Vitosha Mt., Sofia reg.; Vlaykov vrsh mine, Panagyurishte reg.; Elatsite mine, Etropole reg.; Polski Gradets vill., Sliven reg.; Ardino reg.; Plakalnitza mine, Vratsa reg.; Trud, Vurli bryag mines- Burgas reg.; Propada mine, M. Turnovo reg. (Bulgaria). Siberia (Russia). Wittichen, Schwarzwald; Hagendorf, Bavaria; Rheinbreitbach, Westerwald; Lauterberg (Germany). Nova Ves, Moravia; Moldava; Vranice (Czech Republic). Leogang, Salzburg (Austria). Miedzianka, Silesia (Poland). Laurium (Greece). Cap Garonne, Var (France). Dashkesan (Azerbaijan). Gelb Mogreni, Akjouit reg. (Mauritania). Shaba (Congo). Bwana M'Kubwa (Zambia). Tsumeb; Otavi (Namibia). Mavoio; Manhinga (Angola). Bisbee, Arizona; Nevada (USA). (Chile). Brown's Prospect, Rum Jungle, Northern Territory; Broken Hill (Australia). Zapachitsa dep., near Bov vill.; Kremikovtsi dep., Sofia reg.; Kara-dere valley, Vama reg.; Granichak vill., Belogradchik reg.; Trud, Vurli bryag mines- Burgas reg.; Vlaykov vrsh, Isar Asen mines- Panagyurishte reg.; Plakalnitza mine, Vratsa reg. (Bulgaria). Leogang, Salzburg, Tyrol (Austria). Cap Garonne, Var (France). Penamellera (Spain). Slyudyanka, Siberia (Russia). Miedzianka, Silesia (Poland). Laurium (Greece). Guangdong (China). Bambolla mine, Sonora (Mexico). Anti-Atlas Mt.; Ougla; Mibladen (Morocco) Tsumeb; Otavi (Namibia). Shaba (Congo). Bisbee, Arizona; Nevada (USA). Broken Hill; Queensland; Burra Burra mine, Adelaide; Adelaide mine, Dundas, Tasmania (Australia). Kremikovtsi dep., Sofia reg. (Bulgaria). Hagendorf, Bavaria (Germany). Mapimi, Durango (Mexico). Silver Bill mine, Gleeson, Arizona (USA). Chepelare, Smolyan reg. (Bulgaria). (Slovakia). Mapimi, Durango (Mexico). Gila Co., Arizona (USA).
Azurite (Азурит)	64	
Rosasite (Розазит)	6	
Aurichalcite (Аурихалцит)	9	
Kolwezite (Колвезит)	3	
Glaucoephaerite (Глаукофеерит)	1	
11.3.3. Cerussite group		
Cerussite (Церусит)	50	
Phosgenite (Фосгенит)	2	
Hydrocerussite (Хидроцерусит)	1	
Leadhillite (Ледхиллит)	1	
Dundasite (Дъндасит)	5	
11.3.4. Rutherfordine group		
		Fabrika, Borieva Reka, Kroushev Dol mines-Madan reg.; Chepelare, Smolyan reg. (Bulgaria). Olkusz, Silesia (Poland). Mibladen (Morocco). Tsumeb (Namibia). Brown's Prospect, Rum Jungle, Northern Territory; Broken Hill; West Comet mine; Kapi mine, Dundas, Tasmania (Australia).
		Monte Poni, Sardinia (Italy). Laurium (Greece).
		Merehead quarry, Cranmore, Mendip Hills (England).
		Calk Mt., Churchill Co., Nevada (USA).
		Tynagh mine, Galway Co. (Ireland). West Comet mine, Adelaide mine, Dundas, Tasmania (Australia).

1	2	3
Liebigite (Либигитум)	1	Schwarzwaelder mine, Jefferson Co., Montana (USA).
11.3.5. Bismutite group		
Bismutite (Бисмутитум)	2	Murropino, Zambesia (Mozambique). Moldava (Czech Republic).
Kettnerite (Кетнеритум)	1	Krupka (Czech Republic).
CLASS 12. NITRATES AND IODATES		
12.1 Nitrates		
Niter (Калиева селитра)	1	Momchilgrad reg. (Bulgaria).
12.2. Iodates		
Bellingerite (Беллингеритум)	1	Balangero, Lanzo, Piemonte (Italy).
CLASS 13. ORGANIC MINERALS		
13.1. Whewellite-Weddellite group		
Whewellite (Уевелитум)	2	Kladno (Czech Republic).
13.2 Hartite kladnoite group		
Mellite (Меллитум)	1	Csordakut, Tatabanya (Hungary).

Table 2
General conclusions: number of species, varieties, species from type locality, species from Bulgaria

MINERAL CLASSES	Species	Varieties	Groups of not precisely determined mineral species.	Mineral species from type locality	Mineral species from Bulgaria
	2	3	4	5	6
CLASS 1. NATIVE ELEMENTS					
1. Metals	9	1		1	3
2. Semi - metals and nonmetals	8	1		1	3
3. Carbides, Nitrides, Phosphides and Silicides	1				
CLASS 2. SULPHIDES AND SULPHOSALTS					
1. Metallic	68	1		17	19
2. Sulphosalts	34	1		12	4
3. Semi – Metallic	7			1	4
4. Oxy sulphides	2			1	
CLASS 3. OXIDES AND HYDROXIDES					
1. Metallic oxides and hydroxides	75	6		15	24
2. Semi - metallic and nonmetallic oxides	9				2
CLASS 4. HALOGENIDES					
1. Fluorides	16			2	1
2. Chlorides, Bromides and Iodides	14			6	1
CLASS 5. SILICATES ²⁺					
1. Silicates with (Si, Al): M ²⁺ =4:1 to 3:1					
1.1 Free SiO ₂ and free of aluminium silicates	6	13			4
1.2 Aluminosilicates	26	7	1	6	7
1.3 Zeolites	36	3		9	12
2. Silicates with (Si, Al): M ²⁺ =3:1 to 1:1					
2.1 Be-Al-Mg(Fe) assemblages	84	31	3	19	32
2.2 Zr-Ti-Nb assemblages	25			11	
2.3 Ca-Mn-Ba Assemblages	43		1	13	7
2.4 Zn-Cu-Pb(U) assemblages	10				1
3. Silicates with Si: M ²⁺ <1:1					
3.1 Be-Al-Mg assemblages	48	9	2	9	19

	1	2	3	4	5	6
3.2 Zr-Ti-Nb assemblages		23			6	2
3.3 Ca(TR)-Mn-Ba assemblages		15			2	1
3.4 Zn-Cu-Pb(U) assemblages		8			1	1
4. Silicates with boron		19	3	1	3	6
5. Another silicates with additional anions						
5.1. Silicates with semimetallic (AsO ₃ , AsO ₄ et al.) groups		4				
5.2. Silicates with PO ₄ - anions		5			1	
5.3. Silicates with SO ₄ - anions		3				
5.4. Silicates with CO ₄ - anions		1			1	
CLASS 6. BORATES						
1. Be-Al-Mg assemblage		9			4	1
2. Ca-Na-Mg assemblage		17			7	
CLASS 7. PHOSPHATES, ARSENATES AND VANADATES						
1. Be-(Al, Fe)-Mg assemblage		35			9	3
2. Li-Fe-Mn assemblage		42	1		6	1
3. Na-Ca-Ba assemblage		24	3		8	2
4. Zn-Cu-Pb(U) assemblage		57	3		13	6
5. Phosphates, arsenates and vanadates with additional anions		13			7	3
CLASS 8. WOLFRAMATES AND MOLYBDATES		10			1	2
CLASS 9. SULPHATES, SELENITES AND TELLURITES						
1. Sulphates						
1.1 Al-Mg-Na(K) assemblage		13				2
1.2 Fe-Mn-(Na, K) assemblage		6			2	2
1.3 Na(K)-Ca-Ba assemblage		15	1		7	4
1.4 Zn-Cu-Pb(U) assemblage		18			4	6
CLASS 10. CHROMATES		3				
CLASS 11. CARBONATES						
1. Al-Mg-Fe(Na) assemblage		10	1		1	1
2. Na(K)-Ca-(TR)-Ba assemblage		23	7		7	10
3. Zn-Cu-Pb(U) assemblage		20	1		3	6
CLASS 12. NITRATES AND IODATES						
1. Nitrates		1				1
2. Iodates		1				
CLASS 13. ORGANIC MINERALS		2				
TOTAL		913	94	13	216	203

General conclusions

In table 2 are present the general results of catalogue of mineral species in the National Museum of Natural History: 913 species, 94 varieties and 13 groups of not precisely determined mineral species from 13 mineral classes collected from 94 countries, including 216 species from type locality and 203 species from Bulgaria.

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**Каталог на минералните видове в Националния природонаучен музей, София (част 3):
Борати; Фосфати, арсенати и ванадати; Волфрамати и молибдати; Сулфати,
селенати и телурати; Хромати; Карбонати; Нитрати и йодати; Органични минерали**

Чавдар КАРОВ, Илия ДИМИТРОВ

(Р е з ю м е)

Каталогът включва образците, инвентирани в основния минераложки фонд на Националния природонаучен музей в София до 2004 г. Третата част представя последните осем минераложки класа - Борати; Фосфати, арсенати и ванадати; Волфрамати и молибдати; Сулфати, Селенати и телурати; Хромати; Карбонати; Нитрати и йодати; Органични минерали. От тях в каталога са представени 319 минерални вида и 17 разновидности.