

## Uncommon/Rare Minerals List - Updated August 13, 2022

Uncommon to rare (depending upon your definitions) specimens, mostly old Minerals Unlimited inventory. Where available corresponding Minerals Unlimited labels will be provided.

The majority of these specimens are not photogenic so they are described here without photos.

### Size definitions

- Micro - Smaller than a thumbnail, typically fitting in a standard micromount box (or maybe a bit larger).
- Thumbnail - Fits in a standard one-inch cube thumbnail box.
- Miniature - Larger than a thumbnail but fits in a 5.5 x 7.5 cm box
- Cabinet - Larger than a miniature but fits inside an 8.1 x 9.2 cm box.
- Large cabinet - Larger than a cabinet specimen.
- Small fragbag - Bits and pieces, dust to thumbnails, partly to completely filling a 3.8 x 5.0 cm poly bag.
- Large fragbag - Bits and pieces, dust to thumbnails, partly to completely filling a 7.7 x 7.7 cm poly bag.

In some cases, more than one sample of a given species is available, so if you want more than one specimen please ask. When multiple specimens are available, I will select the best available example (in my opinion).

Radioactive specimens cannot be shipped outside the United States.

To order send an email to [steve@dragon-minerals.com](mailto:steve@dragon-minerals.com). To avoid confusion please order by species name, specimen size, and price.

**Algerine-Augite variety Blanfordite on Braunite** - Tirodi, Balaghat District, Jabalpur Division, Madhya Pradesh, India. Sparse to moderately abundant, purple blanfordite -  $(\text{Na,Ca})(\text{Fe}^{3+},\text{Fe}^{2+},\text{Mn,Mg,Al})\text{Si}_2\text{O}_6$  in/on abundant, sparkly, massive to microcrystalline braunite -  $\text{Mn}^{2+}\text{Mn}^{3+}_6(\text{SiO}_4)_8$ . Miniature - \$8.

**Aenigmatite** - Vøra, Vesterøya, Sandefjord, Vestfold og Telemark, Norway.  $\text{Na}_4[\text{Fe}^{2+}_{10}\text{Ti}_2]\text{O}_4[\text{Si}_{12}\text{O}_{36}]$ . Massive, black material on matrix. Miniature - \$8.

**Aeschnite-(Y)** - Mørefjær Feldspar Quarry, Stokken, Arendal, Agder, Norway.  $(\text{Y,Ln,Ca,Th})(\text{Ti,Nb})_2(\text{O,OH})_6$ . Glassy black material abundant in matrix. Intensely radioactive. Miniature - \$8. Vial with ~ 10 grams of chunks and powder - \$8.

**Afghanite** - Case Collina, Pitigliano, Grosseto Province, Tuscany, Italy.  $(\text{Na,K})_{22}\text{Ca}_{10}(\text{Si}_{24}\text{Al}_{24}\text{O}_{96})(\text{SO}_4)_6\text{Cl}_6$ . Colorless to pale blue microcrystals on matrix. Other unidentified species most likely also present. Miniature - \$8. Small fragbag - \$8.

**Agrellite** - Kipawa alkaline complex, Les Lacs-du-Témiscamingue, Témiscamingue RCM, Abitibi-Témiscamingue, Québec, Canada (type locality).  $\text{NaCa}_2\text{Si}_4\text{O}_{10}\text{F}$ . Crystalline masses of translucent to opaque agrellite. Brilliant violet fluorescence under shortwave UV. Miniature - \$8. Large fragbag - \$8.

**Allanite** - near 29 Palms, San Bernardino County, California.  $\{\text{A}^{2+}\text{REE}^{3+}\}\{\text{M}1^{3+}\text{M}2^{3+}\text{M}3^{2+}\}(\text{Si}_2\text{O}_7)(\text{SiO}_4)\text{O}(\text{OH})$ . Allanite intimately intermingled with rock. Ugly but interesting locality. Mildly radioactive. Miniature - \$8.

**Allanite** - Pacoima Canyon, Los Angeles County, California.  $\{\text{A}^{2+}\text{REE}^{3+}\}\{\text{M}1^{3+}\text{M}2^{3+}\text{M}3^{2+}\}(\text{Si}_2\text{O}_7)(\text{SiO}_4)\text{O}(\text{OH})$ . Dead black crystal fragments, most quite large and with at least one flat face. in matrix. Mildly radioactive. Miniature - \$8.

**Alleghanyite, etc.** - Bald Knob deposit, Bald Knob, Sparta, Alleghany County, North Carolina (type locality).  $\text{Mn}^{2+}_5(\text{SiO}_4)_2(\text{OH})_2$ . Brown, glassy, massive alleghanyite abundant in matrix. Some labels indicate other species present may include jacobsite, psilomelane, and kutnohorite in a carbonatite matrix. Miniature - \$8.

**Anapaite** - Santa Barbara Mine, Santa Barbara Lignite District, Upper Valdarno, Tuscany, Italy.  $\text{Ca}_2\text{Fe}^{2+}(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}$ . Greenish crystalline crust, abundant in vugs of matrix. Miniature - \$8.

**Antimony** - near Kernville, Kern County, California. Sb. Metallic antimony, very abundant, in a matrix (probably) rich in stibiconite. Large frag bag - \$12.

**Bastnäsité-(Ce)** - Mountain Pass Mine, Mountain Pass Summit on Interstate 15, San Bernardino County, California.  $\text{Ce}(\text{CO}_3)\text{F}$ . Massive bastnäsité-(Ce), abundant in matrix. Very typical for this huge mining complex visible on the way to Las Vegas. Miniature - \$8. Small fragbag - \$8.

**Bayldonite** - Cap Garonne Mine, Le Pradet, Toulon, Var, Provence-Alpes-Côte d'Azur, France.  $\text{PbCu}_3(\text{AsO}_4)_2(\text{OH})_2$ . Sparse green microcrystalline crust on matrix. Miniature - \$8. Cabinet - \$10.

**Beusite and Lithiophilite** - Los Aleros pegmatite, El Trapiche, Coronel Pringles Department, San Luis Province, Argentina (type locality for beusite). Intergrown mixture of pink beusite -  $\text{Mn}^{2+}\text{Mn}^{2+}_2(\text{PO}_4)_2$  and dark lithiophilite -  $\text{LiMn}^{2+}\text{PO}_4$ . Small fragbag - \$8.

**Beyerite** - Königswart Mine, Schönegründ, Baiersbronn, Freudenstadt, Karlsruhe Region, Baden-Württemberg, Germany.  $\text{Ca}(\text{BiO})_2(\text{CO}_3)_2$ . Sparse to moderately abundant green crusts on a quartz matrix. Thumbnail - \$8.

**Biotite variety Manganophyllite** - Långban Mine, Långban Ore District, Filipstad, Värmland County, Sweden.  $\text{K}(\text{Fe},\text{Mg},\text{Mn})_3\text{AlSi}_3\text{O}_{10}(\text{OH})_2$ . Rich sample of this manganese-bearing biotite variety. Some specimens have matrix which exhibits brilliant orange fluorescence under shortwave UV. Thumbnail - \$8. Miniature - \$8. Cabinet - \$12. Large cabinet - \$20.

**Braunite** - Tirodi, Balaghat District, Jabalpur Division, Madhya Pradesh, India.  $\text{Mn}^{2+}\text{Mn}^{3+}_6(\text{SiO}_4)\text{O}_8$ . Tiny but sparkling braunite, abundant in/on matrix. Miniature - \$14.

**Briartite with Renierite** - Kipushi, Haut-Katanga, DR Congo. Brown mass composed of briartite -  $\text{Cu}_2(\text{Fe},\text{Zn})\text{GeS}_4$ , probably intergrown with renierite -  $(\text{Cu}^{1+},\text{Zn})_{11}\text{Fe}_4(\text{Ge}^{4+},\text{As}^{5+})_2\text{S}_{16}$ . Labels indicate tennantite, bornite, and others may also be present. Small fragbag - \$8.

**Carlosturanite** - Casteldelfino, Cuneo Province, Piedmont, Italy.  $(\text{Mg},\text{Fe},\text{Ti})_{21}(\text{Si},\text{Al})_{12}\text{O}_{28}(\text{OH})_{34} \cdot \text{H}_2\text{O}$ . Brown fibers, somewhat resembling woolly mammoth hair. Small fragbag - \$8.

**Carnotite** - Monument No. 2 Mine, Monument No. 2 channel, Yazzie Mesa, Cane Valley Mining District, Apache County, Arizona.  $\text{K}_2(\text{UO}_2)_2(\text{VO}_4)_2 \cdot 3\text{H}_2\text{O}$ . Yellow crust, sparse on matrix. Intensely radioactive. Thumbnail - \$8.

**Carpathite** - Picacho Mine, Picacho Peak, New Idria Mining District, San Benito County, California. Pale yellow carpathite -  $\text{C}_{24}\text{H}_{12}$  (an organic mineral, best found by its bright shortwave fluorescence on a quartz matrix. Most specimens also have sparse cinnabar. Thumbnail - \$8. Cabinet - \$8.

**Carpholite** - Sengelbach Valley, Biesenrode, Mansfeld, Wippra Metamorphic Zone, Saxony-Anhalt, Germany.  $\text{Mn}^{2+}\text{Al}_2(\text{Si}_2\text{O}_6)(\text{OH})_4$ . Somewhat fibrous material in a quartz matrix. Large fragbag - \$8.

**Caryopilite** - Harstigen Mine, Pajsberg, Persberg ore district, Filipstad, Värmland County, Sweden (type locality).  $\text{Mn}^{2+}_3\text{Si}_2\text{O}_5(\text{OH})_4$ . Brown microcrystalline crust, moderately abundant on matrix, with calcite. Some labels indicate the matrix is diopside variety schefferite and hematite. Miniature - \$8. Cabinet - \$10.

**Caryopilite on Rhodonite** - Valgraveglia Mine, Reppia, Ne, Genoa, Liguria, Italy. Sparse yellow bladed caryopilite -  $\text{Mn}^{2+}_3\text{Si}_2\text{O}_5(\text{OH})_4$  on a matrix of crystalline, pink rhodonite -  $\text{CaMn}_3\text{Mn}[\text{Si}_5\text{O}_{15}]$ . Thumbnail - \$8. Miniature - \$12.

**Cheralite and Euxenite-(Y)** - Uranium King Mine, Encampment, Encampment Mining District, Carbon County, Wyoming. Intermixed (?) cheralite -  $\text{CaTh}(\text{PO}_4)_2$  and euxenite-(Y) -  $(\text{Y},\text{Ca},\text{Ce},\text{U},\text{Th})(\text{Nb},\text{Ta},\text{Ti})_2\text{O}_6$ . Weakly radioactive. Small fragbag - \$8. Gel capsule - \$8.

**Chiavennite** - A/S Granit Quarry, Tuften, Tvedalen, Larvik, Vestfold og Telemark, Norway.  $\text{CaMnBe}_2\text{Si}_5\text{O}_{13}(\text{OH})_2 \cdot 2\text{H}_2\text{O}$ . Beige, microcrystalline crust, sparse to moderately sparse, some samples on platy calcite. Thumbnail - \$8. Miniature - \$8. Small fragbag - \$8.

**Chondrodite** - Crestmore quarries, Crestmore, Riverside County, California.  $\text{Mg}_5(\text{SiO}_4)_2\text{F}_2$ . Small brown blebs in marble. A closed and soon to be very extinct locality. Large fragbag - \$8.

**Churchite-(Y)** - near Sausalito, Marin County, California.  $\text{Y}(\text{PO}_4) \cdot 2\text{H}_2\text{O}$ . Sparse, white acicular crystal groups in matrix. Visually identified as churchite-(Y), but not analyzed. Labeled as florencite, but this is most probably incorrect. Miniature - \$8. Large fragbag - \$8.

**Coesite** - Meteor Crater, Meteor Crater area, Coconino County, Arizona (type locality).  $\text{SiO}_2$ . Seventeen gel capsules partially filled with white powder to small chunks. Large fragbag - \$8

**Corvusite** - Yellow Cat Mesa, Thompsons Mining District, Grand County, Utah.  $(\text{Na},\text{K},\text{Ca},\text{Mg})_2(\text{V}^{5+},\text{V}^{4+},\text{Fe}^{2+})_8\text{O}_{20} \cdot 6-10\text{H}_2\text{O}$ . In a black sandstone matrix. Mildly radioactive, probably due to traces of carnotite -  $\text{K}_2(\text{UO}_2)_2(\text{VO}_4)_2 \cdot 3\text{H}_2\text{O}$  and/or tyuyamunite -  $\text{Ca}(\text{UO}_2)_2(\text{VO}_4)_2 \cdot 5-8\text{H}_2\text{O}$ . Smaller miniature - \$8. Larger miniature - \$10 and \$14. Cabinet - \$14. Large fragbag - \$10.

**Cylindrite** - Santa Cruz Mine, Poopó, Poopó Province, Oruro, Bolivia (type locality).  $\text{Pb}_3\text{Sn}_4\text{FeSb}_2\text{S}_{14}$ . Short to long rods of cylindrite in a black, mixed sulfides/sulfosalts matrix. Miniature - \$12.

**Cyrilovite** - Iron Baron Mine, Iron Baron, Middleback Range, Eyre Peninsula, South Australia, Australia.  $\text{NaFe}^{3+}_3(\text{PO}_4)_2(\text{OH})_4 \cdot 2\text{H}_2\text{O}$ . Sparse, yellow microcrystalline crust on matrix. Small fragbag - \$8. Cabinet - \$10.

**Delafossite and Cuprite** - Bisbee, Cochise County, Arizona. Crystalline delafossite -  $\text{CuFeO}_2$  and crystalline cuprite -  $\text{Cu}_2\text{O}$  together but distinct, in a matrix vug. Thumbnail - \$8.

**Diadochite** - Richelle, Visé, Liège, Wallonia, Belgium.  $\text{Fe}^{3+}_2(\text{PO}_4)(\text{SO}_4)(\text{OH}) \cdot 6\text{H}_2\text{O}$ . Dirty white, earthy material with some grey-black matrix. Miniature - \$8.

**Dolomite variety Teruelite** - Nabo Ravine, Teruel, Teruel, Aragon, Spain.  $\text{CaMg}(\text{CO}_3)_2$ . Sharp and lustrous, brown to black teruelite crystals to 1 cm and more in a gypsum matrix. Miniature - \$14. Cabinet - \$16.

**Dundasite** - Adelaide Mine, Dundas mineral field, Zeehan District, West Coast municipality, Tasmania, Australia (type locality).  $\text{PbAl}_2(\text{CO}_3)_2(\text{OH})_4 \cdot \text{H}_2\text{O}$ . White dundasite needles and tufts, moderately abundant on matrix. Cabinet - \$10.

**Eudidymite** - Tvedalen, Larvik, Vestfold og Telemark, Norway.  $\text{Na}_2\text{Be}_2\text{Si}_6\text{O}_{15} \cdot \text{H}_2\text{O}$ . Thin to micaceous, pearly crystals on nepheline matrix. Miniature - \$8. Thumbnail - \$8. Micro - \$8.

**Feitknechtite and Braunite** - Noda-Tamagawa Mine, Noda, Kunohe-gun, Iwate Prefecture, Japan. Intermingled, microcrystalline to massive feitknechtite -  $\text{Mn}^{3+}\text{O}(\text{OH})$  and braunite -  $\text{Mn}^{2+}\text{Mn}^{3+}_6(\text{SiO}_4)\text{O}_8$ . Miniature - \$8.

**Fergusonite-(Y)** - Høgetveit Feldspar Quarries, Evje og Hornnes, Agder, Norway.  $\text{YNbO}_4$ . Black, vitreous crystal fragments on matrix. Mildly radioactive. Small fragbag - \$8.

**Gedrite** - Risør, Agder, Norway.  $\square\{\text{Mg}_2\}\{\text{Mg}_3\text{Al}_2\}(\text{Al}_2\text{Si}_6\text{O}_{22})(\text{OH})_2$ . The specimen consists mostly of green gedrite crystals, with some admixed biotite. Miniature - \$8.

**Gerasimovskite** - Karnasurt Mountain, Lovozersky District, Murmansk Oblast, Russia.  $(\text{Mn},\text{Ca})(\text{Nb},\text{Ti})_5\text{O}_{12} \cdot 9\text{H}_2\text{O}$ . Brown to black crust on matrix. Thumbnail - \$8. Micro - \$8.

**Gersdorffite and Molybdenite** - Pacific Cement and Aggregate Company, Santa Cruz, Santa Cruz County, California. Microcrystalline gersdorffite -  $\text{NiAsS}$  and sparse molybdenite -  $\text{MoS}_2$  in matrix. Large fragbag - \$8.

**Giuseppettite and Liottite** - Sacrofano, Metropolitan City of Rome Capital, Lazio, Italy. Micro crystals of giuseppettite -  $(\text{Na,K,Ca})_{7-8}(\text{Al}_6\text{Si}_6\text{O}_{24})(\text{SO}_4,\text{Cl})_{1-2}$  and liottite -  $(\text{Na,K})_{16}\text{Ca}_8(\text{Al}_6\text{Si}_6\text{O}_{24})_3(\text{SO}_4)_5\text{Cl}_4$  in matrix, along with other unidentified species. Miniature - \$8.

**Godovikovite** - Kladno Mine, Libušín, Kladno District, Central Bohemian Region, Czech Republic.  $(\text{NH}_4)\text{Al}(\text{SO}_4)_2$ . Moderately abundant, dirty white crust on matrix. Some with sulfur. Thumbnail - \$8.

**Gudmundite and Kermesite** - Pezinok District, Bratislava Region, Slovakia. Steely-grey gudmundite -  $\text{FeSbS}$  and kermesite -  $\text{Sb}_2\text{S}_2\text{O}$  intergrown in/on matrix. Miniature - \$8.

**Häggite** - Runge Mine, Edgemont Uranium Mining District, Fall River County, South Dakota.  $\text{V}^{3+}\text{V}^{4+}\text{O}_2(\text{OH})_3$ . Black powdery material, moderately radioactive, in eleven gel capsules. Small fragbag - \$8.

**Hannebachite** - Hannebacher Ley, Hannebach, Spessart, Brohltal, Ahrweiler District, Rhineland-Palatinate, Germany (type locality). Tiny, white to colorless blade clusters, sparse, on matrix. Thumbnail - \$8. Miniature - \$8.

**Hellandite-(Ce)** - Tre Croci, Vetralla, Viterbo Province, Lazio, Italy.  $(\text{Ca,REE})_4\text{Ce}_2\text{Al}_2(\text{B}_4\text{Si}_4\text{O}_{22})(\text{OH})_2$ . Micro crystals, scarce on matrix. Other unidentified species most likely also present. Miniature - \$8.

**Hureaulite** - Bull Moose Mine, Custer, Custer Mining District, Custer County, South Dakota.  $\text{Mn}^{2+}_5(\text{PO}_3\text{OH})_2(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}$ . Sparse red crusts on a black matrix (lithiophilite?). Miniature - \$8. Small frag bag - \$8.

**Inyoite** - New pit, Boron Open Pit, Boron, Kramer Borate District, Kern County, California.  $\text{Ca}(\text{H}_4\text{B}_3\text{O}_7)(\text{OH}) \cdot 4\text{H}_2\text{O}$ . A colorless, translucent to opaque, terminated inyoite crystal or crystal cluster, some with matrix. Thumbnail - \$8.

**Iranite** - Chah Khouni Mine, Anarak District, Nain County, Isfahan Province, Iran.  $\text{Pb}_{10}\text{Cu}(\text{CrO}_4)_6(\text{SiO}_4)_2(\text{OH})_2$ . Brown crystals on matrix. Miniature - \$8. Miniature with goethite replacing pyrite - \$10. Small fragbag - \$8. Large modest fragbag - \$8. Large stuffed fragbag - \$20.

**Jamborite** - Ca' dei Ladri, Gaggio Montano, Metropolitan City of Bologna, Emilia-Romagna, Italy (co-type locality).  $\text{Ni}^{2+}_{1-x}\text{Co}^{3+}_x(\text{OH})_{2-x}(\text{SO}_4)_x \cdot n\text{H}_2\text{O}$ . Sparse s[rays on a platy (calcite?) matrix. Minerals Unlimited label indicates this is a replacement of millerite. Thumbnail - \$8. Miniature - \$8.

**Jinshajiangite** - Norra Kärr, Gränna, Jönköping, Jönköping County, Sweden.  $\text{BaNaFe}^{2+}_4\text{Ti}_2(\text{Si}_2\text{O}_7)_2\text{O}_2(\text{OH})_2\text{F}$ . Incomplete, black prismatic crystals abundant in a pegmatite matrix. Micro - \$8. Thumbnail - \$8. Miniature - \$8.

**Kaersutite** - Linosa, Pelagie Islands, Agrigento Province, Sicily, Italy.  $\text{NaCa}_2(\text{Mg}_3\text{AlTi}^{4+})(\text{Si}_6\text{Al}_2)\text{O}_{22}\text{O}_2$ . Masses and small crystals. Small fragbag - \$10.

**Kalinite** - Silver Peak, Silver Peak Mining District, Esmeralda County, Nevada.  $\text{KAl}(\text{SO}_4)_2 \cdot 11\text{H}_2\text{O}$ . White, translucent to opaque, mostly massive kalinite, most samples without matrix. Natural potassium alum. Water soluble. Miniature - \$14. Cabinet - \$16.

**Kalsilite, etc.** - Vispi Quarry, San Venanzo, Terni Province, Umbria, Italy.  $\text{KAlSiO}_4$ . Small acicular to prismatic crystals, moderately abundant, in vugs. Indicated with red arrows on most samples. Other unidentified minerals also present. Miniature - \$8.

**Kermesite, etc.** - Arechuybo, Chihuahua, Mexico.  $\text{Sb}_2\text{S}_2\text{O}$ . Minerals Unlimited labels says this is kermesite replacing stibnite, with antimony and valentinite. Thumbnail (very bright and sparkly) - \$8. Large fragbag - \$10.

**Kermesite, etc.** - Saints-Martyrs-Canadiens, Arthabaska RCM, Centre-du-Québec, Québec, Canada.  $\text{Sb}_2\text{S}_2\text{O}$ . Bronzy-brown crystals in a matrix of other crystalline to massive sulfides and sulfosalts. Minerals Unlimited label on some specimens indicate antimony and stibnite also present. Miniature - \$8. Thumbnail - \$8.

**Kingite** - near Robertstown, North Mount Lofty Ranges, Mount Lofty Ranges, South Australia, Australia.  $\text{Al}_3(\text{PO}_4)_2\text{F}_2(\text{OH})\cdot 7\text{H}_2\text{O}$ . Earthy, off-white masses, most with some matrix. Miniature - \$8. Cabinet - \$10. Small fragbag - \$8.

**Kinoite** - Christmas Mine, Christmas, Banner Mining District, Gila County, Arizona.  $\text{Ca}_2\text{Cu}_2(\text{H}_2\text{O})_2[\text{Si}_3\text{O}_{10}]$ . Patches of blue kinoite microcrystal clusters, sparse to moderately abundant on matrix. Most specimens also include colorless, microcrystalline apophyllite. Miniature - \$8.

**Köttigite/Parasymplesite** - Ojuela Mine, Mapimí, Mapimí Municipality, Durango, Mexico. Köttigite -  $\text{Zn}_3(\text{AsO}_4)_2\cdot 8\text{H}_2\text{O}$  and/or its iron analog parasymplesite -  $\text{Fe}^{2+}_3(\text{AsO}_4)_2\cdot 8\text{H}_2\text{O}$  in fine crystal clusters on limonite matrix. These two species are visually indistinguishable, and most probably occur as zones within individual crystals. Gypsum may also be present on some samples. Miniature - \$8.

**Lamprophyllite** - Lovozero Massif, Kola Peninsula, Russia.  $(\text{Na},\text{Mn}^{2+})_3(\text{Sr},\text{Na})_2(\text{Ti},\text{Fe}^{3+})(\text{Si}_2\text{O}_7)_2\text{O}_2(\text{OH},\text{O},\text{F})_2$ . Abundant bronzy-brown micaceous crystals in matrix. Not a recent specimen; the Minerals Unlimited label gives the locality as being in the U.S.S.R. Miniature - \$14. Large fragbag - \$8.

**Latiumite** - Cava di Campagnano, Campagnano di Roma, Metropolitan City of Rome Capital, Lazio, Italy.  $(\text{Ca},\text{K})_4(\text{Si},\text{Al})_5\text{O}_{11}(\text{SO}_4,\text{CO}_3)$ . Abundant prismatic crystals on rock matrix. Miniature - \$8. Cabinet - \$10.

**Latiumite** - Sacrofano, Metropolitan City of Rome Capital, Lazio, Italy.  $(\text{Ca},\text{K})_4(\text{Si},\text{Al})_5\text{O}_{11}(\text{SO}_4,\text{CO}_3)$ . Abundant prismatic crystals on rock matrix. Miniature - \$8.

**Lazulite** - Hallsjöberget, Värmland County, Sweden.  $\text{MgAl}_2(\text{PO}_4)_2(\text{OH})_2$ . Blue blebs scattered in matrix. Interesting locality. Large fragbag (one thumbnail and one miniature) - \$8.

**Liottite** - Case Collina, Pitigliano, Grosseto Province, Tuscany, Italy (type locality).  $(\text{Na},\text{K})_{16}\text{Ca}_8(\text{Al}_6\text{Si}_6\text{O}_{24})_3(\text{SO}_4)_5\text{Cl}_4$ . Liottite microcrystals, sparse to moderately sparse, in vugs on a matrix rich with crystalline vesuvianite, grossular, and (probably) other unidentified minerals. Miniature - \$8. Cabinet - \$10.

**Lotharmeyerite and Cuprian adamite** - Ojuela Mine, Mapimí, Mapimí Municipality, Durango, Mexico. Red-brown crusts of microcrystalline lotharmeyerite -  $\text{CaZn}_2(\text{AsO}_4)_2\cdot 2\text{H}_2\text{O}$  with green cuprian adamite -  $(\text{Zn},\text{Cu})_2\text{AsO}_4\text{OH}$  on limonite matrix. Accompanying by crystalline quartz, which is uncommon (or just frequently overlooked) on specimens from this locality. The lotharmeyerite is unverified but its association with adamite makes sense. Thumbnail - \$8.

**Magnesiochromite** - Kyiv, Kyiv Oblast, Ukraine.  $\text{MgCr}_2\text{O}_4$ . Abundant black grains interspersed in a white matrix. Mineral Unlimited label identifies the white matrix as boracite, but this association was debunked some time ago. Miniature - \$14.

**Meionite** - San Vito Quarry, San Vito, Ercolano, Mount Somma, Somma-Vesuvius Complex, Naples, Campania, Italy.  $\text{Ca}_4\text{Al}_6\text{Si}_6\text{O}_{24}\text{CO}_3$ . Opaque, snow-white crystals clustered on matrix. Cabinet (some samples could be trimmed to a miniature or thumbnail without loss) - \$8.

**Meneghinite and Franckeite** - Pacific Cement and Aggregate Company, Santa Cruz, Santa Cruz County, California. Metallic meneghinite -  $\text{Pb}_{13}\text{CuSb}_7\text{S}_{24}$  and franckeite -  $\text{Fe}^{2+}(\text{Pb},\text{Sn}^{2+})_6\text{Sn}^{4+}_2\text{Sb}_2\text{S}_{14}$  in marble matrix. Miniature - \$8.

**Messelite** - Messel Mine, Messel, Darmstadt-Dieburg, Darmstadt, Hesse, Germany (type locality).  $\text{Ca}_2\text{Fe}^{2+}(\text{PO}_4)_2\cdot 2\text{H}_2\text{O}$ . A small vial of platy, brown crystal clusters. Small fragbag (size) - \$8.

**Palenzonaite** - Molinello Mine, Ne, Genoa, Liguria, Italy (type locality).  $\text{NaCa}_2\text{Mn}^{2+}_2(\text{VO}_4)_3$ . Tiny, glassy, brown blebs in matrix. Miniature - \$8.

**Pisolite** - near the Eagle Rock, Eagle Rock, Los Angeles, County, California. Many rounded pebbles to a few mm in diameter. Interesting locality for the California collector. Small fragbag - \$8.

**Portlandite** - Cerro de la Coronita, Cuernavaca, Morelos, Mexico.  $\text{Ca}(\text{OH})_2$ . White, earthy masses. Small fragbag - \$8.

**Pyroaurite** - Grama Valley Quarry, Laghi, Vicenza Province, Veneto, Italy.  $\text{Mg}_6\text{Fe}^{3+}_2(\text{OH})_{16}[\text{CO}_3]\cdot 4\text{H}_2\text{O}$ . Yellowish, tabular crystals on matrix. Micro - \$8.

**Pyroaurite** - Långban Mine, Långban Ore District, Filipstad, Värmland County, Sweden (type locality).  $\text{Mg}_6\text{Fe}^{3+}_2(\text{OH})_{16}[\text{CO}_3]\cdot 4\text{H}_2\text{O}$ . Miniature (sparse crystals on a marble matrix) - \$8. Vial (a gram or two of small bits and fragments) - \$8.

**Pyrochlore** - MacDonald Mine, Monteagle Township, Hastings County, Ontario, Canada. Specific pyrochlore supergroups species undetermined. A single octahedral crystal on a scrap of matrix. Mildly radioactive. Micro - \$12.

**Sarcopsidite** - Bull Moose Mine, Custer, Custer Mining District, Custer County, South Dakota.  $(\text{Fe}^{2+}, \text{Mn}^{2+}, \text{Mg})_3(\text{PO}_4)_2$ . Massive, brown material. Cabinet - \$10. Large fragbag - \$10.

**Sacrofanite, etc.** - Sacrofano, Metropolitan City of Rome Capital, Lazio, Italy.  $(\text{Na}_{61}\text{K}_{19}\text{Ca}_{32})(\text{Si}_{184}\text{Al}_{84}\text{O}_{336})(\text{SO}_4)_{26}\text{Cl}_2\text{F}_6\cdot 2\text{H}_2\text{O}$ . Labeled as sacrofanite but this species is not clearly present. However, several other unidentified species clearly are, so who knows what you might find? Miniature - \$8. Thumbnail - \$8. Micro - \$8.

**Schneiderhöhnite** - Urucum Claim, Galiléia, Minas Gerais, Brazil.  $\text{Fe}^{2+}\text{Fe}^{3+}_3\text{As}^{3+}_5\text{O}_{13}$ . Massive to crystalline schneiderhöhnite, abundant in/on matrix, with an unidentified, brown microcrystalline mineral. Small fragbag - \$8.

**Schoonerite** - Hagendorf, Waidhaus, Neustadt an der Waldnaab District, Upper Palatinate, Bavaria, Germany.  $\text{ZnMn}^{2+}\text{Fe}^{2+}_2\text{Fe}^{3+}(\text{PO}_4)_3(\text{OH})_2\cdot 9\text{H}_2\text{O}$ . Sparse, red brown schoonerite on matrix. Thumbnail - \$8. Micro - \$8.

**Schumacherite and Pucherite** - Pucher Shaft, Wolfgang Maaßen mines, Schneeberg, Erzgebirgskreis, Saxony, Germany (type locality for both species). Yellow crusts of schumacherite -  $\text{Bi}_3(\text{VO}_4)_2\text{O}(\text{OH})$  with red crystalline pucherite -  $\text{Bi}(\text{VO}_4)$ . Both species are sparsely represented. Thumbnail - \$8.

**Scorodite** - Gold Hill Mine, Gold Hill District, Tooele County, Utah.  $\text{Fe}^{3+}\text{AsO}_4\cdot 2\text{H}_2\text{O}$ . Sparkling, light green scorodite microcrystals abundant in/on matrix. Miniature - \$8. Cabinet - \$12.

**Sicklerite on Lithiophilite** - Stewart Mine, Pala District, San Diego County, California. Sparse, crusty sicklerite -  $\text{Li}_{1-x}(\text{Mn}^{3+}\text{Mn}^{2+}_{1-x})\text{PO}_4$  on a massive, black lithiophilite -  $\text{LiMn}^{2+}\text{PO}_4$  matrix. Miniature - \$8. Cabinet - \$12.

**Tadzhikite-(Ce)** - Tre Croci, Vetralla, Viterbo Province, Lazio, Italy.  $\text{Ca}_4\text{Ce}^{3+}_2\text{Ti}^{4+}_2(\text{B}_4\text{Si}_4\text{O}_{22})(\text{OH})_2$ . Sparse, brown crust in sanidine matrix, with sparse afghanite. Miniature - \$8.

**Talmessite** - Gold Hill Mine, Gold Hill District, Tooele County, Utah.  $\text{Ca}_2\text{Mg}(\text{AsO}_4)_2\cdot 2\text{H}_2\text{O}$ . White, opaque crystals, fairly abundant on - and easily distinguished from - the crystalline aragonite matrix. Miniature - \$8. Cabinet - \$10.

**Tanteuxenite-(Y)** - Greenbushes Tinfield, Bridgetown-Greenbushes Shire, Western Australia, Australia.  $\text{Y}(\text{Ta}, \text{Nb}, \text{Ti})_2(\text{O}, \text{OH})_6$ . A few grams of small chunks in a corked, glass vial. Weakly radioactive. Vial - \$8.

**Tazheranite** - Tazheranskii Massif, Lake Baikal area, Irkutsk Oblast, Russia (type locality).  $(\text{Zr}, \text{Ti}, \text{Ca})(\text{O}, \square)_2$ . Sparse, brown material in marble matrix. Micro - \$8.

**Thomsonite** - Drain, Douglas County, Oregon. Most likely thomsonite-Ca -  $\text{NaCa}_2[\text{Al}_5\text{Si}_5\text{O}_{20}]\cdot 6\text{H}_2\text{O}$ . Abundant, pearly white crystals on matrix. Thumbnail - \$8.

**Tuscanite** - Biachella Valley, Sacrofano, Metropolitan City of Rome Capital, Lazio, Italy.  $\text{K}(\text{Ca}, \text{Na})_6(\text{Si}, \text{Al})_{10}\text{O}_{22}[\text{SO}_4, \text{CO}_3, (\text{OH})_2]\cdot \text{H}_2\text{O}$ . White, translucent to opaque, needles to blades in matrix vugs, sometimes indicated with an arrow. Miniature - \$8.