

# **E. M. Barron Exhibit of Minerals and Gem Collections**



*Join us for a virtual tour of these  
rare and beautiful specimens*

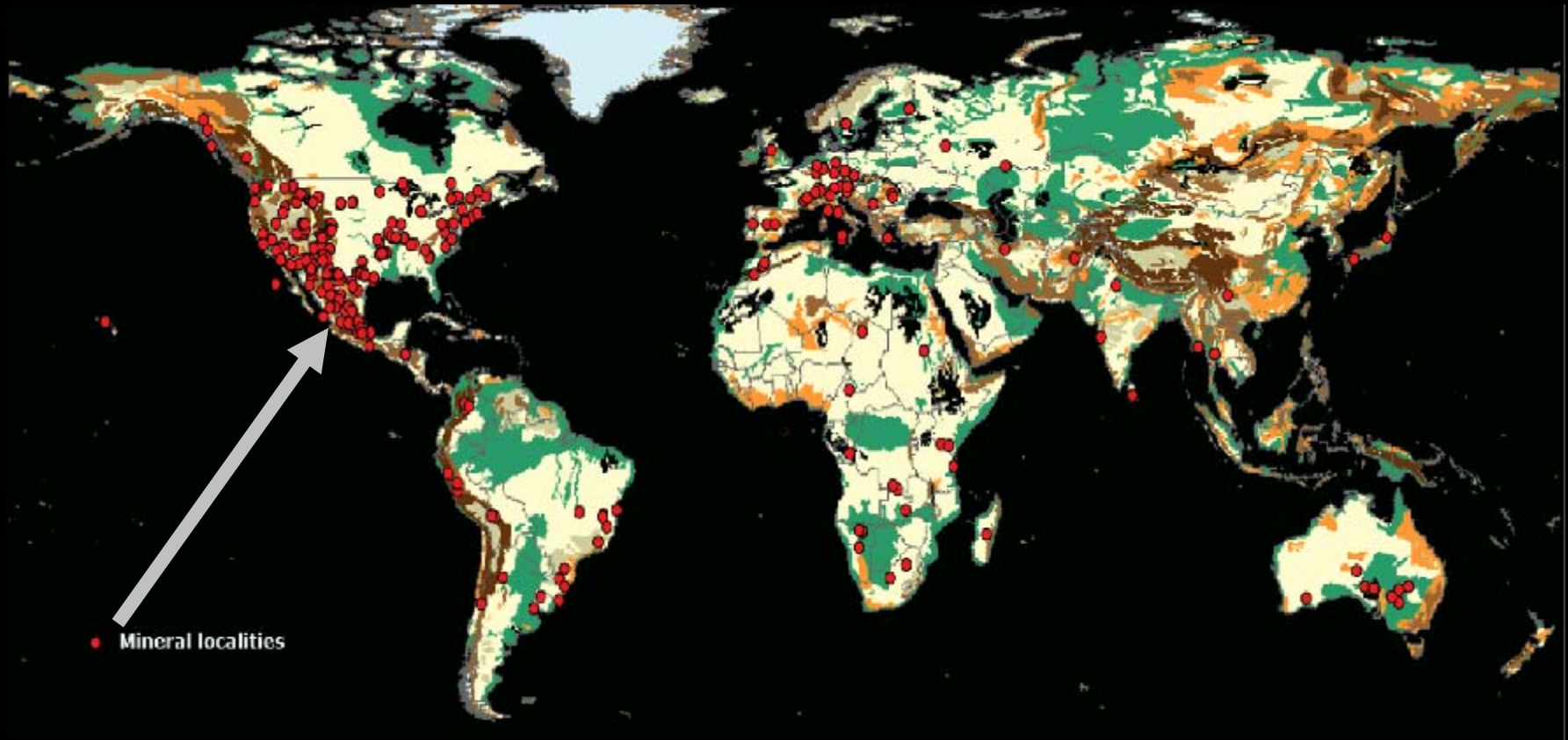
# Colonel E. M. Barron

*Colonel E. M. Barron (1903-1969) of El Paso, Texas, one time State legislator and military man, turned his attention to minerals in later life, founding the Southern Gem Mining Company in the late 1940s.*

*Opportunities to acquire rare and beautiful minerals were abundant. Mexico was close by and over the years Barron built a remarkable personal collection of rare specimens from Mexico.*

*Barron bequeathed most of his collection to The University of Texas at Austin.*

# Mineral localities



*Barron's interests focused early on Mexico but expanded to classic localities around the world.*

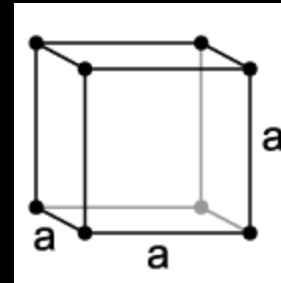
*Each red dot represents a locality from which one, or more, of his minerals were extracted.*

# The Exhibit

*Minerals are naturally occurring, inorganic solids with definite chemical compositions and definite atomic structures (they are crystalline).*



*Halite  
(salt)*



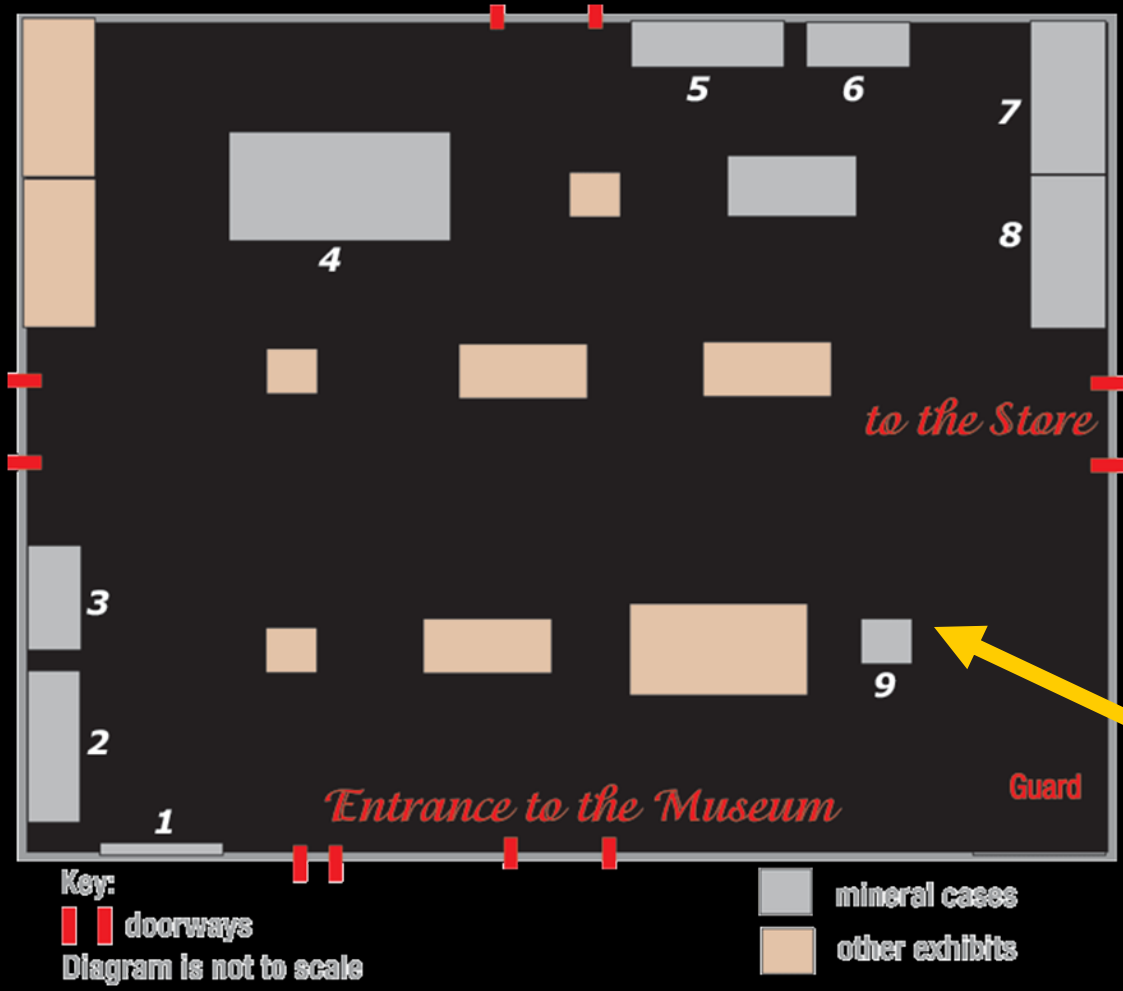
*Chemical composition is the basis for grouping the exhibited minerals. Each display case is arranged by chemical class; carbonates, silicates etc.*



# Exhibit Display Cases

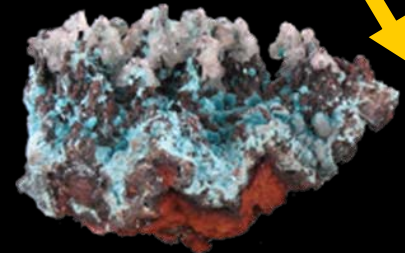
- *1. Introductory panel*
- *2. Silicates*
- *3. Native elements*
- *4. Amethyst geode*
- *5. Carbonates and phosphates [ includes arsenates, vanadates and phosphates]*
- *6. Tungsten and molybdates [focus- wulfenite]*
- *7, 8. Gems*
  - *7. Gems and gemstones*
  - *8. Cut and color*
- *9. Topaz*
- *10. Agates*
- *Numbers are located on the exhibit map (next slide)*

# Exhibit Map



*More information about the specimens*

*More about individual specimens*



*Click on the case to see the topic*

*Now plan your visit to the Museum*

**# 10 Agates display case is located on the first floor**

# Silicates



- *Tourmaline*

# Silicates

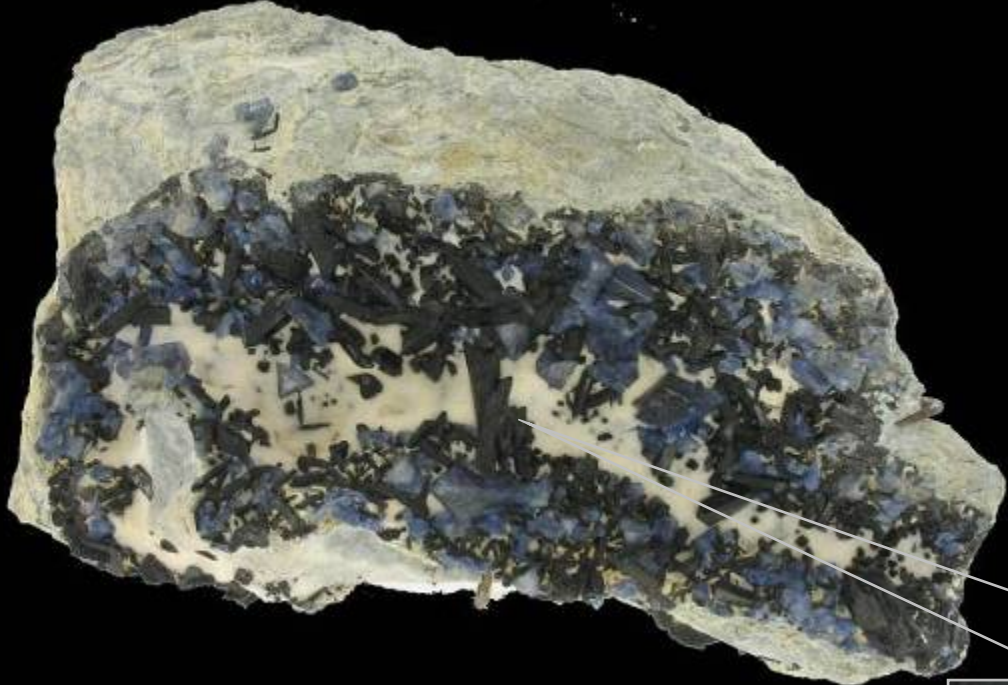


- *Amazonite*

# Silicates



- *Benitoite gemstones*



- *Benitoite and neptunite*





# Colorful Silicates



- *Tanzanite*

- *Kunzite*



- *Citrine*



- *Gems of the collection*

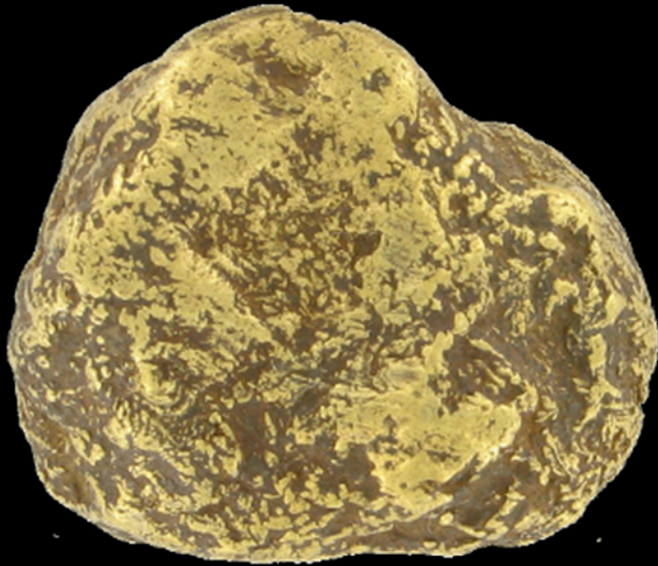


# Silicates

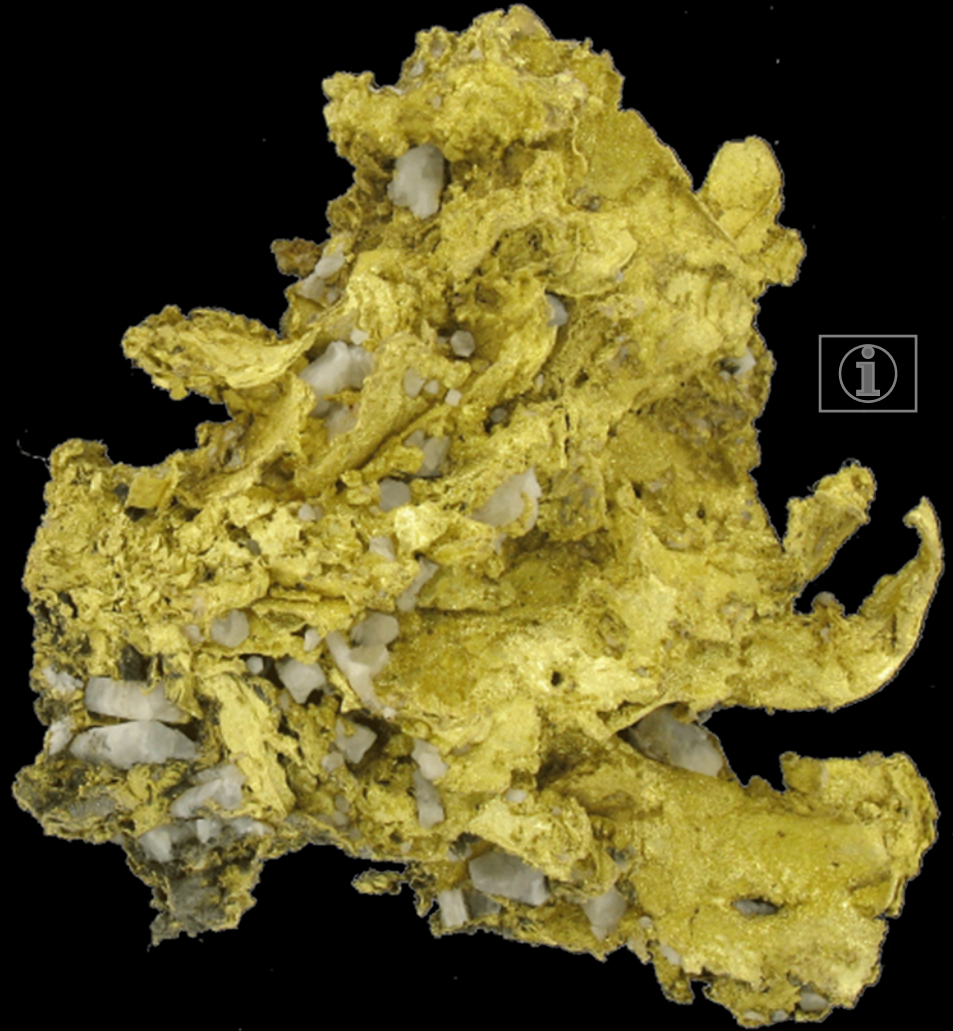


- *Quartz variety amethyst*

# Native Elements



- *Gold nugget*
- *Gold filigree*

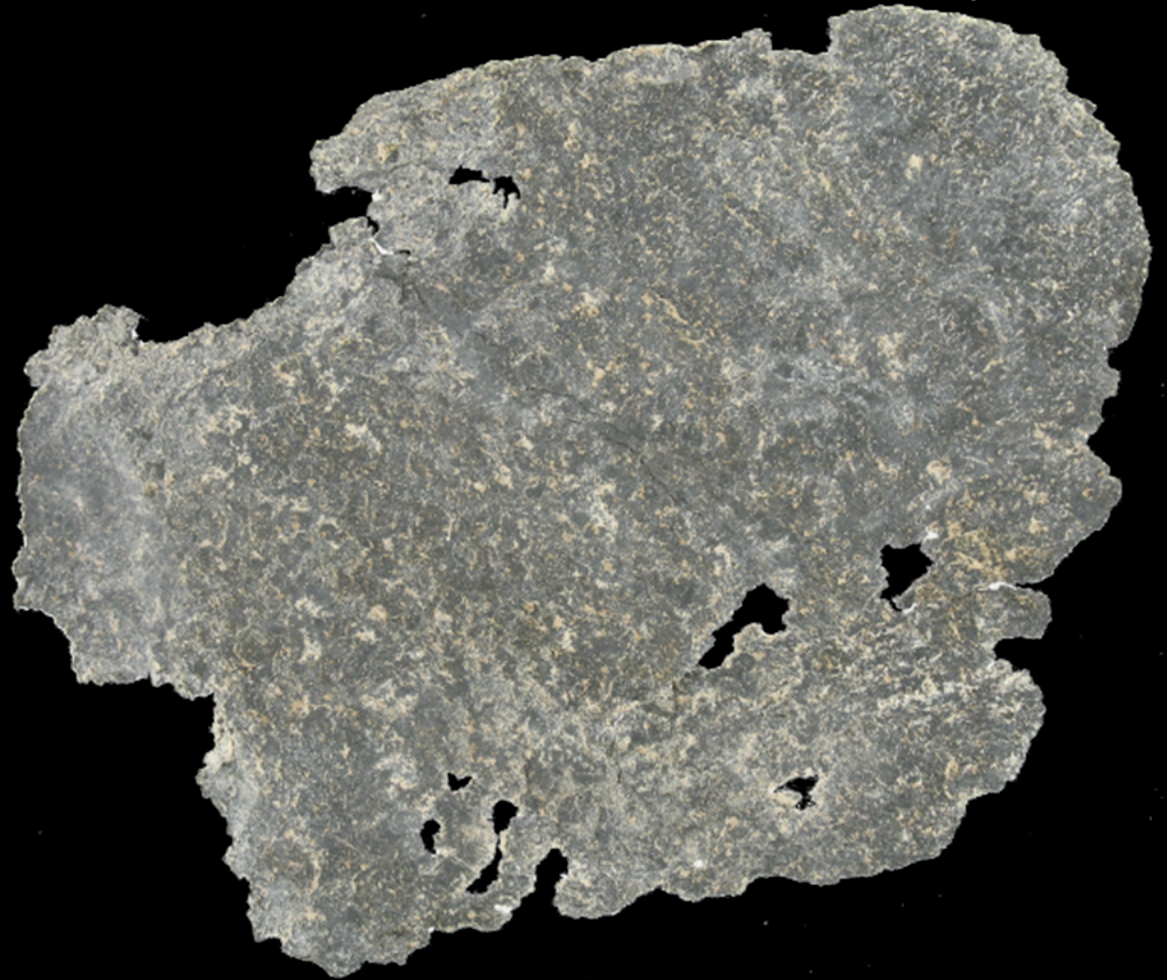




# Native Elements



- *Silver*



# Native Elements



- *Copper in calcite*

# Carbonates and Phosphates



- *First the carbonates*
- *This example is cerussite, lead carbonate*



# Carbonates



• *Calcite*



• *Calcite*



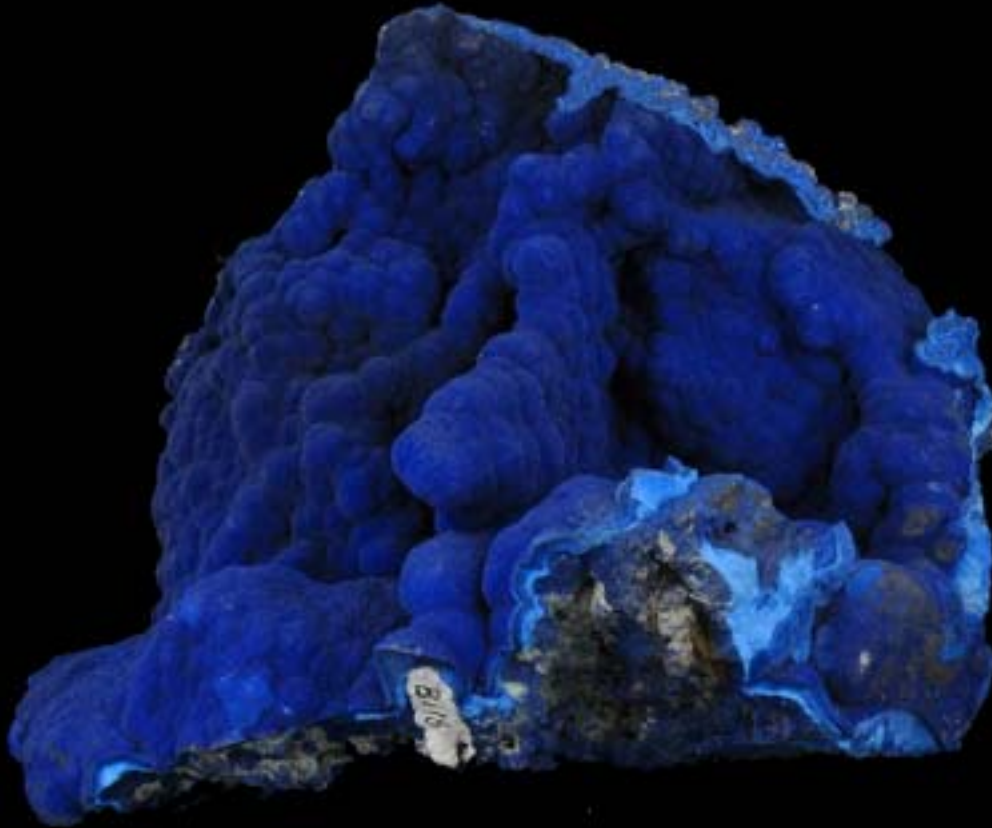
• *Aragonite*



• *Calcium carbonate in many forms*



# Colorful Carbonates



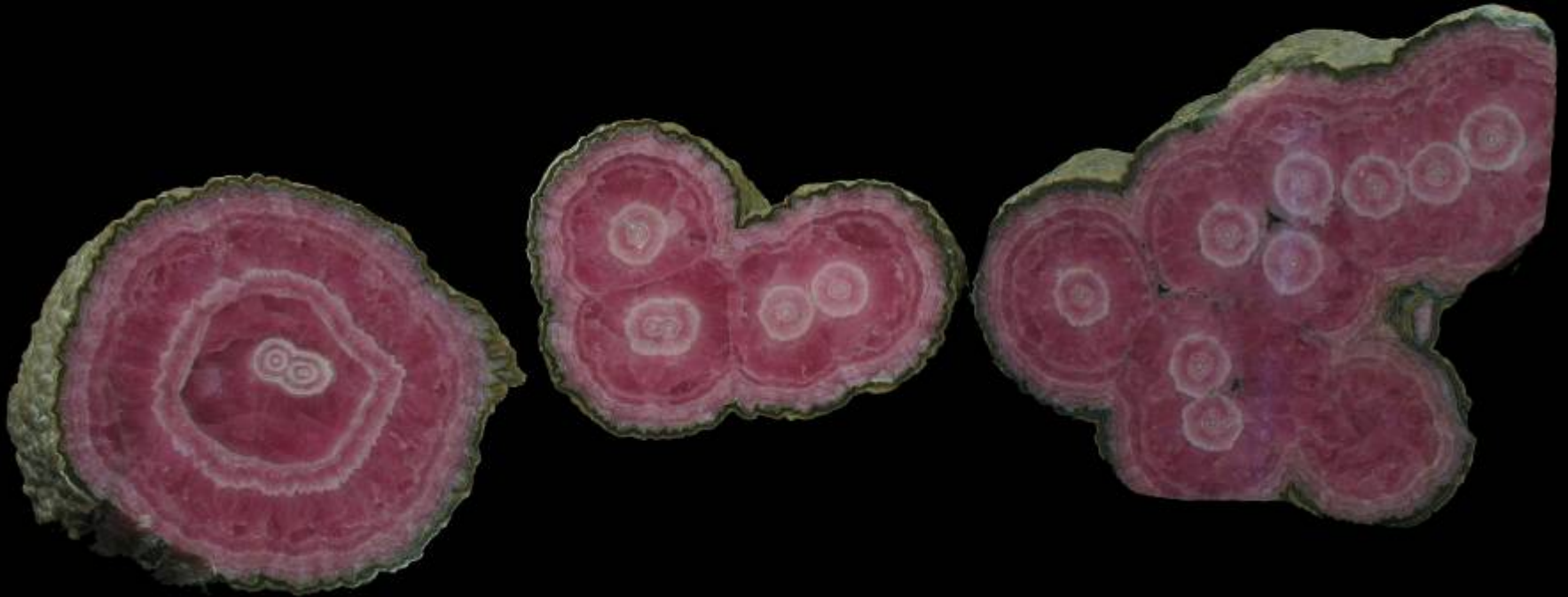
- *Azurite*

# Colorful Carbonates



- *Malachite*

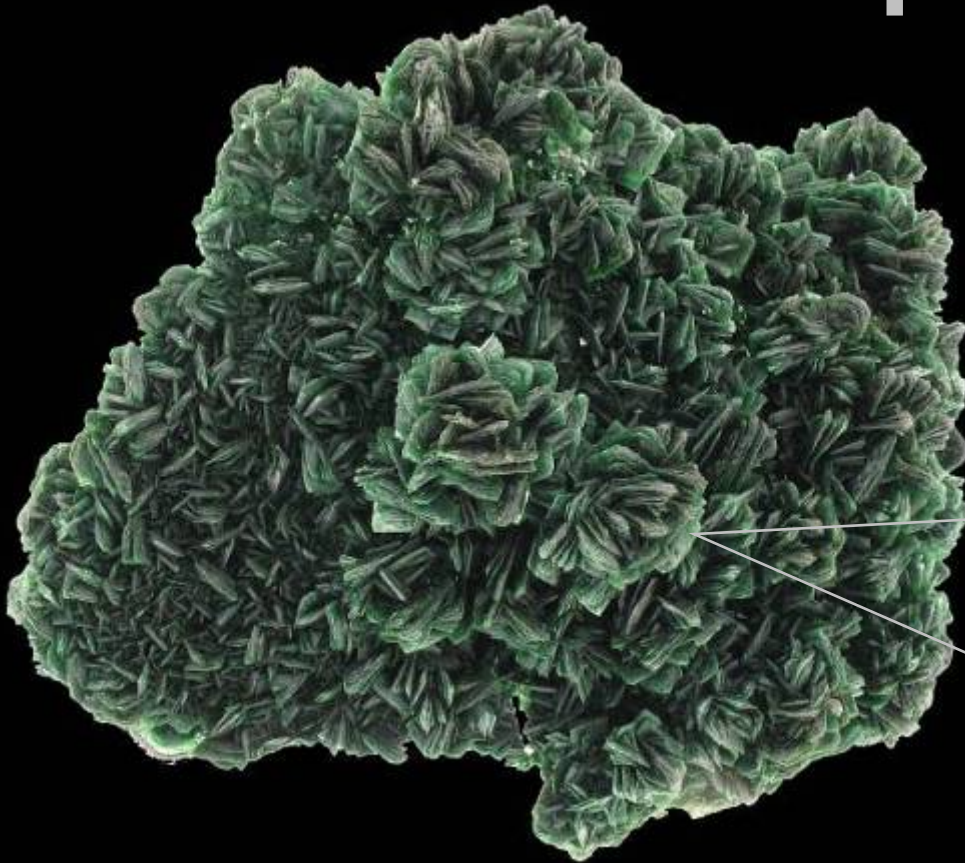
# Colorful Carbonates



- *Rhodochrosite*



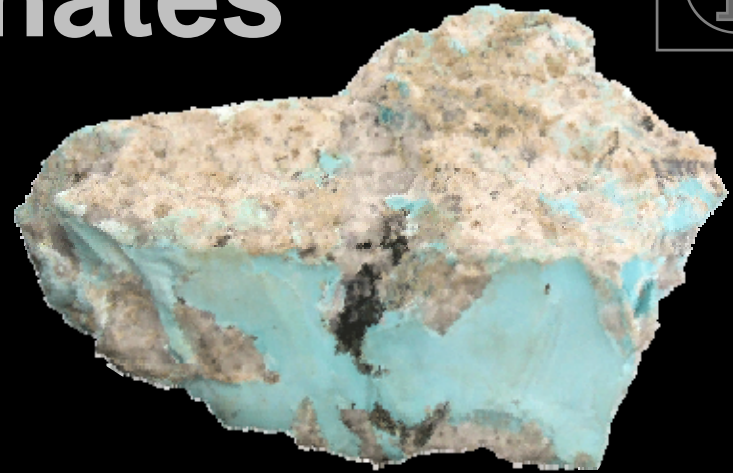
# Phosphates



- *And now the phosphates*
- *Metatorbernite*

- *Brazilianite*

# Phosphates



- *Turquoise*



- *Lazulite*





# Arsenates



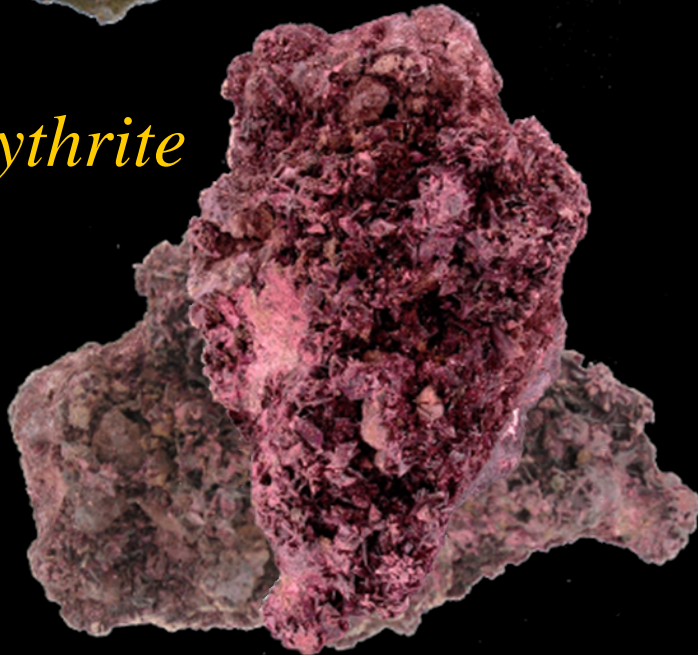
- *Legrandite*



- *Scorodite*

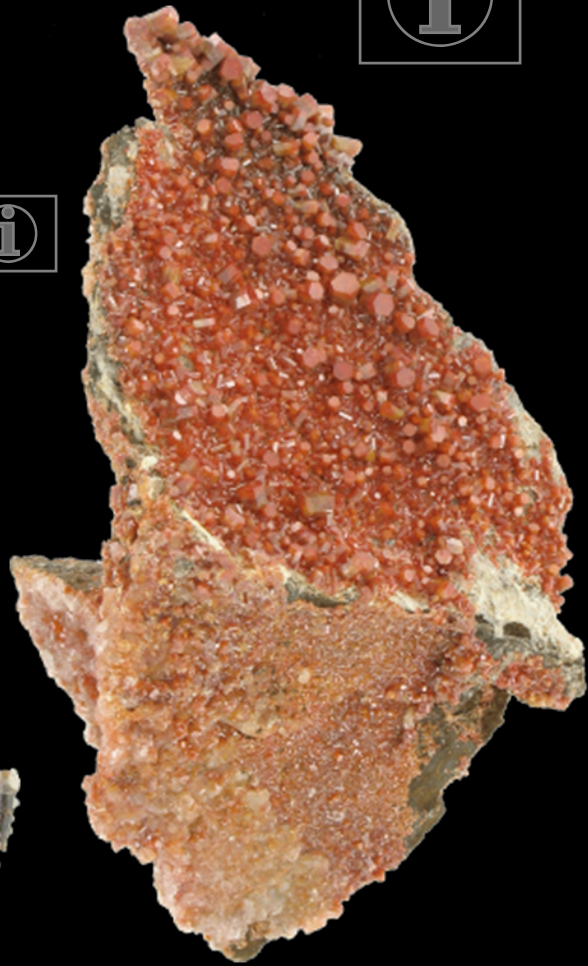
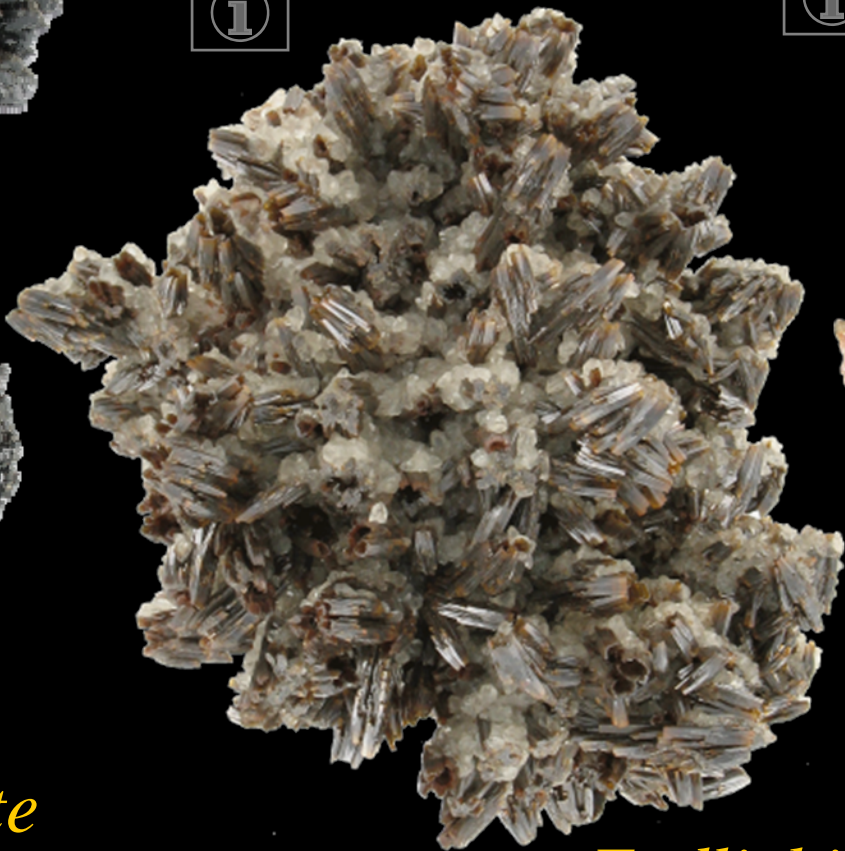


- *Erythrite*





# Vanadates



• *Descloisite*

• *Endlichite*

• *Vanadinite*

# Tungstates and Molybdates



- *Wulfenite, a molybdate, with mimetite*

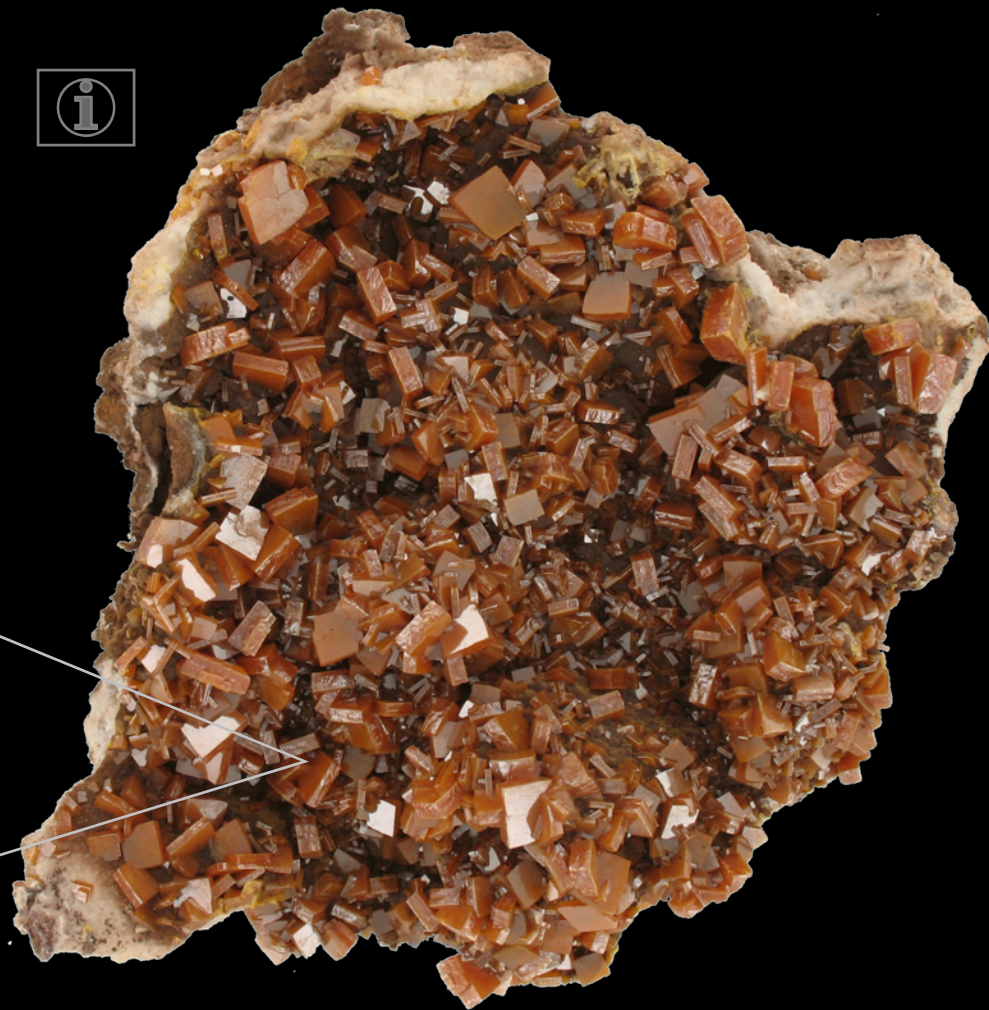


# Wulfenite



- *Wulfenite with quartz*

# Wulfenite





# Gems and Gemstones



*The Gemological Institute of America (GIA)*

*defines a gem as:*

*“A natural specimen of mineral or organic material used for personal adornment that possesses beauty, rarity and durability”.*

*A gemstone is a cut and polished gem.*

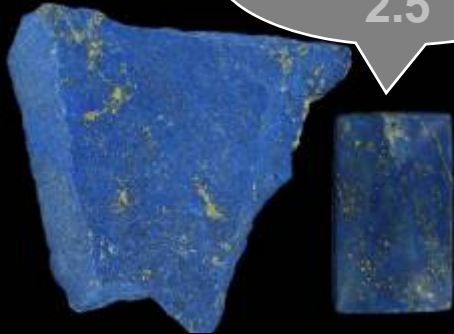


*The next slides detail some properties of gems and gemstone*



# Hardness

Hardness  
2.5



Hardness 10

Gemstone	Mohs Relative hardness	Mineral	Absolute hardness	Scratch test for hardness
	1	Talc	1	
	2	Gypsum	2	
Gold, Silver				finger nail
	3	Calcite	9	
Lapis lazuli, Sphalerite, Platinum	4	Fluorite	21	
Apatite, Brazilianite, Titanite	5	Apatite	48	
Turquoise				
Opal, Sugilite	6	Orthoclase feldspar	72	
Kunzite, Peridot, Tanzanite				plate glass, steel knife
Amethyst, Alexandrite, Citrine	7	Quartz	100	
Zircon, Tourmaline				
Beryl, Topaz	8	Topaz	200	
Ruby, Sapphire	9	Corundum	400	
Diamond	10	Diamond	1500	

- *Mohs hardness measures resistance to scratching*
- *Diamond is the hardest*





# Cut, Color and Clarity



- Emerald



- Aquamarine



- Goshenite



- *This uncut beryl is known as 'rough'*
- *Beryl is found in several colors*

- Golden beryl



# Inclusions



- *This quartz contains inclusions of another mineral, rutile*



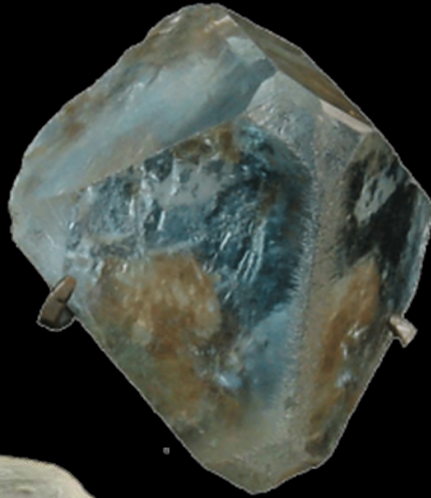
- *Inclusions can increase the beauty of a gemstone*
- *Or they may lower the value of a gemstone*

# Topaz and Texas



*Topaz is the state gem*

*The Lone Star cut is the official state cut*

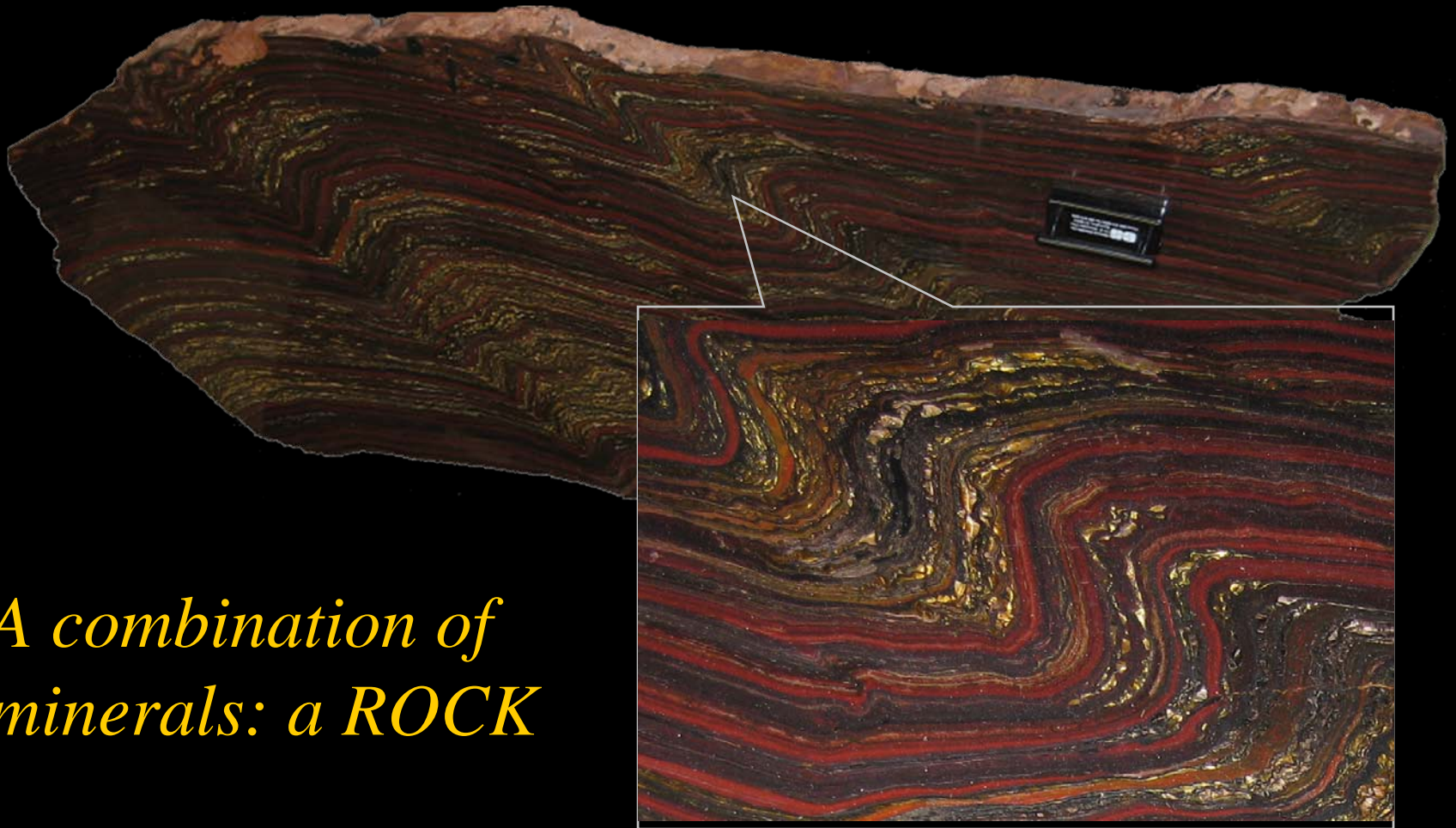


*Blue Texas topaz is rare.  
Most Texas topaz is  
white*





# Banded Iron



- *A combination of minerals: a ROCK*



# Minerals and Gems



*Visit the Museum and enjoy the beauty of these fascinating minerals. Notice their place in your everyday life.*

*To learn more about minerals, please visit:*

*<http://www.utexas.edu/tmm/npl/mineralogy/>*

*View more specimens from the Barron, and other fine collections, in the hall displays of [The Jackson School of Geosciences.](#)*

# Acknowledgements

*The Texas Natural Science Center thanks the following people for their advice and help in the production of both the physical and virtual exhibit*

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