



\*1. ADAMITE: Ojuela Mine, Mapimi, Mexico (0.86)



2. ALGODONITE: Mohawk Mine, Keweenaw Peninsula, Michigan (each ~ 1 inch across)



3. AMBER: Baltic Sea area (various cut gems and utility objects)



4. AMBER: Dominican Republic (with insect inclusion)

All numbers refer to carat weights unless otherwise indicated. Sequential numbers refer to rows of gems, reading left to right, top row, middle rows, bottom row. Rows are separated by double slashes (//). The symbol ~ means *approximately*. The symbol \* means that the gems illustrated have been color analyzed and the data appear on pages 28-35. The photos and data can most easily be matched using gemstone color, shape, and weight.



5. AMBLYGONITE: Brazil (5.2, 6.3)





\*6. ANDALUSITE: Brazil  
(7.55, 2.40, 2.92, 9.55)



\*7. ANGLESITE: Morocco (6.99)



8. APATITE: *Catseye apatite*, India  
(~ 2.4, 5.6)



\*9. APATITE: Burma (colorless, 7.34), Mexico (antique, 8.70), Brazil (green, 1.09; blue, 0.86) // Madagascar (light blue, 1.07), Brazil-? (green, 12.40; dark green, 2.87), Canada (green, 8.05) // Brazil (dark blue, 0.55), Madagascar (light blue, 1.07), Maine (violet, 1.02).





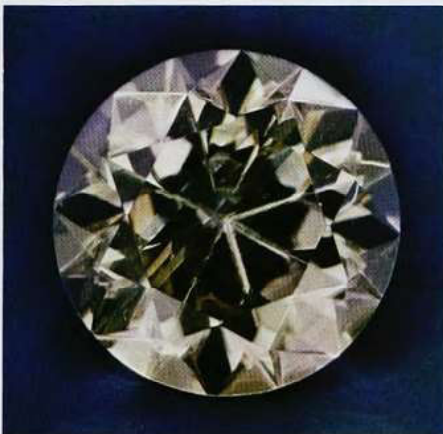
10. APOPHYLLITE: India (1.3, 8.6, 2.4)



11. AUGELITE: California (~ 1.5, rough 1/2 inch across)



12. AXINITE: Baja California, Mexico (~ 2.0, rough 1 1/2 inches long)



13. ARAGONITE:  
Czechoslovakia (5.35)



14. AZURITE with MALACHITE: Bisbee,  
Arizona (~ 4 inches high)





15. BARITE: South Dakota (4.7), Colorado (9.4, 1.9)



\*16. BERYL: Brazil (yellow, 40.98; green, 18.42; peach, 9.06 // peach, 6.92; colorless, 11.25; green, 4.54; blue, 18.08 // green, 19.09; pink, 17.33), Africa (blue, 21.80); Brazil (20.00)



\*17. BENITOITE: San Benito County, California (1.19, 0.66, 1.07 // 1.08, 1.15, 1.30)



18. BERYL: *Aquamarine catseye*, Brazil (18.37)





19. BERYL: *Aquamarine*, Brazil (25.65)



20. BERYL: *Aquamarine*, Nigeria (3.10, 7.82, 2.81)



\*21. BERYL: *Golden beryl*, Brazil (20.00, 19.85 // 18.98, 3.20)



22. BORACITE: Hanover, Germany (0.6)



23. BERYLLONITE: Maine (~ 2, rough 1 inch across)

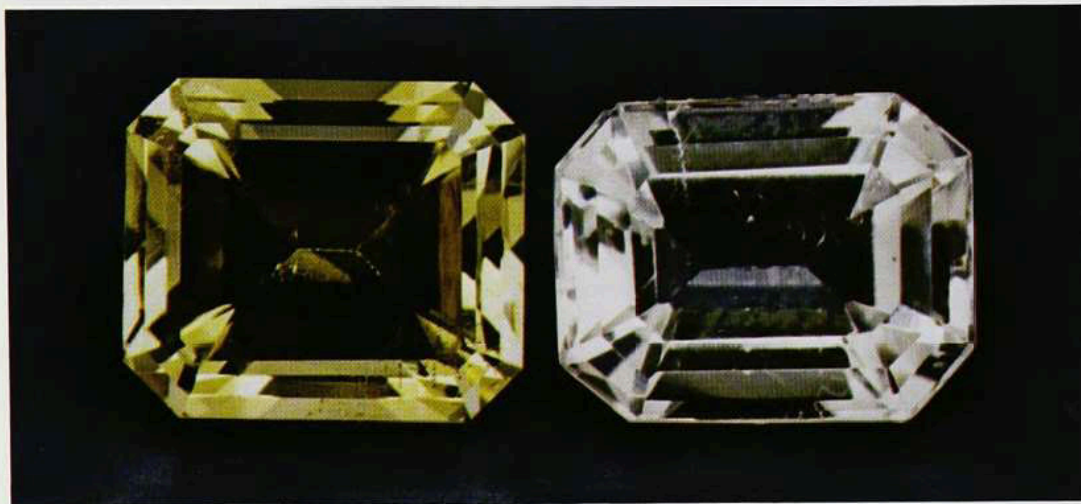




24. BORNITE: Butte, Montana (specimens 2 inches across)



25. BUSTAMITE: Broken Hill, New South Wales, Australia (2.6)



26. BRAZILIANITE: Brazil (3.0, 2.7)



\*27. CALCITE: Paramca, Spain (cobaltian, 3.40), Mexico (12.55)



28. CALCITE: Canada (600.91)



29. CANASITE: Bur'atskaja, Urals, Siberia, USSR (~ 2 inches across)





30. CANCRINITE: Bigwood Township, Ontario, Canada (~ 3 inches across)



\*31. CASSITERITE: Bolivia (14.25, 3.5)



32. CELESTITE: Madagascar (16.3)



33. CELESTITE: Canada (1.5)



34. CERULEITE: Arizona (specimens each ~ 1 inch across)





35. CHABAZITE: Nova Scotia (specimen ~ 3 inches across)



36. CHAMBERSITE:  
Texas (0.5)



37. CERUSSITE: Tsumeb, Namibia (32.87)



\*38. CHILDRENITE: Brazil (1.37)



39. CHIOLITE: Greenland (1.1)



40. CHONDRODITE: Tilly Foster Mine, Brewster,  
New York (~ 2, rough 1 inch long)





\*41. CHRYSOBERYL: Sri Lanka (7.80, 6.19, 7.51, 7.04) // Brazil (11.84), Sri Lanka (13.25, 9.30 // 21.30), Brazil (11.49), Sri Lanka (12.02)



42. CHRYSOBERYL: *Catseye*, Sri Lanka (~ 5)



43. CHRYSOBERYL: *Alexandrite*, USSR (~ 6); incandescent light (above) and daylight (below)



44. CHRYSOCOLLA: Arizona and New Mexico (large specimen ~ 4 inches high)



\*45. CHRYSOCOLLA: Arizona (free form, 13.59)

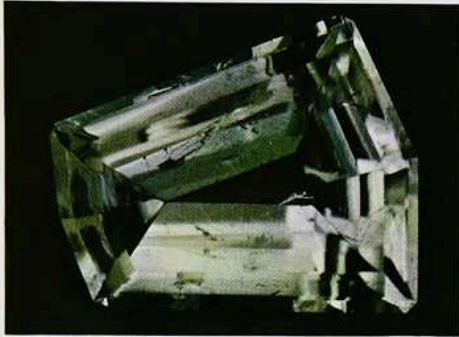




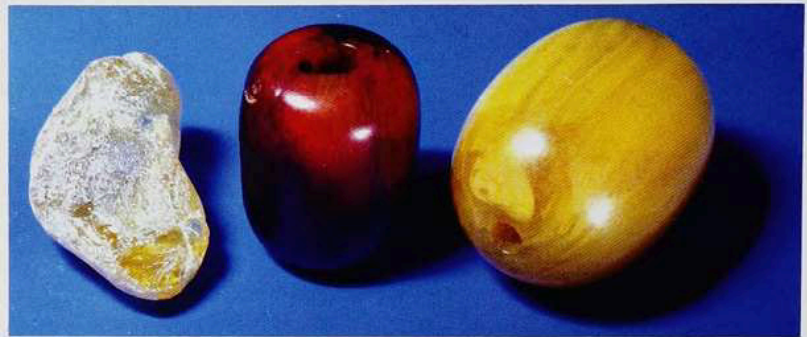
\*46. CLINOCHUMITE: USSR  
(1.52)



\*47. CINNABAR: Charcas,  
Mexico (1.37)



48. COLEMANITE: Boron,  
California (26.50)



49. COPAL: New Zealand (yellow bead ~ 1 inch long)



50. CORAL: South China Sea (red carving ~ 4 inches tall)





\*51. CORDIERITE: *Iolite*, India  
(1.56, 8.51, 3.00)



\*52. CORUNDUM: *Sapphire*, Sri Lanka (2.12, 3.76, 4.25, 5.21 // 6.05, 3.60, 4.02, 16.12)



\*53. CORUNDUM: *Sapphire*, Umba River, Tanzania (1.98, 1.40, 1.86, 3.41, 3.28 // 0.96, 3.77, 1.46, 2.56, 4.64)





\*54. CORUNDUM: *Sapphire*, Montana (1.35, 1.77, 1.47, 1.66 // 1.19, 1.10, 1.40, 1.22, 1.30 // 1.03, 1.10, 0.96, 0.95, 2.30)



\*55. CORUNDUM: *Sapphire*, Sri Lanka, heated geuda (6.13, 3.89 // 4.00, 2.21, 3.60)



56. CORUNDUM: *Sapphire*, Sri Lanka (184, in gold pendant with diamonds)





\*57. CORUNDUM: *Ruby*, Thailand (3.66), Burma (3.56), Thailand 2.23 // Burma (2.30), Thailand (2.11, 2.07, 3.56)



58. CORUNDUM: *Ruby*, Thailand (2.22, 3.68, 3.35)



59. CORUNDUM: *Ruby-Star ruby*, Sri Lanka (2.75), Burma (2.6, 0.62), India (8.4)

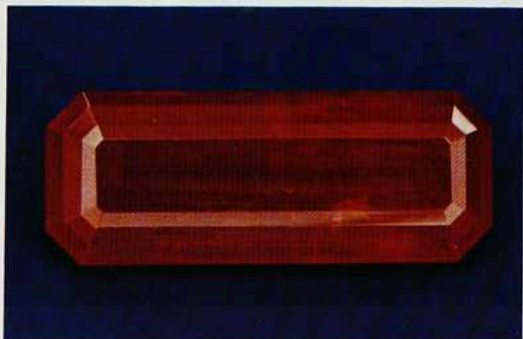




60. CORUNDUM: *Sapphire-Star sapphire*, Sri Lanka (31.87)



\*62. CREEDITE: Chihuahua, Mexico (0.96)



63. CROCOITE: Dundas, Tasmania (3.4)



61. CORUNDUM: *Ruby*, Burma (gems 0.8-1.3, in platinum pin with diamonds)



64. CUPRITE: Onganja, South Africa (48.07)





65. DANBURITE: Charcas, Mexico (8.5, crystal ~ 2½ inches long)



66. DATOLITE: Paterson, New Jersey (4.0)



67. DIAMOND: Africa (portion of A. V. Gumuchian's "Spectrum Collection," New York City; ~ ½ to 5)





68. DIAMOND: South Africa; at sorting office of DeBeers Co., Kimberley (rough crystals, ~ 0.25 to 5)



69. DIAMOND: South Africa (~ 2)



\*70. DIOPSIDE: New York (2.15), Kenya (0.75, chrome diopside), USSR (3.5, chrome diopside)

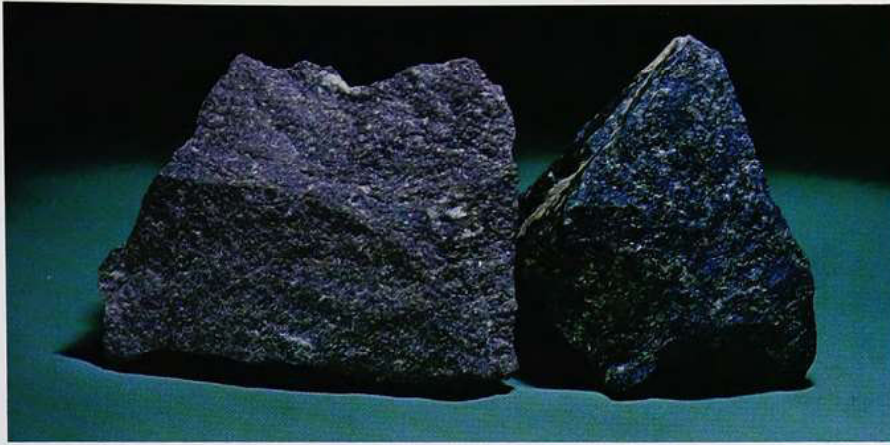


\*71. DIASPORE: Turkey (2.10)



72. DOLOMITE: Spain (4.5)





73. DUMORTIERITE: Nevada (~ 2 inches across);  
Ogilby, California (~ 1 inch across)



74. EKANITE: Sri Lanka (~ 0.5)



\*75. ENSTATITE: Kenya (1.80),  
Burma (0.55), Kenya (4.38)



76. ENSTATITE: *Star enstatite*, India (~ 3 to 15)



77. HYPERSTHENE: Africa (~ 6)





78. EPIDOTE: Baja California, Mexico (1.0), Kenya (1.2)



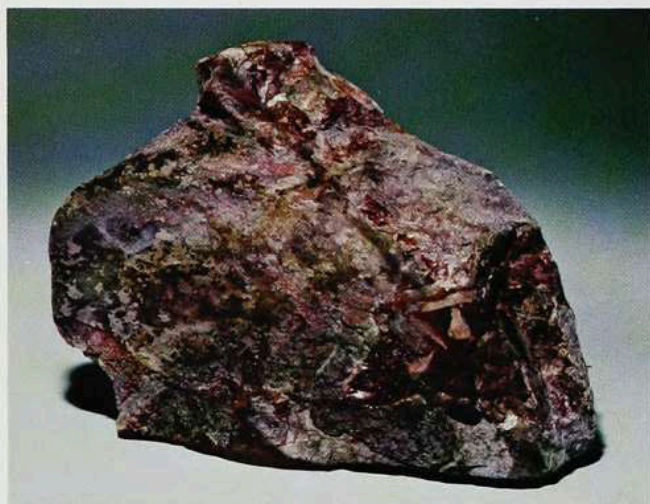
\*79. ZOISITE: *Tanzanite*, Tanzania (26.54)



80. CLINOZOISITE: Mexico (1.18)



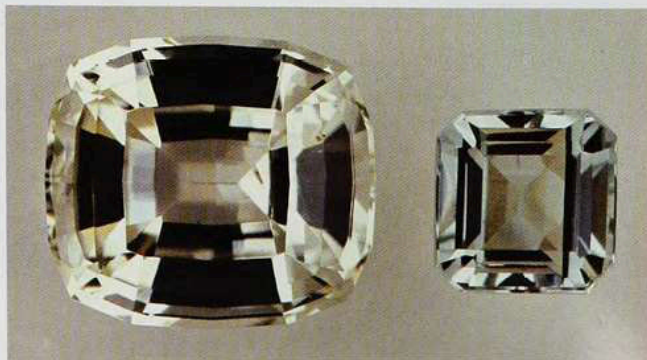
81. ZOISITE: *Tanzanite*, Tanzania, unheated, showing natural color range (~ 0.5 to 5)



82. PIEDMONTITE: Adams County, Pennsylvania (~ 4 inches across)



83. ZOISITE: *Thulite*, Norway (each specimen ~ 2 inches across)



84. EUCLASE: Brazil (5.49, 1.34)





85. FELDSPAR: *Orthoclase*, Madagascar (4.98), Zimbabwe (1.23), Sri Lanka (1.5), Madagascar (2.5)



86. FELDSPAR: *Microcline-amazonite*, Amelia Court House, Virginia (1 inch); Ontario, Canada (~ 2 inches across)



87. FELDSPAR: *Moonstone*, India and Sri Lanka (~ 5 each)



88. FELDSPAR: *Albite*, Sri Lanka (4.6), New Mexico (3.9)





89. FELDSPAR: *Labradorite*-*"sunstone,"* Oregon, showing color range (~ 1 to 5)



90. FELDSPAR: *Labradorite*-*"sunstone,"* Oregon (~ 14)



91. FELDSPAR: *Labradorite*, Chihuahua, Mexico (36.45, 34.0, 24.26)



92. FELDSPAR: *Labradorite*-*"spectrolite,"* Finland (~ 2 inches across)





93. FELDSPAR: *Oligoclase*, Canada (3.96, 7.21)



94. FRIEDELITE: Franklin, New Jersey (1.74)



\*95. FLUORITE: Colombia (3.05); Switzerland (0.92), Illinois (15.80) // Illinois (5.75), England (6.05), Illinois (8.80)



96. FLUORITE: Illinois (1031, world's largest of this color)



97. FLUORITE: Africa (62.55), New Hampshire (152.90), Illinois (17.55), New Hampshire (38.10)





\*98. GARNET: *Grossular*, Asbestos, Quebec, Canada (9.81), Tanzania (4.15, 5.01 // 2.59, 4.48, 2.18, 3.88 // 2.47, 4.82, 4.14)



\*99. GARNET: *Malaya*, Tanzania (12.80, 11.39, 6.38 // 8.23, 8.56, 14.46)





\*100. GARNET: *Hessonite*, Orissa State, India (3.61, 3.81, 5.65)



\*101. GARNET: *Grossular-tsavorite*, Tanzania (4.11, 2.47, 1.25, 4.01)



102. GARNET: *Andradite-demantoid*, USSR (stones ~ 0.25-0.50)



103. GARNET: *Andradite-demantoid*, USSR (1.93, 0.93, 4.37)

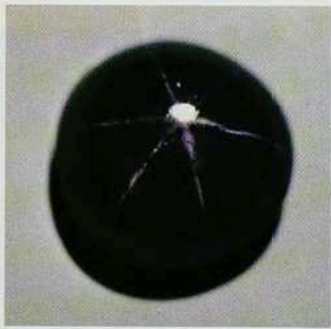




\*104. GARNET: *Spessartine*. Brazil (4.05), Madagascar (15.40) // Amelia, Virginia (4.65), locality unknown (6.41)



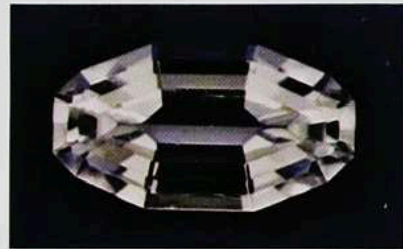
\*105. GARNET: *Rhodolite*. Tanzania (24.46)



106. GARNET: *Almandine*-*Star garnet*. Africa (~15)



107. GRANDIDIERITE: Madagascar (1.1)



108. HEMIMORPHITE: Mexico (0.75)

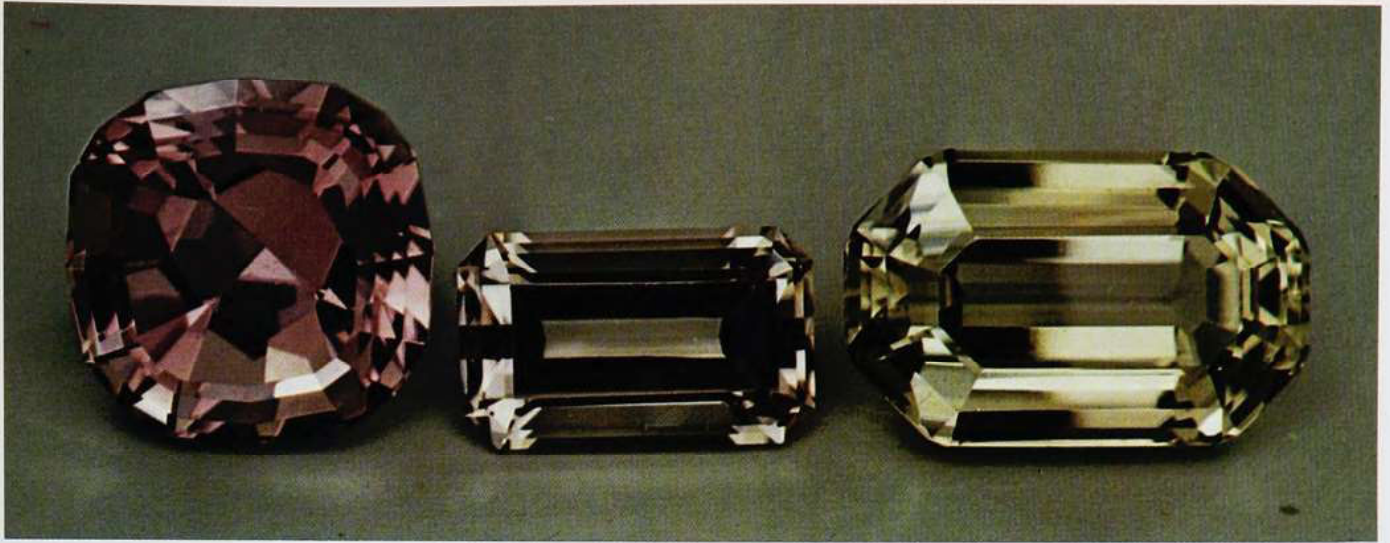


109. HAMBERGITE: Madagascar (1.5)



110. HEMIMORPHITE: Zacatecas, Mexico (~ 3 inches high)

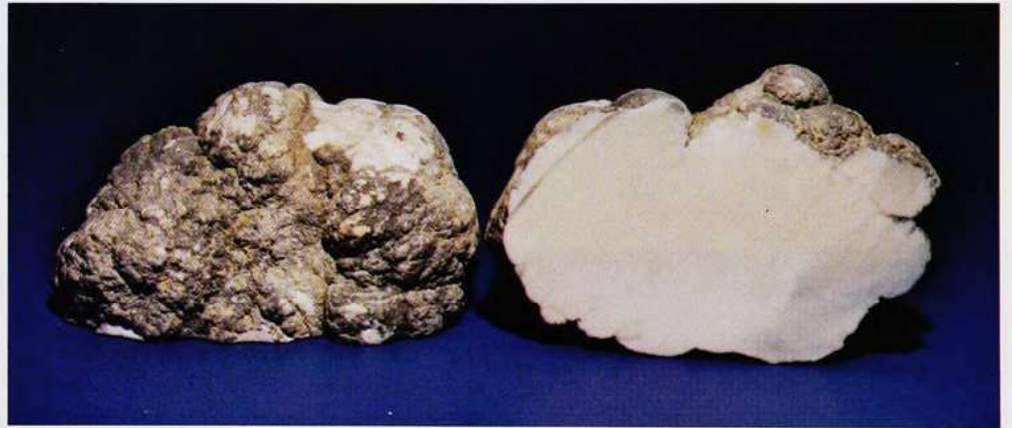




111. HERDERITE: Brazil (9.6, 3.65, 9.25)



112. HODGKINSONITE:  
Franklin, New Jersey  
(0.35)



113. HOWLITE: California (nodule ~ 3 inches across)

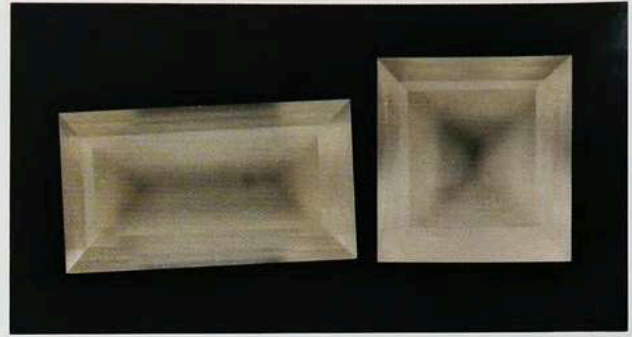


114. HUREAULITE: Pala County, California  
(~ 3 inches across)





\*115. IDOCRASE: Africa (2.35), Italy (1.40) // Africa (1.05), Switzerland (3.80)



116. JADE: *Nephrite*, China (1.9); *Jadeite*, Burma (2.0)

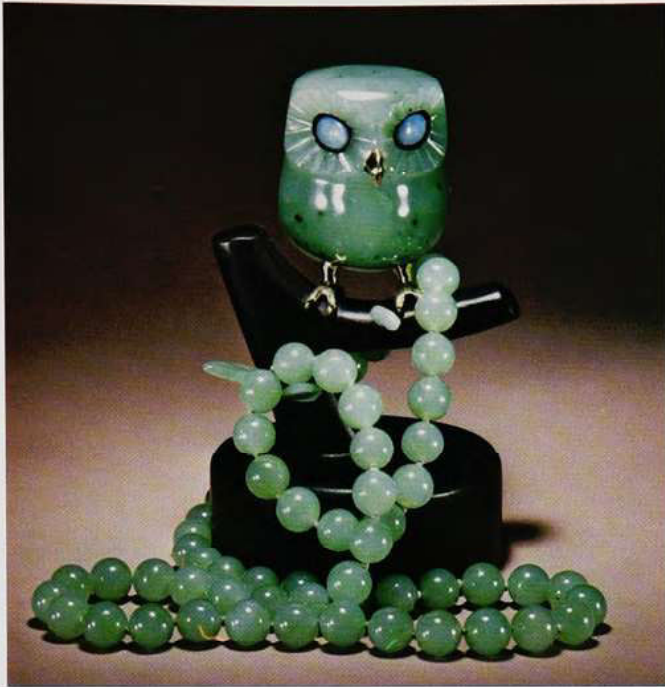


117. JADE: *Jadeite*, Burma—"imperial jade" (4.77)



118. JADE: *Nephrite and Jadeite*, assorted carvings and beads, China and USSR (snuff bottles ~ 2 inches high)





119. JADE: *Nephrite*, Siberia, USSR (owl ~ 2 inches tall)



120. JADE: *Jadeite*, Burma (statue ~ 8 inches high)



121. JADE: *Nephrite*, China, "chicken-bone jade."  
Vase Ming Dynasty, 14th century  
(~ 8 inches high)

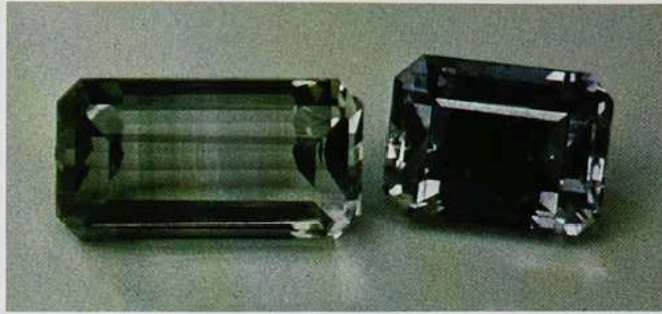


122. JADE: *Chloromelanite*, Burma (~ 3 inches long)





123. JADE: *Jadeite*, Burma  
(pin ~ 2 inches across)



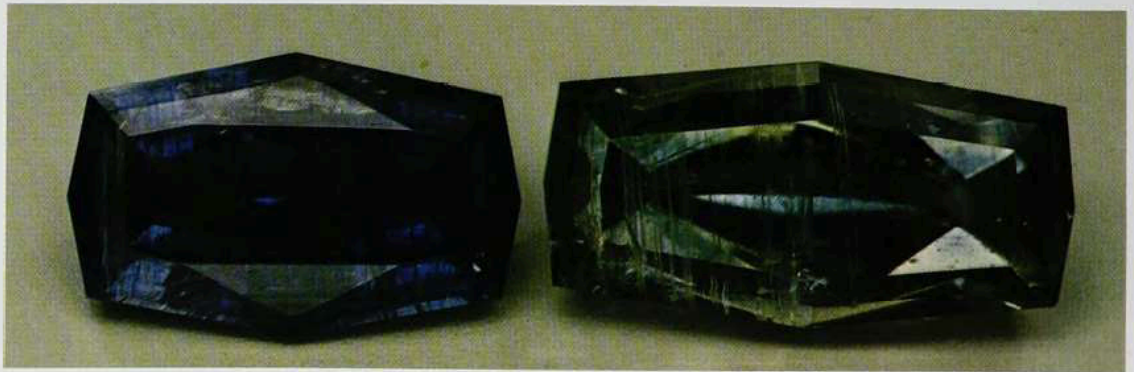
\*124. JEREMEJEVITE: Nerchinsk, Siberia, USSR (0.5, 0.4)



125. JET: Whitby, England (~ 3 each)



126. KORNERUPINE: Kenya (0.55), Madagascar (1.23), Kenya (1.47)

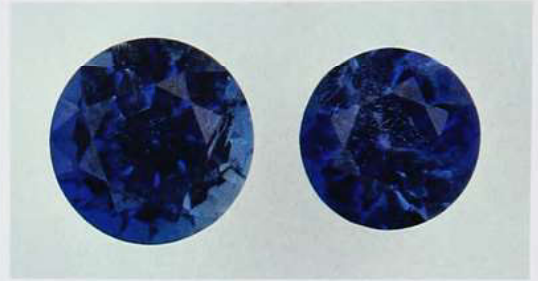


127. KYANITE: Brazil (4.55, 7.80)





128. LAZURITE: *Lapis Lazuli*, Afghanistan (solid blue), Chile (mottled), cabochons 5 to 25 carats.



\*129. LAZULITE: Brazil (0.70, 0.44)



130. LEGRANDITE: Mexico (~ 2, rough 1½ inches long)



131. LUDLAMITE: Idaho (~ 0.5)



132. MAGNESITE: Brazil (134.5, world's largest cut magnesite)



133. MALACHITE: Zaire (~ 4 inches high)



134. MANGANOTANTALITE:  
Alta Ligonha,  
Mozambique (5.5)





135. COLUMBOTANTALITE:  
Brazil (2.9)



136. STIBIOTANTALITE:  
Mozambique (1.0)



137. MELLITE: Germany (0.42)



\*138. MICROLITE: Brazil (0.14)



139. MILARITE: Tsumeb,  
Namibia (0.53)



140. MIMETITE: Tsumeb,  
Namibia (2.81)



141. OBSIDIAN: Mexico (banded and sheen varieties); Utah ("snowflake obsidian," cabochon 30 × 40 mm)

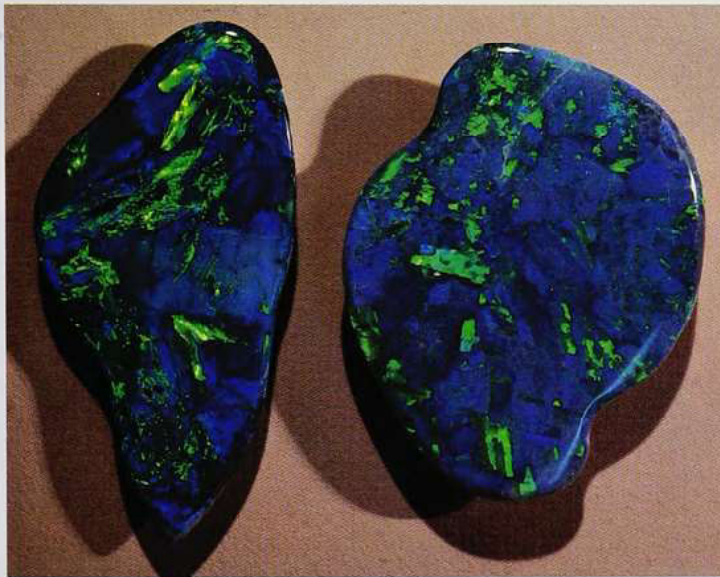




142. NATROLITE: Bound Brook, New Jersey (~5)



143. NICCOLITE: Cobalt, Ontario, Canada (polished cabochon ~ 1 inch long)



144. OPAL: *Black opal*, Australia (free-form cabochons ~ 30 carats each)



145. OPAL: *Semiblack opal*, Australia (~ 10 carats)



146. OPAL: *Black opal*, Australia (stone in bracelet ~ 20 carats)

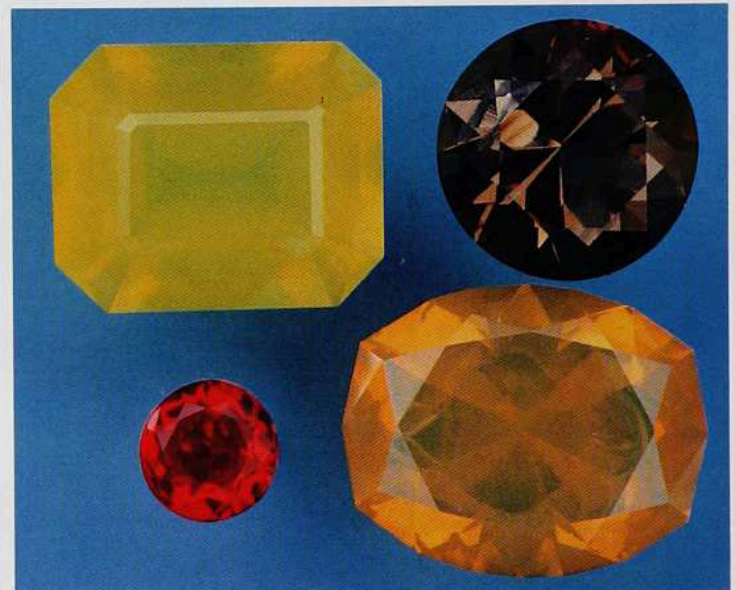


147. OPAL: *Black opal*, Australia,  
lighting position #1  
(stone in ring ~ 10 cts)



148. OPAL: *Triplet*, Australian rough,  
ceramic base/quartz top  
(30 × 23 mm)

\*149. OPAL: *Fire opal*, Idaho (11.74),  
Mexico (5.15, hyalite)  
// Mexico (0.76, 8.04)



150. OPAL: *Contraluz*, Mexico, illuminated  
from front (~ 4)



151. OPAL: *Contraluz*, Mexico, illuminated  
from rear (~ 4)





152. OPAL: *Black opal*, Australia, lighting position #2 (stone in ring ~ 10 cts)



153. OPAL: *Moss opal*, Idaho (5.70)



154. PEARL: Worldwide localities, selected to show color variation.



155. PERIDOT: Burma (83.01)



156. PECTOLITE: "*Larimar*," Dominican Republic (cabochons ~ 6 to 30 carats)





\*157. PERIDOT: Norway (4.51), Egypt (8.22) // Arizona (9.20, 8.25)



158. PETALITE: Brazil (15.65)



159. PHENAKITE: Colorado (stone ~ 2.5)





160. PHOSGENITE: Monte Poni, Sardinia (1.5)



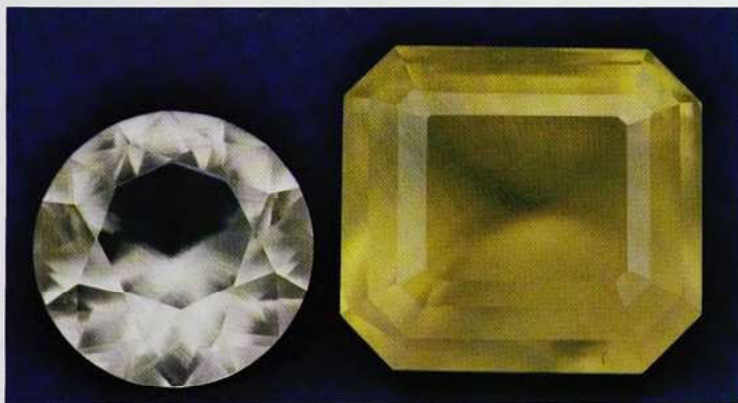
161. PHOSPHOPHYLLITE: Potosi, Bolivia (8.1)



162. POLLUCITE: Maine (gem ~ 2 cts)



\*163. PROUSTITE: Germany (7.53)



164. PREHNITE: Mexico (2.47), Australia (7.65)



165. PUMPELLYITE: Isle Royale, Lake Superior, Michigan (pebbles ~ 1/4 inch)

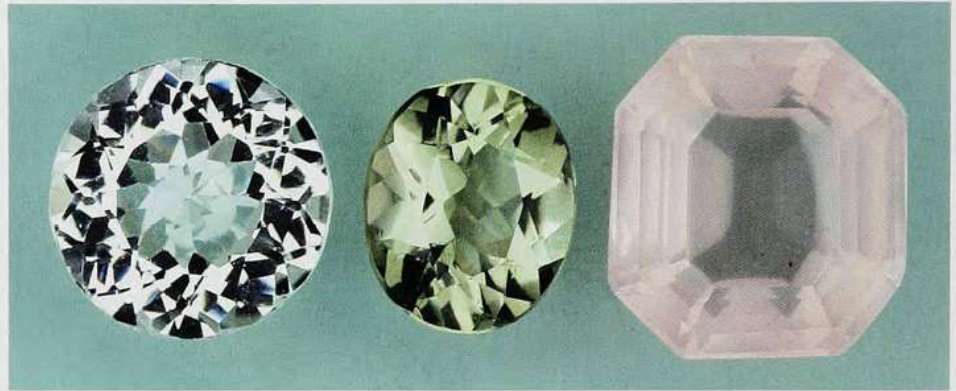




166. PURPURITE: Usakos, Namibia (specimens ~ 2 inches across)



167. PYROXMANGITE:  
Japan (0.55)



\*168. QUARTZ: Brazil (colorless, 11.0; green, 4.48; rose, 14.20)



\*169. QUARTZ: *Citrine*, Brazil (7.55, 4.20, 8.81, 12.64 // 16.90, 19.72, 15.76)





\*170. QUARTZ: *Smoky Quartz*, Brazil (23.78), 15.61 // 9.37, 13.57)



171. QUARTZ: with inclusions, Brazil (dendrites, rutile, tourmaline, ~ 6, 12, 25, respectively)



\*172. QUARTZ: *Amethyst*, Brazil (6.22, 9.18), Zambia (8.52) // Brazil (4.40, 3.61, 6.41, 6.38)



173. QUARTZ: *Chrysoprase*, Australia (largest beads ~ 8 mm)





174. QUARTZ: "Ametrine," Uruguay  
(~ 15, 25)



175. QUARTZ: *Agate*, Mexico, "fortification agate"  
(slab ~ 4 inches across)

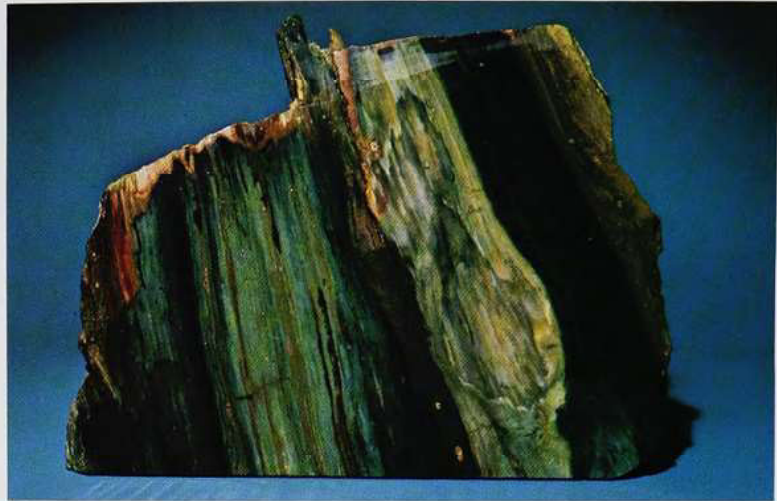


176. QUARTZ: *Jasper*, southwestern United States (cabochons ~ 30 × 40 mm)



177. QUARTZ: *Jasper*, Oregon, "picture jasper"  
(cabochon ~ 30 × 40 mm)





178. QUARTZ: *Petrified Wood*, Utah (slab ~ 4 inches across)



179. QUARTZ: *Tiger's eye*, South Africa (rough mass ~ 3 inches long; blue and red cabochons are dyed)



180. REALGAR: Washington (0.65)

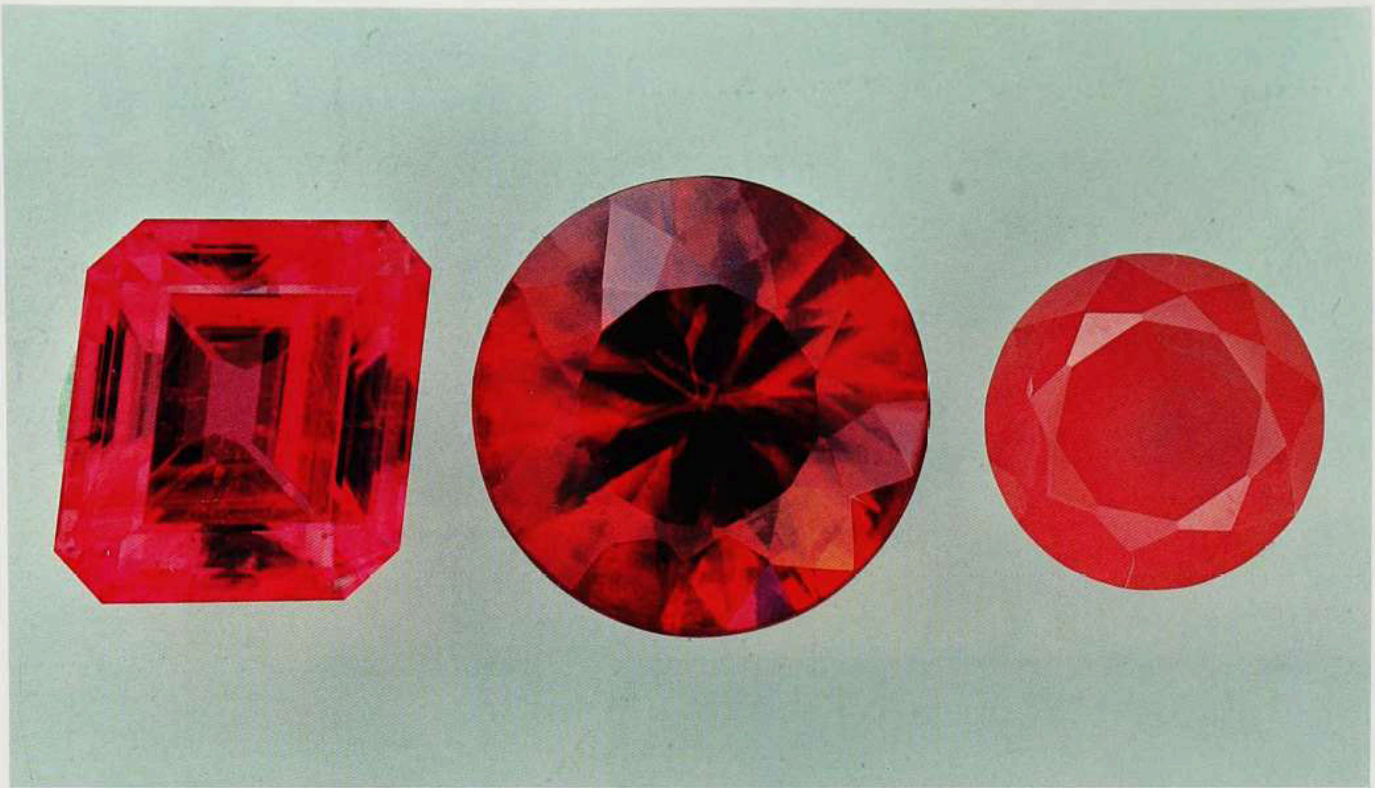


181. RHODOCHROSITE: Argentina, cross-section of stalactite, with cabochons (15 × 20 mm)



182. RHODIZITE: Madagascar (0.49)





\*183. RHODOCHROSITE: Peru (7.15), South Africa (9.42), Argentina (3.95)



184. RHODONITE: Australia  
(beads, 15 mm)



185. RHODONITE: Broken Hill,  
New South Wales, Australia (4.5)



186. SARCOLITE: Italy (0.33)



\*187. SCAPOLITE: Tanzania (32.44, 32.00)





\*188. SCAPOLITE: Tanzania (14.83)



189. SCAPOLITE: *Catseye scapolite*, Burma (7.0)



190. SCHEELITE: California (2.2), Mexico (2.4)



\*191. SCORODITE: Tsumeb, Namibia (1.15, 1.50)



192. SERANDITE: Mt. Ste. Hilaire, Quebec, Canada (~ 1.5, rough ~ 2 inches long)





193. SERPENTINE: Pakistan (~ 4 inches long)



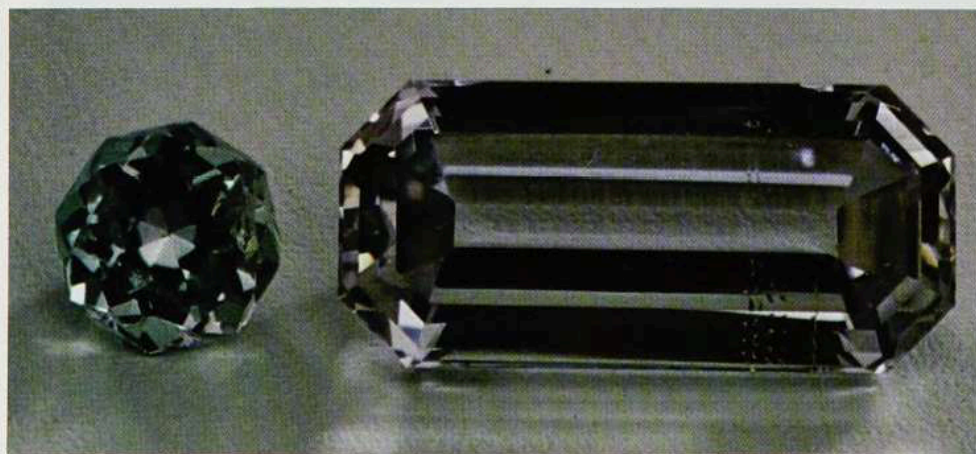
194. SERPENTINE, *Williamsite*, Maryland (2.3)



195. SHORTITE: Wyoming (0.5)



196. SIDERITE: Portugal (1.40)



197. SILLIMANITE: *Fibrolite*, Kenya (0.34), Burma (2.44)



198. SIMPSONITE: Brazil (0.27)