

The World's Largest Crystal

I've always been interested in giant crystals. I was thus delighted to run across an article in the American Mineralogist entitled "The largest crystals" (1982, vol. 66, pages 885-907) by Peter Rickwood. In his article, Rickwood painstakingly documents the largest reported crystals in various mineral categories in terms of length, volume and mass known up until then. It is thus a regular "Guinness Book of World Records" for the mineral kingdom. I've composed a short quiz based on the article to test your sharpness on giant crystals. Be forewarned! These are toughies!

- 1) True or false: There is no theoretical limit on the size to which a single crystal can grow.
- 2) Which mineral forms the world's largest known single crystal?
a) beryl b) quartz c) spodumene d) copper
- 3) How long is the world's largest known single crystal?
a) 2 meters b) 7 meters c) 12 meters d) 18 meters
- 4) What is the maximum diameter of the world's largest known gold crystal?
a) 2 inches b) 5 inches c) 8 inches d) 12 inches.
- 5) How much does the world's largest single galena crystal weigh?
a) 59 lbs. b) 153 lbs. c) 260 lbs.
- 6) The largest known single fluorite crystal was found at
a) Rosiclair, Ill. B) Petaca, N.M. c) Cumberland, England.
- 7) The largest known single calcite crystal was found at
a) Pugh Quarry, Ohio b) Helgustadir, Iceland c) Joplin, Missouri.
- 8) The Etta mine in the Black Hills of South Dakota is the home of the world's largest known single crystals of
a) spodumene b) muscovite c) pyrite d) rose quartz.
- 9) How long is the world's longest known single crystal of quartz?
a) 3 feet b) 8 feet c) 13 feet d) 20 feet.
- 10) A large crystal was reportedly found (but not thoroughly documented) in the Devil's Hole Beryl Mine, Fremont County, Colorado. This single crystal may have been 159 feet long and weighed over 44 tons. What mineral is it?
a) Microcline feldspar. B) olivine. C) native copper

ANSWERS: (no peeking!)

- 1) True! There are practical limits, such as the supply of needed chemicals or Space in a rock, but one can theoretically grow crystals as large as one can Imagine.
- 2) a) Beryl from a granite pegmatite in the Malagasy Republic. The large copper masses from Michigan don't qualify here because they aren't single crystals, but aggregates of many crystals.
- 3) d) 18 meters (about 59 feet) long.
- 4) d) reported from an unspecified mine in California.
- 5) c) from a crystal in matrix from the Isle of Man, U.K.
- 6) b) from a granite pegmatite from this famous district.
- 7) b) from the type locality for "Iceland spar"!
- 8) a) forming giant crystals in granite pegmatites up to 14.3 meters (46.5 feet) long.
- 9) d) from a granite pegmatite in Goiaz, Brazil.
- 10) a) Mined out in 1928, it is uncertain was to whether this was one crystal or an aggregate of many. If it were a single crystal it would be the world's largest by a considerable margin.

Incidentally, if you want to buy large crystals for your basement, a dealer at the last Tucson Mineral show had a 17,600 lb. quartz crystal for sale for only 2½ cents per carat.

- Dr. Bill Cordua, University of Wisconsin-River Falls