

## Rocks and Relations

In addition to my normal activities this past week, there were two special events. On Friday through Sunday was the annual Gem and Mineral Show here in Denver. On Saturday was the annual mountain hike and lunch at an American home for international students of the Colorado School of Mines.

The theme of this year's Gem and Mineral Show was copper minerals. Many of the exhibits specialized in beautiful specimens of them. Copper makes green and blue minerals as well as pure metallic brown colors.



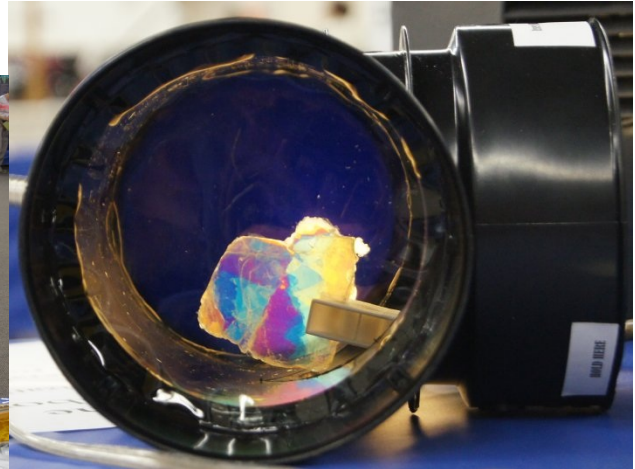
As usual, "Mr. Bones" walked around with his full size dinosaur bone models, to the delight of children and others. Meanwhile, I was a volunteer on Friday and Sunday at the educational exhibit of Dr. Andrew Sicree (light green shirt in photo) from Pennsylvania. He had lots of demonstrations showing various properties of rocks and minerals. In the far background another group let people practice panning for gold.



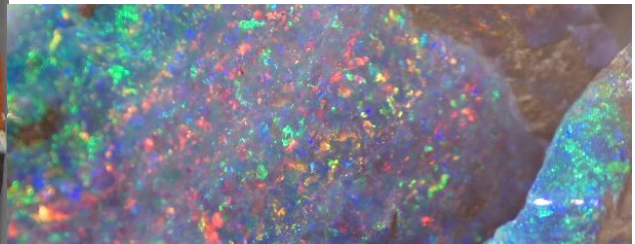
Most of the time I showed visitors this simple apparatus. Polarization film, like that used in sun glasses, was placed at both ends of the black pipes, but crossed so that almost no light passed through both. Then particular colorless minerals (like the thin sheets of muscovite mica) and plastics that



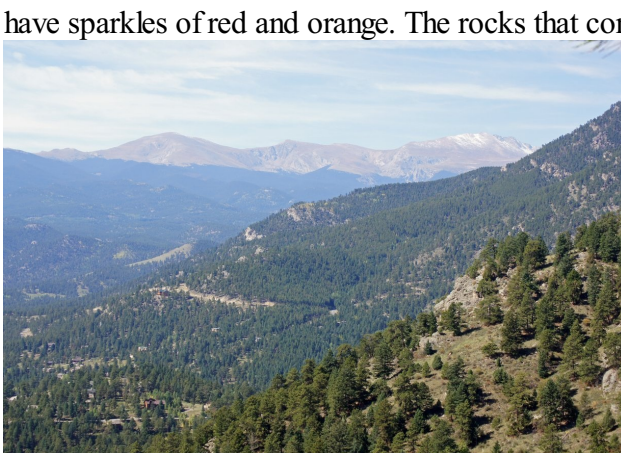
rotate the angle of vibration of the light waves are placed in the tube and become colored.



These children examine rock density. The samples of metallic lead and galena (lead ore) are very dense and heavy. At the other extreme are samples of pumice, a volcanic rock with an abundance of small air holes. It can float on water.



My wife and I like the colors of Australian dark opals, so I photographed some samples. Though typically blue or green, they can also have sparkles of red and orange. The rocks that contain them are brown.



Saturday's trip was to west of Evergreen, Colorado, in the foothills of the Rocky Mountains. The view from there showed Mount Evans in the distance, with snow on its northern slopes. The aspen trees were starting to turn yellow. The pine, spruce, and fir trees remain green all year.





We hiked high above the house and through the forest. Near the top of the hill we saw this tree. It had been struck by lightning in the past. That exploded the bark where the lightning went down the tree's side. The scar is partly healed.



Then we had lunch at the house. Among the guests from Colorado School of Mines were 6 from China, 5 from Iran, 3 from Saudi Arabia, and one each from South Korea and Indonesia.



Our host is sitting at the far right of the right photo. He is age 84 and easily lead us on the hike climbing the hill behind his home. We all enjoyed making new friendships. Two young girls from China and Iran, about age 7, delighted in playing with each other.

Ed Holroyd, 21 September 2012