

CENTRAL OREGON ROCK COLLECTORS

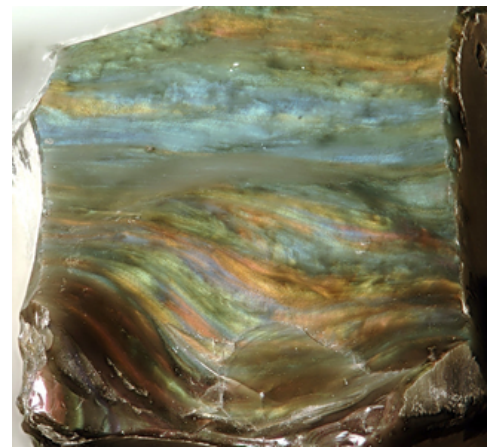


A Close Look at Rainbow Obsidian

excerpts from article by Jeremy Hall in Rock Seeker

What is Rainbow Obsidian?

Obsidian is a volcanic mineraloid glass. It lacks the orderly internal arrangement of atoms required for a compound to actually qualify as a mineral. It generally occurs during the extremely fast cooling of silica-rich magma. This silica is almost always associated with iron oxide, which gives obsidian its dark color in most cases.



*Velvet Rainbow Obsidian –
Mexico (credit: James St.
John/Flickr)*

Historical Uses of Obsidian

Obsidian has a long tradition of use as a tool. To this day, modern flintknappers prize the material even as they also work with modern man-made glasses. Obsidian has a conchoidal fracture, where impacts upon it generally resemble a cone. When a skilled knapper takes advantage of this trait they can leave behind an edge that's one of the sharpest possible, being close to monoatomic since there's no crystalline structure that inhabits edge formation.



*closeup of
flintknapped obsidian*

These edges are quite fragile, which is why copper, then bronze, and finally steel won out as tool materials despite the technology needed to make them. Obsidian still sees some niche use in optical surgery, where specially manufactured obsidian scalpels are considered superior since they leave a cleaner edge.

Obsidian is pretty unstable, at least on a geological time scale. The material is brittle and weathers with exposure before being metamorphosed into other forms of silica. Obsidian is generally less than 20 million years old.

Rainbow obsidian is a specific variety. When held up to the light and turned rainbows seem to “dance” just under the surface of the rock. In obsidian you’ll generally see these colored effects referred to as a sheen.

Rainbow Obsidian is still prized by knappers, but it’s also found its way into jewelry and just as display. Like all obsidian where it forms there’s quite a bit of it so it’s not hard to find for purchase. The bulk of the material on the market is from the Mexican state of Jalisco.

What Creates the Sheen in Rainbow Obsidian?

While sheens in obsidian can often appear to be magical, they’re generated by very real phenomena. Gold and silver sheen for instance, are actually the effects of minute amounts of water that were trapped during the rapid cooling of the obsidian. These microscopic bubbles when give the appearance of gold or silver as light passes through them at the right angle.

Rainbow obsidian, on the other hand, is colored by inclusions. In this case, the mineral responsible is the hedenbergite. Hedenbergite is a relatively rare member of the pyroxene group, associated with iron. It’s rarely found as a pure substance and is most often known in the form of monoclinic crystals.

In rainbow obsidian, this mineral takes the form of nanorods. These are very, very tiny structures. They orient in a particular way in rainbow obsidian, thus creating the optical effect know as thin film interference.



Rainbow Obsidian (credit: Auntie Teena/Flickr)

The best example of thin-film interference, perhaps, from our daily life is an oil slick on water. Essentially you’re seeing the reflection of the hedenbergite and the obsidian itself interfere with itself when the light hits properly.

Don’t confuse rainbow obsidian with fire obsidian either. While both are colored by thin-film interference, fire obsidian has inclusions of nanoparticles of magnetite instead of the rods of hedenbergite.

Rainbow obsidian may or may not have a strong sheen depending on how it was cut and the internal composition. While most pieces you’ll find online show strong, bold colors from all angles this hasn’t been the norm in my experience, and others may require more careful angles.



The article in it's
entirety
may be found in the
April
4, 2023 Rock Seeker
Newsletter



credit: rockhoundgrimm,
Instagram

Geological Curiosities: Obsidian Flows

One of the most fascinating geological phenomena related to obsidian is the formation of obsidian flows. These occur when lava with a high silica content cools rapidly, forming a glassy, solid mass.



The Big Obsidian Flow in Oregon is 1.1 square miles in size

Obsidian flows can be found in various locations around the world, including the Glass Mountain in California and the Big Obsidian Flow in Oregon. These geological marvels offer an incredible glimpse into the powerful forces that shape our planet and create the stunning specimens we love to collect.

by Don from Rock Seeker

Our Trip to Hampton Butte



STATE BY STATE

ROCKS, GEMS,

MINERALS

Illinois



State Rock: Dolostone



Dolostone is a fine-grained sedimentary rock composed primarily of dolomite. A calcium and magnesium carbonate mineral. Dolostone is similar to limestone and is in some cases formed secondarily from chemically-altered limestone. Limestone has a high calcium content, dolostone has a high calcium and magnesium content.

Nonclastic; Very Fine-grained texture (see below)
Medium to light Gray in color

Dolomite is used as a source of magnesium metal and of magnesia (MgO), which is a constituent of refractory bricks. Dolostone is often used instead of limestone as an aggregate for both cement and bitumen mixes and also as a flux in blast furnaces.

State Mineral: Fluorite

The fluorite or fluorspar is a halide mineral and composed of calcium fluoride (CaF_2). The fluorite often occurs as veins with metallic minerals. The fluorite is the principal source of fluorine and used as flux in open-hearth steel furnace.



Pure fluorite is colorless and transparent, both in visible and ultraviolet light, but impurities usually make it a colorful mineral and the stone has ornamental and lapidary uses. Industrially, fluorite is used as a flux for smelting, and in the production of certain glasses and enamels.

Non-clastic rocks are created when water evaporates or from the remains of plants and animals. Limestone is a non-clastic sedimentary rock. Limestone is made of the mineral calcite. It often contains fossils. Chalk is a type of limestone that is usually white. It consists almost entirely of the shells of tiny dead sea creatures. Limestone is a common building material.

Bitumen: A black viscous mixture of hydrocarbons obtained naturally or as a residue from petroleum distillation. It is used for road surfacing and roofing.

STATE BY STATE ROCKS, GEMS, MINERALS

Indiana



State Stone: Limestone



Limestone is a sedimentary rock composed mostly of the mineral calcite and comprising about 15% of the Earth's sedimentary crust. It is a basic building block of the construction industry (dimension stone) and a chief material from which aggregate, cement, lime and building stone are made.

Limestone is highly regarded in the construction industry for its exceptional durability, and it's an ideal building material for structures meant to last for generations. Comprised of calcium carbonate, limestone can stand up to weathering and erosion, remaining strong and stable over hundreds of years.



The Great Pyramid of Giza

The Great Pyramid of Giza is the oldest and largest of the three pyramids in the Giza pyramid complex bordering what is now El Giza, Egypt. It consists of about 2.3 million limestone blocks averaging 1 cubic metre with a mass of 2-3 tonnes.



The **halides** group of minerals are salts of sodium, fluoride, and hydrochloric acid. The minerals halite, sylvite, and carnallite from this group contain exclusive chloride having petrogenic significance. Halite (NaCl) is the mineral form of sodium chloride and is commonly known as rock salt.

pet·ro·genic: of or relating to the origin or formation of rocks and especially of igneous rocks.

Igneous rocks are “fire-born,” meaning that they are formed from the cooling and solidification of molten (melted) rock. The word igneous derives from ignis, the Latin word for “fire.” Molten rock material is known as magma until it is erupted onto the surface when it then is termed lava.

References:

geologypage.com statesymbolsusa.org geology.com mineralexpert.org www.usgs.gov
www.gemsociety.org britannica.com google.com mrds.org ohiodnr.gov
gisgeography.com en.wikipedia.org

Our next Club Meeting is:

June 19th

**Doors open at 5:30 PM for socializing
Meeting starts at 6 PM**

Rock Identification & Prospecting Skills

by Brian Curl, Polka Dot Agate Mine Manger

***Don't forget about Show and Tell!**

***Those who won a door prize at our last meeting please bring one this meeting.**

**Meetings are held every third Wednesday of every month from March through October at the OSU Extension Service Building
3800 SE Airport Way Bldg 3 "The Annex" Redmond, OR
at 6 PM. The only exception is July or August when CORC has its annual picnic.
In November, CORC has its annual holiday party. The club does not meet from
December through February.**

Meeting minutes can be found at corockcollectors.com



Banding – the occurrence of concentric layers or bands of different colors found in some minerals, like agate. They look like colored zoning lines.

CORC Annual Picnic July 20

We will be selling raffle tickets for the
Highland Park Tumbler and grit pack
at our next 3 meetings and at the picnic. We will pick the winning
ticket at the picnic. You do not have to be present to win.

2024 Field Trip Dates

*All fields trips are
subject to
change

June 23rd, Sunday Glass Butte
Obsidian

July No Field Trip Due to Annual Picnic on the 20th, Saturday

August 3rd, Lucky Strike Mine
Thundereggs
This is a fee dig

August 25th, Sunday Milepost 32
Leaf fossils and petrified wood

September 14th, Saturday Old Marker Ranch
Sweet Home, Oregon
Agates and petrified wood
This is a fee dig \$2/lb

October 13th, Sunday Ochoco Amigos
Agates, moss agates, jasper, crystals



**The rarest and most
expensive type of
obsidian is fire obsidian.**

picture courtesy of Rock Seeker

2024 Rock Show Dates

**May 28-June 30 Mt Hood Rock Club Annual Rock & Gem Show
Kliever Memorial Armory Portland, OR**

**June 13-16 Prineville Rockhound Pow Wow
Crook County Fairgrounds Prineville, Oregon**



**June 20-23 Madras Rock Show
Jefferson County Fairgrounds Madras, Oregon**

**July 11-13 Thunderegg Days
Nyssa South Park Nyssa, OR**

**July 13-14 Rock'n the Coast Rock and Gem Show 2024
National Guard Amory Newport, OR**

**July 20 Oregon Geo Fest
Broadway Center Eugene, OR**

**August 2-4 Far West Rock & Gem Show
The Mill Casino - in the Salmon Room North Bend, OR**

**August 16-18 End of Summer Rock Show
Polk County Fairgrounds Rickreall, OR**

It's time to renew your membership!

2024 CORC Board Members

April Anable
President

Patricia Moreland
Vice President

Tonia Smith
Secretary

Nancy Johnston
Treasurer

Ken Lawson
Co-Field Trip Committee
Chair

Eric Smith
Co-Field Trip Committee
Chair

Barb Thompson
Claims Committee Chair

Scott "Plaid" Peterson
Program Committee Chair

You may now go to our website
corockcollectors.com to pay your
membership dues online.

Click on the
Membership page. It will take you
to Cheddarup. Follow the
instructions to fill out the
membership form and make
your payment.

Or you may print off the membership form
instead and mail it with a check.

Central Oregon Rock Collectors (CORC)
4817 SW Volcano Ave
Redmond, OR 97756

Non Board Members

Tonia Smith
Nancy Johnston
Newsletter Editors

April Anable
Social Media
Webmaster

Annual membership dues are
\$20 for individuals,
\$25 for household
and \$5 for juniors.

If you have questions, please
contact Tonia at
corc.rocks@gmail.com

***If you would like to contact a board member please email
corc.rocks@gmail.com**

ANNOUNCEMENTS

CigarBoxRock Lapidary
63291 Nels Anderson Rd
Bend, Or
Open Tuesday- Saturday
9:00am - 3:00 PM
CBR@Bendnet.com
541-389-9663 Or 541-280-5574
Follow us Facebook and Instagram

Coming soon!

In house shows of specialty Cabs and Slabs

Cigarboxrock.com

**After a longer than anticipated wait we are
back in our buildings and ready to serve you!**

To post an announcement or ad in the
CORC newsletter please email
corc.rocks@gmail.com.

You must be a current member to do so.