



# The Helena Mineral Society Newsletter



Gem, Mineral, and Geological Education and Experience

February 2011

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## From The Editor:

. Barite is this month's mineral. Barite derives its name from the Greek *barys*, in reference to its high specific gravity.

Crystals are orthorhombic and common, often being large and fine. Barite also occurs in thin to thick tabular crystals compressed along the *c* axis and commonly elongated along the *c* axis.

Crystals occur as square tablets, beveled-edge tablets and chisel-tipped prisms.

Barite is very brittle, but when in massive form it is fairly tough. Fracture is uneven and barite has a perfect cleavage parallel to the *c* axis.

Barite is transparent to translucent. It is usually colorless but also occurs in pale blue, yellow, brown, grayish and rarely, reddish or greenish.

Chemistry is barium sulfate. Weight is 4.3 to 4.6 and hardness is 3 to 3.5.

Barite is a moderate to low temperature hydrothermal vein material. It commonly forms the gangue for sulfide ores. In sedimentary rocks it forms as veins or lenses or lines cavities.

In the Helena area, there are several good collecting areas for this mineral. Indian Head Rock, south of Basin, has fine specimens. Whitehouse Campground, east of Bernice, is another fine area to collect. Fine small crystals lining geodes can be found in the White Earth area of Canyon Ferry Lake. Massive barite can be found at the Summit or Montana Silver Star Mine southwest of Radersberg. In the central to eastern part of Montana, fine chisel-tipped crystals can be found along with barite seams in fossil bacculites.

So, go forth and add a specimen of this mineral to your collection!

**Helena Mineral Society  
Officers for 2010-2011**

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**Vice-president: Kathy Bruce**  
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**Secretary: Vacant**

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**Show Chairman: Gary Parisi**  
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**Program Chairman: David Jordan**  
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The grab bag filling date for the HMS show will be March 19, 2011 at Wayne Waters' house, 5485 Sahara Court. If you have material and cannot be there, contact Wayne at 458-4919 or Gary at 442-1226 to make arraignments to pick up material.

Field trip suggestions are needed. Martin would like to have a tentative schedule for March's meeting. Contact Martin at 431-8081 with your suggestions.

Montana Tech Mineral Museum would like to have a rotating mineral display from clubs around the state. If you have a mineral that was collected with 70 miles of Helena, and would like to display it for one year at the museum, contact Dave Jordan at 443-0348. HMS will put in one or two cases at this year's show with specimens for consideration.

Dr. Ray Breuninger will be conducting a course on collectable minerals in the Helena area at Carroll College. Cost is \$35.00. There will be 4 class dates, April 6, 9, 13 and 16. Times will be 7 to 10 in the evenings and 9 to 12 on Saturdays. Contact Ray at 442-2526 for info or to sign up.

HMS members will be doing wire wrap demonstrations at the show this year. If you do wire wrapping, and would like to do a demo, contact Gary at 442-1226 or Kathy at

443-1175.

Next regular meeting is March 10, 2011

## Twinned Crystals at the Sally Ann Quartz Claim

Ray H. Breuninger  
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It's winter again, and I've strewn dozens of sparkling Sally Ann crystals out on the table. I'm sorting out candidates for my mineral collection, plus a few for trading and a big batch for the kid's mineral grab bag at the April Mineral Show (coming up fast!). Today, I'm looking for twins—crystal pairs that have a reflected arrangement of their atoms. At Sally Ann, we find two twin types, or laws, Japan and Dauphine. The halves of a Japan Law twin attach in an easy-to-spot butterfly wing pattern. A pair of Dauphine Law crystals are a bit tricky to spot, because the two crystals completely merge. (It's Dough-fee-nay', with the accent on the nay.)

**Japan Twins.** In Japan twins, two crystals connect along a contact surface, with the crystals arranged like your left and right hands, or two shells of a clam. This contact twinning gives a V shape, almost always with one crystal bigger than the other. (Why? No one knows.) The angle of the V between the twinned crystals is always 95.5 degrees. The contact between the twinned crystals is called the composition surface. Expect the composition surface to be somewhat irregular, not a perfect plane. Japan twins will split apart on the composition surface, so handle them with care. A dab of Elmer's household glue will fix them back together, as good as new (well, nearly).

Japan twins are the real Sally Ann prizes! Take a look at the photo of Gary Parisi's Japan twin, which is the biggest I've seen from the claim. It shows the typical lopsided, V shaped, crystal arrangement. Both crystals are flattened front to back, again we don't know why. One of Leland Stanford's twinned beauties is atypical with both crystals equal in size; this specimen also shows Dauphine twinning.

**Dauphine Twins.** Dauphine twins are penetration twins, extremely common at Sally Ann. In Dauphine twins, two crystals combine in a complex fashion to form what looks like a single, well-shaped crystal (as opposed to contact twins—such as Japan twins—where the two crystals are side by side). The internal structure of one Dauphine crystal is the mirror reflection of the other. The merging of the two crystals shows up as shiny patches and matte patches on crystal faces. The patches have irregular shapes, with both curved and straight borders. To see the patches, rotate a specimen until you have a strong reflection on one of the faces. If it's a Dauphine twin, parts of the face glisten and reflect light; other parts are dull, with little reflection.

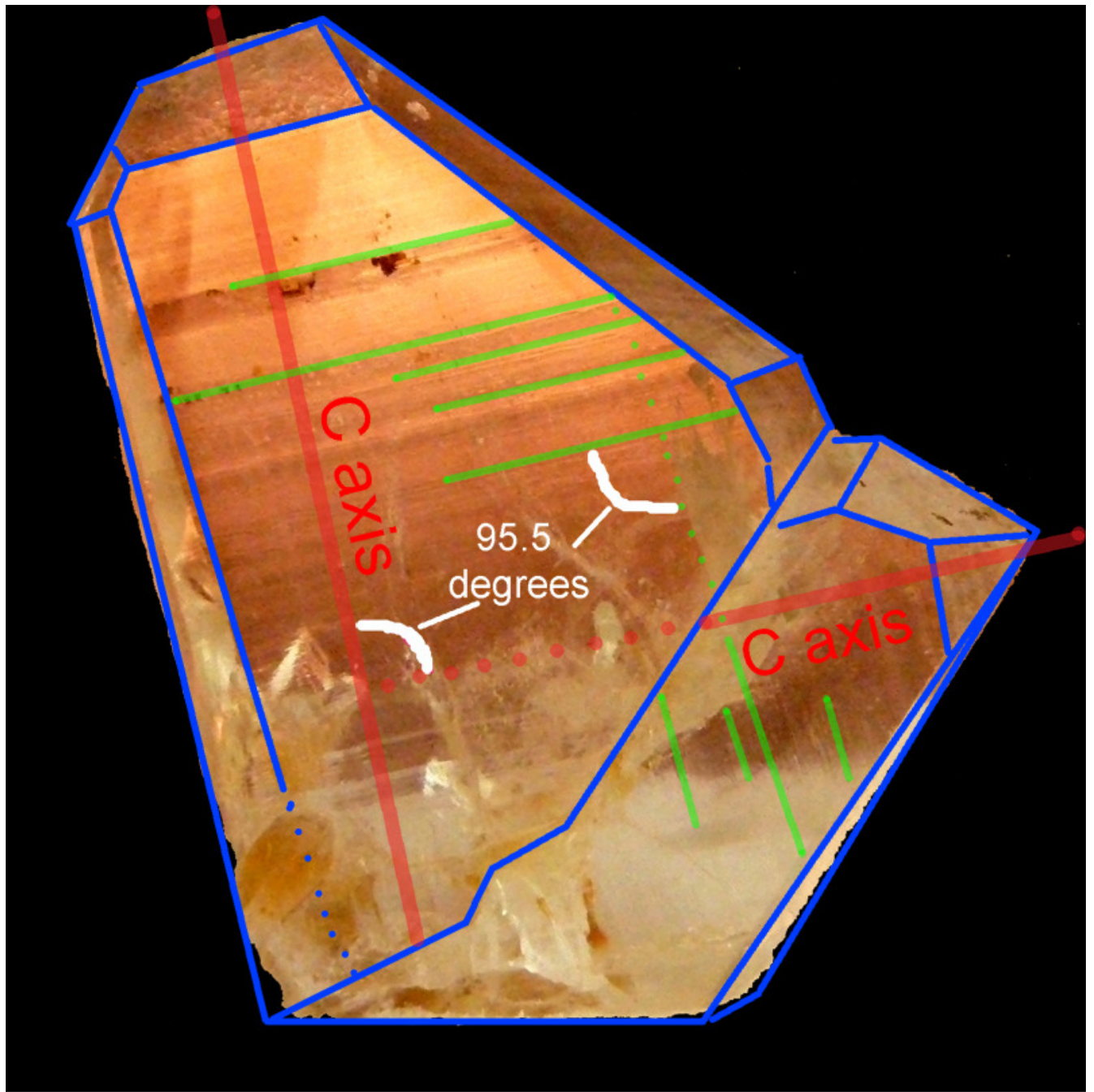
Quartz crystals generally show growth striations on their sides (the prism faces). Striations are parallel lines running sideways across the prisms. See the green lines in my overlay drawing of Gary's Dauphine twin. Striations have little to do with twinning, but will help you orient a crystal.

**Brazil Twins.** Worldwide, Brazil Law twins are about as common as Dauphine twins. Brazil twins are penetration twins much like Dauphine twins, but display a strong angular pattern with straight line segments bounding the matte and shiny patches on crystal faces.

At our Sally Ann Claim, not many Brazil twins turn up. Maybe none. Why? I don't know. No one knows. Shovel and screen hard and fast this summer—maybe you will be the one to uncover a gorgeous Brazil twin. If so, give me a call and we will add a photo of it to this article, right here.



Japan Law twin from Sally Ann Claim.  
Gary Parisi specimen



Japan Law twin from Sally Ann Claim.  
Gary Parisi specimen



Dauphine Law twinning shown by matte and smooth texture zones with a very irregular boundary, on a prism face (m face) of a Sally Ann quartz crystal. Image height about 2 cm; Gary Parisi specimen.



Japan and Dauphine twins in Sally Ann quartz.  
Specimen of Leland Stanford.



Japan twin in Sally Ann Quartz.  
Width of twin 4.8 cm (1.9 in); Leland Stanford specimen.

## Meetings

The Helena Mineral Society meets at the Mountain West Bank located on Montana Avenue between Aspen and Poplar. Meetings are the second Thursday of every month at 7:00 pm. There is no regular meeting for the month of December. See you there! Friends, guests, and new members are always welcome

To place a classified ad, please see me in person at one of our regular meetings or you may e-mail me (Gary) with your information at [gjparisi72@yahoo.com](mailto:gjparisi72@yahoo.com). Ad will run in the newsletter for that month only unless specifically requested to run longer.

### Pictures and Articles Needed:

If you have a picture that you want to share, please send it to me, along with a short description of the activity, where it took place, and when, and I'll put it in the newsletter. If you'd like to share your field trip adventures with those members who are unable to attend, please feel free to contribute to the newsletter. Just e-mail me your experiences, and I'll make sure they're entered. Remember, this is your newsletter, and your contributions make it better.

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