Chert and “Savannah River” Agate

Girard, GA
Specimens are found on a public right-of-way.

During the 1700-1800s, this was part of a stage coach route between Augusta and Charleston.
New material is exposed every time the road is graded.
Girard Chert

- Sedimentary rock
- Microcrystalline, cryptocrystalline, or microfibrous silica-rich
- Contains tiny fossil particles and microminerals
Chert breaks in conchoidal fractures that easily form very sharp edges.

The white outer crust is from weathering.
Used and traded for 16,000+ years for stone tools and projectiles (arrowheads, spear points)
Augusta Gem and Mineral & Aiken Gem, Mineral and Fossil Society members have found Native American artifacts here.
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Pottery shards

Preformed knapped chert
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Vugs (cavities in the rock) contain different microminerals and sometimes even fossils.

Specimen collected by Bill Reid
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Microminerals in Girard chert vugs:

- barite
- druzy quartz (clear or white crystals)
- cacoxenite (golden brown)
- calcedony (light blue)
- churchite (fine fiberous white tufts)
- dufrenite (green-brown fiberous or hemispheres)
- gypsum
- hematite (red-brown)
- hyalite opal (fluoresces light green)
- jarosite (brown to yellow-brown)
- kidwellite (chartreuse green)
- limonite
- rockbridgeite (black-brown crusts and spheres)
- strengite (pinkish)
- varisite

Source: Kim Cochran
Georgia Mineral Society
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This area is located in the **Coastal Plain** geologic region of South Carolina.

The mix of fine-grained grey-white sand and iron-rich red soil shows that this region has been covered by seawater and shallow fresh water many times since the Cretaceous Period (144-65 million years ago).

*Image source: SC Aquarium “Sculpting South Carolina”*
Chert is both a biological and a chemical sedimentary rock.

Untold zillions of silica dioxide (SiO$_2$) skeletons of diatoms (single cell), radiolarians (amoeboid protozoa), foraminifera, pteropods, coccolithophores, and sponges fell to the sea floor. As these skeletons dissolved, the SiO$_2$ grew crystals that merged together. These deposits gradually formed continuous layers in the soft seabed sediments. With time and pressure, the layers hardened into rock.
This specimen has a perfect fossil echinoid (sea urchin) inside of the druzy quartz-filled vug.

This is why tiny particles of marine fossils can be seen inside the chert itself, and sometimes newer era marine organisms are fossilized inside of the rock as well.
Fossil gastropod in a chert specimen

Collected by Julia Poole
Aiken Gem, Mineral & Fossil Society
All Club members abide by our Code of Ethics.

- All holes dug in the road bed are filled in.
- No trash is left behind.
- No collecting on private lands.