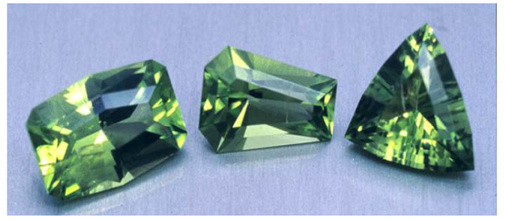
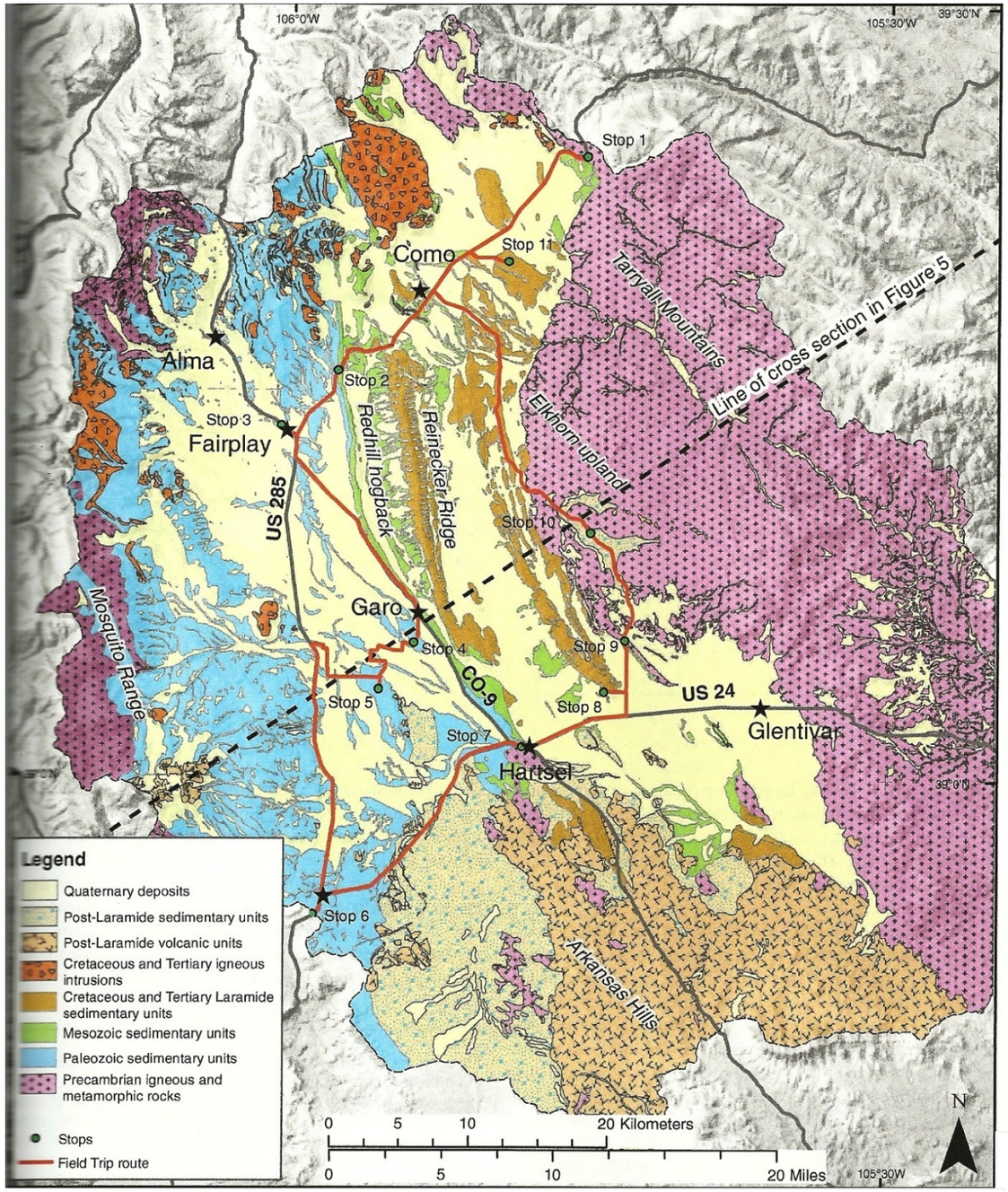
Peridot from out of the ground
in South Park



Faceted peridot

Pete Modreski presents
**Geology of South Park, Colorado**
to the Park County Historical Society
Oct 15th, 2016
Design: Jim Glenn

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South Park Geology Presentation
October 15th, 2016 – Dr Pete Modreski

I gave a presentation to the PCHS last April about the geology of Park County that focused mainly on the Bailey area and the ancient, crystalline rocks of the Front Range that underlie it—gneiss, schist, and granite. In this month's talk I will move west and concentrate on South Park, quite a different chunk of geology.

**South Park** is a unique region in Colorado. This relatively flat basin of some 900 square miles has been uplifted several thousand feet less than the mountain ranges that surround it. The lesser amount of uplift, making it a down-dropped basin relative to the mountains, has preserved younger sedimentary (and volcanic) rocks than can be found in the ranges. It has the overall structure of a large north-south-trending syncline (downward fold), cut by numerous north to northwest-trending faults.

The sedimentary rocks range include:

1) Lower to Upper Paleozoic limestone, dolomite, quartzite, sandstone & shale;
2) Mesozoic rocks of Jurassic and Cretaceous age (the Morrison Formation, Dakota Sandstone, and Pierre Shale);
3) Tertiary sedimentary rocks including the South Park, Antero & Wagontongue Formations; and Pleistocene gravels.

The more erosion-resistant layers form the prominent hogback ridges of Red Hill and Reinecker Ridge. Cretaceous sedimentary rocks near Como contained the coal beds which were mined to the benefit of the railroads that crossed the Park. Volcanic rocks of the Thirtynine Mile volcanic field cover much of the southern part of the Park, marking an extensive volcanic episode from the middle of the Tertiary Period. Prominent among these volcanics is the **37-million-year-old Wall Mountain Tuff,** erupted from a caldera in the Sawatch Range and which travelled (and buried and incinerated the landscape) as far east as **Castle Rock**.

Barite crystals from Hartsel

Most mineral deposits occur in the uplifted ranges around the Park, but placer gold mining helped bring settlers to the park, as did its salt springs. Small uranium occurrences were found near Garo. Porcupine Cave (in Ordovician limestone) is famous for its Ice Age fossil mammals. In the modern era, mineral and gem collectors are drawn to the barite crystals and agate found near Hartsel, gem peridot near Herring Park, and most of all to the gem topaz in the Tarryall Range that forms the Park's eastern margin.