THE GODSEND CLAIM: A PERLIMINARY REPORT, LAKE GEORGE PEGMATITE DISTRICT, TELLER COUNTY, COLORADO

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The Godsend mining claim, staked by Richard Fretterd in 2001, is in the Crystal Creek area, west of Crystal Peak, in Teller County, Colorado. North of U.S. Highway 24 between the towns of Florissant and Lake George, this famous collecting site spans the Teller–Park county lines. Since the 1870s, some of the world’s finest examples of amazonite, smoky quartz, and other minerals have been mined from the Lake George pegmatite district, which includes Crystal Peak and the Crystal Creek area.

The Godsend mining claim is also located within the Hayman fire area where a blaze destroyed more than 138,000 acres of forest during the summer of 2002. Although most of the area is under claim, this part of Pike National Forest is closed due to the fire.

The geologic setting has many interesting aspects. Pegmatite dikes and lenses in the Pikes Peak batholith may contain miarolitic cavities (crystal pockets). The Godsend claim represents a recently developed, spectacular example of these crystal-bearing pockets found in the Pikes Peak batholith.

The billion-year-old Pikes Peak batholith is the largest pluton in Colorado. Exposed over 3,000 km², it also has been traced geophysically in the subsurface to the east for 129 km (80 mi), and as much as half of the batholith could be buried. The Pikes Peak batholith is unique with no counterparts of that age or composition anywhere in the southern Rocky Mountains. A composite batholith with three major intrusive centers (its principal rock type is classed as an anorogenic A-type granite) is thought to have been generated during a period of continental doming and rifting. Its magmas were likely generated by a combination of processes involving both crustal and mantle melting—evidence suggests a limited amount of mixing of granitic and basaltic magmas. The magma cooled at relatively shallow (epizonal) crustal levels within 5 km of the surface.

Parts of the batholith were exposed by uplift and erosion about 500 Ma, when the Cambrian Sawatch sandstone was deposited unconformably on the granite. Other major periods of uplift and erosion occurred during the creation of the Ancestral Rockies about 250 Ma and during the Laramide orogeny (ca 70 Ma). Major faults that cut the batholith, like the Ute Pass and Rampart fault systems, are largely Laramide features. Parts of the batholith have been segmented by Neogene block faulting, sometimes by re-activating earlier faults.

Late-crystallizing internal and satellitic stocks are of two distinct compositional trends: potassic (granitic) and sodic (syenites and alkali granites). The sodic trend is represented by seven small stocks, six of which are aligned along two northwest-trending linears parallel to major Proterozoic fault orientations.

The 29 km² Lake George intrusive center, which surrounds the Lake George pegmatite district, is actually composite, containing rocks of both the potassic and sodic series in a circular or concentric pattern. Rocks of the sodic series (fayalite granite and quartz syenite) form partial ring dikes around a central stock of dark-green syenite. These sodic rocks were intruded into a late stock of fine-grained granite to fine- to medium-grained porphyritic granite of the potassic series. Most of the productive pegmatite prospects of the Lake George district are in this latter rock unit. The Godsend lies on the edge of the Lake George intrusive center.

The Godsend pegmatites exhibit a gradational pattern with aplite as an outer band abruptly changing to a zone of graphic granite where crystal cavities may occur. The aplite granite has a sugary texture and resembles sandstone. The intergrowth of feldspar and quartz characterize the graphic granite.

While exploring the Godsend, Fretterd observed an east-west trending pegmatite dike in contact with a 0.5 m (1.64 ft)-thick quartz vein. Fretterd began work on the quartz-feldspar contact and dug down 1 m (3.28 ft) where he opened a pocket on February 2, 2002. While carefully removing crystals from the first pocket, he encountered a large milky-quartz core. After breaking through the milky-quartz barrier, he discovered another large pocket. By September 6, 2002, Fretterd had opened six pockets, which he named the Holy Moses group. These pockets are very close together and seem to reflect a high-energy pumping of vapor-rich fluids in
pulsating phases. These pulsating phases formed a conduit-like dike that pinched and swelled over short distances, generating this series of en echelon pockets. Richard M. Pearl likened these types of structures to a string of pearls.

Microcline and quartz are the dominant pocket minerals. Buff to cream-colored microcline crystals as long as 3.8 cm (1.5 inches) have been found. A number of feldspar specimens from the claim fluoresce a distinct red under short-wave ultraviolet light. A. F. Wilson in 1950 noted that not all areas of the Pikes Peak batholith contain feldspars that fluoresce.

Several crystal pockets have been opened recently that have yielded some of the largest specimens of smoky quartz ever found in Colorado. The longest crystal measures 1.295 m (4 ft 3 inches) in length and weighs 156.49 kg (345 lb). The heaviest smoky quartz crystal, attached to a microcline plate, weighs 199.1 kg (439 lb) and is 1.218 m (4 ft) long. Cubic groups of fluorite have been found in various shades of pale blue. Some cubes exhibit a dark purple along the edges.

The surface features of the area are now easy to observe after the Hayman fire burned all surface vegetation, leaving a vast area to prospect. Pegmatite dikes are slightly more resistant to weathering than the surrounding granite and appear as small ridges. These topographic features, along with graphic granite exposed on the surface, may reveal more pockets. The discovery and development of new pockets and accompanying research will reveal more of the mysteries of the crystal pockets at Lake George—truly a "Godsend."

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