



Figure 88. Glen Mountains Layered Complex showing result of spheroidal weathering in strongly layered rocks. Area is E-14 Lower, north projection.



Figure 89. Glen Creek Gabbro showing spheroidal weathering, typical of its more homogeneous nature. Area is E-14 Lower, north projection.

tion is clouded by the possibility that assimilative reaction has affected even the pinkest (least contaminated) granitoid components of the Cold Springs Breccia. For the present, the origin of the Cold Springs Breccia and the associated granitic dikes—both of which transect the Glen Creek Gabbro—remains uncertain. (See also Powell and others, 1980.)

The Glen Creek Gabbro is exposed along an easterly trend for about 1.5 km; the outcrop width reaches about 0.4 km. The body is undoubtedly larger than this, because it is covered in places by surficial deposits and is overlain by the Glen Mountains Layered Complex. Although the body appears to be tabular and sill-like at the surface, probably owing to horizontal dikes, its exact form is unknown. That the Glen Creek is not strictly conformable is seen where it intrudes both the L and M Zones of the Glen Mountains Layered Complex. The thickness of the body is not known, but it does exceed 30 m.

Unlike the enveloping rocks of the Glen Mountains Layered Complex, which weather to light-gray, blocky slabs, the Glen Creek Gabbro weathers to comparatively smooth and rounded surfaces, a characteristic of the Roosevelt Gabbros in general. The weathered Glen Creek Gabbro forms olive-brown, friable masses, of considerable thickness in places, which exfoliate in layers from rounded masses of remarkably fresh, dark-brown gabbro. In one particular excavation, these weathering patterns convey the impression that their size, shape, and distribution are controlled by subtle structures that may relate to stresses formed during magma cooling.

The Glen Creek Gabbro is generally medium grained, although its grain size is variable. It is readily distinguished from the Glen Mountains Layered Complex by the higher color index and presence of biotite (or phlogopite) in the gabbro. Interesting ultramafic concentrations of olivine, magnetite, and ilmenite occur locally in the Glen Creek Gabbro. The genesis of these ultramafic concentrations is discussed below.

A coarse-grained rock resembling gabbro ("basic") pegmatite occurs in the northwestern and eastern parts of the Glen Creek Gabbro exposures. Its close spatial relationship to Glen Creek Gabbro strongly suggests a genetic connection, at present not worked out in any detail. Whether it represents an initial facies of the gabbro or is the result of secondary processes is unknown. Current investigation is being focused on this question. In the section below on the Sandy Creek Gabbro is a discussion of the origin of a similar-looking rock type within that body, with remarks about the interpretation of these and other occurrences in the Raggedy Mountain Gabbro Group.

The characteristic texture of the Glen Creek Gabbro is hypautomorphic-granular, locally ophitic to subophitic, with large (1 to 5 cm), anhedral augite grains (5–53 percent) enclosing lath-shaped labradorite crystals (30–70 percent) and subhedral to anhedral, rounded olivine grains (2–22 percent) (fig. 90). Magnetite and ilmenite are ubiquitous and occur