

View 14.—Clements Mountain towers above an alpine meadow at Logan Pass on the Continental Divide. The lower meadow is underlain by the Helena Formation (Yh); the upper meadow and lower three-quarters of the mountain contain Snowslip Formation (Ysn). Shepard Formation (Ysh) caps the mountain. Glacial moraines around the mountain base formed as recently as the mid-1800's.



View 13.—Thrust fault between Heavens Peak (left) and McPartland Mountain on the west side of Glacier National Park drags Grinnell Formation (Yg) onto Empire Formation (Ys). S-shaped folds above fault suggest back sliding along the thrust plane. View is south-southeast.



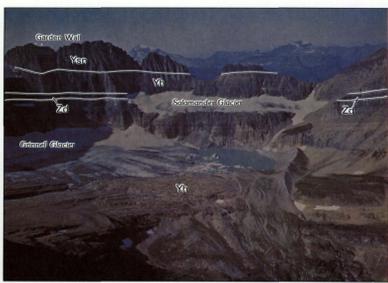
View 12.—Garden Wall, a knife-edged arete, is capped by Snowslip Formation (Ysn). Helena Formation (Yh) forms lower slopes. Haystack Butte is in center. Going-To-The-Sun Road forms light-colored line along vegetated mountainside. MacDonald Creek in foreground. View is east.



View 11.—View northeast showing eastward-dipping Proterozoic rocks in the west limb of a syncline whose axis passes through Glacier Wall toward upper right part of photograph. MacDonald Creek flows southwestward down the heavily forested, glacier-scoured valley into Lake MacDonald, the largest body of water on the west side of Glacier National Park.



View 10.—Sperry Glacier, viewed from the north, one of the largest of the few remaining glaciers in the Park, perches above Avalanche Valley (right foreground).



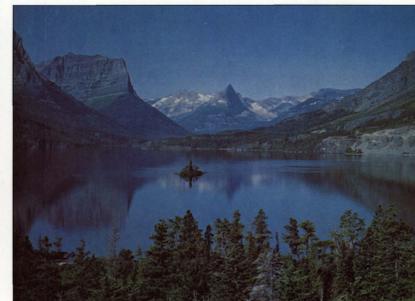
View 15.—Grinnell and Salamander Glaciers were connected by an ice tongue before 1926, but they have since melted apart. The moraine to the right of Upper Grinnell Lake, right of center, marks a former margin of the expanded glacier. The moraine partly impounds Upper Grinnell Lake, which is fed by meltwater. Ice broken from the terminus of Grinnell Glacier forms small icebergs. The precipitous headwall above the glaciers is the northeast side of the Garden Wall, which here consists of Helena and Snowslip Formations. Note the 100-meter-thick diorite sill (Zd) and its bleached upper and lower borders just below the middle of the cliffs at the level of Salamander Glacier. View is southwest.



View 16.—Shear east face of the Garden Wall is composed of Helena Formation (Yh) and Snowslip Formation (Ysn). Note diorite sill (Zd), its change of stratigraphic level in right center of photograph, and bleaching in the rocks above and below.



View 17.—Horn-like Reynolds Peak, elevation 2,800 m, rises above the hanging valley at the head of Reynolds Creek. The steep cirque walls below the hanging valley consist of Helena Formation.



View 1.—Saint Mary Lake, the largest water body in the eastern part of Glacier National Park, fills the bottom of a glacier-scoured, U-shaped valley. Wild Goose Island is in center of photograph.



View 2.—Singleshot Mountain is formed of rocks of the upper plate of the Lewis thrust fault. The trace of the fault is obscured by talus just above the treeline. Light-buff rocks above the talus are limestone and dolomite of the Albyn Formation, the oldest formation in the eastern part of the mapped area. The overlying Appekunny Formation, mostly dark greenish gray argillite and siltite, here contains two prominent light-gray bands of quartzite.



View 3.—Divide Mountain, on the east boundary of Glacier National Park, is a highly faulted klippe of mostly Albyn Formation. Darker rock at very top of mountain is Appekunny Formation. The Lewis thrust fault is at the base of the mountain but is mostly concealed by landslides and talus. Face of mountain on the right side of photograph is a recently formed landslide scar.



View 4.—Red Eagle Mountain, on the south side of Saint Mary Lake, contains westward-dipping Proterozoic rocks in the upper plate of the Lewis thrust. Higher thrusts are splay faults that probably merge with the Lewis at depth. The Lewis thrust fault is concealed by talus in lower left of photograph.



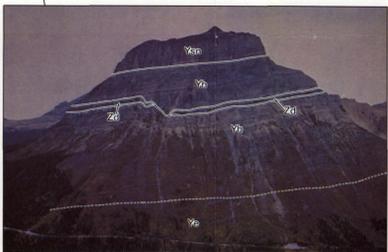
View 5.—Canophyton zone, as massive light-gray rock composed of fossil algae (stromatolites), forms a prominent marker in the thin-bedded upper part of the Helena Formation (Yh) throughout most of Glacier National Park. A diorite sill (Zd) is exposed locally on the lower slopes. Top of ridge is composed of Snowslip Formation (Ysn).



View 9.—Small syncline formed from quartzite and interbedded red argillite in the upper part of the Grinnell Formation near Sperry Glacier. Meltwater rivulets cascade over resistant quartzite layers.



View 8.—Folded Grinnell Formation near Gunsight Pass on the Continental Divide. Rocks along skyline at upper right are Empire Formation (light brown) and Helena Formation (dark gray).



View 7.—Going-To-The-Sun Mountain consists mostly of westward-dipping strata of the Helena (Yh) and Snowslip (Ysn) Formations. Empire Formation (Ys) crops out near the base. A diorite sill (Zd) abruptly changes stratigraphic position in the center of the photograph. The road, named after an mountain, skirts its base in the lower part of the photograph.



View 6.—The red Grinnell Formation is a prominent part of the Proterozoic rock sequence in the upper plate of the Lewis thrust fault. Trace of fault about coincides with edge of heavy timber at base of escarpments to left of center. The Proterozoic rocks dip gently westward in the east limb of a northward-trending syncline whose axis is to the left of photograph. Red Eagle Lake, Saint Mary Lake, and Lower Saint Mary Lake in upper right of photo are in Mesozoic rock terrane of the lower plate of the Lewis fault. Split Mountain is in foreground. View is northeast.

Map C. Shaded-relief, oblique view index map showing location of photographs

GEOLOGIC MAPS, CROSS SECTION, AND PHOTOGRAPHS OF THE CENTRAL PART OF GLACIER NATIONAL PARK, MONTANA

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