DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
NEVADA BUREAU OF MINES

MISCELLANEOUS FIELD STUDIES
MAP MF – 485

Base by U.S. Geological Survey, 1956

Geology mapped in 1971–1972

SCALE 1:62500

CONTOUR INTERVAL 80 FEET
DOTTED LINES REPRESENT 40-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

APPROXIMATE MEAN DECLINATION, 1968

NEVADA
QUADRANGLE LOCATION

PRELIMINARY GEOLOGIC MAP OF THE AUSTIN QUADRANGLE, LANDER COUNTY, NEVADA

by

Edwin H. McKee

1973

EXPLANATION

Qa | **Qf** | **Qls** — Surficial deposits

Qa, stream gravel and sand and intermontane fans grading into playa sand and silt

Qf, young fan deposits, undissected or slightly dissected, mostly in the process of formation

Qls, landslide deposits or areas of large surficial slumping

Pleistocene and Holocene

Qoa — Older alluvial deposits

Gravel and sand of dissected older fans

QTs — Sedimentary rocks

Green to brown tuffaceous mudstone, siltstone, and sandstone

Pliocene or Pleistocene

Tt — Tolyabe Quartz Latite

Crystal-rich rhyolitic ash-flow tuff. Contains smoky quartz, sanidine, plagioclase, and some biotite. Age based on K/Ar data (Bonham, 1970)

Miocene

Tbm — Bates Mountain Tuff

Pink to gray crystal-poor rhyolite ash-flow tuff. Contains quartz, sanidine, and a little plagioclase

Td — Dacite flows

Dark, aphanitic to porphyritic flow rocks

Oligocene or Miocene

Tt — Undifferentiated ash-flow tuff

Includes at least three cooling units. All are pink moderately crystal-poor tuff containing quartz, sanidine, plagioclase, and biotite. One sample from 2½ miles southeast of Austin Summit yielded K/Ar age of 29.4 m.y. (Andrew and Silberman, 1970)

Td — Dacite flows

Dark aphanitic to porphyritic flow rocks. Includes laminated, platy splitting types and flow breccias. Some contain large phenocrysts of hornblende and (or) plagioclase

Oligocene

UNCONFORMITY

Th — Rhyolite breccia

Silicified rhyolite breccia; may be partially intrusive and partially flow rocks. Age uncertain but older than Bates Mountain Tuff

TKi — Diorite intrusive rocks

In southwest corner of quadrangle. Light-hued, pervasively altered fine- to coarse-grained hornblende diorite stock with numerous jumbled large inclusions labeled breccia. Age unknown

KJi — Diorite intrusive rocks

Four and one-half miles southwest of Austin. Dark- to light-hued, fine- to coarse-grained and locally porphyritic intrusive. Age unknown

Jg — Granitic rocks (Austin pluton)

Medium- to coarse-grained, in places porphyritic, biotite quartz monzonite. Mostly massive but in places very strongly developed sheeting gives the rocks a stratified aspect. Dated at 148 m.y. (Kroger and Schilling, 1971)
x, silicified rib

QUATERNARY

TERTIARY OR QUATERNARY

TERTIARY

CRETACEOUS OR TERTIARY

JURASSIC OR CRETACEOUS

JURASSIC

SILICEOUS AND VOLCANIC (WESTERN) ASSEMBLAGE
UPPER PLATE OF ROBERTS MOUNTAINS THRUST

Ov — Valley Formation

Black chert, siliceous siltstone, quartzite, and cherty rocks that are probably altered volcanic flows. Highly folded, faulted, and contorted

CARBONATE ASSEMBLAGE
(INCLUDES EASTERN AND TRANSITIONAL ROCKS)
LOWER PLATE OF ROBERTS MOUNTAINS THRUST

West side of the range 2½ to 8 miles south-southwest of Austin

Oa — Antelope Valley Limestone

Medium- to thick-bedded light-gray limestone. Poorly preserved large gastropods in a few places

Om — Winnemucca Formation

Very poorly exposed outcrops presumably of shale and thin-bedded limestone. The stratigraphic interval forms a soil-covered slope beneath outcrops of Antelope Valley Limestone

Ocl — Limestone

Thin-bedded gray limestone. In places weathers a brownish color. Trilobites collected at several localities suggest correlation with Goodwin Limestone and Windfall Formation of eastern Nevada

Ocp — Phyllite

Gray to black, phyllite and a little thin-bedded gray limestone. Well-developed slaty cleavage

Cq — Quartzite

Medium- to thick-bedded dark quartzite. Some interbeds of dark shale or siltstone

Central and east side of the range 8 to 13 miles south of Austin

Ocl — Tor Limestone

Massive, poorly bedded, largely recrystallized whitish limestone. Formational designation unsubstantiated

Sr — Roberts Mountains Formation

Thin-bedded, platy splitting, tan-weathering argillaceous limestone. Many graptolite collected from near base. No chert at base

Oa — Antelope Valley Limestone

Medium- to thick-bedded light-gray limestone. Some beds of flat-pebble intraformational conglomerate

Om — Winnemucca Formation

Very poorly exposed outcrops presumably of shale and thin-bedded limestone. Forms a soil-covered slope beneath outcrops of Antelope Valley Limestone

Ocp1 — Phyllite and limestone

Thin- to very thin-bedded gray limestone, black argillaceous shale, and phyllite. In most places a well-developed slaty cleavage. Probably equivalent to part or all of the Broad Canyon sequence of Nolan (1962)

Cl — Limestone

Medium- to thick-bedded gray to blue limestone. Upper part is interbedded thin limestone and gray phyllite about 300 feet thick

Cq — Quartzite

Upper part is limestone and siltstone with interbeds of quartzite in one limestone. Lower portion is medium- to thick-bedded quartzite and some siliceous siltstone. Total thickness as much as 3,000 feet

West side of the range 13 to 17 miles south-southwest of Austin

Dda — McMonnigal Limestone

Thin- to medium-bedded gray limestone. Contains corals and some brachiopods

Sr — Roberts Mountains Formation

Thin-bedded, platy splitting, tan-weathering argillaceous limestone. Thin, lenticular black chert at the base

Soh — Hanson Creek Formation

Dark-gray and black limestone, interbeds of lenticular black chert and dark-red and green shale. Contains crypto-lithoid trilobites

Oa — Antelope Valley Limestone

Medium- to thick-bedded gray limestone. Poorly preserved large gastropods in places

Om — Winnemucca Formation

Very poorly exposed outcrops presumably of shale and thin-bedded limestone. Forms a soil-covered slope beneath outcrops of Antelope Valley Limestone

Og — Goodwin Limestone

Thin-bedded grey and brown limestone and sandy limestone

PENNSYLVANIAN (?)

SILURIAN AND DEVONIAN

SILURIAN

ORDOVICIAN AND SILURIAN

ORDOVICIAN

CAMBRIAN

Dcg — Limestone and limestone conglomerate

Rounded to semirounded limestone and chert pebbles and cobbles in limestone matrix. Contains Pennsylvanian brachiopods, corals, and fusilinids. Entire outcrop consists of various-sized jumbled blocks of the conglomerate

Contact — Dashed where uncertain; dotted where concealed

Fault — Dashed where uncertain; dotted where concealed. Ball and bar on downthrown side

Thrust fault — Dashed where uncertain; queried where highly uncertain. Sawteeth on upper plate

Fault scarp — Hachures on downthrown side

Strike and dip of beds

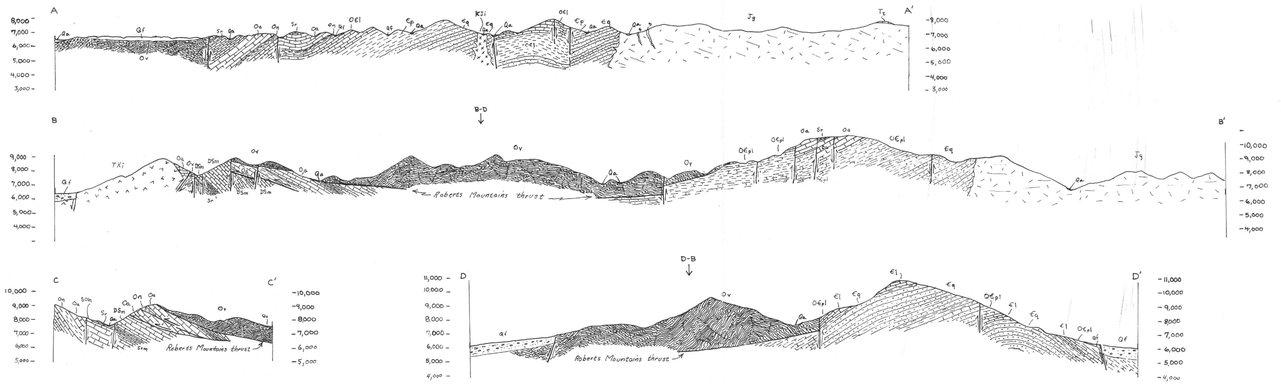
Strike and dip of overturned beds

Strike and dip of foliation

Strike and dip of joints in granite

References:
Bonham, H. F., 1970, Geologic map and sections of a part of the Shoshone Mountains, Lander and Nye Counties, Nevada: Nevada Bur. Mines Map 38.
Kroger, H. W., and Schilling, J. R., 1971, Geochron/Nevada Bureau of Mines K/Ar age determinations list 1: Isochron/West, no. 1, p. 9-15.
McKee, E. H., and Silberman, M. L., 1970, Geochronology of Tertiary igneous rocks in central Nevada: Geol. Soc. America Bull., v. 81, p. 2317-2328.
Nolan, W. D., 1962, Structure and stratigraphy in the central Sylvania Range, Nevada: California Univ. Pubs. Geol. Sci., v. 42, no. 2, p. 71-110.

CROSS SECTIONS



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