

About 17 to 15 million years ago, resurgence of granitic magma caused eruption of trachyandesite to rhyodacite lavas north of Tonopah and rhyolitic to quartz latitic pyroclastic rocks, flows, and domes south of Tonopah near Divide. Hydrothermal activity accompanied volcanism at Divide and deposited silver- and gold-bearing epithermal veins 16 to 15 million years ago.

Crustal extension began about 16 million years ago and resulted in eruption of rhyolite pyroclastic debris, trachybasalt and basaltic andesite flows, and rhyolitic lavas from numerous vents. Much of the pyroclastic debris was reworked and deposited in basins that were formed during crustal extension. Volcanism ceased about 10 million years ago.

### STRATIGRAPHIC AND STRUCTURAL STUDIES

#### Quaternary faulting in Clayton Valley in southwestern Nevada

Geomorphic investigations by J. R. Davis in Clayton Valley in Esmeralda County, Nevada (loc. 3), have revealed evidence of Quaternary faulting. Studies of alluvial slopes and fault scarps along the eastern margin of Clayton playa suggest that faulting was episodic and caused segmentation and entrenchment of alluvial fans. The scarps display two distinct trends which intersect at an acute angle; one trend strikes about N. 30° E. and the other N. 65° E. The most recent episode of faulting is represented by a set of small, steep scarps. If the rates of scarp-profile degradation in Clayton Valley are comparable to those in north-central Nevada (Wallace, 1977), the last episode of faulting may have occurred 12,000 years ago or less.

#### Triassic rocks in southern Toiyabe Range in central Nevada

The Candelaria Formation (Lower Triassic) has been recognized by F. G. Poole about 12 km southwest of Manhattan in the southern Toiyabe Range in northern Nye County, Nevada (loc. 4). Correlation with the type Candelaria, located 80 km to the southwest, is based on similar lithology, sedimentary features, and fauna. Sparse limestone beds in the dominantly platy argillite and siltite flysch sequence have yielded age-diagnostic fossils. Ammonites and bivalves identified by N. J. Silberling (USGS) and conodonts identified by B. R. Wardlaw (USGS) and J. W. Collinson (Ohio State University) are Early Triassic (late Griesbachian to early Dienerian) in age and are comparable to those found in the type locality. Lithology and fauna of the marine Candelaria indicate that it was deposited mainly by tur-

bidity flows in an elongate basin in moderately deep water. The Candelaria flysch is believed to have formed during the Sonoma orogeny of Silberling and Roberts (1962).

#### Digital aeromagnetic data set for Nevada

A composite aeromagnetic map of the State of Nevada was created from approximately 125 different data sets that were adjusted to a barometric elevation of 12,500 ft. The data sets were made by digitizing contour maps compiled from surveys having different line spacings and elevations and flown over several years. The aeromagnetic map has been a useful aid in geologic mapping, in exploration for new mineral deposits, and in delineating areas of geothermal potential.

#### Mississippian flysch in Toiyabe Range in central Nevada

Autochthonous sandstone and conglomerate of probable Mississippian age has been recognized by F. G. Poole in the Toiyabe Range in northwestern Nye County, Nevada (loc. 5). The sandstone and conglomerate unit rests with angular unconformity on the strongly deformed Ordovician Vinini Formation and is overlain disconformably by a 60 m-thick fossiliferous marine limestone unit of Late Mississippian age. The sandstone and conglomerate unit, which is as much as 275 m thick, was deposited in a depression on the denuded and subsided Antler orogenic belt.

#### Allochthonous Devonian chert in northern Shoshone Range in north-central Nevada

Microfossils obtained by C. T. Wrucke, Jr., and D. L. Jones from chert layers in the Roberts Mountains allochthon in the northern Shoshone Range, Lander County, Nevada (loc. 6), have provided additional information on ages of Paleozoic rocks that comprise the allochthon. Most previous dates on these eugeosynclinal rocks were based on fossils from sparse limestone beds and abundant, but poorly exposed, shale and argillite units. Unfortunately, the fossils obtained were from too few localities to permit adequate age assignments of many thrust sheets that also lacked lithologic characteristics diagnostic of a particular formation. Recently, age-diagnostic radiolarians, conodonts, and other microfossils have been found in chert layers at numerous localities in north-central Nevada, and owing to the abundance of chert in most thrust sheets of the allochthon, these fossils will help decipher the stratigraphic and structural complexities of these strongly

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#### Devonian Woodruff Fo

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