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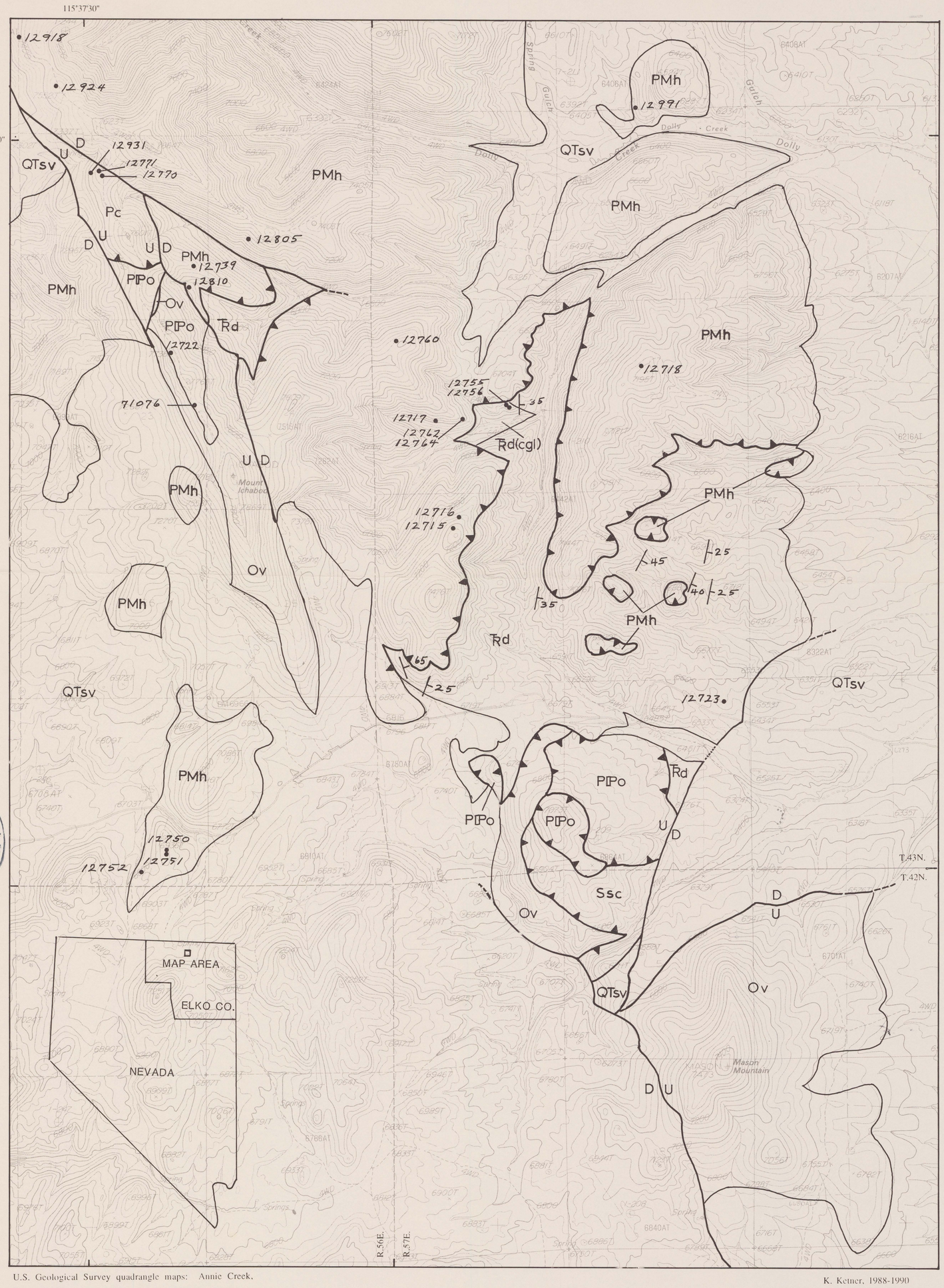

U.S. Geological Survey quadrangle maps: Annie Creek, Cornwall Mountain, Mount Ichabod, Wagon Springs, 1986

K. Ketner, 1988-1990

Scale 1:24,000

0 1 2 MI

0 1 2 3 KM

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PRELIMINARY GEOLOGIC MAP OF THE MOUNT ICHABOD AREA, ELKO COUNTY, NEVADA

By

Keith B. Ketner, Benita Murchey, Robert G. Stamm, and Bruce R. Wardlaw

1992

CORRELATION OF MAP UNITS

QTsv		QUATERNARY TERTIARY	
Rd(cgl)	Rd	Lower Triassic	TRIASSIC
Golconda allochthon	Overlap assemblage		
PMh	PIPo	Pc	PERMIAN
			PENNSYLVANIAN
			MISSISSIPPIAN
Roberts Mtns. allochthon			
Ssc		Middle and Lower Silurian	SILURIAN
Ov			ORDOVICIAN

DESCRIPTION OF MAP UNITS

QTsv **Sedimentary and volcanic rock** (Quaternary and Tertiary)--Jarbidge Rhyolite, and unnamed lava flows, tuff, and ignimbrite; alluvium, colluvium, lake deposits

Rd **Dolly Creek sequence (Lower Triassic)**--Principally thinly laminated deep-water deposit of limy, argillaceous siltstone, limy sandstone, and silty, argillaceous limestone. Also locally includes a conglomeratic facies Rd(cgl)

Pc **Heterogeneous conglomerate (Permian)**--Principally boulder conglomerate; lesser amounts of sandstone, siltstone, and bedded chert; boulders derived from Valmy Formation, and overlap assemblage including richly phosphatic rock of probable Permian age

PIPo **Overlap assemblage (Permian and Upper Pennsylvanian)**--Complete sequence consists, in order, of basal conglomerate, limestone, sandstone and siltstone and phosphatic bedded chert; termed "overlap assemblage" because it lies unconformably on rocks of the Roberts Mountains allochthon

PMh **Havallah sequence (Permian, Pennsylvanian, and Mississippian)**--Highly deformed, rootless mass of limy siltstone and fine-grained sandstone; bedded chert, argillite, and limestone; principal component of Golconda allochthon

Ssc **Siltstone and chert undivided (Silurian)**--An upper unit of micaceous feldspathic siltstone of Middle(?) Silurian age and a lower unit of light colored bedded chert of Early(?) Silurian age; an important component of the Roberts Mountains allochthon; correlated lithically with paleontologically dated units elsewhere in the region (Ketner, 1991)

Ov **Valmy Formation (Ordovician)**--Thick-bedded medium- to coarse-grained quartzite, minor bedded chert, black shale, argillite; a major component of the Roberts Mountains allochthon; correlated lithically with paleontologically dated units in exposures outside the map area

MAP SYMBOLS

Contact

U / D — High-angle fault; U, upthrown side; D, downthrown side dashed where location uncertain; dotted where concealed

Low-angle fault; sawteeth on upper plate

35 — Strike of beds showing degree of dip

• 12764 — Fossil locality with number corresponding to table in text

AGE RANGES OF FOSSIL COLLECTIONS

C=conodont, R=radiolarian, F=fusulinid

Sample number	Kind of fossil	Age range of collection	Specialist (see acknowledgments)
12715	C	Early Pennsylvanian	Sandberg
12716	R	Middle Pennsylvanian	Murchey
12717	C	Early or Middle Pennsylvanian	Sandberg
12718	R	Middle Pennsylvanian	Murchey
12722	F	Late Pennsylvanian (Missourian)	Douglass
12723	C	latest Permian (redeposited)	Sandberg
12739	R	Pennsylvanian to Permian (Wolfcampian)	Murchey
12750	R	Pennsylvanian to Permian (Wolfcampian)	Murchey
12751	R	Pennsylvanian to Permian (Wolfcampian)	Murchey
12752	R	Early Permian (Leonardian)	Murchey
12755	C	Earliest Triassic (Griesbachian)	Wardlaw, Stamm
12756	C	early Middle Pennsylvanian (boulder)	Wardlaw, Stamm
12760	R	Early Permian (Leonardian)	Murchey
12762	C	Late Mississippian (Chesterian)	Wardlaw, Stamm
12764	C	Mississippian	Wardlaw, Stamm
12770	R	Pennsylvanian to Permian (Wolfcampian)	Murchey
12771	C	early Middle Pennsylvanian (boulder)	Wardlaw, Stamm
12805	R	Pennsylvanian to Permian (Wolfcampian)	Murchey
12810	R	Pennsylvanian to Permian (Wolfcampian)	Murchey
12918	R	Early Permian (probably Leonardian)	Murchey
12924	R	Middle Pennsylvanian	Murchey
12931	R	Pennsylvanian to Permian (Wolfcampian)	Murchey
12991	R	Pennsylvanian to Permian (Wolfcampian)	Murchey
71076	C	Pennsylvanian to Permian	Huddle

PRINCIPAL STRUCTURAL RELATIONS IN THE MOUNT ICHABOD AREA

The Mount Ichabod map area displays two major structural features: a low-angle fault that emplaced Paleozoic rocks above Triassic rocks, and a pair of high-angle faults bounding Mount Ichabod, a horst that exposes the Paleozoic strata underlying the Triassic sequence.

Rocks structurally overlying the Triassic Dolly Creek sequence comprise elements of the Roberts Mountains allochthon, Golconda allochthon, and the overlap assemblage. The Roberts Mountains allochthon consists of the Ordovician Valmy Formation and unnamed Silurian strata and is overlain in one area by thrust plates of the overlap assemblage. The term "overlap assemblage" is generally understood to mean upper Paleozoic rocks that were deposited on the Roberts Mountains allochthon either disconformably or with angular discordance.

The Golconda allochthon consists of the Mississippian to Permian Havallah sequence. The term "Golconda allochthon" is a structural term and "Havallah sequence" is a stratigraphic term but, in most contexts, they are synonymous. The Havallah sequence and the overlap assemblage are partially contemporaneous but are of different facies. The Havallah sequence was deposited in relatively deep water and is distinctly allochthonous whereas the overlap assemblage was deposited in relatively shallow water and is parautochthonous. The close juxtaposition, in the Mount Ichabod area, of these partially contemporaneous contrasting facies was the result of contractional faulting. Extensional faulting would have spread the facies apart.

The Mount Ichabod horst is composed of the Valmy Formation and unconformably overlying strata of the overlap assemblage. Heterogeneous conglomerate of Permian age (Pc) at the north end of the horst is interpreted to overly the overlap assemblage on a low-angle fault. Because this unit is unique in its lithic composition it can't be assigned to either the overlap assemblage or the Havallah sequence.

The presence of elements of the Roberts Mountains allochthon and overlap assemblage lying both above and below the Triassic unit indicates tectonic repetition of strata and therefore a compressional, rather than a tensional, stress environment.

Structural relations in the Mount Ichabod area confirm evidence in the Adobe Range, 30 mi (48 km) to the south (Ketner and Ross, 1990), that the Roberts Mountains allochthon was emplaced in post-Early Triassic time. Evidence in the Mount Ichabod area indicates that the Golconda allochthon also was emplaced in post-Early Triassic time. This is the most unambiguous evidence of the time of its emplacement that exists anywhere in Nevada.

ACKNOWLEDGMENTS

C.A. Sandberg dated three conodont collections and R.C. Douglass provided the age of a collection of fusulinids. Conodont sample 71076 was collected by R.R. Coats (1986) and its age was determined by J.W. Huddle.

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