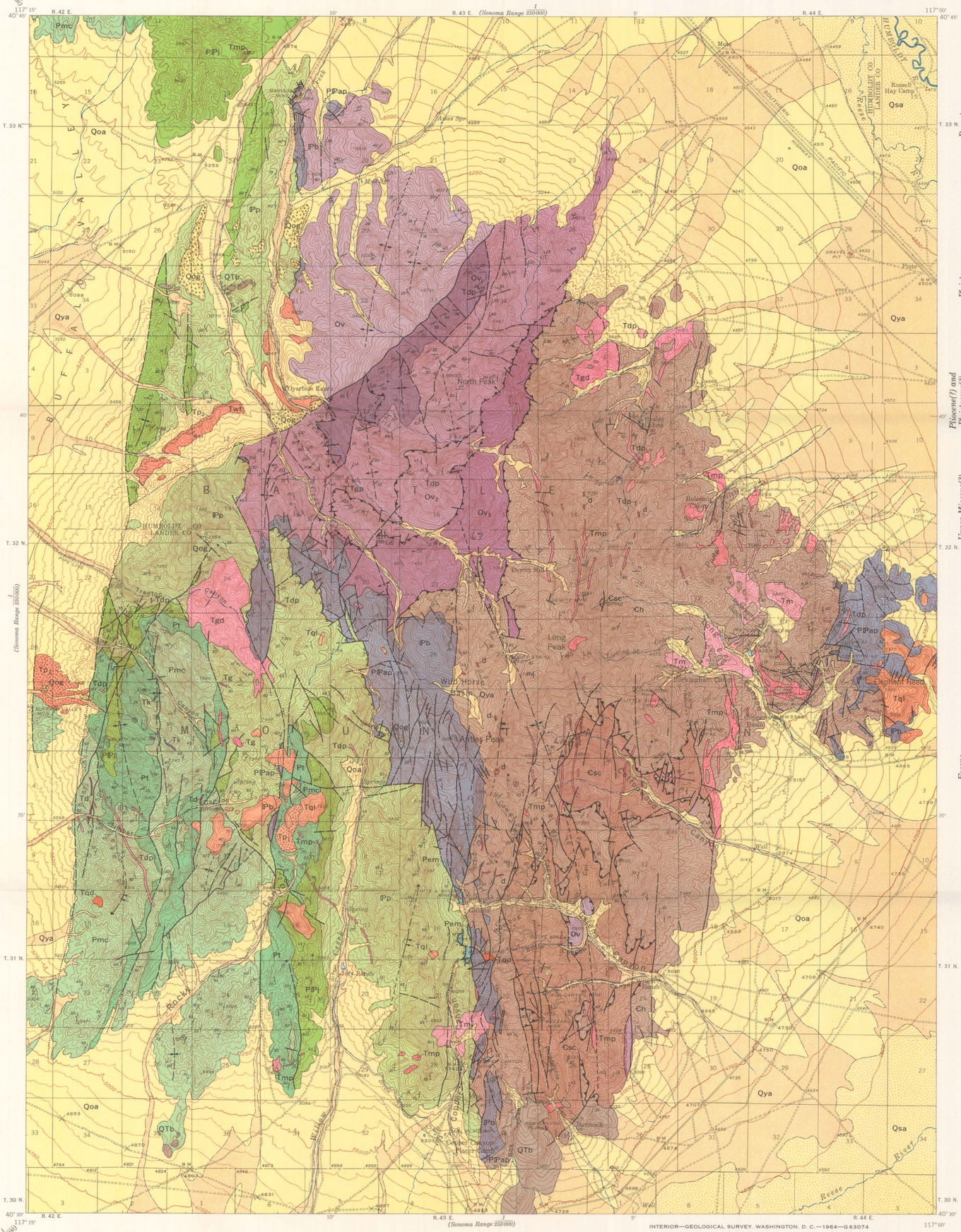

Base map by Topographic Division
U.S. Geological Survey, 1943

Geology by R. J. Roberts, H. G. Ferguson, A. E. Granger, M. W. Cox, D. C. Arnold, J. F. Maier, E. A. Scholz, J. F. Robertson, and C. C. Albritton, 1941–42, 1946–49, and 1951–53; additions by Southern Pacific Land Dept. geologists, 1957–60

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1964—G63074

TRUE NORTH
MAGNETIC NORTH
17½°
APPROXIMATE MEAN DECLINATION, 1964

EXPLANATION

SEDIMENTARY ROCKS

QUATERNARY

Recent

Qsa — Silty alluvium
White to light-gray and buff silt, in part sandy and clayey; mostly alluvium along Reese and Humboldt River flood plains, but some wind-deposited material included

Qya — Younger alluvium
Stream and fan gravels and interbedded sand and silt layers, chiefly in valley bottoms and lower parts of alluvial fans; gravels grade outward from Battle Mountain range into sands and silts

Pleistocene

Qoa — Older alluvium
Fan gravels, partly dissected, on flanks of Battle Mountain range. Also includes alluvium in upper parts of valleys

Qog — Older gravels
Gravels capping high-level benches and ridges. Well-washed and in part rounded gravels composed largely of quartzite, chert, conglomerate, and quartz latite boulders

VOLCANIC ROCKS

Pliocene(?) and Pleistocene(?)

QTb — Basalt flows
Black dense and vesicular lava in thick flows. Rude columnar jointing in places. Locally rest on washed gravels, probably valley fill

Upper Miocene(?)

Tql / Tp₁ — Quartz latite
Welded crystal tuffs generally consisting of a basal pyroclastic unit (Tp_1) of variable thickness that grades upward into vitrophyre 20–30 feet thick and then into aphanitic quartz latite

Twt / Tp₂ — Welded tuff and pyroclastics
Gray to reddish brown welded tuff with basal pyroclastic unit (Tp_2) in places

MAJOR EROSIONAL UNCONFORMITY

INTRUSIVE ROCKS

TERTIARY

Eocene

Tmp, Tdp — Porphyry
Tmp, *quartz monzonite porphyry*
Tdp, *granodiorite porphyry*
Light- to dark-gray dense porphyritic rock containing phenocrysts of quartz, andesine, orthoclase, and biotite. Includes some diorite dikes

Tm, Tgd, Tqd — Monzonite, granodiorite, and diorite
Tm, *quartz monzonite*
Tgd, *granodiorite*
Tqd, *quartz diorite*
Medium- to light-gray medium- to coarse-grained intrusive rocks

Tk, Tgp, Td — Dikes
Tk, *kersantite*
Tgp, *granite porphyry*
Td, *diabase*

Tg — Gabbro
Dark-gray to black coarse-grained intrusive rock. Consists of plagioclase, hornblende, and augite

UPPER PLATE OF GOLCONDA THRUST
HAVALLAH SEQUENCE

Middle Pennsylvanian and Lower Permian

Pmc, Pt, PIPj — Havallah Formation
Interbedded sandstone, quartzite, shale, limestone, and chert
Pmc, *Mill Canyon Member, interbedded quartzite, shale, chert, and limestone*
Pt, *Trenton Canyon Member, dark red and green chert and shale*
PIPj, *Jory Member, coarse pebbly and limy sandstone*

DISCONFORMITY

IPp — Pumpernickel Formation
Interbedded argillite and chert with minor greenstone flows and pyroclastics. Argillite mainly gray, green, or reddish-brown; grades laterally into siliceous argillite and black, green, or red chert. Chert beds are thin to medium bedded and highly lenticular

BASE CONCEALED
GOLCONDA THRUST FAULT

ANTLER OROGENY – MAJOR UNCONFORMITY

OVERLAP ASSEMBLAGE
ANTLER SEQUENCE

Upper Permian

Pem — Edna Mountain Formation
Gray to buff calcareous sandstone with interbedded chert-pebble conglomerate and thin gray limestone beds

EROSIONAL UNCONFORMITY

Upper Pennsylvanian and Lower Permian

PIPap — Antler Peak Limestone
Medium- to dark-gray limestone and shaly limestone; lower beds shaly limestone; middle part medium- to thick-bedded cliff-forming cherty limestone; upper part thin- to medium-bedded shaly limestone

DISCONFORMITY

Middle Pennsylvanian

IPb — Battle Formation
Reddish-brown to dark-red conglomerate with interbedded sandstone, shale, and thin limestone beds. Lower unit (398 feet) coarse conglomerate with quartzite, chert, limestone, greenstone, and sandstone pebbles, cobbles, and boulders; sandy and shaly partings. Middle unit (74 feet) interbedded pebble conglomerate, sandstone, shale, limy shale, and limestone. Upper unit (258 feet) interbedded pebble conglomerate, sandstone, shale, and calcareous shale

PERMIAN
PENNSYLVANIAN
CARBONIFEROUS
PENNSYLVANIAN(?)

SILICEOUS AND VOLCANIC ASSEMBLAGE

Lower and Middle Ordovician

Ov, Ov₃, Ov₂, Ov₁ — Valmy Formation
Ov_3, *member 3, mainly interbedded shale and chert with thin quartzite beds and minor greenstone. Shale is gray and black, weathers light gray; chert is green, gray, brown, and black*
Ov_2, *member 2, interbedded shale, quartzite, and chert with intercalated greenstone. Shale mostly dark gray to black; quartzite is gray to black, medium to thick bedded; chert is brown, gray, and black. Greenstones, mainly breccias, grade laterally into tuffs*
Ov_1, *member 1, interbedded shale, quartzite, chert, and greenstone. Shale is gray to black; chert is mainly gray and black with some green and brown beds; quartzite is mainly gray weathers buff to reddish-brown. Greenstone includes pillow and massive lavas and pyroclastic rocks*
Ov, *Valmy Formation, undifferentiated, probably mostly* Ov_1

ORDOVICIAN

TRANSITIONAL ASSEMBLAGE

Upper Cambrian

Ch, d — Harmony Formation
Interbedded greenish-brown micaceous sandstone, feldspathic sandstone, arkose, and green, red, or black shale; minor amounts of calcareous shale and limestone. Upper beds in Copper Basin contain higher proportion of limy beds
d, *diabase dikes and sills cutting Harmony Formation*

Lower or Middle(?) Cambrian

Csc — Scott Canyon Formation
Dark-gray to black chert, shale, and argillite with intercalated greenstone flows, pillow lavas, and pyroclastics

CAMBRIAN

BASE CONCEALED

Contact
Dashed where approximately located

Normal or steep reverse fault
Dashed where approximately located; dotted where concealed

Permian thrust fault

Mississippian thrust fault

Overturned thrust fault
Saw teeth on upper plates. Faults dashed where approximately located; dotted where concealed

Anticline
Showing trace of axial plane. Dashed where approximately located; short dashed where inferred or uncertain

Syncline
Showing trace of axial plane. Dashed where approximately located; short dashed where inferred or uncertain

Overturned syncline
Showing trace of axial plane, plunge of axis, and direction of dip limbs. Dashed where approximately located; short dashed where inferred or uncertain

Plunge of minor anticline

Plunge of minor syncline

Plunge of minor overturned beds

Strike and dip of beds

Strike and dip of overturned beds

Strike of vertical beds

Horizontal beds

GEOLOGIC MAP OF THE ANTLER PEAK QUADRANGLE, HUMBOLDT AND LANDER COUNTIES, NEVADA

SCALE 1:62 500

1 ½ 0 1 2 3 4 MILES

1 .5 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 50 FEET
DATUM IS MEAN SEA LEVEL