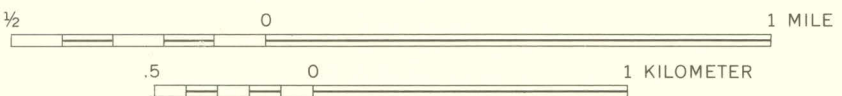


Base from U.S. Geological Survey, 1:62,500
Cochise Head, 1950

12°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN
DECLINATION, 1980

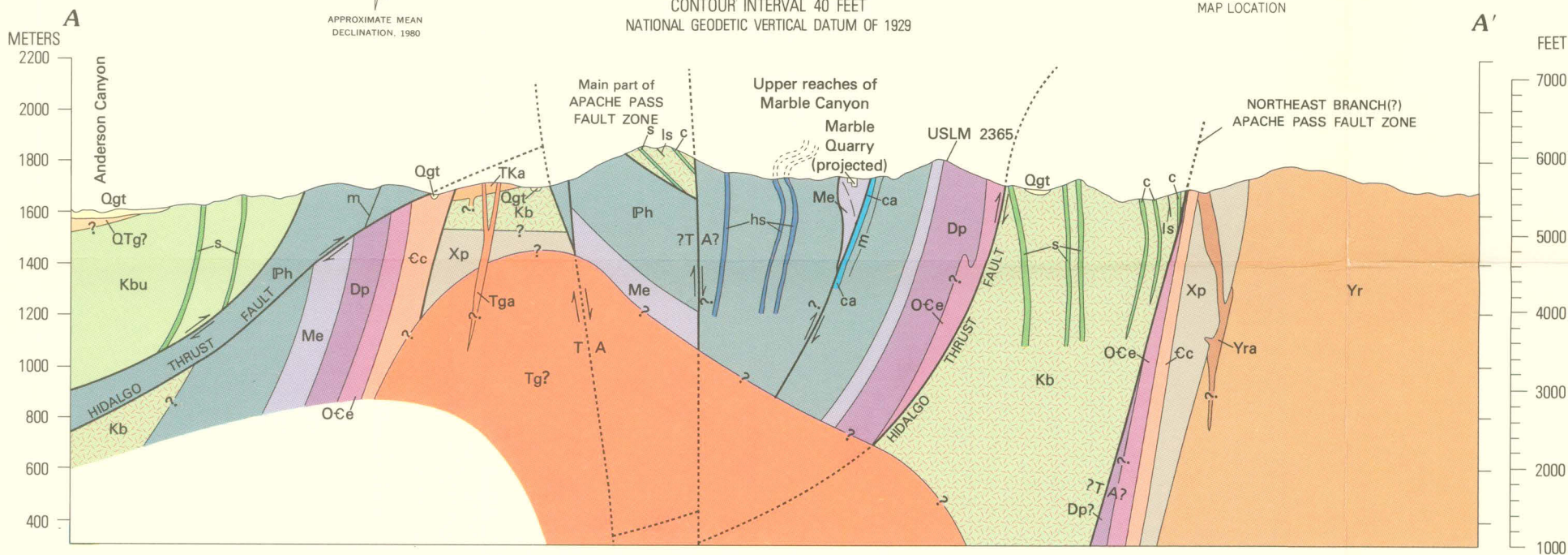
SCALE 1:24 000



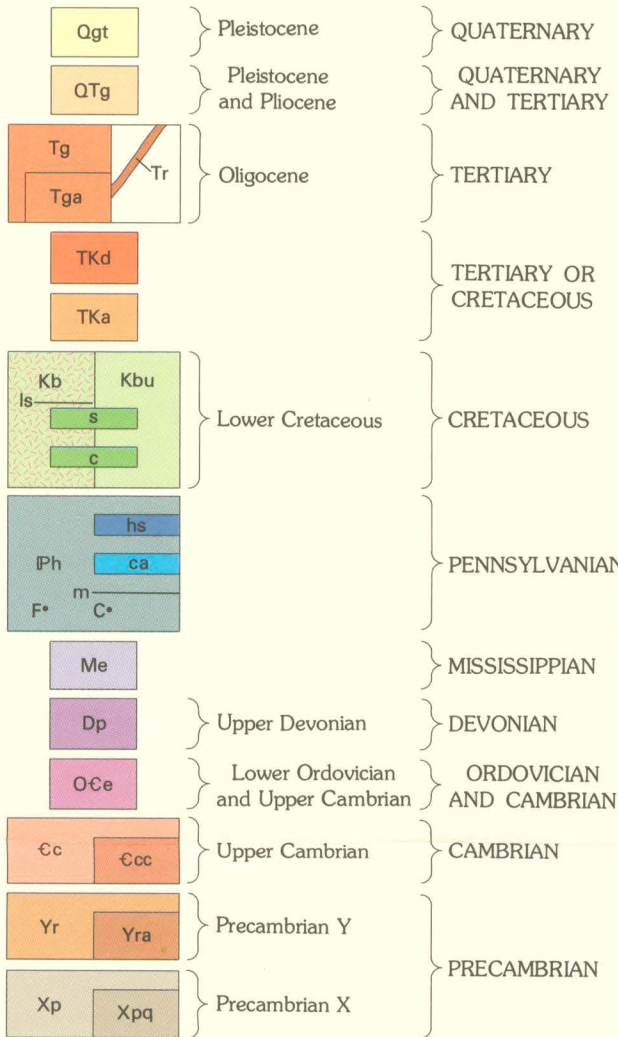
CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929



Geology by Harald Drewes,
1969, assisted by A. J. Toevs



CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- Qgt** GRAVEL, SAND, AND BLOCKS (QUATERNARY)—Mainly alluvium deposited on terraces; grades laterally into colluvium, and into blocky talus fans on Bowie Mountain
- QTg** GRAVEL AND SAND (QUATERNARY AND TERTIARY)—Alluvium in basins and on high terrace remnants
- INTRUSIVE ROCKS (OLIGOCENE):**
- Tg** Granodiorite and quartz monzonite—Stock and dikes. Biotite radiometrically dated at 30.7 million years old (Marvin and others, 1973)
- Tga** Aplite—Dikes, probably emplaced with granodiorite stock
- Tr** Rhyolite and quartz latite—Porphyritic dikes
- TKd** QUARTZ DIORITE AND METADIORITE (TERTIARY OR CRETACEOUS)—Plug and dikes
- TKa** ANDESITIC ROCKS (TERTIARY OR CRETACEOUS)—Medium-dark-gray propylitized intrusive or extrusive masses
- BISBEE FORMATION (LOWER CRETACEOUS):**
- Kb** Upper member, metamorphosed—Olive-gray metasiltstone and intercalated sandstone, quartzite, conglomerate, and sparse limestone
- Is** Limestone beds, partly altered to metasiltstone rock
- Kbu** Upper member, unmetamorphosed—Olive-gray siltstone and intercalated sandstone and conglomerate
- s** Sandstone and quartzite—Selected marker beds; locally crossbedded
- c** Conglomeratic sandstone and quartzite—Commonly graded bedded
- IPh** HORQUILLA LIMESTONE (PENNSYLVANIAN)—Light-gray, mainly fine-grained, sparsely cherty, thin-bedded marble; contains intercalated pale-reddish-gray homfels and metasiltstone in upper half of formation

- hs** Homfels and metasiltstone—Selected marker beds
- ca** Conglomeratic argillite and phyllite—Marker bed low in formation
- m** Marker horizon—Top of a light-gray medium-coarse-grained marble that may be part of an older formation
- Fossil sites:**
- C** *Chaetetes*-bearing beds; probably early Middle Pennsylvanian (Atokan) age
- F** Fusuline-bearing beds; probably late Middle or Late Pennsylvanian age
- Me** ESCABROSA LIMESTONE (MISSISSIPPIAN)—Light-medium-gray, coarse-grained, locally cherty and crinoidal marble; contains horn corals
- Dp** PORTAL FORMATION OF SABINS, 1957b (UPPER DEVONIAN)—Gray carbonaceous limestone and argillite in thin beds of contrasting resistance to weathering
- OCe** EL PASO DOLOMITE (LOWER ORDOVICIAN AND UPPER CAMBRIAN)—Light-brown dolomite to southwest and gray dolomite and silty limestone to northeast
- Cc** CORONADO SANDSTONE (UPPER CAMBRIAN)—Light-gray to brownish-gray, thick-bedded, coarse-grained sandstone and quartzite. Referred to as Bolsa Quartzite by Sabins (1957a) and as Coronado Sandstone by Hayes (1972)
- Ccc** Conglomerate member—Basal thin pebble conglomerate and local thick cobble and block conglomerate
- Yr** RATTLESNAKE POINT GRANITE OF SABINS, 1957a (PRECAMBRIAN Y)—Very coarse grained brownish-gray porphyritic quartz monzonite; stock
- Yra** Aplite—Dikes
- Xp** PINAL SCHIST (PRECAMBRIAN X)—Gray to brownish-gray schistose and gneissic rocks; includes metavolcanic, metasedimentary and possible metaigneous rocks, and andesitic, aplitic, and dioritic dikes
- Xpq** Quartzite member—Light-brownish-gray, medium-coarse-grained, crossbedded metaquartzite

CONTACTS AND FAULTS—Dotted where concealed, intruded or eroded:

- Contact—Showing dip**
- Normal fault—Showing dip. Bar and ball on downthrown side**
- Thrust fault—Sawteeth on upper plate**
- Strike-slip fault—Arrow couple shows relative movement**
- Fault on cross section—Arrow couple shows relative movement. A, movement away from viewer; T, toward viewer. Queried where basis for projection is lacking**

FOLD AXES—Showing plunge:

Anticline

Syncline

STRIKE AND DIP OF BEDS:

Horizontal

Inclined

Vertical

Overtured

STRIKE AND DIP OF FOLIATION:

Inclined

Vertical

SAMPLE SITE—Showing age of rock in m.y.

GEOLOGIC MAP AND STRUCTURE SECTION OF PART OF THE NORTHERN CHIRICAHUA MOUNTAINS NEAR MARBLE CANYON, ARIZONA