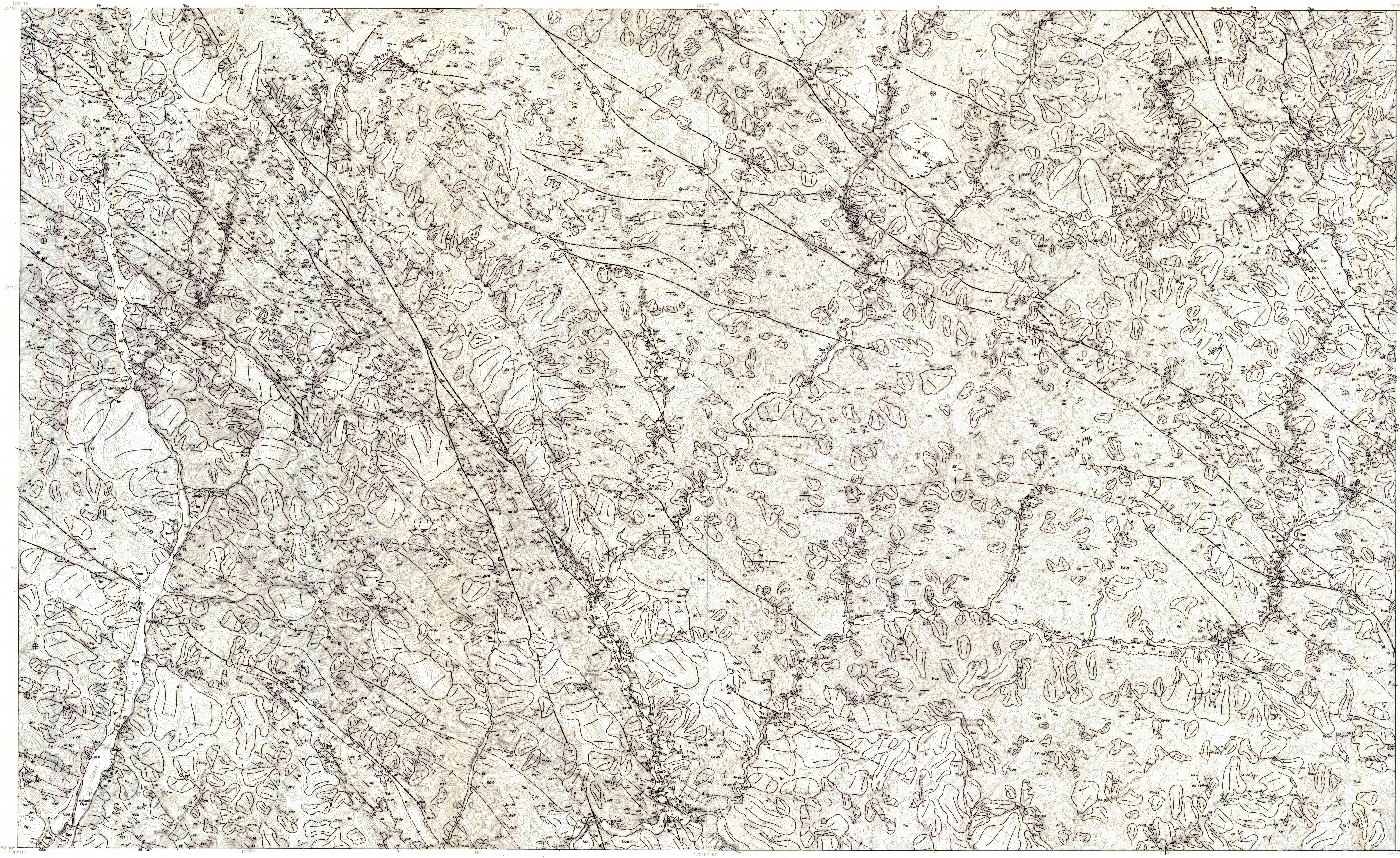
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

OPEN-FILE REPORT
91-109



DESCRIPTION OF MAP UNITS

QUATERNARY DEPOSITS

Holocene and Pleistocene deposits

Qya Young alluvium -- Gravel, sand, and silt along active and intermittent stream channels; incised along Tepusquet Canyon and other major drainages

Qoa Old alluvium -- Gravel, sand, and silt generally perched above stream channels; dissected; depositional surfaces preserved

Pleistocene deposits

Qpr Upper part of Paso Robles(?) Formation of Hall (1978) -- Sandstone, siltstone, claystone, and conglomerate; unconsolidated to well consolidated (Hall, 1978); present in the southwesternmost corner of Tepusquet Canyon quadrangle; two small patches of conglomerate east of lower Tepusquet Canyon questionably assigned to this unit

TERTIARY SEDIMENTARY ROCKS

Pliocene and/or Miocene sedimentary rocks

Tst Tinaquaic Sandstone Member of the Sisquoc Formation -- Sandstone and minor siltstone; marine; sandstone generally fine grained, thick bedded to massive, locally bioturbated; unconformity at base; fossils not found within map area; contains late Miocene and early Pliocene mollusks and echinoids in adjoining areas to the south (Woodring and Bramlette, 1950)

Miocene sedimentary rocks

Tm Monterey Formation -- Siltstone, mudstone, shale, and minor sandstone; marine; shale laminated to thin bedded, siliceous and locally calcareous; brecciated and tar impregnated at places; mudstone indistinctly bedded to thin bedded, commonly calcareous, sparsely phosphatic, locally contains dolomitic concretions or siliceous zones; sandstone very fine to coarse grained, indistinctly bedded and lenticular, generally 1 m or less thick, locally calcareous; mudstone near the base contains Zone CN2 calcareous nannofossils and Saucesian Stage foraminifers; lower part assigned to Rincon Shale and Point Sal Formation by Redwine (1958), Redwine and others (1975), and Hall (1978), who reported Saucesian and Relizian Stage foraminifers; upper part contains Luisian, Mohnian, and Delmontian(?) foraminifers (Redwine and others, 1975) and includes the lower and upper members of the Monterey Shale as described by Redwine (1958) and Redwine and others (1975) (Explanatory Notes give reasons for not subdividing the Monterey Formation)

Tss Sandstone; marine; thick bedded to indistinctly bedded, fine to coarse grained, quartzofeldspathic, commonly glauconitic; generally calcareous and locally micaceous; unconformity at base; assigned to Vaqueros Formation by Redwine (1958), Redwine and others (1975), and Hall (1978); includes pebbly lenses in lower part at places, clasts chiefly redeposited from Upper Cretaceous conglomerate; fossils not found within map area

Miocene and/or Oligocene sedimentary rocks

Ts Simmler Formation -- Conglomerate, sandstone, and mudstone; nonmarine, fluvial; lenticular; conglomerate contains abundant clasts of biotite-rich sandstone; unconformity at base, locally channeled; assigned to Sespe Formation by Redwine (1958), Crandall (1961), and Redwine and others (1975)

Eocene sedimentary rocks

Tus Sandstone, subordinate conglomerate, and mudstone; lenticular; submarine-fan deposits; sandstone quartzofeldspathic, micaceous; conglomerate includes abundant siliceous metavolcanic clasts; unconformity at base; unit contains sparse early Eocene orbitoid foraminifers and mollusks in adjacent areas of the Sierra Madre Mountains; occurs northeast of Sur-Nacimiento fault zone

UPPER CRETACEOUS SEDIMENTARY ROCKS

Kus Sandstone, mudstone, and conglomerate; lenticular; submarine-fan deposits; sandstone quartzofeldspathic, micaceous, commonly as biotite booklets; base not exposed; contains rare Late Cretaceous foraminifers and mollusks; occurs southwest of Sur-Nacimiento fault zone; locally subdivided into Morris Formation and Buckhorn Sandstone by Crandall (1961) (See Explanatory Notes)

Kcn Conglomerate and subordinate sandstone; nonmarine; conglomerate massive to thick bedded, indistinctly stratified, lenticular, poorly sorted; channeled at the base and internally; pebbles, cobbles, and boulders of porphyritic siliceous volcanic rocks abundant, clasts of granitic rocks and quartzite common; intertongues with unit Kus (Vedder, Howell, and McLean, 1977)

LOWER CRETACEOUS (?) AND UPPER JURASSIC ROCKS

KJe Espada Formation -- sandstone, mudstone, and minor tuffaceous radiolarian chert, thin bedded; sandstone lithic, fine-grained; mudstone silty, slightly micaceous; radiolarian chert in lower part; base not exposed; fragmented small outcrop on northeastern edge of ophiolite unit (Jo) in Colson Canyon; contains *Buchia piochii* (Gabb); presumably detached block carried upward by protrusion of ophiolite

Jo Ophiolite; diabase, microgabbro, serpentinite, and silica-carbonate rock; diabase and microgabbro sericitized, secondary actinolite and prehnite; silica-carbonate rock largely chalcedony and quartz; protrusive into Monterey Formation between Tepusquet and Colson Canyons

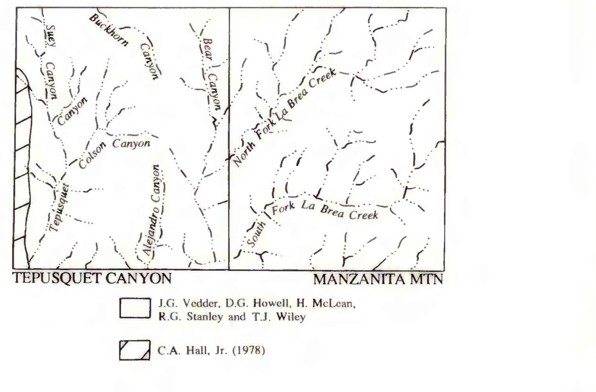
EXPLANATORY NOTES

This preliminary map is one of a series that covers a large part of the Los Padres National Forest and adjoining areas from the vicinity of Santa Margarita to Big Pine Mountain. Most of the fieldwork for this series was done sporadically from 1977 to 1987. From 1980 through 1983, the mapping was supported by funds supplied under the provisions of the Wilderness Act for a survey of the mineral resource potential of designated "wilderness" and "roadless" areas.

PERTINENT REFERENCES AND REFERENCES CITED

SYMBOLS

INDEX TO GEOLOGIC MAPPING



Base map from U.S. Geological Survey Tepusquet Canyon, 1964; and Manzanita Mtn., 1964, quadrangles

APPROXIMATE MEAN DECLINATION, 1986

SCALE 1:24 000

AREA OF MAP

Geology mapped at intervals from 1979 to 1989 with assistance from J.M. Joyce in 1979 and 1982 and J. D. Kingston in 1982. The westernmost edge of Tepusquet quadrangle mapped by C.A. Hall, Jr. (1978) (See Index to Geologic Mapping). The northeastern corner of Manzanita Mtn. quadrangle modified from unpublished mapping by J.G. Vedder and R.D. Brown, Jr., in 1967. Field check of Tepusquet Canyon quadrangle in 1990 by J.G. Vedder, H. McLean, and R.G. Stanley.

PRELIMINARY GEOLOGIC MAP OF TEPUSQUET CANYON AND MANZANITA MTN. QUADRANGLES, CALIFORNIA

By

J.G. Vedder, D.G. Howell, H. McLean, R.G. Stanley, and T.J. Wiley

1991