EXPLANATION

SEDIMENTARY ROCKS

QUATERNARY

- **Recent**
  - **Qal** — **Alluvium and valley fill** (*Coalescing alluvial fans deposited during several cycles and including older dissected fans on the south flank of the Puente Hills, which in the text are referred to as La Habra terrace*)
  - **Qt** — **Terrace deposits** (*River gravel and the upper edge of dissected fans*)
- **Pleistocene**
  - **Qs** — **San Pedro (?) formation** (*Buff conglomerate and sandstone slightly indurated; nonmarine origin*)
- **Pliocene**
  - **Tf** — **Fernando group, undifferentiated** (*Buff sandy shale or siltstone, with lesser amounts of sandstone and conglomerate*)

TERTIARY

- **Miocene**
  - **Tpush, Tpuss, Tpmss, Tplsh, Tplss** — **Puente formation** (*White to pink diatomaceous shale of varying degrees of purity, sandy shale, buff sandstone, and conglomerate. Divided into upper member consisting of several zones of shale* (Tpush) *and sandstone* (Tpuss), *middle sandstone* (Tpmss), *lower shale* (Tplsh), *and lower sandstone* (Tplss) *the last not recognized east of fault below Santa Ana Canyon*)
  - **Tt** — **Topanga formation** (*White to buff arkosic sandstone*)
- **Oligocene (?)**
  - **Tvs** — **Vaqueros (Miocene) and Sespe (Oligocene ?) formations** (*Red and variegated clay and sandy clay, poorly sorted angular material, probably of nonmarine origin; in upper part interbedded white sandstone carrying Vaqueros marine fossils*)
- **Eocene**
  - **Ttj** — **Tejon formation** (*White to buff quartzose sandstone, shaly sandstone and conglomerate, weathering to prominent outcrops*)
  - **Tmz** — **Martinez formation** (*Dark-gray and green shale and micaceous sandstone; several carbonaceous beds in lower part*)

CRETACEOUS

- **Upper Cretaceous ?**
  - **Kc** — **Chico and Trabuco formations** (*Dark-gray shale and interbedded sandstone with several zones of conglomerate chiefly of marine origin*)
  - **Ŧsl** — **Triassic slate and associated rocks** (*Slate carrying Triassic fossils, and an overlying series of effusive igneous rocks; includes some intrusive granite*)

IGNEOUS ROCKS

- **Tir, Tt** — **Intrusive and extrusive rocks** (Tir); **tuffs and tuffaceous sandstone** (Tt) (*In some places intrusive into or interbedded with the Puente and Topanga formations, and in other places of pre-Puente age*)

- Axis of anticline (*Showing direction of plunge and direction of overturn of fold*)
- Axis of syncline (*Showing direction of plunge; dashed where location is doubtful; dotted where rocks are covered by later deposits*)
- Fault (*Dotted where concealed by later deposits*)
- Oil wells of all classes, including abandoned wells
- Oil seepage or outcrop of oil sand
- Strike and dip of beds
- Strike and dip of overturned beds
- Horizontal beds
- Strike of vertical beds

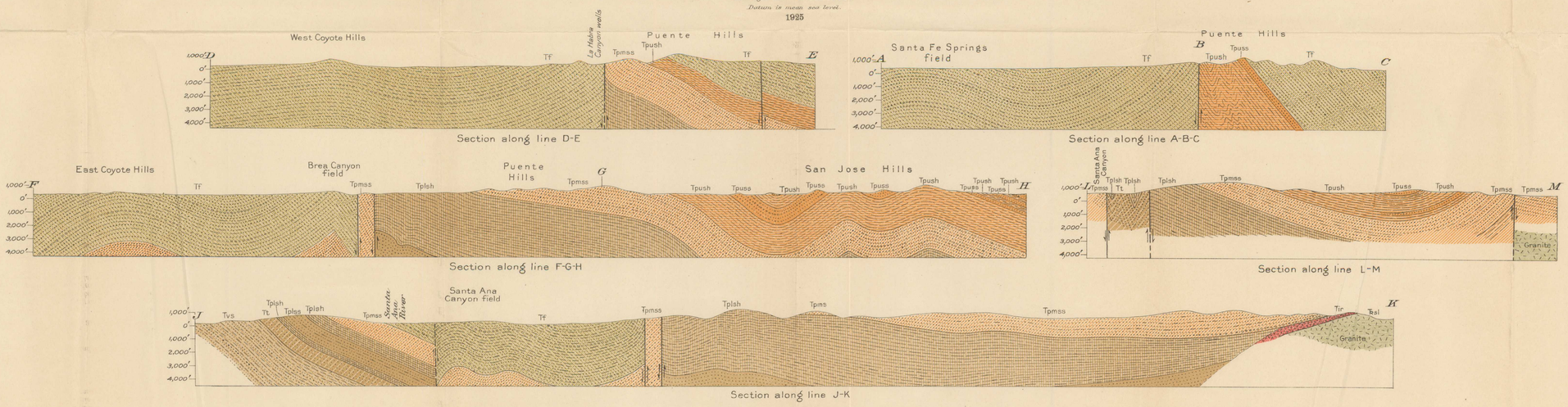
Base from U. S. G. S. topographic maps
Culture revised by Walter A. English

Geology by W. A. English and W. S. W. Kew
Surveyed in 1918

GEOLOGIC MAP AND SECTIONS OF THE PUENTE HILLS REGION, SOUTHERN CALIFORNIA

Scale $\frac{1}{62500}$ — Miles

Contour interval 50 and 100 feet.
Change of interval occurs at 34°
Datum is mean sea level.
1925



Section along line D-E

Section along line A-B-C

Section along line F-G-H

Section along line L-M

Section along line J-K