

Addicott, W.O.,
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MIOCENE MACROFOSSILS OF THE SOUTHEASTERN SAN JOAQUIN VALLEY, CALIFORNIA

By WARREN O. ADDICOTT, Menlo Park, Calif.

Abstract.—Marine mollusks referable to the principal divisions of the California Miocene chronology occur in the southeastern San Joaquin Valley. Early and middle Miocene assemblages occur in the Kern River area northeast of Bakersfield. The Barker's Ranch fauna of this area is the standard for the middle Miocene "Temblor stage." New data from current biostratigraphic studies in the Kern River area indicate that this important faunal unit ranges from near the base of the Olcese Sand to the top of the Round Mountain Silt. Middle and late Miocene macrofossils occur in the Tejon Hills near Arvin.

Molluscan fossils representative of the three principal time-stratigraphic divisions of the California Miocene chronology, the Vaqueros, Temblor, and Briones-Cierbo-Neroly "stages"¹ of Weaver and others (1944), occur in two principal areas along the southeastern margin of the San Joaquin Valley, near the Kern River and in the northern Tejon Hills (fig. 1). Marine mollusks referable to the "Vaqueros" and "Temblor stages", the traditional early and middle Miocene divisions of the Pacific coast chronology, are abundant in the foothills between the Kern River and Poso Creek, about 15 miles northeast of Bakersfield. Beds of unusually well preserved fossils in the upper part of the Olcese Sand of Diepenbrock (1933) have yielded the classic Barker's Ranch fauna. This fauna is the standard of reference (Anderson, 1905, p. 190-191) for the "Temblor stage" of the macrofossil chronology. Mollusks and echinoids of middle and late Miocene age are present in the northern Tejon Hills near Comanche Point. There are other scattered records of Miocene fossils from the margin of the valley, and also a few subsurface records from well cores.

Biostratigraphic studies in progress on the early and middle Miocene molluscan faunas of the Kern River area and middle and late Miocene assemblages from

the northern Tejon Hills are briefly summarized in order to record new data of potential use in local and regional faunal correlation. Stratigraphic ranges of a few of the abundant and characteristic Miocene mollusks of the southeastern San Joaquin Valley are defined herein and most of these species are figured. Principal interest is in the Barker's Ranch fauna, the largest Miocene molluscan fauna of the Pacific coast. This fauna, previously known from a few localities in a limited stratigraphic interval embracing the contact between the Olcese Sand and the Round Mountain Silt of Diepenbrock (1933), has been informally used as the standard for middle Miocene correlation on the Pacific coast. New biostratigraphic data from the Kern River area indicate that this unit extends from near the base of the Olcese Sand to the top of the Round Mountain Silt.

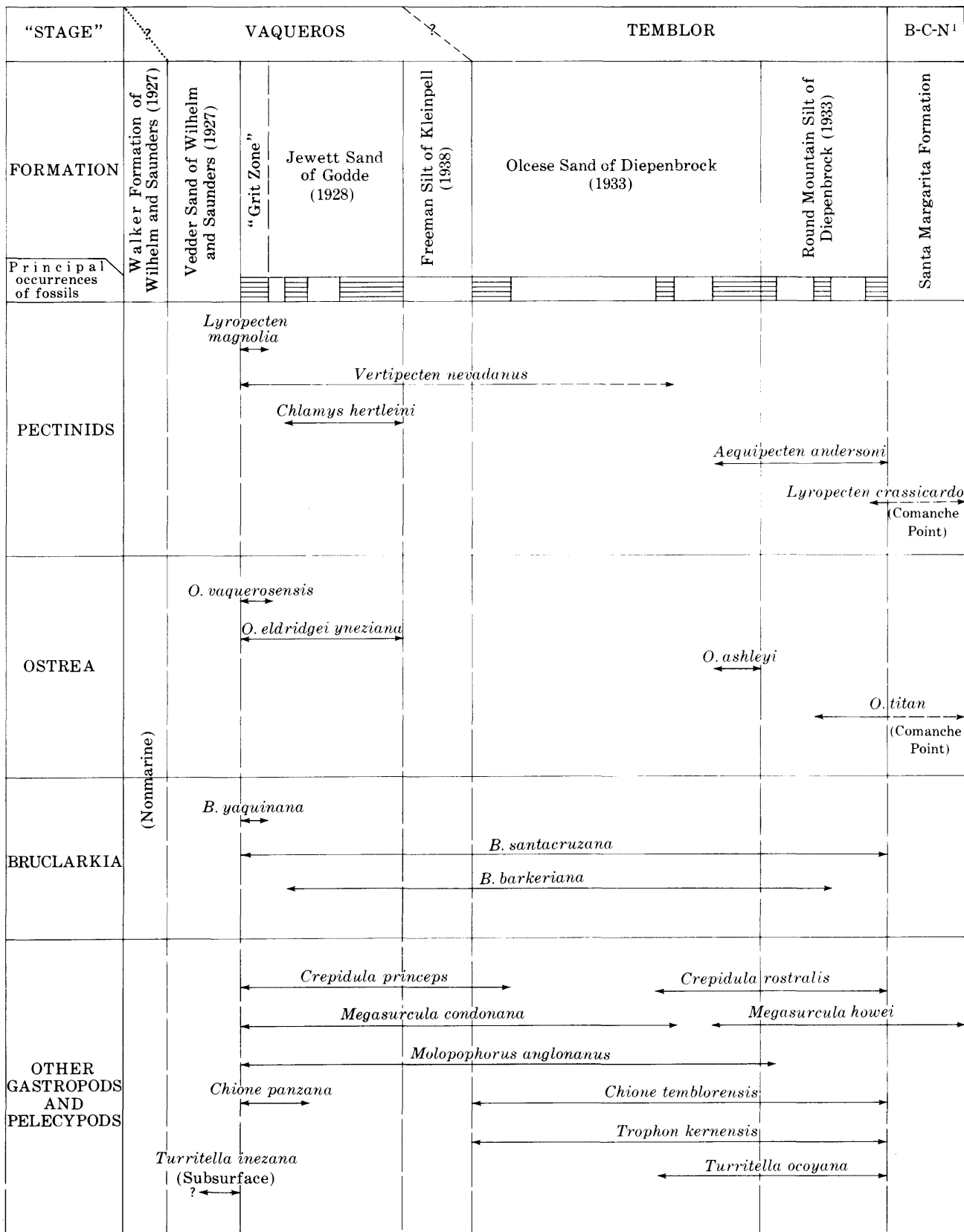
References to specimen numbers and localities in the accompanying paper are abbreviated as follows:

- UCLA—University of California, Los Angeles.
- UCMP—University of California Museum of Paleontology, Berkeley.
- UCR—University of California, Riverside.
- USGS Cenozoic loc. M—U.S. Geological Survey, Menlo Park, Calif.
- USNM—U.S. National Museum, Washington, D.C.

HISTORY OF PALEONTOLOGIC INVESTIGATION

W. P. Blake, geologist-mineralogist assigned to a U.S. War Department Pacific Railroad Survey party, discovered the marine strata of the Kern River area while encamped on Ocoya [Poso] Creek in August 1853. Blake collected poorly preserved casts and molds of several mollusks from sandstone on the south bank of Poso Creek, and several shark teeth from near the top of the marine section. Field sketches of the fossiliferous material from sandstone beds now included in the

¹Quotation marks are used hereafter to signify that these chronostratigraphic units have not been formally defined.



¹ Briones-Cierbo-Neroly "stages" of Weaver and others (1944).

FIGURE 2.—Stratigraphic ranges of selected mollusks in Miocene formations of the Kern River area.

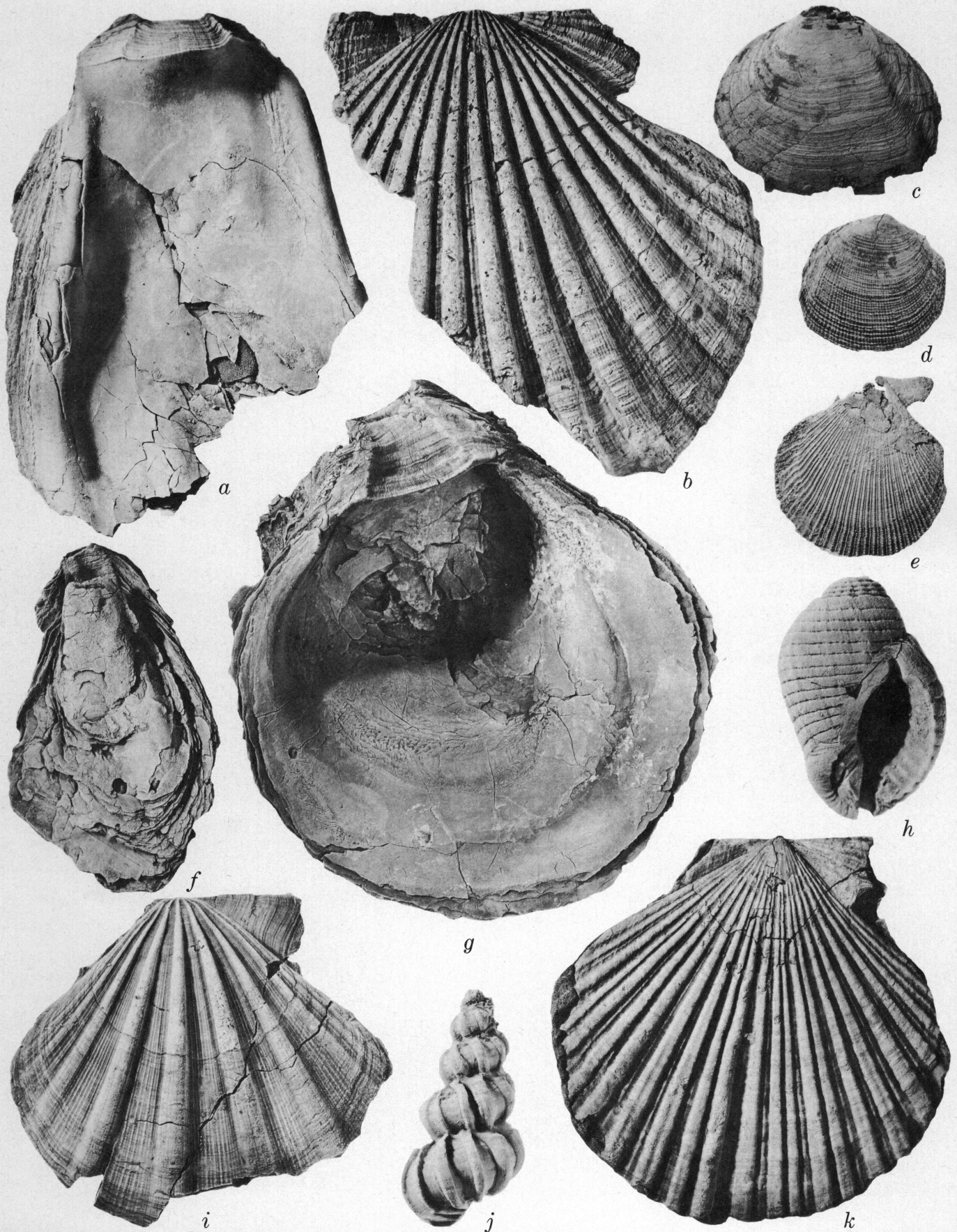


FIGURE 3.—Mollusks of the Jewett Sand of Godde (1928) and Santa Margarita Formation in the Kern River and northern Tejon Hills areas of California.

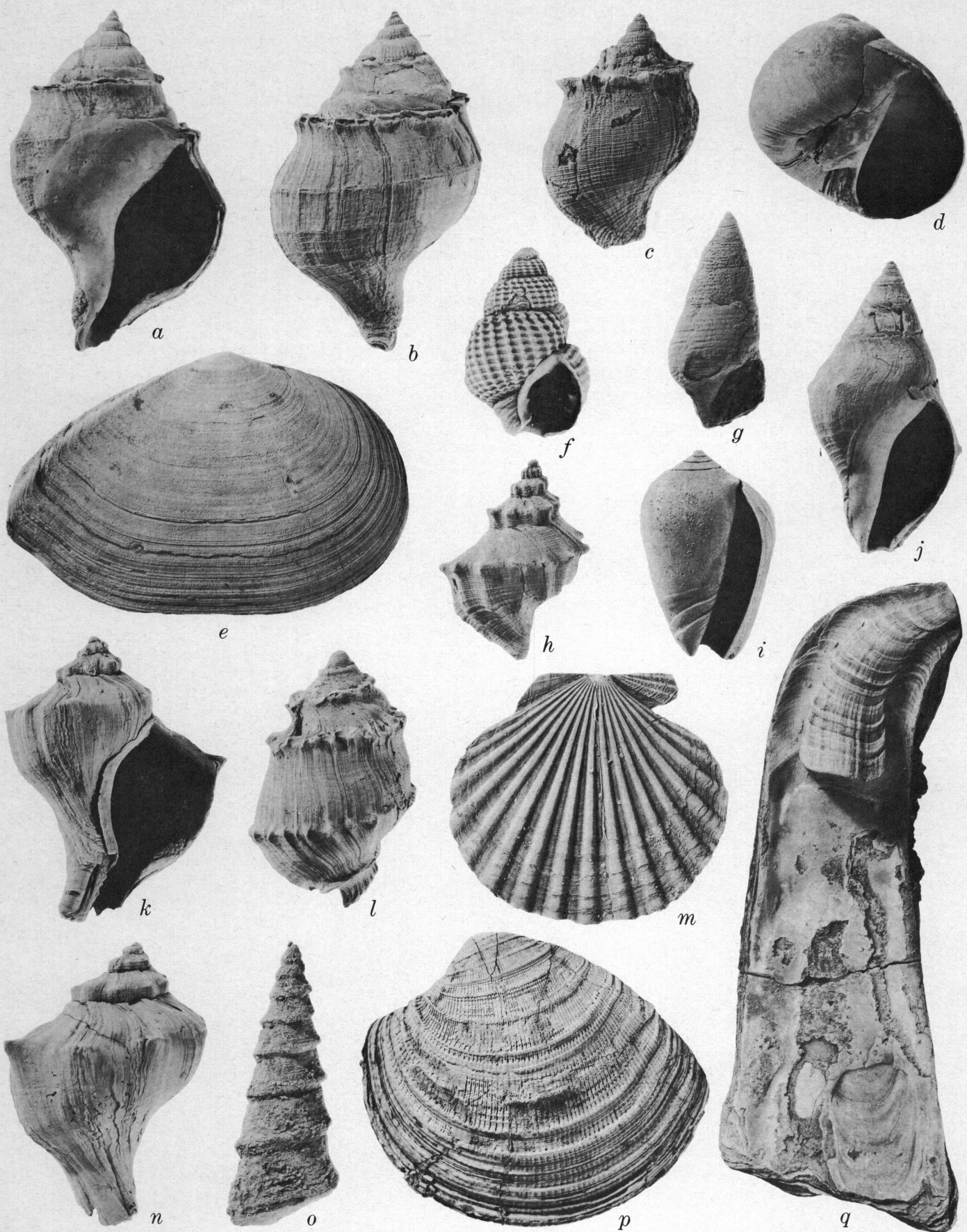


FIGURE 4.—Mollusks of the Oleese Sand and Round Mountain Silt of Diepenbrock (1933) in the Kern River area, California.

- Savage, D. E., 1955, Nonmarine lower Pliocene sediments in California—A geochronologic-stratigraphic classification: California Univ., Dept. Geol. Sci. Bull., v. 31, no. 1, p. 1-26.
- Watts, W. L., 1894, The gas and petroleum yielding formations of the central valley of California: California Mining Bur. Bull. 3, 100 p.
- Weaver, C. E., and others, 1944, Correlation of the marine Cenozoic formations of western North America [Chart 11]: Geol. Soc. America Bull., v. 55, no. 5, p. 569-598.
- Wilhelm, V. H., and Saunders, L. W., 1927, Report on the Mount Poso Oil Field: California Oil Fields, v. 12, no. 7, p. 5-12.

