

PROBABLE CRETACEOUS-TERTIARY SECTION IN FRESNAL
CANYON, BABOQUIVARI MOUNTAINS

By

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A large section of Cretaceous and/or Tertiary rocks occurs in Fresnal Canyon, in the Baboquivari Mountains, Pima County. These rocks dip steeply westward and are apparently in normal stratigraphic sequence. Bedding faults may modify the sequence locally, but the total effect is believed to be small. Aggregate thickness of the section is about 15,000 feet.

GENERAL DESCRIPTION

Figure 1 is a columnar section of the beds in Fresnal Canyon. Units 1-7 dip 50° - 70° to the west; unit 8 dips 45° to the west. Units 1 and 2 are sediments, with no presently recognized volcanic members, although some of the clastic material is volcanic in origin. The remainder of the section is dominantly volcanic, with interbedded sediments.

On the east and north, the sequence is in fault contact with metamorphic rocks which are probably older or of at least equivalent age. On the west and south the sequence is in normal-fault contact with volcanics which are almost certainly younger. Also, in fault contact to the south is the granite which forms Baboquivari Peak. The age of this granite with respect to the section has not been definitely determined.

PROBABLE AGE

Unit 2 is lithologically similar to beds which have been considered as Cretaceous by other workers in nearby areas. (Bryner, 1959; Heindl, 1960; Kinnison, 1958.) The nature of the lithologic change between units 2 and 3, i. e., from predominately clastic to predominately volcanic, would further indicate a Cretaceous age for the lower beds if interpreted in the light of suggestions of Richard and Courtright (1960). These authors believe that widespread volcanism is characteristic of the Tertiary in southern Arizona, and they would draw the line between Cretaceous and Tertiary deposits on this basis.

Unit 8, which overlies the rest of the section with angular unconformity, has been named the Fresnal conglomerate. In its upper part are interbedded andesite flows which are believed by Cooper (personal communication, 1961) to be "turkey track" andesite. Cooper has assigned a Miocene age to this andesite (see Cooper, this volume).

It is therefore probable that the Fresnal Canyon section bridges the Cretaceous-Tertiary boundary, ranging up to Miocene in age.

REFERENCES

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- Heindl, L. A., 1960, Cenozoic geology of the Papago Indian Reservation, Pima, Maricopa, and Pinal Counties, Arizona: Arizona Geol. Soc. Digest III, p. 33.
- Kinnison, J. L., 1958, Geology and ore deposits of the southern section of the Amole Mining District, Tucson Mountains, Pima County, Arizona: Univ. Arizona, unpublished master's thesis.
- Richard, K., and Courtright, J. H., 1960, Some Cretaceous-Tertiary relationships in southeastern Arizona and New Mexico: Arizona Geol. Soc. Digest III, p. 1-7.

Figure 1. --Columnar section, Fresnal Canyon, Baboquivari Mountains, Pima County, Arizona.

