

# GEOLOGIC STRUCTURE OF THE CHOCOLATE MOUNTAIN REGION SOUTHEASTERN CALIFORNIA

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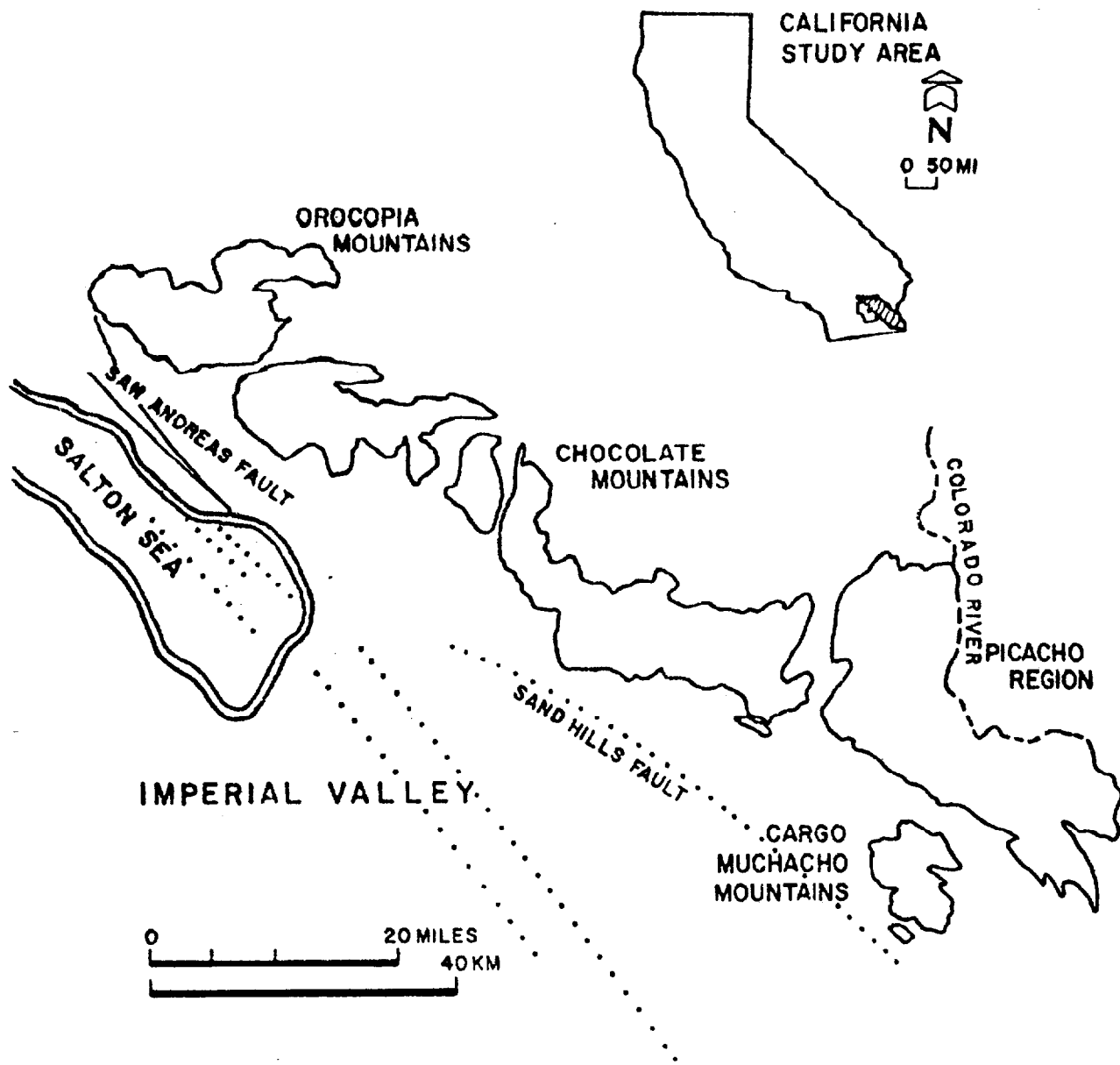
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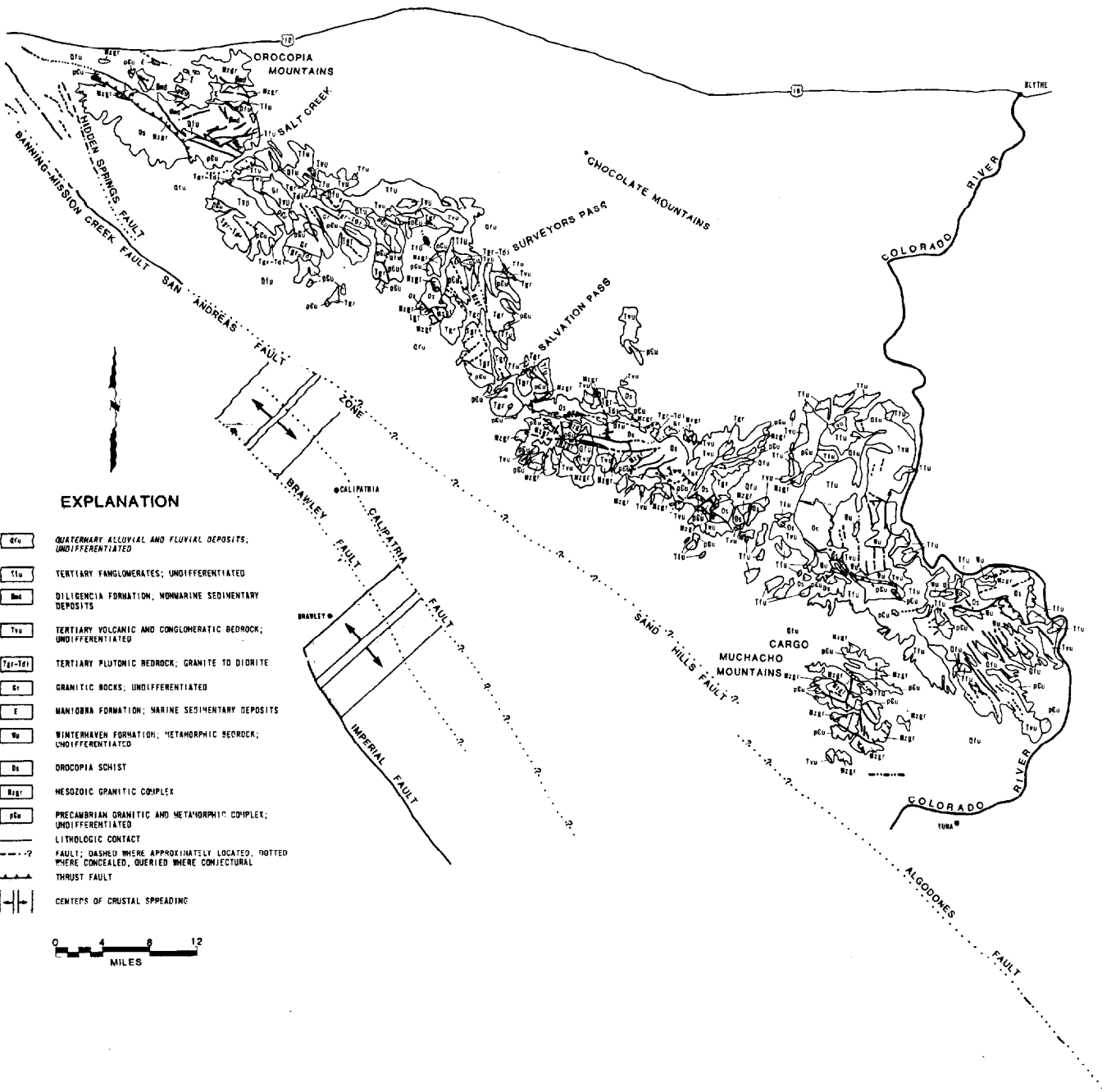
The Chocolate Mountain region in southeasternmost California includes the northwest-trending, linear mountain ranges of the Orocopia, Chocolate, and Cargo Muchacho Mountains, all of which lie adjacent to the San Andrea fault, northeast of the Salton Trough (fig. 1). The Fault Map of California (Jennings, 1975) and the Geologic Map of California (Jennings, 1977) infer a continuous northwest-trending system of faults in the Chocolate Mountain region. Because this inferred system parallels and lies within 20 km of the San Andreas fault, these faults may be structurally related to the San Andreas system. Consequently, this investigation has focused on the geology and structural features of the Chocolate Mountain region with particular attention given to the possible existence of faults related to the San Andreas system within the mountain blocks. Geologic mapping (fig.2) included detailed analysis of the basement rocks and the late Cenozoic alluvial deposits in order to document the age of faulting and it is concluded that a continuous northwest-trending system of faults as inferred by the two State maps is nonexistent. Instead, existing faults appear to be short, discontinuous, and do not have significant strike-slip components. In addition, late Cenozoic (Miocene) fan conglomerates, which surround and partly bury the mountain masses, although locally displaced by bedrock faults, show no large magnitude movements. Consequently, it is concluded that the faulting in the Chocolate Mountain region is neither genetically nor temporally related to the San Andreas fault system.

## REFERENCES CITED

- Jennings, C.W., compiler, 1975, fault map of California: California Division of Mines and Geology.
- Jennings, C.W., compiler, 1977, Geologic map of California: California Division of Mines and Geology.



**FIGURE 1**  
**LOCATION MAP**  
**CHOCOLATE MOUNTAIN REGION**



**FIGURE 2**  
**GEOLOGIC MAP**  
**CHOCOLATE MOUNTAIN REGION**