defined: Zone I (0-6 feet) is characterized by high frequencies of Elphidium incertum obscurum and Elphidium gunteri; frequencies of Ammonia beccarii tepida are less than 46 per cent. In Zone II (7-25 feet) the average frequencies for Ammonia beccarii tepida are 46 per cent or greater and several other species appear in low numbers. In Zone III (25-48 feet), Bolivina striatula, Bolivina vaughani, Buliminella elegantissima, Elphidium tumidum, Hopkinsina pacifica, and Textularia earlandi occur in greater percentages than elsewhere, yet their numbers are small. Zone IV (40-72 feet) is characterized by an abundance of Elphidiella hannai greater than 8 per cent and an abundance of Ammonia beccarii tepida less than 32 percent.

The abundance of Elphidiella hannai where sand predominates apparently is due to its similar hydraulic equivalence to sand grains. Elphidium incertum obscurum reaches maximum abundance in sloughs and other shallow areas where organic matter content is greatest. Species characterizing Zones I and II apparently tolerate greater variations in salinity than species in Zones III and IV, which experience nearly isohaline conditions similar to that of the open ocean. The increase of species with increasing depth is probably due to the nature of Foraminifera, which are typical marine organisms and better suited to marine conditions.

BASEMENT STRUCTURE AND FAULTING ALONG THE NORTHEAST MARGIN OF THE SALTON SEA

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Several faults belonging to the San Andreas system are present in the Durmid area northeast of the Salton Sea. At least 3700 feet of vertical separation is measurable on the San Andreas fault by the offset of the Plio-Pleistocene Shavers Well formation and the Pleistocene Borrego formation, and 1800 feet of recent lateral displacement is indicated by offset drainage. The Powerline and Hidden Spring faults parallel the San Andreas fault about 1 1/2 miles to the east; a 3 milligal positive gravity anomaly and a 25 gamma positive aeromagnetic anomaly are present between these faults and the San Andreas fault. These anomalies are interpreted as being caused by an upfaulted block of basement rock which has little surface expression. Gravity models suggest that the fault block is about 8 miles long and 8000 feet wide, and that its upper surface is about 1200 feet deep. Northeast of the postulated fault block is a basin containing about 5000 feet of sedimentary rock and southwest is the deep sediment filled Salton trough.

In the Durmid area, the eastern margin of the Salton trough is characterized by a complex of subparallel faults having large vertical separations of varying sense. The net effect of this faulting is a downdropping of the Salton trough. Such structural conditions may persist southeast of the Durmid area where the margin of the trough is covered by lake sediments and the Algondones dunes.

CHARACTER AND SIGNIFICANCE OF THE OPHIOLITIC OCEANIC CRUST THAT FORMS THE BASE OF THE GREAT VALLEY SEQUENCE IN WESTERN CALIFORNIA

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Mudstone of the Knoxville Formation of Late Jurassic (Tithonian) age, the oldest sedimentary rock of the Great Valley sequence, in most places