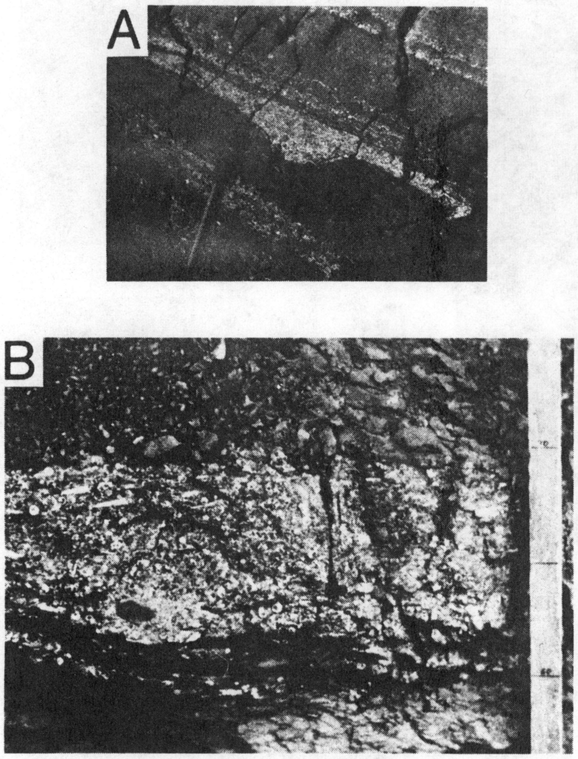

Figure 8. Scattered fossiliferous channel-fill deposits within the shallow-marine (transgressive) facies, type section. A) Coquina-filled channel and fossil-bearing lenses; pencil is 15 cm long. B) Turritella andersoni lawsoni bed, scale is in 10 cm increments.

shallow-marine facies. Other than the fossil content, these conglomerate beds are nearly identical to those in the main part of the coastal alluvial-fan facies. They retained their alluvial-fan nature as they were dumped into the ocean. Most likely, they are storm or flood deposits, which accounts for their presence as discrete beds in a marine setting. Later, some reworking of the uppermost parts of the conglomerate beds contributed fragments of marine fossils.

The condition of the megafossils in the lower part of facies is supportive also of a shoreline interpretation. Most are fragments of mollusks in channelized and laminated coquinas. The principal mollusks that could be considered as dwellers within this environment are the thick-shelled Turritella meganosensis protumescens, which show growth series, the thick-shelled Venericardia (Pacificor) aragonia joaquinensis, and unidentifiable oysters. Even these mollusks have been transported, but in the case of the Turritella specimens, the distance was short based on the presence of preservation of ornamentation.

The presence of well sorted, well laminated, locally cross-bedded and ripple-bedded sandstone with abundant vertical burrows suggests a beach environment where bottom shear conditions were intense. A nearshore environment is interpreted for that portion of the shallow-marine (transgressive) facies which consists of laminated beds alternating with bioturbated beds. Modern and ancient examples

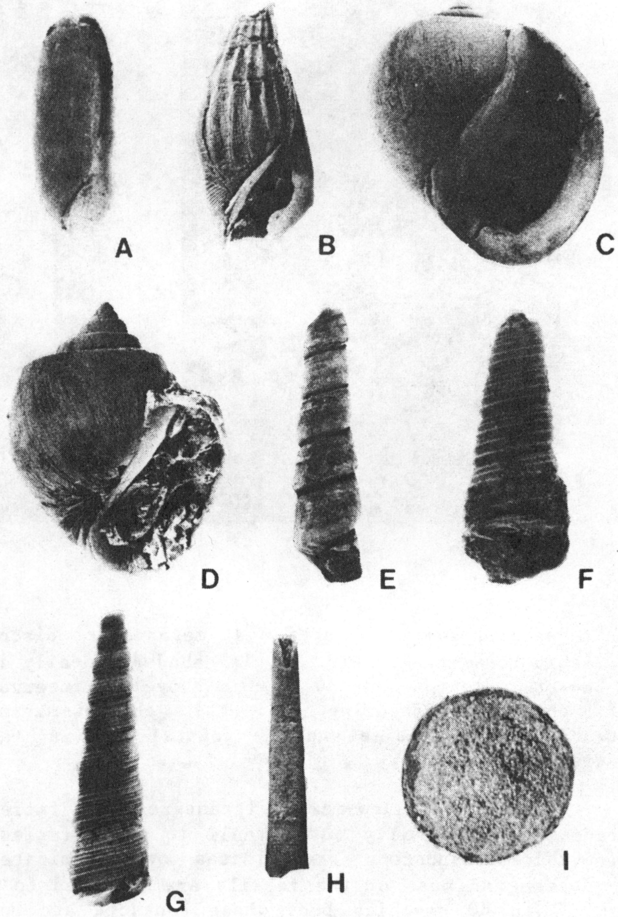

Figure 9. Characteristic megafossils of the shallow-marine facies. LACMIP = Los Angeles County Museum of Natural History, repository for all figured specimens used in this report. A) Cylichnina tantilla (Anderson and Hanna, 1925), hypotype LACMIP 6562, x2. B) Ectinochilus (Macilentos) macilentus (White, 1889), hypotype LACMIP 6521, x1. C) Eocernina hannibali (Dickerson, 1914), hypotype LACMIP 6524, x0.75. D) Pachycrommium clarki (Stewart, 1927), topotype and hypotype LACMIP 6526, x 0.75. E) Turritella andersoni lawsoni Dickerson, 1916, hypotype LACMIP 6511, x 1. F) Turritella buwaldana Dickerson, 1916, hypotype LACMIP 6513, x2.3. G) Turritella uvasana applinae Hanna, 1927, hypotype LACMIP 6514, x0.75. H) Dentalium (Laevidentalium) calafium Vokes, 1939, partial specimen, apical notch view, hypotype LACMIP 6507, x3.4. I) Pseudophragmina clarki (Cushman, 1920), test exterior, hypotype LACMIP 6500, x6.

CSUN 371= LACMIP 16115
CSUN 374= LACMIP 7242
LACMIP 16115
LACM 7242
CSUN 373= LACMIP 16211
LACMIP 7242
LACMIP 16211
LACMIP 16345

of such sedimentary sequences have been reported only from nearshore environments (Howard, 1971, 1972; Howard and Reineck, 1972, 1981; Goldring and Bridges, 1973, Sanders and Kumar, 1975; Kumar and Sanders, 1976; Perlmutter, 1979). In such cases, the finely laminated sand represents storm-influenced stratification, and the biogenic reworking is the inter-storm activity. Shell fragments commonly are concentrated as channel lags in surge channels. The