

## SUBMARINE FANS AND MARGIN PROGRADATION IN THE CORSICAN TROUGH

by

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## ABSTRACT

Topographic and high-resolution seismic surveys (airgun, sparker), supplemented by piston cores, elucidate the influence of gravitative processes and submarine fan sedimentation on the subsiding margin east of Corsica.

The linear (150 km long), narrow (15-45 km), north-south oriented Corsican trough between Corsica and the Tuscany Shelf off Italy has received to about 1500 m of largely clastic deposits since the end of the Miocene.

The pliocene deposits are moderately stratified and average 800 m ; the Quaternary series are well stratified and range to 400 m.

A dense network of E-W and N-S profiles clearly shows the progradation of the Corsican margin on the west flank of the Trough.

The Corsican slope is gentle, irregularly lobe-shaped, and incised by numerous submarine valleys.

The two largest depositional series are the Golo and Aleria fans off the Golo River and the Aleria Plain.

The distal portion of these and other fan-shaped features forming this margin terminate at the Golo Basin, the deepest part (860 m) of the Trough.

North-south profiles reveal levee-bounded valleys whose relief becomes attenuated with increasing depth toward the east.

The valleys may be depositional, depositional-erosional, or erosional ; the latter type predominates on the upper margin near the mouth of rivers.

The sharp v-shaped valley profiles indicate the continued role of erosion due to downslope sediment gravity flows toward the east and south.

Older channel-and-levee features, subsequently abandoned, appear as well-defined lenses in the subbottom records.

Moreover, deformed surficial strata record the effects of recent tectonics, particularly in the northern part of the Trough.

The overall configuration of this margin reflects the interplay of (a) a small but sharply-defined, high-relief massif, Corsica, uplifted and shaped by geologically recent events, that has served as a source of sediment, (b) acceleration of transport beyond river mouths of detrital material by channel and fan lobe deposition during the Quarternary due to large scale climatic and eustatic oscillations, and (c) the entrapment of this sediment in a small, quasi-enclosed, slowly subsiding depression.

Thus, topographically, the complex and largely erosional western margin of Corsica that bounds the large, deep Balearic Basin is distinct from the smooth eastern Corsican slope that records an essentially depositional regime of prograding and coalescing fans.