

ABSTRACT

The Pleistocene marine terraces of Jamaica are described. Four major levels have been recognised, the lowest of which is the most extensive. The distribution and elevation of these terraces suggest that Jamaica was uplifted on the north coast, during the Pleistocene, while subsiding on the south coast. Block faulting has disrupted the terrace continuity. The uplift and tilting of the marginal blocks of the Cayman Trough support theories that attribute this feature to crustal upwarp and extension.

The terrace ages have been calculated from the implied rates of uplift in the Oracabessa area. A tentative correlation is made with the Pleistocene sequences of the Alps and North America utilizing the altimetric ages, radiometric age dates, and the palaeomagnetic record. The four major terraces formed during the Pleistocene Interglacials.

The terrace deposits constitute a series of emerged reefs in which ancient analogues to the modern reef framework, back-reef, and fore-reef are recognisable. These deposits are described in detail and the distribution of each of the ancient environments briefly summarized. The reef zones recorded in the deposits of the last interglacial can be identified from the in situ corals. These assemblages indicate sea levels at +1 to +4 m 140,000 years B. P., +10 to +15 m 120,000 years B.P. and from present sea level to +2 m 100,000 years B.P. The first two phases of reef growth are separated by a disconformity and the third displays a regressive relationship to the second.

The faunal compositions of the Pleistocene and Recent reefs are similar. The extent of modern reef development has been influenced by the local tectonic record.

A progressive diagenetic sequence, comprising four stages, has been recognised in the carbonate terrace deposits. A mechanism of dolomitization is proposed that is based on magnesium leaching from one horizon and subsequent dolomite precipitation at another.