IGCP Project 364: Correlation of Caribbean ophiolites and volcanic arcs—field meeting

Puerto Rico, 11–16 March 1996

Coordinated by Herman Santos of the University of Puerto Rico, this was a meeting of Working Group 1. *Stratigraphic correlation of volcanic sequences in the Greater Antilles*. Leader: Manuel Urrutia-Vinent, Cuba.

**Background and objective of the meeting**

Two stratigraphical assemblages of rudists are already well documented from the Campanian–Maastrichtian of the Caribbean region: the Barranquita malaquita Fauna is regarded as being Campanian (mainly L own to Middle); while the Titasauridues guionensis Fauna is regarded as being uppermost Campanian to Maastrichtian (Rojas et al., 1996). The presence of *Torremites texturatus* (confirmed as such by morphotaxonomic analysis) in Cuba and the newly discovered candidate names are all features in common with the Peter's Hill Limestone of Jamaica (similar *calcareolus* forms collected from the latter formation by PWS in 1992 are as yet undescribed). The Peter's Hill Limestone has been dated as mid–late Santonian, on thermochronology (Zhang and Robinson, 1987). Moreover, the presence of *Torremites texturatus* in the Cotui is debated, in comparison with the Loma Yuacatán fauna of Cuba, which is also of Santonian age (see Rojas et al., 1996). Neither *R. texturatus* nor *T. texturatus* have yet been recorded anywhere from Queensland (van Donkman, 1971). Thus the mid–late Santonian age now looks most likely for the Cotui Formation. Consistent with this, too, is the apparent absence of the family *R. texturatus* in other formations, another feature in common with the Peter's Hill and Loma Yuacatán limestones, as well as the Snowy Range limestones, with *T. texturatus* of Curaçao (MacGillivray, 1971).

**Results**

Sampling of the type section of the Cotui Formation (eastern Monte Grande) between San Germain and Cabo Rojo yielded a rich and informative fossil fauna, including the following taxa (preliminary identification): *Barranquita* (small species, possibly *R. texturatus*), *Titasauridues* (small species, possibly *T. texturatus*), although some larger specimens, likely those figured by Chubb (1971, pl. 49, fig. 4) from the Peter's Hill Limestone, Jamaica, are also present. *Mesorhabdotus*, a new species—a large radiolarian previously referred to *Barranquita*, with a more reticulate cell pattern than that of *M. meridialis* (Skelton, in Rojas et al., 1996). Although with distinctive radial creulations or the inner margin, two *calcareolus* forms, one very large, of *relicturatus* asporophytes, cf. *Titaasauridues*, though lacking the large canals of that genus, and other *Articulata* sp.; and with somewhat curved canals and a vesicular ligamentary coating, supposedly these two forms are echinoderm types of a single antilocaloaprilid taxon, as yet undescribed. *Plagiophysycus* sp. and *Biorhachites* cf. *laminarita*.

In addition, sampling of the inner platform facies of the Cotui, in the Bueno Vista section some 3 km to the west, yielded the following small-sized taxa: *Articulata* sp.; *Biorhachites* cf. *laminarita*; *Radiolites* sp. *Proorhachites* sp.; as well as fragments of other, larger, radiolarians in washovergravels.
Continuing work on the rudists by Santos and Skelton will test these preliminary conclusions, but a provisional corollary for the regional geology is that the Lajas volcanics (underlying the Coto) are no older than Santonian in age. The Monte Grande Formation, overlying the Coto, which contains allochthonous Barretia, is probably Campanian. A further interesting biosstratigraphical implication for the Caribbean area is that the range of the Antillocaprinidae, previously regarded as limited to the Middle Campanian to Maastrichtian (Krijnen et al., 1993; Rojas et al., 1996) can now be extended down into the Santonian.

Additional observations

Continuation by Skelton of the presence of Caprinoida cepheus group and Coelocoma ramaria in the Bar랸cas Limestone of the Barranquitas area, and of the latter species in the Rio Maion Limestone of the Ceye area, is consistent with the Lower to O Middle Albian bracket previously recognised for these limestones (see, for example, Soth and Kollmann, 1985). They do not, therefore, correlate with the ‘Perceptria limestones’ of Camaguey Province in Cuba, which are now known to be Upper Albian (Rojas et al., 1996). Thus at least two (maybe more) rudist limestone intervals can now be recognised within the Albian volcanic arc sequences of the Greater Antilles.

Future plans of the Working Group

Next year (1997), a meeting in the Dominican Republic is planned, to continue the exercise of correlation of rudist-bearing limestones in the volcanic arc sequences already commenced in Cuba, Jamaica and Puerto Rico. Further details may be obtained from: Manuel Iznarda-Vincent (address during 1996: Department of Mammalogy, American Museum of Natural History, Central Park W at 70th Street, New York, N.Y. 10024-5192, USA. Fax: 212-769-5239; phone: 212-769-5693; e-mail manuel@amnh.org)

References


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Large recumbent candidulate rudist (probably a new taxon of primitive antillocaprinid) in the ?Santonian Coto Formation of SW Puerto Rico. It is viewed obliquely from above, preserved in life position in fine oolitic grainstones. Scale 12 cm long.