



Oceanic terranes of S-Central America – 200 Million years of accretion history recorded on the W-edge of the Caribbean Plate.

P. O. Baumgartner (1), K. Flores (1,2), A. Bandini (1,3), D. Buchs (1,4), G. Andjic (1), and C. Baumgartner-Mora (1)

(1) University of Lausanne, Switzerland (Peter.Baumgartner@unil.ch), (2) American Museum of Natural History, New York, USA, (3) University of Western Australia, Crawley, Australia, (4) IFM-GEOMAR, Kiel, Germany

The W-edge of the Caribbean Plate is characterized by two major basement domains, separated today by a SW-NE trending diffuse fault zone located SE of the Nicoya Peninsula (Costa Rica) and possibly connecting with the Hess Escarpment. To the NW, in the area originally called “Chortis Block”, oceanic island/arc basements range in age from Late Triassic to Early Cretaceous and form a complicated puzzle of geodynamic units. To the SE of this fault line, no age older than Turonian-Santonian (90-85 Ma) is known. This area only represents the trailing edge of the Caribbean Large Igneous Province (CLIP).

The *Mesquito Composite Oceanic Terrane* (MCOT) comprises the southern half of the “Chortis Block”, classically considered as a continental fragment of N-America. The MCOT is defined by isolated outcrops of ultramafic, mafic oceanic/arc rocks, and radiolarites of Late Triassic, Jurassic and Early Cretaceous age: Rhaetian (latest Triassic) radiolarites found in the *El Castillo Mélange* (S-MCOT: S-Nicaragua/N- Costa Rica). They are associated with blocks of OIB-metabasalts. These rocks document the presence of a Late Triassic oceanic basement that must have been the substrate of the 174 -177 Ma old (Early/Middle Jurassic) Petit-Spot-like alkaline volcanics that intruded Early Jurassic radiolarites. These rocks form tectonic slivers in the middle Cretaceous *Santa Rosa Accretionary Complex* (relative autochthonous of the *Santa Elena ultramafic unit*, N-Costa Rica).

The oldest rocks of the *Nicoya Complex s. str.* (NW-Nicoya Peninsula, Costa Rica) are Bajocian (Middle Jurassic) radiolarites, that occur as blocks magmatically engulfed in plateau-type basalts and intrusives that range in age throughout the pre-Campanian Cretaceous (130-83 Ma).

Middle and Late Jurassic metaradiolarites occur as blocks in the *Siuna Serpentinite Médange* (NE-Nicaragua), along with High-p, arc-related mafics. We envision an oceanic arc that collided in the latest Jurassic with the *Agua Fria* arc system (Chortis Block s. str.), and became exhumed again by the earliest Cretaceous (139 Ma phengite age).

A pre-Albian basaltic plateau-like basement is suspected but yet undated in the *Matambú Terrane* (Central Nicoya Peninsula). It is overlain by the Albian *Loma Chumico* Formation.

A pre-Turonian basement hosting the 90 Ma old *Tortugal Picrites* and alkaline basalts characterizes the *Manzanillo Terrane* (around the Nicoya Gulf, Costa Rica). The overlying Coniacian-Santonian to early Campanian *Berrugate* Formation represents the first Cretaceous evolved arc activity. It must be located on the edge of the MCOT, since the CLIP is still forming at that time.

To the SE of the S-Nicoya fault zone, Turonian-Santonian (~90-85 Ma) oceanic plateaus represent outcrops of the CLIP. These include parts of Herradura (Costa Rica) and the *Azuero Plateau* (Coiba, Sona and Azuero, Panama).

Late Campanian to Paleocene arcs rest on the CLIP: The *Golfito Complex* (Costa Rica) and the *Azuero Arc* (Panama), possibly also the *San Blas Complex* (Panama) and the *Serranía de Baudo* (W-Colombia).

Late Cretaceous to Eocene plateau/seamount basalts and oceanic sediments became accreted during the Early Tertiary: The *Tulin Group* (Herradura), Quepos, The *Osa Igneous Complex*, Burica, the *Osa Mélange* (Costa Rica/Panama), and the *Azuero Accretionary Complex* (Panama).