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New evidences of Triasic – Jurasic volcanism in the north of Lima, Perú

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Volcanic and volcanosedimentary sequences of the north coast of Lima region, they awarded to the Casma Group based only on stratigraphic relationship. However, new field observations on volcanic and volcanosedimentary successions in the Punta Paraiso area, review of recent radiometric dating of recent dating in intrusive bodies and finding of gastropods fauna; suggest upper Triassic-lower Jurassic age, so these would be equivalent to the volcanic Chocolate arc, representing for the first time evidence of rocks in this latitude of the Peruvian coast.

The volcanism in the Peruvian coast is evidenced from the Permian -Triasic to the Middle Jurassic, and forms different lithostratigraphic units, according to the area where it has been recognized, as for example the Chocolate Formation extends from the Tacna region to the Arequipa region (Jenks 1948, Jaén and Ortiz 1963), in the northwestern part of the Arequipa region, it is called the Chala Formation (Olchauski 1980, Romeuf et al 1995) and in the Ica region it is called the Rio Grande Formation (Ruegg 1951) .

In the coastal zone of the Huacho region, there are extensive outcrops of volcanic and volcanosedimentary sequences, which according to Cobbing (1973) and Guevara (1980) are the Albian - Cenomanian deposits of the Casma Group.

The stratigraphic succession outcropping in the Punta Paraíso area shows a continuous succession of approximately 500 m thick, composed of volcanic lavas, volcanoclastics and volcanic breccia; cut at different levels by a swarm of dykes and sills of andesitic nature

In the upper levels there is a succession of volcaniclastic sandstones of fine to medium granulometry, interspersed with levels of packstone to grainstone limestone with wavy lamination to horizontal, where a large fauna of gastropods and bivalves was collected, in which it can be recognized gastropods of the type Eucyclus sp and Ambercyclus sp which was described Haas (1953) and Ferrari (2015) corresponding to the Upper Triassic - Lower Jurassic.

For this same area the radiometric dates published by Wipf (2006) in his thesis work, mentions a geochronological dating of 131 Ma for the tonalite intrusive, which cuts this Punta Paraíso volcanic sequence, age that shows a Hauterivian age, the The age of this intrusive site suggests an age at least pre Hauterivian for the volcanic deposits of Punta Paraíso.

In addition, the fauna found by the present work determined as gastropods of the genus Eucyclus sp and Ambercyclus sp., With the geo-chronological determinations of the Hauterivian, show us that the age of this volcanic succession of Punta Paraíso is higher Triassic; so these outcrops would be equivalent to the volcanic arc of the Triassic - Lower Jurassic of the southern Peruvian coast.

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Ferrari M. (2015) Systematic revision of Late Triassic marine gastropods from Central Perú: considerations on the Late Triassic/ Early Jurassic faunal turnover. Andean Geology 42 (1): 71-96.

Guevara, C. (1980). El Grupo Casma del Perú central entre Trujillo y Mala.