

EOLIAN AMAZONIAN REMNANTS AS EVIDENCE FOR THE ANCIENT DESERTS

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Relict eolian dunes in the Rio Negro basin, northwestern Amazonia can indicate a past climatic regime markedly different from the present humid and tropical climate. Their presence was observed still in the early 19th century by Humboldt and latter these eolian features were observed by many authors. There is no evidence that eolian processes are presently moving sand on a large scale since those surfaces are actually covered by a mantle of open forest or a shrubland vegetation. There have been few investigations on the age and paleoclimatic significance of these paleo-eolian landforms, due to a lack of radiocarbon datable material, but it is generally assumed that they are late Quaternary in origin. It should also indicate a former climate drier than the present, a sort of arid or semi-arid climate, characterized by winds greater strength and frequency throughout the year. The eolian sands form chains of linear and infilled parabolic dunes bordering the Rio Negro and some of its tributaries, covering an estimated area of more than 400 km². Similar but smaller dunes occur in the Cuieiras-Aracá and Catrimani rivers. They are mainly NE-SW oriented which indicates that trade winds has an association with NE Trade Winds. Recent laboratory investigations, specially electronic microscope have revealed new information about dune-forming processes and associated environmental conditions, enhanced by the shape and surface aspects of the quartz grains a sort of wind transportation associated with mechanical chocks. Radiocarbon dates from charcoal give preliminary age, indicating that the main body of the dunes is last Pleistocene in age, and that some Holocene reworking has occurred. Luminescence dating analyses, now in progress, promise to clarify the chronology of eolian activity.