

Miocene exotic taxa in the Indian Himalaya and subtle aspects of India-Asia collision

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India–Asia collision eliminated marine barrier and thus gave way to mixing of life on either landmasses and as a consequence succeeding horizons deposited in basins adjoining suture zone are characterized by their exotic fossil taxa. Following suturing, Ladakh Molasse Basin apparently served as the meeting ground for the fauna from both bio-provinces and thus eventually provides palaeontological view and constraints to the events that followed the collision. Studies on the similar lines of the fauna from basins on the southern flank of the Himalaya that are more or less coeval to Ladakh Molasse are more insightful in revealing the subtle details of geomorphological changes due to earliest phase of the collisional and deformational dynamics. Induction of exotic deinotheres, native African folivorous beasts, in Dharmasala Basin of Indian Himalayan region in early Miocene is a potential proxy to the fact that basin was having a well drained thick forest, and thus older levels of the region revealing barrenness indicate a big change in the intervening interval. Similarly cyprinids and other species known to have roots and better dispersal history in Asian territories in the north are now well represented in Miocene Dharmasala assemblage; realization of the fact that surface water streams' bound fishes reaching in the Himalayan region from Tibet and across areas of the Asia impels to visualize surface water streams following available slopes due to post-collisional tectonics, that is, an embryonic antecedent river system.

Our explanation regarding occurrence of exotic Dharmasala cyprinids through connecting streams in conjunction with their Oligo-Miocene records from Ladakh and earliest phase of Himalayan Orogeny is apparently tenable. Similarly, disjunct distributions of the extant Malayan freshwater fishes in the Indian shield region — core issue explained by Hora's Satpura Hypothesis (now annulled) — can better be explained by taking into account orogeny driven multiple river reorganizations that are known to have taken place.