

Age of Termination of Collision Between India and Asia: Evidence from the Tertiary Hoh Xil Basin, Northern Tibet

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The collision of India with Asia is perhaps the most profound tectonic event to have occurred in past 65 Ma. It is responsible for the uplift of the Himalayas and Tibetan plateau and the Late Cenozoic global changes. Yet the age of termination of this collision remains poorly constrained. The Tertiary Hoh Xil basin of the northern Tibet could provide a significant evidence to the terminate age of the collision. The basin, reaches the South Kunlun mountains to the north and the Tanggula mountains to the south, is the largest Tertiary sedimentary basin in the interior of the Tibetan plateau. It formed in the very early Eocene and has been argued to be an indicator of the south continental collision. Therefore, the basin could contain geological records of the collision. The Tertiary strata of the Hoh Xil basin show a total sediment pile of 6,055.2 m thick within sedimentary period of about 33 Ma according to our magnetostratigraphy research. The average sedimentation rate of the sediments is 0.84-139.55 cm/ka. But the rate reached 142.90 cm/ka during about 40.40 Ma, much more than geological periods. Thus could indicate an regional tectonic event happened. Accompanying with researches of sedimentology of the Hoh Xil basin and evolution of the Tibetan plateau, we conclude that the collision between India and Asia reached to the climax during about 40.40 Ma, e.g. the terminate stage of collision.