The Regional Configuration and Tectonic Framework of the Himalayas

Anshu K. Sinha
anshuksinha@gmail.com

The Himalayan arc extends about 2,500 km from northwest to southeast incorporating from west to east the loftiestpeaks ,viz.,Nanga Parbat(8125m),Everest(8,848m) and Namche Barwa(7,755m).The width of the belt varies from 250-350 km.The mighty Himalayas and Karakoram,embodying the largest concentration of lithospheric mass,grew south of the Pamir.The mountain zones consists geological record of Precambrian to Recent and terminates both east and west with spectacular syntaxial bends.In the last 100 Ma the collision of Asian and Indian plates is the most significant tectonic events in this part of the globe leading to the uplift of Himalayan mountain chain.This event has directly effected the changes in the orography of earth and consequent climatic changes.The prominent and terminal phase of suturing of Indian and Asian plates was marked by the closing of Tethys during 60-50 Ma.The crustal shortening caused the overthusting and formation of extended thrust sheets forming klippen and nappe and root zones.The Himalayas is experiencing rapid uflift followed by erosion and deposition of sediments in the adjoining Arabian sea and Bay of Bengal.The recent discovery of ultrahigh pressure metamorphism(UHPM) having coesite mineral, and the transcurrent shift in the Karakoram fault zone are the significant research development in this area.Subduction processes in the active zone are responsible for tsunamis and earthquakes.The recession of glaciers in this region is concern for global climatic changes.

Ref.

[1] Book:Geology of the Higher Central Himalayas; Author-Anshu K. Sinha,John Wiley and sons, Chichester,219pp,1989.
[2] Book:Himalayan Orogen and Global Tectonics,Publication no.197 of the International Lithosphere Programme,Editor- Anshu K.Sinha,A.A.Balkema ,343pp,1992.