

# CONSEQUENCES OF THE COLLISION OF NORTH-CHINA AND SOUTH-CHINA CRATONS

*Edmund Z. Chang*

*Department of Geological and Environmental Sciences  
Stanford University, Stanford, CA 94305, USA*

In the Late Paleozoic, the Sino-Korean (North-China) craton and the Yangtze-Cathaysian (South-China) craton collide. The Permo-Carboniferous foredeeps and intermont basins to the north of this orogene were filled up with marine to terrestrial sediments, in which the fauna and flora were communicated with those from North, South and West China. During the Early and Middle Triassic, Dabie-Sulu mountains became Himalaya-type high mountain ranges due to continent-continent collision and double crust. The deep mountain root enabled the ultra-high pressure metamorphism in its lower part. At the same time, the high mountain range had blocked the monsoon from blowing to the north. Therefore, the Early-Middle Triassic deposits in north China became typical red bed whereas the deposits in south China was still shallow marine facies. The strong exhumed mountain ranges in Dabie-Sulu area shed huge amount of detritus to the west. The detritus firstly infilled the remnant ocean basins in Qinling. While the remnant basins were full and the submarine fans shifted further to the west to gradually fill the whole Songpan-Ganzi area. There was a pre-Sinian basement in Songpan-Ganzi called Songpan microcontinent or Norgai massive. The Sinian and Paleozoic strata and their fauna and flora are of Yangtze affinity. Started from Permian, a mid-ocean-ridge triple junction was developed there and the new-born oceanic crust provide more space for an even larger submarine fan. A Triassic subduction zone marked by a double island arc was developed along the western margin of Songpan-Ganzi, and the island arc supplied a smaller amount of detritus to its back-arc-basin on the eastern side which made up the western part of Songpan-Ganzi. In Jurassic, the Dabie-Sulu mountain range was leveled up to low hilly country, which enabled the monsoon to blow to the north very easily. Therefore, the Jurassic coal measures occurred all over the north China. In Songpan-Ganzi, the Triassic submarine fan deposits were folded and metamorphosed during the latest Triassic time. The Cenozoic Himalayas and its relationship with the Bengal submarine fan systems are quite similar to the Triassic Dabie-Sulu orogene and its relationship with the Songpan-Ganzi submarine fan system.