

## Introduction to recent advances in regional geological mapping (1:250, 000) and new results from southern Qinghai-Tibet Plateau

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A large volume of new geological data has been obtained in the process of new round of geological surveys (at a scale of 1:250, 000) and other geoscientific studies in southern Qinghai-Tibet Plateau (Wang et al. 2004). The new results and achievements provide stable bases that are beneficial for understanding the principles governing the geological processes and verifying them in the Qinghai-Tibet Plateau. Significant data on the spatio-temporal distribution of the regional primary junction belts (suture zones) and faults also serve as the base for basic geological information required to establish a workable geotectonic framework for Qinghai-Tibet Plateau.

The discovery of high-pressure granulites and lots of data on isotope chronology of Precambrian metamorphic rocks offer new insights to discuss the formation mechanism and exhumation process of the metamorphic basement in the southern Tibet. Findings of new strata and confirmation of already known strata containing abundant fossils provide new evidences to establish a regional stratigraphic system that will be used for geological classification and comparison. Likewise, discovery of some magmatic rock types and isotope-based age data on them enable to reconstruct the process of evolution and also propose a spatio-temporal framework for the magmatic rocks. Newly discovered unconformities and sedimentary facies or the verification of existing ones together with the associated

geological information are fundamental for the analysis of sedimentary basin and for the paleogeographic reconstruction of tectonic lithofacies. The results and progresses in Quaternary geological mapping at regional scale and also in studying the neotectonic movements will be useful for deciphering the history of uplift of Plateau, the changes in the paleoenvironments and also the development of lakes in the geological past. Additional progress in finding the relics of ancient human activity, deciphering zoological environments and also studying the geology of regions of touristic importance has been made. These will be definitely valuable for research on zoological environment and ancient human civilization of Qinghai-Tibet Plateau and also for regional economic development. Besides these discoveries, new information on mineralization gained through the regional geological surveys will serve as guidelines for undertaking necessary action to explore and develop the mineral resources and also for appraisal of important metallogenic regions and belts in Qinghai-Tibet Plateau.

### Reference

Wang L, Z Di-cheng and P Gui-tang. 2004. Primary Results and Progress of Regional Geological Survey (1:250, 000): the South of Qinghai-Tibet Plateau. *Geological Bulletin of China*, 23(6), in press (in Chinese with English abstract)