Attractive Himalayan Geology - Highlights of past 6 Student Exercise Tours 2012-2017 and Invitation to the 7th tour in March 2018

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Reflecting the collisional tectonics of Indian and Eurasian plates, the Himalaya exhibits a clear geologic constitution. Five geotectonic zones ranging in age from the Proterozoic to the Quaternary are arranged parallel to the mountain range (Fig. 1). A large uplifting rate of 5 mm/y still continuing today and forms deep valleys and steep mountain slopes where slope collapse, landslides and GLOF are often taking place. The Himalaya is the living museum for people studying geoscience and natural hazards (Yoshida et al., 2014).

The Himalayan geology will give a tremendous impact to students who walked in the Himalaya. The impact will spread, although by a small step to step, among students and teachers in Japan. It may ultimately cause to break the recent currency of neglecting field exercise for students who study geology in Japanese universities. The Student Himalayan Exercise Program started in 2012 and the exercise tour (SHET) of about 15 days (Japan-Nepal-Japan) has been conducted every year in March (SHET-HP, 2017, Yoshida, 2014-2017)..

The field tour course was identified as Muktinath-Pokhara-Tansen-Butwal route, about 200km long N-S transect of the central West Nepal Himalaya (Fig. 2), which covers all geotectonic zones of the Himalayan Orogen. A bus and jeeps are chartered and used for the above field tour for about 10 days from Kathmandu to Kathmandu. Field guidebooks for the tour course (Upreti and Yoshida, 2005; Yoshida & Ulak, 2017a, 2017b) are utilized throughout the tour. A pre- and post-field tour seminars and city tours are conducted in Kathmandu escorting Nepali students to interact with Japanese students.

Through the 6 tours of past 6 years, participants included 90 students from 18 universities, 5 citizens, one high school student and 17 leaders (teachers). All 6 tours were successful without any accident, and an average participation fee for a Japanese student is about 162000 yen (JPY).

The SHET has been evaluated and acknowledged well by all participants of all the tours in their tour reports. Reports by all participants have been assembled in a pdf book every year (e.g., Yoshida, 2017) and has been disclosed on the home page of SHET (SHET-HP, 2017) as well as the home page of the Gondwana Institute for Geology and Environment. It is clear that the emotion to study earth science, field geology as well as English is drastically enhanced by participating the tour.

Some highlights of field observations in the tours including beautiful Annapurna and Dhaulagiri ranges with amazing huge and clear folding structures of Tethys formations, a group of delighted students, and intermingling of Japanese and Nepalese students will be shown, and invitation to the 7th exercise tour in March 2018 will be displayed in the presentation, along with distribution of some useful leaflets related with the SHET program at the poster site. Further details of the SHET are possible to download on the SHET-HP (2017) below.

References

DMG, 1982, Geological map of Nepal, 1:1,000,000, Department of Mines and Geology, Government of Nepal,.

SHET-HP, 2017, Student Himalayan Exercise Project homepage. http://www.geocities.jp/gondwanainst/ geotours/ Studentfieldex_index.htm

Upreti, B.N., and Yoshida, M. (Eds), 2005, Guidebook for Himalayan Trekkers, Ser. 1, Geology and Natural Hazards along the Kaligandaki Valley, Nepal. Dept. Geol., Tri-Chandra Campus, Tribhuvan Univ., Kathmandu, 165 pages.

Yoshida, M., Upreti, B.N., Rai, S.M., 2014, Himalayan geotours and guidebooks (in Japanese). In: Yoshida, M., Amano, K., Nakai, H. (Eds), Geotours, Geopark, and Geo-Olympic - Enjoying Earth Science. GSJ e-book, 251 pages, Geological Society of Japan, Tokyo.

Yoshida, M. and Ulak, P.D. (Eds), 2017a, Geology and Natural Hazards along Kathmandu-Pokhara-Lumbini-Mugling Highways. Guidebook for Himalayan Trekkers, Ser. 3, GIGE Miscl. Pub. 33, Field Science Publishers, 78 pages.

Yoshida, M. and Ulak, P.D. (Eds), 2017b, Geology and Natural Hazards along Kaligandaki and Highways Kathmandu-Pokhara-Butwal-Mugling. Guidebook for Student Himalayan Exercise Tour. GIGE Miscl. Pub. 35, Field Science Publishers, 144 pages.

Yoshida, M., 2014-2017, The Student Himalayan Exercise Program, I, II, III, IV, V. Earth Science Education and Movement, (73) 57-62, (74) 63-70, (75) 71-77, (76) 89-96, (77) 80-87.

Yoshida, M., (Ed.), 2017, Traversing the Himalayan Orogen 2017 -Report of the 6th Student Himalayan Exercise Tour (e-book). Field Science Publishers, Hashimoto, Japan, 198 pages.

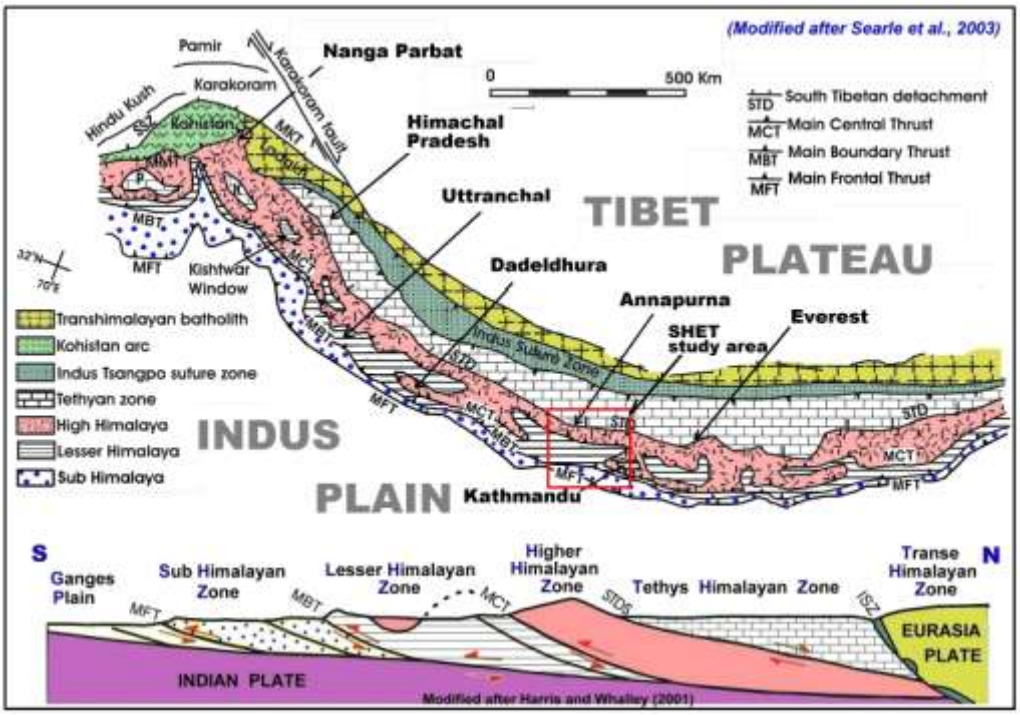

Fig. 1. Geologic outline and cross section of the Himalayan Orogen

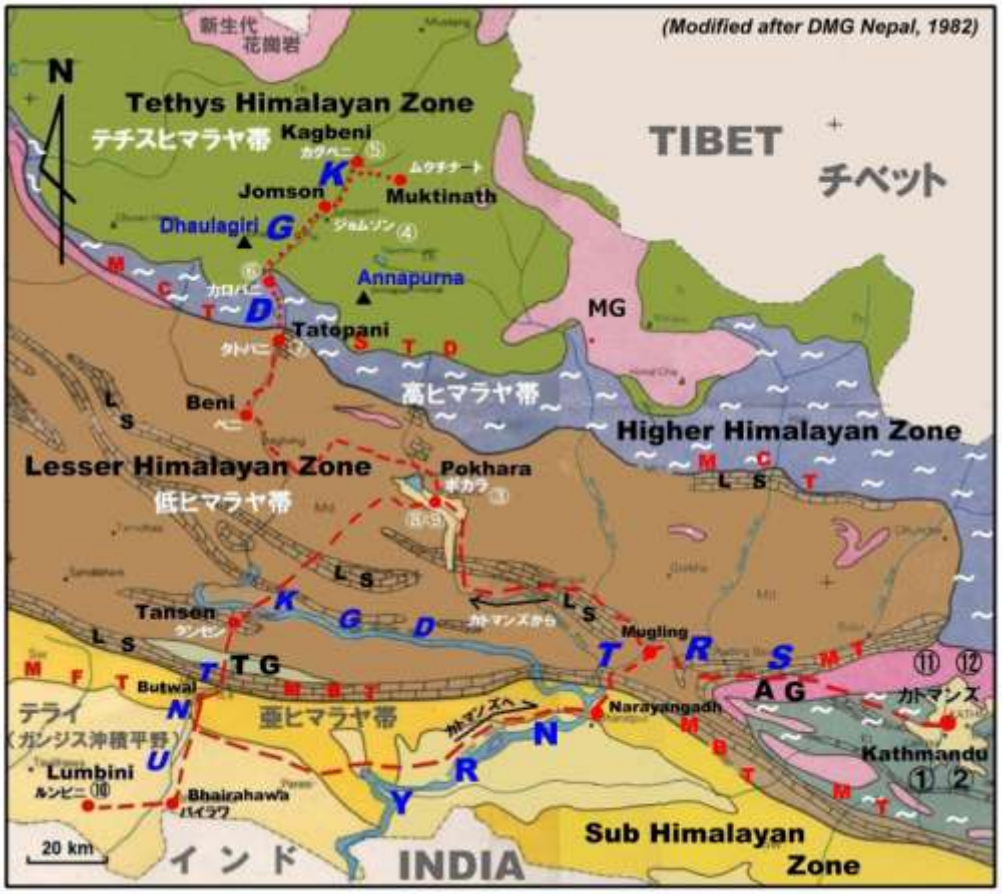

Fig. 2 The SHET course and geologic outline of surrounding areas

KGD: Kaligandaki River, TNU: Tinau River, TRS: Trishuri River, NRY: Narayani River, ①～⑫：night halt of the SHET