

## ヒマラヤントレッカーズガイドブック シリーズNo. 2 エベレスト地域のエコトレッキング (英文)

Guidebook for Himalayan Trekkers Ser. No.2, Ecotrekking in the Everest Region, Nepal Himalaya (Geology and Environment along the Lukla-Everest Base Camp and Namche - Gokyo Routes)

エベレストトレッキングは素晴らしいヒマラヤの景観とネパール山村の魅力で世界中の人々を惹き付けています。地質学的には低ヒマラヤ帯、高ヒマラヤ帯とテチスヒマラヤ帯が見事な帯状配列をなしているため、興味深い観察ができます。とりわけエベレスト頂上で高ヒマラヤ片麻岩類の上に南チベットディタツメント境界で乗っているテチス層群の様子は有名です。

本書は4回に及ぶ現地の野外調査を踏まえ、トリブバン大学地質学教室教員3人で共同執筆したものです。ガイドブックの前半40ページにはヒマラヤ全体とエベレスト地域の地質と自然の概説で、新旧の重要文献を引用してあります。ガイドブックの主要部約100ページは、全ルートのカバーする5万分の一程度の詳しいカラー地形図と、188葉のカラー写真や図により、173地点の地質と自然観察を説明してあります。一般のトレッカーにも分かるように注意して書かれていますが、さらに、巻末に詳細な文献リストや用語集等を付けて読者の便を図っています。変形A5版アート紙カラー全192ページです。

本ガイドブックは、シリーズNo.1「カリガンダキに沿う地質と自然災害」とともにネパール国立トリブバン大学の特別出版として発行されました。これらのガイドブックシリーズの売上は、同シリーズNo. 3として目下鋭意取り組み中のランタンヒマラヤ地域ガイドブック作成費用に向けられます。さらに版を重ねることができると、トリブバン大学地質学教室の野外地質研究の経費補助にも向けられるだろうと、教室教員一同大きな希望を持ってNo2を発行しました。ご興味の皆様にはぜひ1冊ご購入下さり、エベレスト地域のトレッキングに、あるいは日本や世界各地の自然災害との比較に等々ご活用下さい。

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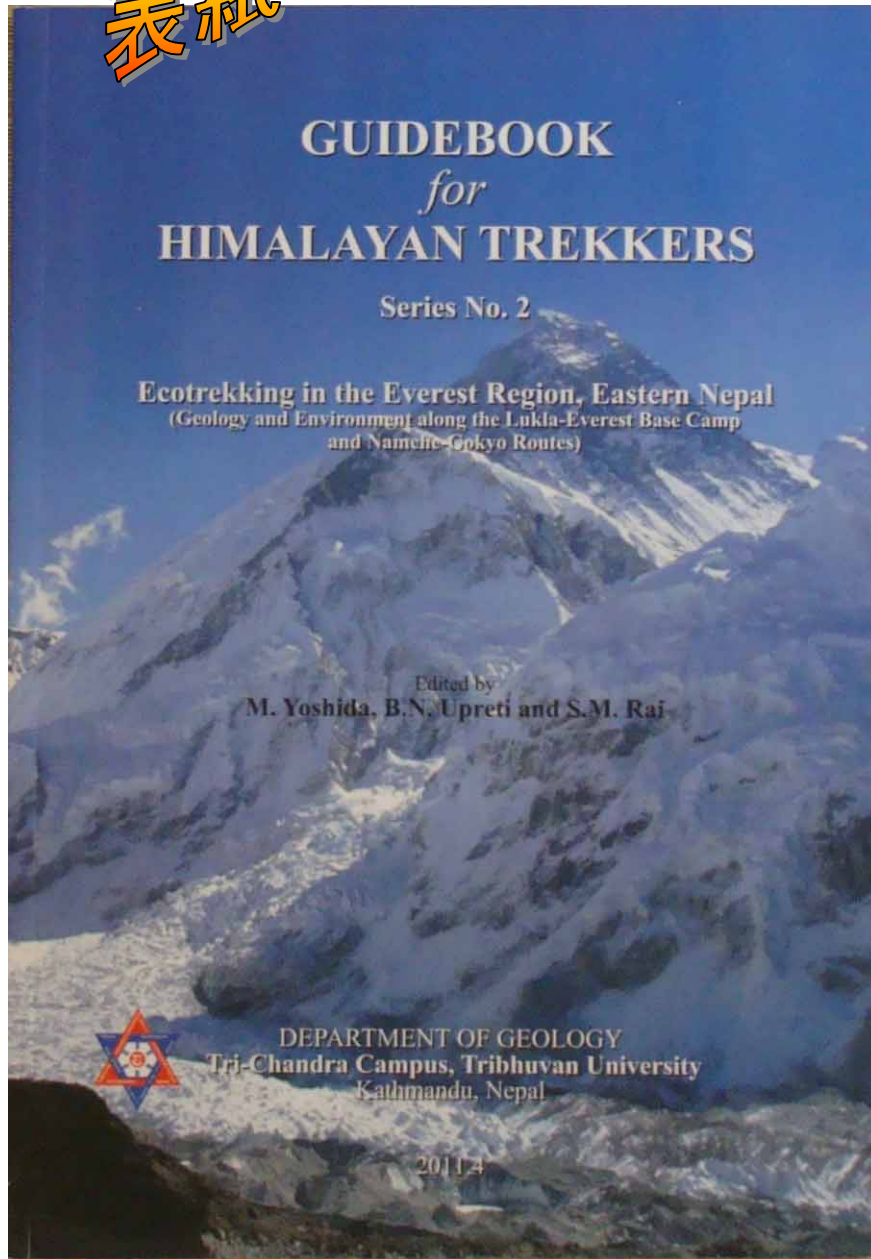
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表紙



テキストの地図

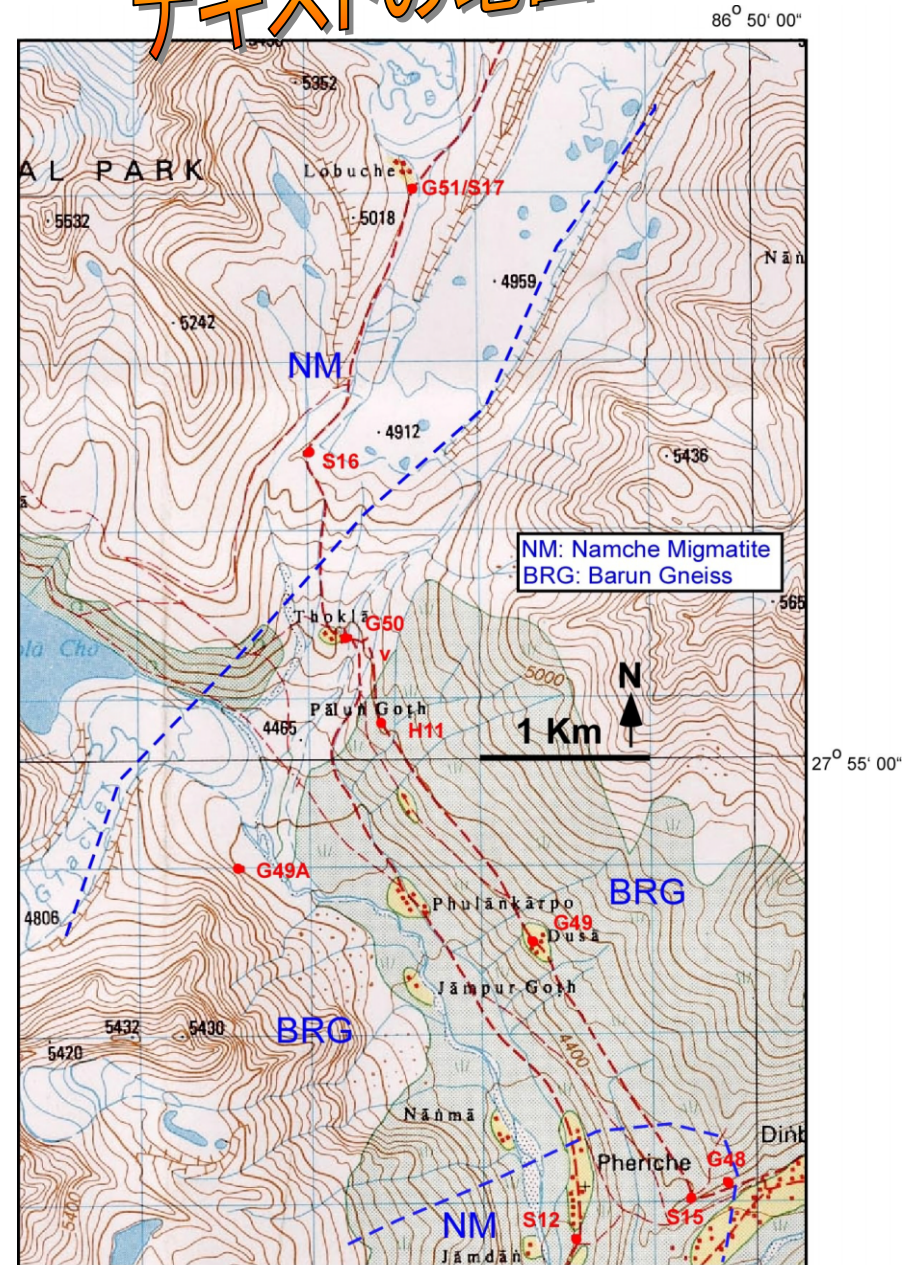


Fig. 3.3.1 Trekking route and observation stops from Dinboche to lobuche



# テキスト

Khangri Shar Glacier. From Goraksep, the trail runs on the lateral moraine for the early half and then until up to the Base Camp follows right through the Khumbu Glacier, mostly covered with rock fragments. It is a debris covered glacier..

The entire region is highly dominated by glacial geomorphology and the past and present glacial features are well represented everywhere. They include active glaciers, cirques, glacier and cirque walls, moraine hills, and glacial lakes. Very large basement rock exposures are observed as cliffs on mountain peaks and ridges here and there; but approach to these cliffs are not easy. Only a few outcrops are met with along the trail.

## Pheriche/Dinboche – Lobuche (Day 5)

### G-48 Basement exposure north of Dinboche: the Black Gneiss

After trekking for about 200 m from Dinboche/Pheriche along the trail to Lobuche, a small outcrop of dark coloured basement rock is found, appearing as if it is the staff of the Black Gneiss. This outcrop represents a tiny part of the extension of the large rock cliff just over Dinboche to the north (**Fig. 3.3.3**). The rocks are mainly medium-grained (sillimanite)-two mica gneiss/schist with platy joints. No leucosome develops here, but flattened potash-feldspar porphyroblasts occur abundantly in some parts.



*Fig. 3.3.3 Exposure of rock in a large cliff to the north of Dinboche (G-48)*

### S-15 View from the moraine ridge west of Dinboche

Few hundred meters west from the Stop G-48, the trail reaches to a small pass on the lateral moraine ridge and a small *stupa* stands at this location. This place is an excellent viewpoint providing a 360 degrees view of the mountain peaks around. One can see Lhotse, Ama Dablam, and Thamserku to the northeast to southwest, and peaks to the north along the main valley include Tobuche and surrounding peaks (**Figs. 3.3.4, 3.3.5**). To the northwest, as viewed through the binocular,

the 5,430 m high Tobuche peaks shows gray to dark gray rocks with no granite intrusion, thought to suggest that they belong the Black Gneiss. From the observations above, we delineate the boundary between the Namche Migmatites and the Black Gneiss just west of Dinboche. Lombardo et al. (1993) and Carosi et al. (1999) also gave partly a similar boundary at around this location.



*Fig. 3.3.4 A northeast view from Stop S-15. The extreme left peak of the mountain range is Lhotse (8,516 m).*



*Fig. 3.3.5 A northwest view from Stop S-15. The Tobuche (Towoche) and Arakam Tse are seen on the left and the Lobuche peak is seen at the extreme right.*

### G-49 Eastern and western cliffs composed of the Black Gneiss and boulders along the trail near Dusa.

The trail goes on a wide and flat plain of middle terrace on the left bank of the main valley. The terrace material is considered to be mostly lateral moraines of

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### References

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- Detailed geomorphological map of the northern part of the Everest region by Komatsu and Iwata (2005)
- Detailed geological Map of the northern part of the Everest region by Searle (2003)
- Glossary
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- Geological Time Table (Backside of the back cover)

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□ **Contributors**