P20. Investigation on Glacial Lake Outburst Flood in Imja Glacial Lake, East Nepal
Jun UMEMURA (Nihon University, Japan)

The outburst flood of a glacial lake dammed up by a moraine appears in glacial
dissolution in the Himalaya area. This paper presents the results of the investigation and
examination concerning Imja glacial lake in East Nepal. The investigation is as follows; 1)
Seismic exploration to determine the base rock depth under the moraine dam and the elastic
properties of the moraine, 2) Several geotechnical tests for investigating the mechanical
properties of the moraine, 3) Temperature measurement in the moraine dam, and 4) Topographical survey of the moraine dam. The examination to predict the occurrence of the
Glacial lake outburst is based on the stability analysis of the moraine dam.

Key words: glacial lake, outburst flood, hazard, Nepal, slope stability

P21. Landslide Distribution in the Mid-eastern Part of the Lower Nepal Himalayas
with Special Reference to Geology and Geomorphology
Hirosi YAGI (Yamagata University, Japan)

This paper discusses geologic and geomorphologic conditions of mountain slopes which
are prone to landslide. This study depends on landslide distribution mapping and measuremen
of slope angles in source areas of landslides. Landslides occur predominantly on dip-slope in
most geological zones, especially in the meta-sediment rock zone of Midland Group. Landslides usually occur more frequently easier on dip slope than on anti-dip slope under the
same geological condition. The frequency and the cumulative occurrence ratio abruptly
increase at specific slope angles in every rock type. We call this slope angle at which landslide ratios increase abruptly as critical slope angle. Phyllite, for example, commences
sliding at the lowest slope angle when composed to other geological zones. It is very
important, but often difficult to determine criteria of hazardousness of each land surface in a
process of hazard mapping. This paper proposes an evaluation system of landslide hazardness,
considering proneness of landslide such as lithology, slope type and critical slope angle.

Key words: Himalaya, landslide mapping, critical slope angle

P22. A Landslide Body covering a Holocene Push Moraine in the Iburidan Valley, in
the Northern Japanese Alps
Go SATO and Yoshihiko KARIYA (Chiba University, Japan)

There are a number of cirques in the northern Japanese Alps in central Honshu Island,
Japan. Recent studies have reported many landslides in the area. In this study, we describe
the landslide mass and push moraine, and their geomorphological development in the Iburidan
valley using air photo interpretation and field investigations. The valley is located on the
west side of the main ridge of the Hida Mountains. There is a cirque at the head of the
valley. Deformed peat "10-8 ka" and gravel layers comprising a moraine are distributed at the
cirque bottom. This deposit was deformed by faults and folds. It is thought that these
structures were formed during a glacial advance and retreat, i.e., it is a push moraine that
formed during the Neoglaciation after 8 ka. A landslide body covering the push moraine was
found. This landslide occurred on the cirque wall. The landslide body is 330 m wide and 180
m long and is composed of serpentinite. Some pressure ridges have formed on the toe of the landslide body perpendicular to its direction of movement. In addition, there are some thrusts in the inner structure. This landslide could be regarded as a paraglacial modification of the slope that occurred after the Holocene epoch.

Key words: landslide, push moraine, paraglacial, Iburidan valley, northern Japanese Alps

P23. An Application of Diatom Analysis for Environmental Monitoring at Mangrove and Lagoon Areas in South-East Asia

Kaoru KASHIMA (Kyushu University, Japan)

Maintaining the quality of natural resources in an enclosed coastal area like mangrove rapidly became an important environmental issue of the 1990s. Has the quality changed as a result of human activities or as a result of natural environmental changes, such as climatic change? What was the timing, rate, and extent of environmental change, and how can we infer these aspects?

Mangroves also have been very important places for human beings since ancient days, because there are many archeological sites around them. However long-term monitoring data of their environment usually do not extend back more than a few centuries, and for many regions the historical record is much shorter.

Diatoms have been extensively used as indicators of environmental change, for example, eutrophication, acidification, salinification, sea level change and land use change. Due to the effective preservation of diatom valves in sediments, the distribution of diatoms in sediment cores can provide a high resolution record of the aquatic environmental change. Therefore, paleoecological studies using diatom remains in undisturbed sediment cores taken from mangrove lands can provide quantitative reconstructions of their environments for thousands of years.

The purpose of this study is to document diatom assemblages associated with definable environmental gradients, in order to develop the database necessary to attempt paleoecological interpretations of Holocene environmental changes at mangrove areas in Malaysia. Therefore, results from the modern-distribution analyses were then used in a paleoecological analysis of diatoms collected from three vertical sections in the Matang mangrove at north-west coast of Malaya Peninsula.

Key words: human impact, intensive cultivation, sediment supply, source of sediment


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Introduction: The environmental degradation in tropical regions has been a serious problem during the last 30 years. The Mangrove ecosystem is an important costal ecosystem in tropical regions but it has been disturbed by the human impacts such as shrimp farming etc. On the other hand, mangrove plantation for natural ecosystem rehabilitation has become popular recently. The authors are aiming to clarify the mechanism of mangrove ecosystem development. This study has focused on the natural changing processes of environmental