LANDSLIDES OF BULATHKOHUPITIYA AREA, KEGALLE DISTRICT - ARE THEY THE RESULT OF MOVEMENTS ALONG JOINT PLANES?

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On the evening of 3rd June 1989, subsequent to more than 48 hours of continuous rain, a multitude of landslides had occurred in the villages of Bambaragala, Bohinna, Ambawakka, Yatapana, Ampe, etc., in the Bulathkohupitiya area. The eye-witness accounts by the villagers suggest that the mass movements had taken place more or less concurrently subsequent to a thundering sound. Our observations showed that the slides had occurred on the steep scarp slopes underlain by highly feldspathic thinly banded gneissic formations characterized by at least two prominent joint systems. At certain points, subsidences have triggered off along the joint systems thus destabilizing and withering the coconut, arecanut and other big trees. Several cracks disposed parallel to the prominent joint systems and extending to hundreds of meters were observed on the topsoil of such areas characterized by subsidence.

On the basis of our field observations, heavy and incessant rainfall has caused floods which had removed the toes of old earth-debris flows there-

by destabilizing them. As a result, the upper reaches of these earlier landslides, underlain by highly jointed weathered gneisses had started to slide down along the scarp slopes. This mass movement appears to have preceded a phenomenon of rupturing along the joint planes accompanied by a characteristic sound. As a result of continuous precipitation, the clays found within the joint planes of weathered feldspar-rich gneisses had expanded causing widespread rupturing and movement along the strike/dip directions of the joints. The occurrence of several mass movements more or less concurrently on at least two parallel ridges suggests the wide distribution of the landslide-prone joint systems in the Bulathkohupitiya area.