

THE PALAEOMAGNETISM OF YOUNG
LAVA FLOWS AND YOUNG SEDIMENTS

FROM KENYA.

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A thesis submitted in part

in fulfilment for the Degree of

Master of Science in the

University of Nairobi.

July 1974

ABSTRACT

In order to investigate the secular variations of the geomagnetic field in declination and inclination in Kenya over intervals of the recent past a number of young lava flows and two sedimentary sections were sampled. A total of thirteen lava flows from the volcanoes Shaitani, Teleki's volcano and Emurangolak were sampled, the samples being measured on the Nairobi spinner magnetometer both before and after alternating field cleaning. With the help of the historical secular variation record for Kenya the variations obtained from the lavas, covering the time from 1000 years B.P. to the present, are confirmed, and fairly reliable ages assigned to most of the lava flows.

Sections of Holocene lake sediment from near Lakes Naivasha and Rudolf covering time spans of about 2600 and 5000 years were intensively sampled and measured in the same way as the volcanics. The secular variations in D and I are clearly seen when the sampling level mean directions are smoothed over intervals of about 250 years. The angular dispersions of the sedimentary secular variations are very small, around 3° : this is shown to be due to too short a sampling 'window' rather than to abnormal (Hawaiian type) secular variation or to time integration of magnetisation over very long periods. The secular variation curves show that drift of the non-dipole field has occurred in both eastward and westward directions in the past, so that the present westward drift must be temporary.

Rotational remanent magnetisation (RRM) is found to occur

in both volcanic and sedimentary samples, the volcanic samples showing acquisition in a direction antiparallel to that normally found.