

PALEOMAGNETIC STUDY OF GALLODDAI DOLERITE, SRI LANKA

Masaru Yoshida¹ and Minoru Funaki²

1. Department of Geosciences, Faculty of Science, Osaka University, Sugimoto, Sumiyoshi-ku, Osaka 558, Japan.
2. National Institute of Polar Research, 1-9-10, Kaga, Itabashi-ku, Tokyo 173, Japan.

A total of 27 rock samples from eastern Sri Lanka including 17 samples of the Jurassic Gallodai Dolerite and 10 of the adjacent East Vijayan Gneisses were analysed, most of specimens giving stable natural remnant magnetisation (NRM) after AF and thermal demagnetizations.

Dolerite samples gave an average NRM of I (inclination)=33.6° and D (declination)=88.3° with (confidence of 95% probability)=6.4, translating into VGP (vertical magnetic pole positions) of Lat=8.5° and Long=152.9°. This VGP was rotated to obtain a paleo pole position in the Gondwana reconstruction after Lawver and Scotese (1987, Gondwana VI). The Jurassic paleo-pole position thus obtained compares well with that obtained from the Jurassic Ferrar Dolerite of Antarctica. 5 samples of the country East Vijayan Gneiss gave an average NRM of I=48.0° and D=294.7° with B=17.6°, translating into VGP of Lat=25.0° and Long=19.3°. These are apparently different from that of the gneisses and pink granites of the Highland Group and the Tonigala Granite in the Wannu Complex (Funaki et al., 1990), and Funaki et al., in press), and is difficult to evaluate at the present stage of our data. An average of 5 NRMs for the East Vijayan Gneiss samples collected within some tens of meters from the contact of dolerite, however, are I=17.7° and D=76.2° and are thus nearly consistent with that of the dolerite, showing the re-magnetization effect by the dolerite intrusion.

Funaki et al., 1990. Proceedings of NIPR Symposium on Antarctic Earth Sci., 4.

Funaki M., Yoshida M. and Vitanage, P.W. Paleomagnetic reconnaissance of Precambrian and Jurassic rocks of Sri Lanka. J. Geol. Soc. Sri Lanka, 2, pp.49-55.