

# **Conventions Applicable to all the Papers**

The Royal Society

Phil. Trans. R. Soc. Lond. A 1957 250, 71-72

doi: 10.1098/rsta.1957.0011

**Email alerting service** 

Receive free email alerts when new articles cite this article - sign up in the box at the top right-hand corner of the article or click here

To subscribe to Phil. Trans. R. Soc. Lond. A go to: http://rsta.royalsocietypublishing.org/subscriptions

#### [71]

## PALAEOMAGNETIC INVESTIGATIONS IN GREAT BRITAIN

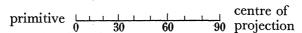
		PAGE
I.	The measurement of the permanent magnetization of rocks. By D. W.	
	Collinson,* K. M. Creer,* E. Irving† and S. K. Runcorn.* Department of	
	Geodesy and Geophysics, University of Cambridge	73
II.	Analysis of the palaeomagnetism of the Torridonian Sandstone Series of	
	north-west Scotland. I. By E. Irving and S. K. Runcorn	83
III.	The origin of the palaeomagnetism of the Torridonian Sandstones of north-	
	west Scotland. By E. Irving	100
IV.	The natural remanent magnetization of certain stable rocks from Great	
	Britain. By K. M. Creer	111
V.	The remanent magnetization of unstable Keuper Marls. By K. M. Creer	130
VI.	Geophysical interpretation of palaeomagnetic directions from Great Britain.	
	By K. M. Creer, E. Irving and S. K. Runcorn	144

(Communicated by Sir Ronald Fisher, F.R.S.—Received 17 April 1956— Revised 8 April 1957)

## CONVENTIONS APPLICABLE TO ALL THE PAPERS

Positions on the globe are given by the colatitude  $(\theta)$  and the longitude  $(\phi)$ , measured from the north geographical pole and from the Greenwich meridian eastwards, respectively. The declination of the geomagnetic field or a palaeomagnetic direction (D) is measured from the geographical meridian eastwards and the inclination (I) (the term 'angle of dip' is not used here because of possible confusion with the term 'geological dip') is measured from the horizontal plane, positive if the north-seeking pole is below the horizon, negative if it is above.

Directions of magnetization are plotted, unless otherwise stated, as north-seeking poles on the equal area projection, open circles are on the upper hemisphere (negative inclination), full dots on the lower hemisphere (positive inclination). The poles of projection are the ends of the vertical diameter of the unit sphere, from the centre of which the directions are drawn. On these projections the declination is simply read off as the angle between the lines joining the centre to the point and to the north. The angle of inclination may be read from the length of the line joining the centre to the point using the following scale:



In four cases equatorial projections are used but are fully explained in the text. The maps of the northern hemisphere are drawn on the polar stereographic net.

- \* Now at the Physics Department, King's College, Newcastle upon Tyne.
- † Now at the Research School of the Physical Sciences, National University, Canberra, Australia.

9

Vol. 250. A. 974. (Price 30s.)

[Published 29 August 1957

72

#### PALAEOMAGNETIC INVESTIGATIONS IN GREAT BRITAIN

#### ACKNOWLEDGEMENTS

We should like to acknowledge the help which we have received throughout this research from discussions with Professor P. M. S. Blackett, F.R.S., Professor Sir Ronald Fisher, F.R.S., and Professor O. T. Jones, F.R.S. In the initial stages of this work Professor Blackett allowed us to use his magnetometer at the Jodrell Bank Experimental Station, upon which experience we drew in designing our instrument. This research was supported by two generous grants from the Department of Scientific and Industrial Research, from which one of us (E.I.) also received a maintenance award. One of us (K.M.C.) was in receipt of a studentship from the Royal Dutch Shell Group of Oil Companies.

We wish to thank the following geologists for help in directing us to exposures in the rock series indicated: Dr J. E. Hemingway and Dr J. Phemister (Torridonian), Dr J. H. James and Mr T. H. Whitehead (Longmynd) and Mr R. H. Hoare (Old Red Sandstone in Shropshire). We are grateful to Mr D. M. Reid for the collection of some specimens of the Torridonian sandstone from Stoer.

We acknowledge with pleasure the help received from Mr L. H. Flavill, to whose skill and invention much of the high performance of the magnetometer is due.

We are indebted to our colleagues in the department, especially Mr J. C. Belshé, Mr P. M. du Bois, Dr A. E. M. Nairn and Mr J. H. Parry, for much help and discussion. We wish to thank Dr N. F. M. Henry and Mr R. Phillips for help with X-ray and ore microscope techniques respectively.