

## LETTERS TO THE EDITORS

### A magnetic fabric study of the Shap region in the English Lake District \*

Dr R. J. Firman has written to question the sampling techniques of Rathore & Kafafy (1986). The sampling and interpretation of magnetic susceptibilities have taken no account of the wide variety of lithologies in the region, the structure, and the local metasomatism and mineralization. Dr Firman considers samples from sites 23 and 26 must be from glacial deposits, rather than *in situ* rock (or site 26 wrongly located in Rathore & Kafafy, fig. 1), and that sites 14 and 15 drilled granite boulders, rather than the contact hornfels reported. In the Shap Blue Quarry group, mean susceptibilities were recorded ranging from  $1.1 \times 10^{-6}$  to  $4994.7 \times 10^{-6}$ , but the authors paid no regard to the complex tectonic, metasomatic and mineralization history of these rocks (Firman 1957). Dr Firman concludes that the data of Rathore & Kafafy (1986) do not support their re-interpretation of the Shap aureole.

Dr C. A. Boulter has commented on the misinterpretation of Boulter & Soper (1973) by Rathore & Kafafy (1986). The latter authors have claimed that fig. 1 of Boulter & Soper (1973) demonstrates intrusion-related deformation "only within a few metres of the granite contact". Dr Boulter stresses that this figure in fact shows a deflection of region cleavage in a 600 m wide envelope around much of the granite. He also criticized Rathore & Kafafy for not sampling the best exposed and most pronounced deflection around the NW corner of the Shap granite. Without this information, the authors were in no position to claim that their studies demonstrated intrusion-related deformation of the aureole to be restricted to a zone of a few metres.

Dr J. S. Rathore has replied that there is an area of disagreement between the work of Rathore & Kafafy, and Dr Firman's. He defends their sampling techniques, and comments that the aim of the work was not to assess the effects of lithology on magnetic fabrics. In answer to the complaint that the views of Boulter & Soper were misrepresented, Dr Rathore concedes that the data of Rathore & Kafafy might not disprove the existence of a strained zone of at least 500 m due to intrusion of the Shap granite.

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## REFERENCES

- Boulter, C. A. & Soper, N. J. 1973. Structural relationships of the Shap Granite. *Proc. Yorks. geol. Soc.* **39**, 365-369.  
Firman, R. J. 1957. Fissure metasomatism in volcanic rocks adjacent to the Shap Granite. *Westmorland. Q. Jl geol. Soc. Lond.* **113**, 205-222.  
Rathore, J. S. & Kafafy, A. M. 1986. A magnetic fabric study of the Shap region of the English Lake District. *J. Struct. Geol.* **8**, 66-77.

\*The Editor regrets that it was not considered appropriate to publish the complete discussions and Replies to this article. Copies of the full texts of Dr Firman's and Dr Boulter's letters may be obtained from the authors, on request.