Devonian palaeogeography of Northern Britain

DONOVAN *et al.*[1] have recently summarised sedimentological data from the Devonian of North Scotland which they believe invalidate my suggestion of a large-scale sinistral shift along the Great Glen Fault (GGF) in late/post Devonian time[2–4]. Their main arguments are that "the ORS sediments of the Orcadian Basin on both sides of the GGF are very similar in character and show identical history of development" and that palaeocurrent vectors support sedimentation within a single basin. The authors consider the Orcadian Basin to have been of oval shape, the long axis being of the order of 400 km. If a basin of this size can have similar characteristics throughout there is no reason why the outcrops from a basin only about twice as long (corresponding to my proposed 500-km transcurrence) should not exhibit an equally good match of sedimentological and other features. The evolution of the Orcadian Basin may have been strongly linked with lateral and vertical movements of the GGF, causing simultaneous variation in sedimentary facies, tectonic structures and so on over extensive parts of its length. Furthermore, from the palaeocurrent vectors presented (dominantly from west of the fault) one can devise widely different reconstructions within the framework of a single basin: data from the adjoining shelf areas are very necessary before such information becomes relevant to the problem under consideration.

The available data can equally well be fitted to the model of the Orcadian Basin having subsequently become subdivided by a major transcurrent movement. With a 500-km sinistral displacement the East Shetland Basin, which includes thick basal breccias and coarse fluvial conglomerates derived from a metamorphic/plutonic terrain to the west[5], would fit in well with the geology of areas around southern Inverness-shire (west of the GGF).

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1 Donovan, R. N., Archer, R., Turner, P., and Tarling, D. H., *Nature*, **259**, 550–551 (1976).
2 Storetvedt, K. M., *Geol. Mag.*, **111**, 23–30 (1974).
3 Storetvedt, K. M., *Nature*, **249**, 777 (1974).
4 Storetvedt, K. M., *Geol. Mag.*, **112**, 94–96 (1975).
5 Mykura, W., *Geol. Mag.*, **112**, 91–94 (1975).

Statement

IN September 1976 Dr Robert J. Gullis left our laboratory after having spent two postdoctoral years with us. He had been engaged mainly in measuring the levels of cyclic GMP in neuroblastoma cells and neuroblastoma × glioma hybrid cells. We published four papers on this matter together with him. After Dr Gullis had left, several of my colleagues (M. Brandt, J. Traber and D. van Calker) repeated this work, but were unable to reproduce it. Dr Gullis was therefore asked to return to our laboratory and repeat his essential experiments under supervision. During a 2-week period Dr Gullis carried out four series of experiments. After the experimental incubations, the samples were coded. In none of the experiments was Dr Gullis able to obtain his previous results. Neither morphine nor levorphanol nor the enkephalins nor cholinergic agonists changed the level of cyclic GMP in the hybrid cells.

In some of the publications listed below cyclic AMP was determined in the same samples in which cyclic GMP had been determined. The cyclic AMP assays were carried out by other members of the laboratory. But the printouts from the scintillation counter were left to Dr Gullis for evaluation.

Dr Gullis admitted having invented the results of all his experiments. Thus, I should like to let it be known to the scientific community that the following three publications are based on invented data:

Gullis, R. J., Traber, J. & Hamprecht, B. Morphine elevates levels of cyclic GMP in a neuroblastoma × glioma hybrid cell line. *Nature* **256**, 57–59 (1975).
Gullis, R. J., Traber, J., Fischer, K., Buchen, C. & Hamprecht, B. Effects of cholinergic agents and sodium ions on the levels of guanosine and adenosine 3′:5′-cyclic monophosphates in neuroblastoma and neuroblastoma × glioma hybrid cells. *FEBS Lett.* **59**, 74–79 (1975).
Gullis, R. J., Buchen, C., Moroder, L., Wünsch, E. & Hamprecht, B. Opiate-like effects of enkephalin on neuroblastoma × glioma hybrids, in *Opiates and endogenous opioid peptides* (ed. Kosterlitz, H. W.) 143–151 (Elsevier, Amsterdam, 1976).

The data on cyclic AMP were falsified by Dr Gullis in a fourth paper (Figs 3 and 4).
Brandt, M., Gullis, R. J., Fischer, K., Buchen, C., Hamprecht, B., Moroder, L. & Wünsch, E. Enkephalin regulates the levels of cyclic nucleotides in neuroblastoma × glioma hybrid cells. *Nature* **262**, 311–313 (1976).

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DR GULLIS WRITES—I wish to disclose the fact that papers published in several journals with myself as principal author are not reliable. The curves and values published are mere figments of my imagination, and during my short research career I published my hypotheses rather than experimentally determined results. The reason was that I was so convinced of my ideas that I simply put them down on paper; it was not because of the tremendous importance of published papers to the career of a scientist.

Therefore I would like to let it be known that the following papers published while I was working in the laboratory of Dr B. Hamprecht are not reliable.

Gullis, R. J., Traber, J. & Hamprecht, B. *Nature* **256**, 57–59 (1975).
Gullis, R. J., Traber, J., Fischer, K., Buchen, C. & Hamprecht, B. *FEBS Lett.* **59**, 74–79 (1975).
Gullis, R. J., Buchen, C., Moroder, L., Wünsch, E. & Hamprecht, B. Opiate-like effects of enkephalin on neuroblastoma × glioma hybrids, in *Opiates and endogenous opioid peptides* (ed. Kosterlitz, H. W.) 143–151 (Elsevier, Amsterdam, 1976).

Another paper in which I was co-author and submitted cyclic GMP values is also wrong in terms of the cyclic GMP content (Figs 3 and 4). The paper is

Brandt, M., Gullis, R. J., Fischer, K., Buchen, C., Hamprecht, B., Moroder, L. & Wünsch, E. *Nature* **262**, 311–313 (1976).

I would also like to disclose the fact that the following papers published with Dr C. E. Rowe are purely hypothesis.

Gullis, R. J. & Rowe, C. E. *Biochem. Soc. Trans.* **1**, 849 (1973); *Biochem. J.* **148**, 197–208; 557–565; 567–581 (1975); *J. Neurochem.* **26**, 1217–1230 (1976); *FEBS Lett.* **67**, 256–259 (1976).

This letter is to point out to the scientific community that the results presented in these papers are wrong and based purely on hypothesis. I must take full responsibility for these unfortunate incidents and have consequently suffered. I hope that my experiences are noted by others, and I would like to apologise to the scientific community and the various people involved.

R. J. GULLIS