Neural repair

John Nicholls and John Treherne
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A cultured astrocyte stained with antibody against glial fibrillary acidic protein (GFAP). Photograph kindly supplied by Martin Raff.
Neural repair

This volume deals with a challenging problem in modern neurobiology: the ability of the most complex of the organ systems to repair itself. Understanding of the regenerative process of the brain is not only of compelling scientific interest, but also of crucial clinical importance in overcoming the effects of neural injury and disease. The chapters in this book — all written by international authorities — provide valuable insight into current techniques and concepts which are transforming our understanding of the cellular processes of brain repair. The topics covered range from the molecular mechanisms of neural growth factors and synapse formation to neuronal targeting and the use of embryonic nerve grafts to alleviate what have been previously regarded as intractable pathological conditions.

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PREFACE

It is becoming increasingly difficult to produce a book such as this which is not out of date in a number of minor and, often, major particulars, so fast is the acquisition of biological knowledge and so dilatory the publication by many commercial publishers. In this, the eighth Review Volume of The Journal of Experimental Biology, we have made every effort to avoid this problem. The volume is based on a meeting held in Crete in the spring of 1987 and it is a testimony to the skill and dedication of the staff of The Company of Biologists Limited that it has been published by the summer, to produce a timely overview of a burgeoning topic of considerable scientific interest.

The success of the venture depended on the seclusion and friendly atmosphere provided by the meeting at the Greek Orthodox Academy at Kolimbari. We are most grateful to the Director of the Academy, Dr Alexandros Papaderos, for his willing collaboration with The Company of Biologists Limited in running this meeting and to Bishop Eirenaios for his kindly interest.

We are indebted to the American Society of Zoologists, Cambridge University Press, Elsevier Biomedical Press, Macmillan Journals Ltd, Masson, Pergamon Press, Rockefeller University Press, the Society for Neuroscience and Springer International for granting permission to reproduce text illustrations.

John Treherne