

MATTERS ARISING

Penfield's homunculus

I was fascinated to read GD Schott's devastating, but also enlightening and at times amusing critique of the scientific value of Penfield's homunculus.¹ He points out some of the non-scientific associations of the word "homunculus"—for example, in modern psychology (*In that remark the abused child is speaking*).

I would add that a similar notion has become a part of contemporary folklore (*Inside every fat man there is a thin man struggling to get out*) and is reminiscent, not only of Cartesian philosophy (*the ghost in the machine*), but also of some basic assumptions of ear acupuncture and iridology (where the whole human body is represented by points on the lateral surface of the ear and circumscribed areas on the iris, respectively). It is one of the merits of Schott's editorial that the reader is initially puzzled by the choice of the ill-defined term "homunculus," with its multifarious associations, but such a scrupulously scientific investigator as Penfield, but comes to realise that the scientific evidence for this concept is equally puzzling.

Underlying, but not made explicit in Schott's critique is a superficially whimsical, but highly relevant, and surprisingly intractable, philosophical puzzle, namely, how one thing can be about another thing, in this instance, how a drawing of a homunculus can be about a certain constellation of neurons—or, for that matter, how a drawing of a homunculus can be about anything at all. One answer might be that Penfield meant the homunculus to be about certain neurons (an explanation of the problem in terms of mental states), but this merely moves the scenery and leaves the problem itself centre stage. Another approach is to bring back from the very same teleology banished by Schott from the theatre of science: Penfield's mind was "designed", or had evolved, in such a way that the homunculus seemed to him to be a satisfactory representation of the results of his work on stimulation of the human cerebral cortex.

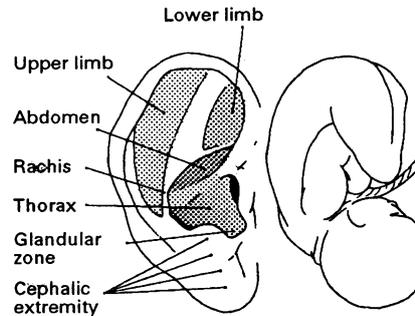
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1 Schott GD. Penfield's homunculus: a note on cerebral cartography. *J Neurol Neurosurg Psychiatry* 1993;56:329-33.

Schott replies:

I was interested to read Dr Crichton's comments about some of the philosophical issues raised by the homunculus concept. The representation of the human body in respect of ear acupuncture has also been illustrated, even in modern times (fig).

Philosophical ideas about the homunculus, although discussed today, were of concern many centuries ago. The term probably originated in the 15th century,² but has had different meanings in different eras. For instance, Paracelsus used the term



The fetal homunculus located in the ear. Reproduced with permission.¹

to mean a fusion in man of animal and human spirits or qualities,³ a far cry from Penfield's use of the homunculus. In philosophy, as in medicine, it is important to define and illustrate what one means.

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- 1 Nogier PFM. *Traite de auriculotherapie*. Moulins-les-Metz: Maisonneuve 1972;58.
- 2 Kuhn SM (ed). *Middle English Dictionary*, vol 4. Ann Arbor: University of Michigan Press 1963;982.
- 3 Sudhoff K (ed). *Paracelsus: Sämtliche Werke*, vol 14, I. Munich: Oldenbourg, 1922;325.

NOTICES

The XIIth International Congress of Neuropathology will be held in Toronto, Ontario, Canada from 18-23 September 1994. This meeting will be conjoint with the American Association of Neuropathologists Annual Meeting and the Canadian Association of Neuropathologists Annual Meeting. For further information please contact Dr JJ Gilbert, Victoria Hospital Research Institute, 375 South Street, London, Ontario N6A 4G5, Canada. Tel +1 519-667-6649, fax +1 519-432-7367.

The American Neuropsychiatric Association will hold its Sixth Annual Meeting on July 21-23, 1994 in Newport, Rhode Island, USA. The meeting will be a joint session with the British Neuropsychiatry Association and the programme will include invited lectures, platform and poster presentations, and videotaped case demonstrations. The meeting theme is "Subcortical disease in neuropsychiatry". Information regarding this meeting and requests for abstract submission forms can be obtained from: Stephen Salloway, MD, Chairman, Scientific Programme Planning Committee, Department of Neurology, Butler Hospital, 345 Blackstone Blvd. Providence, Rhode Island 02906, USA. Tel. +1 401 455-6403; fax. +1 401 455-6405.

BOOK REVIEWS

All titles reviewed here are available from the BMJ Bookshop, PO Box 295, London WC1H 9TE. Prices include postage in the United Kingdom and for members of the British Forces Overseas, but overseas customers should add £2 per item for postage and packing. Payment can be made by cheque in sterling drawn on a United Kingdom bank, or by credit card (Mastercard, Visa or American Express) stating card number, expiry date, and your full name.

Surgery for Stroke. Edited by R M GREENHALGH and L H HOLLIER. (Pp 420 Illustrated; Price: £70.00). 1993. London, WB Saunders Co. Ltd. ISBN 0-7020-1759-0.

The title of this multi-author book is somewhat misleading as it is concerned only with carotid surgery; intracranial surgery for haematoma is not dealt with. This being said it is an excellent production. The opening historical chapter makes one appreciate how far we have come since 1954, when carotid stenosis was treated by resecting the affected segment of artery followed by end-to-end anastomosis, all carried out under hypothermia. This is followed by the usual chapters on cerebral ischaemia and on the pathophysiology or the carotid plaque. Good evidence is presented to show that the incidence of restenosis after surgery is higher in smokers but the authors simply state the facts without commenting on the currently topical, ethical issues which may arise.

Interesting chapters follow on methods of investigation, the view being expressed that conventional angiography is probably on its way out. Not that the authors believe that Duplex scanning, valuable though it is, is enough; it gives good pictures of the carotid lesion but tells nothing of the cerebral circulation as a whole. It is to magnetic resonance imaging and to computed tomographic angiography that the authors look for the future.

Most important is the section on the indications for carotid endarterectomy. Here it is made clear that you cannot simply say that endarterectomy is indicated in this or that condition; medical audit must be brought in. The surgical mortality in a particular institution must be known before a decision can be reached. This being said, endarterectomy for asymptomatic carotid lesions is recommended, provided the surgical mortality is less than 3 per cent. In TIAs, stenoses of 70 per cent or more should be removed. After a completed stroke much depends on the degree of residual disability; if this is not too great, endarterectomy is recommended, but only after a delay of four to six weeks. The remainder of the book is largely concerned with surgical technique, on which the present reviewer is not competent to pronounce, but, this aside, the book can be

AIDS, HIV and Mental Health (Psychiatry and Medicine Series). By MICHAEL B KING. 1993. (Pp 197; Price: £14.95, \$19.95). Cambridge University Press. ISBN 0-521-42356-5.

This is a useful monograph which addresses the problems of mental health in AIDS and HIV infected patients and the response from healthcare workers. The author has reviewed much of the literature on this topic and, in many instances, finds it lacking in both quantity and quality. However, despite this problem, he is able to give a critical and concise approach to the diagnosis and management of psychiatric problems. This is placed in the social context HIV provokes and explains the stigma that patients suffer and the sometimes ill-considered reaction of both public and medical profession.

Much is not known but clearly there is a large psychiatric morbidity accompanying this infection. Dr King debates the question of whether depression and anxiety affects the immune system in an adverse way. This remains unproven, the one unsatisfactory trial of psychotherapy did not improve the patients' outlook. Psychosis is a worrying complication and often presages progressive organic encephalopathy with ensuing dementia. In the introduction the neurological complications of HIV infection are considered, but this is necessarily brief and neurologists should not look to this book for guidance on management of organic encephalopathies or other neurological problems.

I would though strongly recommend this book to psychiatrists involved in caring for HIV sufferers and to other clinicians, counsellors, nurses and carers.

C CLOUGH

Inflammatory Myopathies (Bailliere's Clinical Neurology International Practice and Research) Vol.2, No.3. Guest Editor: F L MASTAGLIA. (Pp 744; Price: £27.50). 1993. Sidcup, Harcourt Brace and Co Ltd. ISBN 0-7020-1706-X.

This book begins with a helpful chapter on the classification and clinical features of inflammatory muscle disease including some comments on differential diagnosis. Following this are good sections on the pathological changes in different inflammatory myopathies and on inclusion body myositis. These are followed by a fragmented and confusing chapter on the immunogenetics of inflammatory muscle disease and an almost equally impenetrable one on the rôle of autoantibodies in myositis. I am afraid that I didn't find myself with any greater understanding of the relationship between these components of the immune system and inflammatory myopathies at the end of these chapters than I had had when I started them. In contrast, the chapter by Hohlfeldt, Goebels and AG Engel on cellular immune mechanisms in inflammatory myopathies is very clear and contains an excellent review of our current knowledge of this area.

The remainder of the book contains good chapters on viral infection, including retroviruses, and inflammatory myopathies,

experimental models of inflammatory myopathies and treatment. This is a useful book in which Professor Mastaglia has assembled a multinational group of authors who, collectively, are at the forefront of our knowledge of the inflammatory myopathies. In common with many multi-author texts there is a little overlap between some chapters but overall it provides an up to date review of most aspects of our understanding of these diseases and would be a useful addition to any departmental library.

TJ WALLS

Psychology, Pain and Anaesthesia. Editor: H B GIBSON. (Pp 314; £17.99). 1994. Publisher: Chapman and Hall London. ISBN 0-412-33650-2.

This book is fascinating both in concept and in content. Edited by a psychologist, the book is aimed at providing a comprehensive account of up to date practice in the management of acute and chronic pain, the prevention of pain associated with medical procedures and the rehabilitation of pain patients. In the space available, this would be an impossible task but something of value has definitely been achieved.

In the 314 pages there are contained twelve chapters. Six deal with the treatment of chronic pain, three with the assessment and treatment of acute pain and psychological factors involved in recovery from surgery, and three with specific aspects of general anaesthesia. These are not written for the specialist but for those who wish to obtain a comprehensive picture of certain facets of a large area of clinical practice that is becoming increasingly complex.

The chapters on chronic pain cover the topic well, albeit somewhat superficially, but several of them explore corners that are rarely exposed elsewhere and this is where this book really comes into its own. The same is true for the other chapters on acute pain and general anaesthesia. Those dealing with psychological factors in surgical recovery by Salmon and anaesthesia for ECT by Simpson and Oswald could easily stand as archetypal monographs illustrating how to present comprehensive, factual information in a readable and assimilable manner.

For all clinical practitioners with an interest in these areas, researchers, lecturers and their students, this is a book to be perused, dipped into and read, learned and inwardly digested. Obviously a must for all libraries and departments as there is much of value in this small, well presented and attractively priced tome.

KEITH BUDD

Handbook of Clinical Neurology, Systemic Diseases/Part 1. Editors: P J VINKEN, G W BRUYN and H L KLAUWANS. Co-Editors: C G GOETZ, C M TANNER and M J AMINOFF. (Pp 669; US\$ 237.25; Dfl 415.00). Elsevier Science Publishers. 1993, Amsterdam. ISBN 0-444-81282-2.

The famous "Handbook" reminds me of a medieval cathedral, taking centuries to be built, beautiful to look at but rather under used. The high price combined with built in

obsolescence mean that only very well off neurologists and libraries will harbour ambitions to collect the whole series. Systemic diseases were last given the handbook treatment in two volumes in 1979-80. Therefore the three volumes planned for the 1990s are expected a shelf life of ten years or so, quite a tall order. An intrinsic failure to cope with the evanescent nature of medical knowledge is the fundamental flaw of the handbook as a publishing concept. It belongs more to the days when neurology was a species of Byzantine art than now. However of all the volumes of the handbook, those dealing with the neurological manifestations of systemic diseases are most likely to be useful since such reviews are less commonly found elsewhere.

This volume covers cardiovascular, haematologic, respiratory and renal diseases and so contains much of interest to neurologists with a large general medical interface. There is some repetition, for example Libman Sachs endocarditis is reviewed both as a heart valve disorder (Chapter 2) and in the chapter on Endocarditis (Chapter 6) but overall this endemic fault of multi-author texts is not apparent. Especially helpful are the reviews of neurologic complications of cardiac arrest and cardiac operations. In addition more exotic topics like the toxic oil syndrome (under Eosinophilic syndromes) are conscientiously described as well as subjects of growing interest such as the neurology of plasma cell dyscrasias and the paraproteinaemias. The respiratory disease section has perhaps more than most neurologists would need on the hyperventilation syndrome but does give extensive reviews of the neurology of respiration as well covering the central apnoea syndromes. Other chapters cover the new neurology of renal dialysis and transplantation including favourites such as central pontine myelinosis in over rapidly corrected hyponatraemia.

The editors and authors of this latest addition to the brown ranks of the handbooks' legion of volumes are to be commended in completing a solid piece of work. However I wonder how much of a future there is in such a canonical project when the half life of medical knowledge is declining far faster than the cycle time of updating volumes.

CMC ALLEN

CORRECTION

Penfield's homunculus.

J Neurol Neurosurg Psychiatry 1993;57:525.
The author of this article should be Paul Crichton with apologies to the author.