

Council, the origins of which go back to the Local Government Board of 1871 and more immediately to the Medical Research Committee of 1913. Perhaps because of the tradition of Chadwick, Simon and Farr there seems to have been less worry in Britain than in the United States about the state getting mixed up in health and research, and the MRC was protected from direct ministerial interference at least until the Rothschild era. Although the NIH also achieved considerable scientific independence, Congress continues to try to influence its projects — as in the bill to set up an Institute of Nursing, vetoed last year by the President.

Despite the prosperity of the 1920s, progress in public health was difficult under the "new era" politics of Coolidge. Coolidge never mentioned the subject in a speech, and though treasury secretary Mellon was more favourably inclined he could rely on the director of the budget, Herbert Lord, to keep the purse strings tightly drawn. Lord combined a professional dislike of spending money, especially on research, with the Christian Scientist's belief in its futility.

By the late 1920s, the story takes on some of the inevitability of a Greek tragedy. Harden describes in detail the negotiations through which, after many years of struggle, Congress was persuaded to pass the Parker bill giving more freedom to the Public Health Service. Eight days later Coolidge vetoed it. Again there is a detailed but lively account of the haggling and manoeuvring in Congress. This time the Ransdell bill, which specifically set up the National Institute of Health, failed partly because of opposition from Parker who was smarting at his own defeat. At last Coolidge went and Lord retired. After more hectic activity, both bills passed both houses and were signed by President Hoover. It was 1930 and the Great Depression had already started.

Throughout this story there are many colourful and interesting characters. Yet I have the impression that the colour and the passion have been carefully filtered out in the interests of analytical clarity. This is unfortunate for the amateur historian or the general reader, but for those who want to influence public health policy the message comes through clearly. They must educate the public, the legislators and the administrators. And education here means both short- and long-term campaigns. It means using every effort to win over pressure groups, influencing the influential and converting the doubtful. Well-timed epidemics are always a help. In short this is an excellent, though rather dry, textbook for wets. □

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Signal studies in psychology

D. Aled Jeffreys

Human Brainwaves: The Psychological Significance of the Electroencephalogram.

By Jacob Empson. *Macmillan, London/Stockton, New York:1986. Pp.126. Hbk £25, \$50; pbk £7.95.*

In 1934, Adrian and Mathews confirmed and extended Berger's earlier but largely ignored discovery that small, continually varying, electrical signals could be recorded from the human scalp. These electroencephalograms (EEGs) have been extensively studied over the past 50 years but, even so, relatively little is known about their origins and significance. In contrast to their well-proven clinical applications, therefore, the "spontaneous" EEG signals have had only limited uses in research into normal brain function. They have nevertheless proved to be useful indicators of the level of consciousness and, in particular, of the different stages of sleep. There have also been encouraging results from experiments in which stimulus-induced changes in the EEG — the so-called event-related or evoked potentials (ERPs or EPs) — have been used to investigate cognitive and, to a lesser extent, sensory aspects of brain function.

Newcomers to such electrophysiological studies of the human brain are unfortunately confronted with a vast and specialized literature, often with a high technical content. Jacob Empson has tried to alleviate the problem by providing a simple, non-technical introduction to the use of the EEG and ERPs in cognitive psychology. The first two chapters include brief accounts of the history of the EEG and of modern encephalographic practice;

descriptions of the typical characteristics of the EEG and their use in the assessment of states of consciousness; and discussion of various theories on the origins of the alpha rhythm. There are also individual chapters on event-related (and slow) potential studies of psychological processes, and on the EEG and localization of function in the brain. Two final chapters are devoted to the author's particular interests of normal and abnormal aspects of sleep.

As expected, the book does not provide detailed reviews of the literature but instead contains selective summaries of what the author judges to be the most important experimental findings. One can, in several cases, argue with some of his particular choices or omissions; and also perhaps complain that a short summary similar to that given in the section on event-related potentials was not provided in every chapter. But such shortcomings must be judged against the difficulty of the author's task. The quality of production is quite good except that the print on several pages of my review copy was slightly smudged.

The book is written in a simple and clear style, although occasional sentences have uncertain meaning and, in two cases (pp. 17 and 31), do not make sense at all, presumably because of missing lines or words. On the whole, however, it is easy to read and meets its main objective of providing a coherent and non-technical survey of the topic. *Human Brainwaves* will serve as a useful primer for psychology students and others who need a general introduction to non-clinical, psychological aspects of the EEG. For those who wish to progress further, each chapter has a selected bibliography of more comprehensive review papers. □

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Material success

Charles Newey and colleagues

Encyclopedia of Materials Science and Engineering. Editor-in-chief Michael B. Bever. *Pergamon:1986. Eight volumes, pp. 6,015. £1,350, \$1,950.*

THE *Encyclopedia of Materials Science and Engineering* (EMSE) contains some five million words in seven volumes, plus a volume of indexes. How could a single reviewer possibly do justice to such a massive effort?

Depending on their stance inside or outside the "materials community", different users will look for different things from this encyclopaedia and one person could

not hope to have a representative view. Further, review of EMSE requires assessment of a project planned by about 50 people and implemented by nearly 1,300 contributors writing over 1,500 entries. So, in keeping with the traditions of The Open University, we adopted a team approach. What follows is the essence of our corporate appraisal.

A good test of the usefulness of any encyclopaedia is to see how it performs against a list of topics you would expect or like to see covered. Our list included topics as diverse as Kyropoulos crystal growth, zeolites, charged dislocations, bubble memories, pyrometry, mercury reserves, globular proteins and value analysis. EMSE passed with flying colours, only failing on design for recycling (but recycling is well covered) and charged disloca-