

BOOK REVIEWS

Alternatives to Eyes

Visual Prosthesis. Edited by T. D. Sterling, E. A. Bering jun., S. V. Pollack, and H. G. Vaughan jun. Pp. xviii+382. (Academic: New York and London, April 1971.) \$18.50; £8.65.

Visual Prosthesis contains the papers and discussion of the Second Conference on Visual Prosthesis held in Chicago in 1969 and also summarizes the First Conference of 1966 in an appendix.

Blindness is a human predicament resulting in a much greater dependence upon other people, the two particular problems being reading and mobility. Braille, the talking book, the long cane and the guide dog are current, but unfortunately limited, answers to these problems. This conference was convened to take a longer view and consider complete replacement of vision. This might be achieved through evoking phosphenes, the sensation of light elicited by direct stimulation within the visual pathways of the brain, or by using sophisticated techniques for stimulation of the skin.

The problem can be divided into two halves; that of processing the optical information to render it suitable for display and that of displaying it to the skin or the brain. Inevitably most interest centred on the experiments of Brindley who implanted an array of electrodes on the surface of the occipital cortex in a blind volunteer. In addition to the important scientific results on the nature of the phosphenes produced, questions of medical ethics were discussed. One participant thought such experiments could not yet be performed in the USA.

Many simulations have been performed to find out such things as how many display points would be needed for mobility and for reading. Considerable processing has taken place by the time signals reach the cortex in the visual system and various schemes of substitution for this preprocessing were considered. Against the need for extra processing Bach-y-Rita reported that good results could be obtained, with tactile stimulation using a simple imaging of the optical input with

camera control in the hands of the subject. Relatively little space is devoted to devices employing skin stimulation; as well as the work of Bach-y-Rita, sections are included describing a reading aid by Bliss, and a mobility aid by a group of Polish workers.

Rather surprisingly some of the blind members of the conference expressed the view that they would not welcome an ideal prosthetic device of the type envisaged. A man who is making a success of his life in spite of blindness does not want to have to start learning all over again, and the scientist should not necessarily assume that his attentions will be welcomed. The direct reporting of the discussions gives the reader a strong personal involvement, although the transatlantic telephone conversation with Brindley, who was not present at the conference, might have been better edited. J. P. WILSON

Better than Cure

Preventive Medicine. (An International Journal devoted to Practice and Theory.) Ernest L. Wynder, Editor-in-chief. Pp. 286. (Academic: New York and London, March 1972.) \$35.00 four issues (for institutional subscribers).

THE editorials of this issue are learned and interesting and, although some tautology is inevitable amongst seven authors writing on the same subject, these are valuable reference articles.

The aim of *Preventive Medicine* is to stress the application of existing knowledge without necessarily referring to why a treatment works. The problems mentioned are drug addiction, including alcohol, population control, accidents (and seat belts), nutritional problems, particularly obesity, and air and water pollution.

This issue is given over principally to coronary heart disease and its predisposing causes. One interesting and very unusual paper gives not only advice on recommended foods in CHD, but even includes a list of recipes.

Cardiovascular disease and cancer are less common in Japan than in the US, but as they approximate to the US

level in the Japanese who live in US it reminds us that such diseases are the product of man's own downfall, particularly by his dietary habits and smoking.

Preventive Medicine is welcome if only to combat "... medicine's long preoccupation with the retrieval of catastrophic disease...". Economics are barely mentioned, although a French nephrologist found that if everyone needing a kidney machine had one this would represent 80 per cent of the total security budget. It is necessary to consider whether one person should have a heart transplant or 5,000 have spectacles and dentures.

An article on the early detection of cancer of the cervix and breast brings us out of the cloud-cuckoo-land of the saving of life by early detection: it is, as another editorial states, the quality of remaining life which is so improved; if a person has a fatal cancer he should be a hedonist.

To sum up, the articles are generally excellent reviews, but the summaries are disappointing, and it is difficult to see what is the place of this journal and who will read it. The private doctor has not the time to read learned discussions and weigh statistical evidence; he needs experts to advise him. Should he need to know more he can turn to the specialist journals where the original work was published.

J. P. W. HUGHES

Atomic Theory

Molecular Reality: a Perspective on the Scientific Work of Jean Perrin. By Mary Jo Nye. Pp. xi+201. (MacDonald: London; American Elsevier: New York, February 1972.) £5.

THIS book was almost inevitable, although it is nonetheless welcome for that. The last decade has witnessed a spate of scholarly books and articles about the Daltonian atomic theory, its origins, the difficulties it encountered and its implications for the history of chemistry in general. No longer is it possible (if indeed it ever was) to overlook the grave setbacks that chemical atomism received within half a century