

### GOOD MEDICAL SOFTWARE

The electronic computer can take man to the moon, manipulate his bank account and find him a London hotel. Such versatility makes it inevitable that the applications of computer science to medicine will be fully explored, and at a conference organized by the British Chapter of the World Organization of General Systems and Cybernetics some of the current applications were described. This conference, the second in a series, was held at Blackburn and attended by more than 100 people from many academic backgrounds.

Perhaps because so much is going on there were numerous formal papers, as a consequence of which discussion time was limited, but everyone had their fair share even if they were constrained to pursue speakers in the coffee intervals and ply them with questions over lunch. It was soon evident that advances in design and instrumentation were making old expensive computers obsolete and bringing in newer, smaller and more capable models which are getting even cheaper to run. Competition in the computer industry is intense and for once the consumer could benefit by easier access to the machinery, the hardware, if he could only overcome the shortage of software, the intermediate stage, the stage of human variability, fatiguability and even sheer cussedness that lies between the ordinary doctor and the magnetic tape. Software in the shape of programmes and systems analysts is in short supply and good medical software is valued beyond rubies.

Problems of management have received most attention as being, perhaps, easier to reduce to input terms than the less precise problems facing the clinician. Medical care requires both and an American speaker painted a picture of the computerization of the provision of health care for a deprived population in the Tennessee Valley which was either miraculous or dreadful according to the viewpoint of the observer. Doctors would work at a centre, each with a television console. Nurses in mobile units would travel in the area served visiting patients and 'inputting' data on each patient. Decisions would be made by the doctors who might recommend treatment or hospitalization. Practitioner screens could be linked with the screens of specialists at will and the patient's past medical history was available to both on demand. The medicomputers used were designed to make medical skills go further, 'doctor-stretching' they called it. Evidently the area is one in which there is no medical care service at all. Questioning revealed that the proportion of doctors to population when the scheme was in full operation would be 1:500. Some stretch!

Most of the remaining sessions were devoted to aspects of computer techniques as applied in hospitals, either in laboratories or wards or in exclusively research departments where the size and importance of the problems seemed disproportionately small in comparison with the amount of effort, skill and resources devoted to them. Undoubtedly the recognition of electric wave fronts passing through heart muscle, their direction, duration and effect on the QRST segments of the electrocardiograph tracing is going to be helpful to some cardiologists, but surely for the deployment of academic skills and resources that are not unlimited, information of wider relevance could be asked? Much the same thoughts could be applied to the separation of disease entities by numerical taxonomic analysis, doing for colitis and Crohn's disease what Gilbert White did to warblers simply by looking at them and observing their similarity coefficients.

The ease with which mathematically analysable material can be handled depends on its 'hardness' in the first place and in administration much is already reduced to agreeably hard terms. Numbers, pounds and new pence together with time and distance are measurables which can be tabulated by hand, expensively, or nowadays by machinery at lesser cost. The machinery, the 'hardware', in fact need not necessarily be a computer. For hospital administration and the administration of services on a large scale—half a million people are employed in the National Health Service hospitals—instruments really come into their own and a paper describing applications in this field was impressive and enlightening. Requirements for the handling of information within a hospital region could be predicted and within the limits of present-day technology, could be coped with. This must lead one to consider how effectively the executive council structures could be computerized on either a central or a regional basis. If there are thoughts in high places about this none penetrated and illuminated the discussion that followed.

There were a few practitioners in the audience, none surprised at but all regretful that the

institutional bias of the meeting was so evident. There are no external distinguishing features by which the observers can recognize a computer-minded practitioner though certain characteristics did appear to be shared amongst the whole audience. Youth was one. More than one observer estimated the average age as being in the mid-thirties, balding crowns and greying temples occurring rather among the chairmen of sessions. A further feature was clear evidence of an intense, almost obsessional absorption in their subject. This is all to the good provided that in future the effort and energies of these enthusiasts can be directed towards problems of wider significance. There are known to be a number of practitioners who are working on the reduction of the amorphous flow of data from their practices and reducing it to computer compatible terms. Perhaps, when the next conference in this series is held in a few years' time, we may hear of their work among commonplace rather than esoteric problems. These former are equally deserving of the attention of good medical software.

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## *Correspondence*

### **Education Foundation Board**

From Professor Lord Rosenheim.

Sir,

As chairman of the Education Foundation Board of the College, I have been asked by the members of the Board to submit to you a report on its activities. As most of your readers will know, the Board was founded in November 1966 with the aims of providing financial and other assistance for educational projects, whether by research or by study of existing schemes, which were unlikely to be funded from other sources. The Board is deeply aware of its responsibility to promote studies not only of professional training in general practice, but also of the continued education of established practitioners. It has taken special interest in the problems of training those responsible for the training of future general practitioners.

There have been recent changes in the composition of the Board. At its last meeting on Friday, 13 November 1970, the Board with regret accepted the resignations of Dame Annis Gillie, the Lord Platt and Mr Brian Young, but I am glad to say that an invitation to serve on the Board has been accepted by Professor A. S. Duncan, executive dean of the Medical School in Edinburgh, Dr J. O. F. Davies, Secretary of the Central Council for Postgraduate Medical Education and Training in England and Wales, Dr David Morrell and Dr Donald Irvine.

Among the projects recently supported has been the visit of the Secretary of the Board of Censors (Professor J. D. E. Knox) to study the examination methods of the Canadian College of General Practitioners. It has also supported the conference of secretaries of the education committees of the faculties held in Birmingham last July, and a survey by Dr D. H. Irvine of practices in England,

Wales and Northern Ireland that had been identified as suitable to accept vocational trainees. Reports on these and other projects will be published in due course.

The Board controls certain specific trust funds such as that which provides the undergraduate essay prizes, funds the annual Pickles lecture and has recently accepted responsibility for the annual selection of Upjohn Travelling Fellows.

The amount of money available annually is limited, but the Board is anxious to receive applications for the support of projects that have a direct bearing on the education of general practitioners. It continues to look forward to the time when, with more funds at its disposal, it can embark upon more permanent and more ambitious schemes.

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### **Rising sickness absence**

Sir,

I read Dr Semmence's article 'Rising sickness absence in Great Britain—A general practitioner's view' with great interest. Perhaps I might comment on it from my experience as a regional medical officer and a general practitioner in Scotland.

There can be little room for speculation about the sickness absence of sufferers from the large groups of organic diseases which can be diagnosed with fair certainty, such as chronic bronchitis and emphysema, rheumatoid arthritis, etc., and which cause such human misery and economic loss.

My impression is that many patients suffering from anxiety states/low threshold for stress, masquerade in our statistical columns under various organic diagnostic labels which are determined mainly by their presenting symptoms, because