As to the use of inapt expression, I can only promise to reread Gower's Plain Words and hope to avoid 'infelicities' in the future. Opinions by their very nature evoke emotive responses. The opinions expressed in the Norris report are based on presented evidence. I feel this leaves the reader free to draw his own conclusions. Perhaps Verdon has taken the advice of Thumper's mother in 'Bambi': 'If you can't say anything nice, then don't say anything at all!'

5. *Prerequisites for membership*
The Norris report does not suggest that a prerequisite for membership of the Board should be 'recent (and novel) research publications'. It says that people with an 'up to date and vital research record, including novel applications' should be represented. A person's research record is much more than just publications and the Board is more than a panel of researchers. Further, the history of science suggests that new ideas are the very essence of developments in science.

6. *Policy statements and Discussion papers*
Verdon is correct in drawing attention to the difference between policy statements and discussion papers. However, the function of the Computer Consultative Council is described in the Norris report. The source of statements on the possible future of the Board are also given. I feel this is sufficient to establish the status of such statements. The problem is that discussion documents can merge into implicit policy actions.

7. *Encourage public debate*
The Computer Board has done a fine job in building up computing power in the UK universities. Its policy making is also probably more open than many similar agencies. However, the Board needs guidance on judging the merits of the major projects that will use the equipment. Where this judgement should come from is open to debate.

References

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Book reviews

Microprocessor Architecture and Programming, by William F. Leahy, 1977; 233 pages. (*Wiley Interscience*, £14·95)

Microelectronics, A Scientific American book, 1977; 145 pages. (*W. H. Freeman*, £6·10, £3·10 soft cover)

Microprocessor Architecture and Programming presents a ground up introduction to microprocessors, assuming no initial knowledge of computing, nor of electronic engineering. It is badly out of date: 'The most widely used MOS transistor technology utilised at the present time is the metal gate P-channel process', while the final chapter is called 'Beyond the Intel 8008'. This is another to add to my collection of bad books on microprocessors. At £14·95, I cannot recommend you to do the same.

Microelectronics is a reprint of the articles from the September 1977 issue of *Scientific American*. There are eleven articles, each written by a world authority, with the clarity of text and quality of illustration that is the hallmark of the *Scientific American*. Although the book assumes no initial knowledge of microelectronics, the information content is high, and each article provides an advanced review of its subject area.

The first four articles discuss the way in which microelectronic circuits work and are made. The next two articles review microelectronic memories and microprocessors, while the last five are concerned with the impact of microelectronics. For example, Alan Kay, from Xerox Parc, discusses the potential of the personal computer. This is demonstrated by the use of the Smalltalk system by children to create sophisticated applications in animation, simulation and music synthesis, complete with some remarkable graphics. In a thought provoking article on computer science, Ivan Sutherland and Carver Mead argue that microelectronics necessitates a new theoretical basis for computer science, which properly combines notions of logic, topology and communication. They demonstrate that communication paths represent the basic limitation on performance, both in silicon real estate and power, so that the geometric regularisation of computing structures will become an important design goal. This is an important book. It should be read by everyone who wants some understanding of the central role of microelectronics in our future society.

IANN M. BARRON (Redbourn)

Computational Linguistics in Medicine, edited by W. Schneider and A-L. Sagvall Hein, 1977; 181 pages. (*North-Holland*, Dfl. 65·00)

These proceedings of the IFIP Working Conference on Computational Linguistics in Medicine held in Uppsala, Sweden in May, 1977 have been produced with commendable speed. There are 18 papers, many of which discuss theoretical problems in artificial intelligence and computational linguistics in medicine. Three papers are concerned with successful systems in the limited area of indexing and retrieval of diagnostic reports in surgical pathology.

One paper, however, stands head and shoulders above the rest, that by E. H. Shortliffe of Massachusetts General Hospital describing the MYCIN system developed at Stanford University School of Medicine. This is a practical tool which plays the part of a physician experienced in infectious diseases in consultation with a non-specialist physician about appropriate treatment of a patient with an infection. As well as offering advice during this dialogue MYCIN will respond to 'WHY', 'HOW' or 'EXPLAIN' with the data and logic behind this advice. The LISP program contains a 'rule interpreter' which works on the specialist knowledge which has been built into the system as a set of facts about the subject, and a set of production rules each consisting of a premise and an action to be applied if the premise is true. The rule interpreter compares the knowledge that has been supplied about the patient and through a goal-oriented strategy examines relevant rules and notes the action for those that are true. It builds up a record of the consultation that is used by a 'reasoning status checker' by asking the physician for further relevant facts, and offers advice when it has reached conclusions.

The specialist knowledge is built-in rather than acquired and it is specially structured, so MYCIN does not answer many of the questions posed in the other papers, but that the knowledge about the patient can be built up, reported and used so effectively shows that artificial intelligence techniques may soon be making a real contribution in medicine.

E. C. COLES (Harrow)

Microcomputers: The Mini-Micro Revolution, compiled and edited by Alan Simpson, 1977; 90 pages. (*Input Two-Nine*, £9·95)

This is a collection of short articles around the theme of microcomputers and their significance. The aim of the collection is to provide 'an in-depth survey of a topic of critical importance to the computing industry'. There are some individual contributions of value but some are no more than sales material for a given product or firm: in either case similar articles are a regular feature of the weekly computer press. The overall publication is poorly structured (why is the 'impact of micros on mainframe developments' put under the heading 'Social implications'?); it does not deal adequately with the impact of micros outside the traditional boundaries of computing; it is badly edited and poorly presented; there is too much strident talk of revolutions and not enough quiet fact and analysis. It is not to be recommended.

B. M. WOOD (London)