Computers in Medicine

SIR,—Your leader on computers in medicine (4 November, p. 250) was timely, and you so rightly pointed out that "the most powerful computer can originate nothing." So much in clinical medicine in the past has been padded with waffle, and in the computer age there will be no room for it. Already I have heard of examples where clinicians were unable to communicate fully with programmers. Many doctors will have to learn basic computer systems, and yet already I have experienced confusion in this field.

I recently attended the three-day introductory course at Elliott Medical Automation, University College Hospital. The lectures on the second and third day of this course were on A.L.G.O.L. programming, which is used by Elliott-Automation Computers Ltd. Two of the doctors on the course were medical officers of health and their authority had installed a Honeywell computer, which used C.O.B.O.L. language. For my own research I have been offered facilities on an I.B.M. 1401 which uses C.O.B.O.L., but part of my research involves the use of a psychiatric inventory which has a prepared programme written in F.O.R.T.R.A.N. (the I.B.M. computer language). Fortunately for me I.B.M. have gone out of their way to help me and I have no problems.

However, I do feel that there should be some rationalization in the medical computer field. We do not wish to be told what computers we should use, but I wonder whether it would be possible for the *B.M.J.* to run periodically a summary of what is happening in the medical computer field.—I am, etc.,

Hinckley, Leics. PETER A. PARISH.

Cerebral Localization of Psychological Function

SIR,—May I report in the accompanying Table on three patients I have recently seen in this vicinity, all with similar psychological findings to subnormal epileptics (Dr. P. E. Sylvester and Miss E. Blundell, 4 February, p. 282), but occurring within the normal range of intellect, in adults, all with "spike and wave" E.E.G.s and abnormal personalities, but without clinical epilepsy or any previous or family history thereof.

Sex	Age	E.E.G.	Wechsler I.Q.	
			Verbal	Performance
M	17	Bilateral spike and wave during overbreathing	102	87
F	25	On photic stimulation two brief outbursts of bilaterally synchronous generalized atypical spike and wave.	85	72
M	18	Bursts of bilateral atypical spike and wave 3–5 c/s frequently throughout, usually with eyes open, and rather more frequently on photic stimulation.	96	81

These three patients' clinical personality characteristics varied from agitated labile in the first to anergic aggressive in the second and pedantic retarded in the third. All three had at one time or another in more acute exacerbations been considered borderline schizophrenics by experienced psychiatrists, and all then responded better to phenothiazines than to anticonvulsants, on which none was kept very long.

Each patient was tested by a different senior psychologist, and the second patient's findings were essentially the same on repeat testing at an interval of six weeks, so that the results are considered reliable. The psychological finding of a significantly higher verbal than performance score was said by the psychologist testing the first and third patients to be a sign of emotional disturbance, and in the first more specifically of schizophrenic disorder, although in my experience schizophrenic disturbance, when predominantly of language function, produces the opposite test result.

While there may well be a connexion in all this between schizophrenia and the schizophrenic-like psychoses of epilepsy,[1] the relationship of the psychological findings would seem to require further interpretation and discussion in the light of the pathological and electrical ones. Thus the E.E.G. abnormalities in my three patients were bilaterally equal, as apparently were the smallness in linear dimensions of the parietal lobes in Dr. Sylvester and Miss Blundell's epileptics, yet the psychological differences seem to suggest that the dominant cerebral hemisphere subserving language function was less affected than the non-dominant subserving spatial ability (including "performance" tests like Koh's blocks and tests with shape and pattern).[2]

Even if bilaterally equal congenital epileptic abnormalities were invoked by way of explanation, as interfering with clear lateralization of developing psychological function, this should affect verbal as much as performance scores. Could the observed psychological difference therefore be more an indication perhaps of global or bilateral abnormality of the sensorium, as seen in confusion or dementia? Performance tests may depend far more on "fluid" ability than "crystallized" verbal function,[3] and thus be more affected by such intermittent generalized disorder. Unilateral localized cerebral hypogenesis might rather account for more specific psychological defects like developmental dyslexia.—I am, etc.,

Stone House Hospital, Nr. Dartford, Kent. J. P. CRAWFORD.

REFERENCES
1 Slater, E., and Beard, A. W., *Brit. J. Psychiat.*, 1963, **109**, 95.
2 Crawford, J. P., *Lancet*, 1961, **2**, 487.
3 Cattell, R. B., *Psychol. Bull.*, 1943, **40**, 153.

Visuo-motor Disability in Schoolchildren

SIR,—In view of the authors' statement (4 November, p. 259) that "no formal neurological examination could be undertaken in the present inquiry . . ." it would be interesting to know whether an assessment of visual acuity, refractive error, binocular vision, or muscle balance was made in the experimental group, since a defect in any of these might have affected their performance.—I am, etc.,

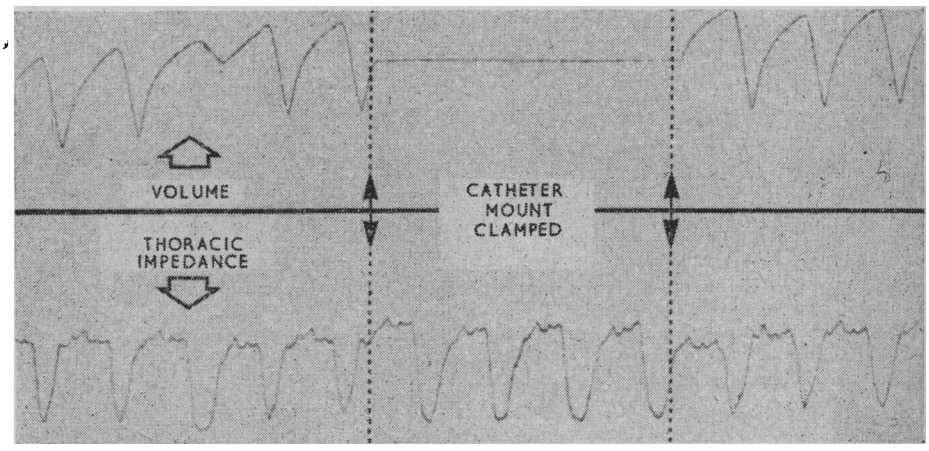
Orpington, Kent. S. E. WHITE.

Respiratory Monitoring

SIR,—We read with interest the report by Dr. J. V. Farman and Mr. D. A. Juett on the use of impedance spirometry as a monitor of ventilation (7 October, p. 27).

Our own experience has been that the impedance "spirogram" is not always a reliable guide to ventilation in spontaneously breathing subjects. The record reproduced above was obtained from a lightly anaesthetized spontaneously breathing patient. Total obstruction of the catheter mount, as indicated by the arrows, produced little change in the impedance trace. This is in marked contrast with the record shown in Fig. 2 of the communication by Dr. Farman.

On the evidence of the disparity between these traces and on similar experimental laboratory findings, we suggest that impedance spirometry in its present form should not be regarded as a reliable monitor of ventilation in the spontaneously breathing subject.—We are, etc.,



Volume: Integrated signal from pneumotachograph head. Thoracic impedance trace: 2 electrode configuration, 30 Kc generator; indifferent electrode over sternum, measuring electrodes M.A.L.6th I.C.S. Catheter mount clamped at first arrow and released at second. Short partial occlusion at the "volume" large arrow.

D. W. BETHUNE.
J. M. COLLIS.

Departments of Anaesthesia and Medical Electronics, St. Bartholomew's Hospital, London E.C.1.