long-term availability of reprints means that the reports will be more accessible to a wider audience than much work which is conventionally published.

One important feature of the I.R.C.S. is that it will provide ready access to work done in non-English-speaking parts of the world. At the moment scientists from such countries are usually fully aware of what is published in English language journals. The reverse is unfortunately rarely true, and many English speakers seem to assume arrogantly if subconsciously that "if it's not in English it can't be good." The I.R.C.S. offers an ideal method for the communication of results from non-English-speaking countries and there are already clear indications that it is being very warmly welcomed in Europe, the Soviet Union, and Japan.

Finally, I should like to emphasize that at this stage the detailed application of the I.R.C.S. is flexible and open to modification. Informed criticism should be addressed either to myself or to I.R.C.S., P.O. Box 500, Lancaster. All suggestions will be welcomed and seriously considered.—I am, etc.,

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Strikes by Hospital Ancillaries

SIR,—I am certain that many ordinary members of the B.M.A. feel mystified as to how and why the Association decided to lend their weight to the demand for an inquiry into the wages of hospital workers.

The present strikes seem to many of us less about wage betterment than an effort to force the Government to back down and be discredited. That we should aid this effort makes one wonder whether the left wing has had a victory in our Council. This seems the more likely in that the B.M.A. has produced, over many years, no similar support or demand for inquiry into the salaries and service conditions of physiotherapists, occupational therapists, and others closely allied to us in our work and who are, considering their training and skills, much more deserving of our support and protest than many of those on whose behalf our name has been used—without our permission or preknowledge.—I am, etc.,

W. A. MURRAY

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Locally Advanced Breast Cancer

SIR,—In your leading article (17 February, p. 372), after describing Sonneland's recent paper¹ concerned with the destruction of a fungating carcinoma of the breast by means of zinc chloride paste, you mention that this is a technique of chemosurgery which has been used over the centuries. You add, however, that "this apparently first reported case of the use of chemosurgery in the primary treatment of advanced breast carcinoma is encouraging enough to warrant further serious consideration."

We would like to point out that a clinical trial of this method which included 60 patients with malignant disease, many of them with carcinoma of the breast, was reported in 1857.² In the Bland-Sutton Institute of Pathology at the Middlesex Hospital there is preserved in a specimen jar a

breast treated with this technique. Some limited benefit was obtained but the method was soon discarded. Coupland wrote of this study in 1902, "To us the lesson of this inquiry lies in the demonstration that the remedy, of which so much had been expected, which had long been kept a secret, was found to be no remedy at all and the fact that the practice of removal of growths by the slow and painful plan of mineral cauterization has not become established, except in isolated instances where no other procedure is available, goes to show that the hopes excited by this plan were soon falsified, and another method consigned to the limbo of discarded cures of this baffling disease."³

An occasional carcinoma of the breast where the tumour, though large, does not show wide infiltration of the surrounding tissues may be totally removed by any method which causes necrosis of the tumour. Such cases are limited in number and alternative methods of treatment which are less arduous for the patient are usually available. At a time when it is realized that clinical trials are major undertakings if significant conclusions are to be reached it is surely wrong to suggest the diversion of effort into a discarded field of treatment and wrong to subject patients to remedies of dubious value.—We are, etc.,

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Mount Vernon Hospital,
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¹ Sonneland, J., *American Journal of Surgery*, 1972, 124, 391.

² *Report of the Surgical Staff of the Middlesex Hospital to the Weekly Board and Governors upon the Treatment of Cancerous Diseases in the Hospital on the Plan Introduced by Dr. Fell*. London, Churchill, 1857.

³ Coupland, S., *Reports from the Cancer Research Laboratories, Middlesex Hospital*, 1902, 1, 1.

Hyperinfection with Strongyloides in Lymphomas

SIR,—Viral involvement in lymphomas may be secondary to chronic inflammatory states. The patients described by Dr. Malcolm Adams and others (3 February, p. 264) had overwhelming infection with strongyloides and also lymphomas. One had received immunosuppressive drugs, and conceivably this therapy later produced Hodgkin's disease. The two other patients had no treatment, and the lymphomas were therefore considered to have altered their immune responses. But why then did the reticuloses appear? Had the filariform larvae so thoroughly irritated the reticulo-endothelial system that normal contact-inhibition of the cells was lost? Such a mechanism locally may explain the increased incidence of bladder tumours in patients with bilharziasis. Hyperinfection with strongyloides is, however, rare, although the infestation is relatively common in the tropics. The infection more likely became "opportunistic" in the reported cases because of an earlier immune contest.

Candidiasis or aspergillosis often occurs in patients with "acquired immune deficiency," and recently infestation with *Giardia lamblia* was found in a case with severe hypogammaglobulinaemia.¹ Raised immunity may have in fact preceded both the hyperinfection and the lymphomas in these un-

usual examples of strongyloidiasis. Sensitized lymphocytes in lymphomas may be both the prop and the butt of an aggression, beginning years before. "Many immune responses confer unpleasant and even dangerous sensitivity on subsequent exposure to the provoking (or other) antigens."² Chronic malaria² and the prolonged cell-mediated immunity found in tuberculosis and particularly sarcoidosis³ are probably important factors in the aetiology of both reticuloses and other neoplasms. Cellular immunity to malaria may perhaps sometimes induce Burkitt's lymphoma; patients who have had tuberculosis more often develop gliomas than those who have not,⁴ while renal carcinoma,⁵ chronic lymphatic leukaemia⁶ and Hodgkin's disease⁷ have been reported following sarcoidosis.

A connexion exists between autoimmune diseases and neoplasms⁸ and this may be why malignancy occurs more often also after organ transplantation.⁹ Tumours have been found in patients with Hashimoto's disease, Sjögren's syndrome, and coeliac disease who had had, significantly, no immunosuppressive drugs. Hyperthyroidism, chronic thyroiditis, parathyroiditis, and Addison's disease are sometimes associated with sarcoidosis,¹⁰ probably more often than is realized. Erythema nodosum may be the only indication that sarcoidosis is present, and probably subcutaneous granulomas do not always occur in the legs. The infectious mononucleosis occasionally found in Hodgkin's disease may result from chronic immune alterations reactivating the Epstein-Barr virus. A similar reactivation may account for the occurrence of herpes zoster in patients with reticuloses and spinal metastases. The sustained immune stimulation of sarcoidosis may, for instance, excite anamnestic reactions and reactivation of viruses, leading sometimes to organ failure and later to neoplasms. The alternative proposal that virus infections induce sarcoid lesions does not sufficiently allow for the time factor.—I am, etc.,

GERALD A. MACGREGOR

Chilworth, Surrey

¹ Webster, A. D. B., *Proceedings of the Royal Society of Medicine*, 1972, 65, 589.

² Shaper, A. G., Kaplan, M. H., Mody, N. J., and McIntyre, P. A., *Lancet*, 1968, 1, 1342.

³ Caspary, E. A., and Field, E. J., *British Medical Journal*, 1971, 2, 143.

⁴ Ward, D. W., Mattison, M. L., and Finn, R., *British Medical Journal*, 1973, 1, 83.

⁵ MacGregor, G. A., *British Medical Journal*, 1972, 1, 375.

⁶ Ganpule, M., and Garretts, M., *British Journal of Dermatology*, 1971, 85, 587.

⁷ MacGregor, G. A., *Lancet*, 1973, 1, 322.

⁸ Fairley, G. H., *British Journal of Hospital Medicine*, 1971, 6, 633.

⁹ MacGregor, G. A., *Lancet*, 1973, 1, 200.

¹⁰ Karlish, A. J., and MacGregor, G. A., *Lancet*, 1970, 2, 330.

Breech Management with Fetal Blood Sampling

SIR,—Any obstetrician must welcome a system that could provide reliable warning of asphyxia during a breech labour. The changes in fetal pH in the second stage of a breech delivery, described by Dr. B. W. Eliot and Mr. J. G. Hill (23 December, p. 703), and the management that they have derived require careful consideration.

We have reviewed 46 unselected cases of breech presentation managed in labour by continuous fetal heart monitoring and, when indicated, by fetal blood sampling. Forty-

three infants were delivered vaginally, of which 10 were in poor condition (one-minute Apgar score of five or less and requiring intubation). In all 10 there was usually more than one abnormal feature in the fetal heart record. Specific features were variable decelerations (10/10), baseline tachycardia (7/10), and loss of beat-to-beat variation (7/10). In three cases the cord was found to be prolapsed. A pH estimation was made at the start of the second stage in three cases, the values being 7.31, 7.29, and 7.10 respectively.

In cases of breech delivery where other high-risk factors will not usually apply, compression of the umbilical cord is the most likely cause of asphyxia. There is now considerable evidence demonstrating significant changes in the fetal heart rate when this occurs. Our own data suggest that cord problems are readily detected in breech deliveries by continuous monitoring of the fetal heart and we believe that, because of its continuous nature, this will play a greater role in the management of the breech than fetal blood sampling.—We are, etc.,

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Assessment of Acid-base Disturbances

SIR,—In general the assessment of acid-base disturbances and the different indices used by various authorities (for example, buffer base, base excess or deficit, standard bicarbonate) have been confusing and difficult for the average clinician to understand. The present need is for a simple, understandable approach, and we were disturbed to find Dr. A. W. Grogono (17 February, p. 381) advocating adding the complexities and apparent authority of a computer, especially when the programme is based on essentially invalid premises. Most of the earlier methods of assessment of acid-base disturbances, including the Siggaard Andersen nomogram adapted by Dr. Grogono, are based on the titration of blood with CO_2 in vitro. It is now generally accepted that the titration of the whole animal with CO_2 produces a titration curve which is significantly different from that obtained in vitro¹ and that an assessment of acid-base disturbances based on the latter can produce a significantly misleading analysis.²

We have proposed a very simple scheme for the assessment of acute acid-base disturbances in man, using only the two readily understood parameters, pH and the PCO_2 .³ The severity of the respiratory acidemia is assessed in the conventional manner as the change in the arterial PCO_2 from the normal range (35–45 mm Hg). The presence of a non-respiratory disturbance is established by plotting the measured values (PCO_2 , pH) on a PCO_2 -pH diagram against a background of CO_2 titration curves in vivo. The displacement of this point from the "normal line" (titration curve in vivo passing through pH 7.40 and PCO_2 40 mm Hg) indicates a non-respiratory disturbance. The pH that would result if the PCO_2 were altered in vivo to 40 mm Hg is then found by following the titration curve through that point and is termed the non-respiratory pH. The deviation of the non-respiratory pH

from 7.40 is used as an index of the severity of the non-respiratory acidemia. A similar approach has now also been adopted by Siggaard Andersen,³ using the term extracellular base excess to describe the shift of the in-vivo titration curve produced by a non-respiratory disturbance. But even he, commenting on his own results, states that the "areas [indicated on his nomogram] should not be interpreted as more than reference areas or indications of the acid-base values to be expected in certain types of acid-base disturbance." There seems little point in continuing the battle when the general has fled the field.

The second important misconception supported by Dr. Grogono is that from a single acid-base analysis one can predict the degree of depletion of bicarbonate stores and therefore the total buffer capacity, and hence calculate the amount of base needed to correct it. Such a conclusion is clearly untenable because all the measurements are related to concentrations, not the total amounts of the extent of the pre-existing bicarbonate stores. The prediction of the degree of depletion must also take into account the time course of the disorder. In addition, our results in dogs suggest that there is a relationship between the rate of infusion of sodium bicarbonate and the amount needed to correct a given acidemia.⁴ We would suggest that the only sensible method of management of an acute non-respiratory acidemia is to infuse sodium bicarbonate, preferably slowly, and to measure the effect by repeated blood gas measurements.

We have now had considerable experience with this approach, both in the clinical field and in the teaching of undergraduates and postgraduates, and are very impressed with the ease by which acid-base disturbances can be assessed and, more important, understood by all concerned.—We are, etc.,

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- 1 Prys-Roberts, C., Kelman, G. R., and Nunn, J. F., *British Journal of Anaesthesia*, 1966, 38, 500.
- 2 Stoker, J. B., Kappagoda, C. T., Grimshaw, V. A., and Linden, R. J., *Clinical Science*, 1972, 42, 455.
- 3 Siggaard Andersen, O., *Scandinavian Journal of Clinical and Laboratory Investigation*, 1971, 27, 239.
- 4 Kappagoda, C. T., Linden, R. J., and Snow, H. M., *Clinical Science*, 1970, 39, 169.

Poisoning in Children

SIR,—I have recently been analysing the ingestion of poisons in children between the ages of 6 months and 5 years in this hospital in 1970–72. There were 175 such admissions—9.5% of the total of admissions within this age group. Although there were no deaths, this is still a considerable cause of morbidity.

Two points of interest have arisen. The first is that 10 children were admitted after the ingestion of camphorated oil, which appears to be still used extensively, at least in Newcastle, for external use in coughs and colds. This is potentially a serious poison, and 5 ml is said to be fatal, causing cerebral

stimulation and renal damage. There is no reason why it should be kept at all in the home today.

The other point of interest is that of the 65 cases of ingestion of drugs other than aspirin 25 took place in houses other than home, usually in the grandmother's house. Thus even in the unlikely event of every child's home in Newcastle today having locked medicine cabinets, children would still be admitted having ingested dangerous drugs such as digoxin, amitriptyline, and iron, and in fact the only death from ingestion of poison in this hospital in recent years has been that of a child who took several of her grandmother's digoxin tablets. Perhaps child-proof containers will prove the answer to the problem.—I am, etc.,

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Road Accident Prevention

SIR,—Your interesting leading article, "Road Accidents Epidemic" (17 February, p. 370) seems to make, *prima facie*, a case for the founding of a national institute of road accident prevention or comparable organization. Such a body, through research, could help to identify predisposing factors both in individuals and in environments, and could bring together various disciplines now working independently.

Those needed for such research would include surgeons, epidemiologists, statisticians, and also psychiatrists to study the behavioural causes of accidents—for example, the presence of severely depressed patients on the road with the risk of urgent suicidal impulses as well as the more obvious conditions of alcoholism and aggression. Those responsible for providing and disseminating health education relating to accident prevention would also be needed, as well as co-ordinators for both medical and non-medical bodies, including representatives from the road vehicle industry and from local safety committees. There would be no lack of co-operation from public health departments, which are in fact conscious of the need for an approach to road accidents as to an epidemic, referred to in your article.

As the matching of numbers of vehicles on the road against space available has presented increasing problems in recent years, so road accidents have been replacing infectious disease as the main killers and disablers of young adults. A pooling of knowledge and endeavour through a joint venture in prevention would do much to alleviate the situation.—I am, etc.,

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Speech Defects in Children

SIR,—We, two speech therapists and a phonetician, involved both in the training of student speech therapists and in the treatment of children with speech and language disorders, started to read with interest the article by Professor Neville Butler and others (3 February, p. 253). However, we must sadly admit that our disappointment deepened as we read the report, and we feel obliged to