takes a somewhat outdated view. The friendship between philosopher and politician began in 1666 and continued until Shaftesbury's death in 1683, during which time Locke lived for some 14 years in the Earl's household. The two great men formed a unique and fruitful partnership of a theoretical with a practical mind. Whatever Professor Jeffreys may say of Shaftesbury, Locke was his lifelong friend and said of him that he was a "vigorous and indefatigable champion of civil ecclesiastical liberty." These are almost precisely the same words with which the professor acclaims Locke, and his article ends with praise of Locke's truthfulness.

In 1674 Locke received a bachelorship of medicine and was appointed to a medical studentship at Christ Church. In the following year he went to France for the sake of his health, and complained to a friend, "I doubt whether all the ortolans in France be able to communicate to me one grain of their fat." In 1679 Locke returned to England where he continued his association with Shaftesbury. He did not follow him into exile and was living in Clapham when Shaftesbury died in Holland. He then stayed in England long enough to go down to Dorset to assist at the return of his patron's body and to receive from the widow three yards of black cloth for his mourning suit. He then withdrew to Holland, deeming the intolerant climate of England too dangerous for him. With a characteristic Stuart gesture Charles II ordered his dismissal from the studentship at Christ Church. After the revolution Locke returned and spent his last few years in the household of Lady Masham.

Your colleagues, Sir, may care to be reminded that an excellent if brief biography of Locke is to be found in *An Alabama Student and other Biographical Essays* by William Osler, Regius Professor of Medicine at Oxford, published in 1909.—I am, etc.,

HILDA M. STOWELL

Durley, Southampton

Non-union of the Scaphoid

SIR,—Of course you are right when you state in your leading article (5 October, p. 2) that the problems of non-union of fractures of the scaphoid are best avoided by proper management of the original injury. However, I cannot agree with your implication that this ideal may be achieved simply by early recognition and plaster immobilization of the fracture; a significant number of these fractures fail to unite even when a scaphoid plaster is applied immediately after the injury and worn continuously for several months. Proper management of the injury demands an awareness of the different types of fracture and of their differing behaviour; I believe that unstable fractures have a high incidence of non-union and that this complication is best avoided by early internal fixation using a compression screw.¹

With established non-union of the scaphoid the problem is different since there is frequently evidence of carpal instability.² It is this instability which is commonly responsible for the weakness of the wrist, the susceptibility of further injury, and the radiocarpal osteoarthritis. Treatment of the ununited fracture obviously depends on the degree of instability. Screw fixation, simply

by stabilizing the fracture and hence the midcarpal joint, may produce considerable relief of symptoms even if union does not always follow. Anterior grafting, either by the Russe technique or by the use of a bone wedge, may help to restore the normal anatomy but has the disadvantage of requiring a fairly long period in plaster. If there is evidence of radiocarpal osteoarthritis then radial styloidectomy either alone or combined with other procedures usually affords considerable symptomatic relief. Obviously in the most severe cases wrist arthrodesis may be required. Arthroplasty, either by excision or replacement of the scaphoid, can only compound the instability and is best avoided. I cannot see that prolonged immobilization in plaster can be justified as a method of treatment of non-union in view of the uncertainty of the outcome and the likelihood that the patient will be unable to work while in plaster.

As you rightly say, problems of non-union are best avoided by proper management of the original injury.—I am, etc.,

T. J. HERBERT

Rowley Bristow Orthopaedic Hospital,
Pyrford, Woking, Surrey

¹ Herbert, T. J., *Proceedings of the Royal Society of Medicine*. In press.

² Fisk, G. R., *Annals of the Royal College of Surgeons of England*, 1970, **46**, 63.

SIR,—While your leading article (5 October, p. 2) reviewed several aspects of the treatment of this condition, it is surprising that only mention of arthroplasty was made.

I think that any account of non-union of the scaphoid at this time must include prosthetic replacement of the scaphoid bone.^{1,2} This is often a useful procedure and should be seriously considered among the options open to one in this unfortunate situation, which does occur not infrequently.—I am, etc.,

THOMAS G. WADSWORTH

London W.1

¹ Swanson, A. B., *Orthopedic Clinics of North America*, 1970, **1**, 299.

² Barber, H. M., *Proceedings of the Royal Society of Medicine*, 1974, **67**, 1075.

Adjustment of Serum Calcium Measurements: a Correction

SIR,—In our paper on the "Interpretation of Serum Calcium in Patients with Abnormal Serum Proteins" (15 December, p. 643) and in a subsequent letter (2 March, p. 393) we made an error in converting our equation from conventional to S.I. units. The equation was calculated using g/100 ml for albumin instead of g/l. as recommended by the National Working Party.¹

The formula—adjusted calcium=calcium—albumin+4.0 (when calcium is in mg/100 ml and albumin in g/100 ml)—converted to S.I. units becomes—adjusted calcium=calcium—0.025 albumin+1.0 (when calcium is in mmol/l. and albumin in g/l.).—We are, etc.,

R. B. PAYNE

A. J. LITTLE

R. B. WILLIAMS

J. R. MILNER

Department of Chemical Pathology,
St. James's Hospital, Leeds

¹ Baron, D. N., et al., *Journal of Clinical Pathology*, 1974, **27**, 590.

Larrey and Débridement

SIR,—Mr. D. H. Patey (26 October, p. 228) says that is a fortunate error that British surgeons have tended to derive the word "débridement" from "débris." I cannot agree because, in so doing, they have increasingly forgotten its original meaning; and this is one of the rare cases in surgery where a correct etymology may save a limb or a life.

"Débridement" means to unbridle; in this context to relieve tension, actual or potential, by slitting up the fascial envelopes of the muscle compartments. If this is not done widespread muscle necrosis, with its attendant risks of infection and gangrene, may develop after the treatment of a compound fracture, however efficient the initial excision of dead or dying tissue. We owe a great deal to Trueta for reminding us of this at the beginning of the last war.

It has been my misfortune on occasion to have to try to remedy the damage brought about in cases of compound fracture by young surgeons who have never been taught the true meaning of "débridement"; and how can they be blamed when eminent seniors misapply the term to such procedures as the removal of necrotic tissue and sequestra in Pott's disease? Those of us in charge of accident departments should never miss an opportunity of stressing the importance of dividing the deep fascia when dealing with compound injuries.—I am, etc.,

DAVID LE VAY

Withyham,
near Hartfield,
Sussex

** This correspondence is now closed.—
Ed., B.M.J.

P.C.A. Reactions in Monkeys

SIR,—In their investigations of allergic reactions in an article Dr. D. H. Bryant and his colleagues (8 December 1973, p. 589) used passive cutaneous anaphylaxis (P.C.A.) testing in macaque monkeys as one of a series of methods of delineating human IgG and IgE homocytotropic antibodies. In these studies there were no P.C.A. reactions attributed to IgE at two and four hours after sensitization, but P.C.A. reactions were induced at 24 hours.

We have been studying P.C.A. reactions in monkeys for some time, using human serum from allergic individuals and serum from ascaris-sensitive macaques. Our studies have revealed that there are good and poor recipient macaques for P.C.A. It is not clear at present why this should be so, but we do know that wild-caught macaques are commonly sensitive to ascaris, suggesting an already existing IgE response which might complicate passive transfer reactions. Also, macaques can become sensitive to human serum on repeated transfers. Fortunately, we have a series of home-bred macaques who have no known sensitivity and therefore provide animals in which one would expect a low natural IgE level. In these animals P.C.A. reactions can be carried out using serum from sensitive monkeys or humans. In our tests human reaginic sera from an ascaris-sensitive individual is capable of sensitizing such monkeys for two-, four-, and 24-hour P.C.A. reactions at dilutions of

1/10-1/1,000. Such reactions are abolished if the serum is preheated for 1½ hours at 56°C prior to injection.

These findings are in contrast to those of Dr. Bryant and his colleagues in that these workers were unable to show attachment of IgE at two and four hours after sensitization. However, they do agree with the findings of other workers who have been able to sensitize chopped human and monkey lung and human skin passively in vitro by exposure to IgE antibody for a short time.

Our results indicate that human IgE attaches rapidly to macaque monkey skin and elicits a P.C.A. reaction at two, four, and 24 hours; these reactions being abolished if the serum is heated for 1½ hours at 56°C. Most importantly, they emphasize the importance of using "clean" experimental monkeys with a known history.—We are, etc.,

T. S. C. ORR

Fisons Ltd. Pharmaceutical Division,
Research and Development Laboratories,
Loughborough, Leics

M. C. POLLARD

Pharmacology Control Laboratory,
Beecham Pharmaceuticals,
Worthing, Sussex

Consultant Posts in Baghdad

SIR,—Several advertisements have appeared in the *B.M.J.* inviting applications from consultants in certain specialties to apply for service for periods of three months to one year in a special unit attached to the Medical City Teaching Hospital, Baghdad. As one who has been working for over two years as a visiting professor to the medical college and in the teaching hospital I can assure any consultants who may be interested that I have found work in Baghdad a most rewarding experience. The clinical conditions encountered are many and reasonable facilities for their investigation and management exist. Educational standards are good; a high general standard of education and knowledge of English is demanded of all entrants to medicine, all teaching being in English; the students are keenly interested and lively; and a teacher is often bombarded with questions.

Apart from medicine Iraq is a wholly fascinating country to anyone interested in history and archaeology—the centre of an ancient and sophisticated civilization, of which substantial remains going back 5,000 years still exist, and also there is much to see of the early Muslim world. Finally, may I say that ancient Arab courtesy and welcome have to be experienced to be understood. Without them I doubt if I, who had originally intended to serve here for only one year, would now be entering my third year of service.—I am, etc.,

H. H. LANGSTON

Medical College,
Baghdad

Diet and Colonic Cancer

SIR,—In your leading article, "Diet and Colonic Cancer" (2 March, p. 339), you credited Mr. Denis P. Burkitt for the thesis "that diet and faecal constituents are important in the aetiology of cancer of the

large bowel," which he attributes to "the low-residue diet of the West, high in refined carbohydrates and low in fibre." This has obviously happened because Burkitt in his article¹ did not even refer to my work,² published much earlier than his, let alone give me due credit for this thesis. Allow me, therefore, to quote from my article² not only to establish priority but, even more important, to draw attention to the explanation why diets rich in cellulose and vegetable fibres are protective. Perhaps this may lead to additional information which could go a long way to prevent colonic cancer.

In my article I stated that cancer of the colon was far less common in north Indians as compared with south Indians, and that one likely explanation might be that while north Indian diets are rich in roughage, cellulose, and vegetable fibres these are almost completely lacking in the south Indian diets. The article continued: "We have investigated this point further by examination of faeces in these disparate groups, which showed that while vegetable fibres were abundant in the stools of north Indians these were completely absent in those of the south Indians. This may have an important implication because of the recent evidence³ that fermentation of cellulose and vegetable fibres in the intestine gives rise to large quantities of acetic acid which may thus act in a protective manner on the intracellular mucus of the mucous membrane of the colon by virtue of its acid milieu in north Indians while giving no such protection to the south Indians."

An acid milieu precipitates the mucus and prevents it from escaping from the mucus cells, thus protecting the mucus cells from the adverse inflammatory and proliferative changes referred to above. In an alkaline milieu, on the other hand, the intracellular mucus of the mucous membranes is rendered fluid and escapes from the cell, thus producing inflammatory and proliferative changes in the mucosa with a marked increase in mitotic activity. Such hyperplasia of long duration is often a prelude to neoplasia.^{4,5}—I am, etc.,

S. L. MALHOTRA

Calcutta,
India

¹ Burkitt, D. P., *Cancer*, 1971, 28, 3.

² Malhotra, S. L., *Gut*, 1967, 8, 361.

³ Peiback, G., French, T. H., and Folley, S. H., *Biochemical Journal*, 1951, 48, 411.

⁴ Poel, W. E., *Progress in Experimental Tumor Research*, 1964, 5, 53.

⁵ Malhotra, S. L., *Journal of the Indian Medical Association*, 1970, 55, 265.

Geriatric Policies

SIR,—May I take sides in the dialogue between Professor G. F. Adams (28 September, p. 789) and Dr. H. M. Hodgkinson (2 November, p. 290) and state that the easiest solution of the geriatric problem is permanent hospital admission. This is the line of least resistance, and by taking it everybody is left alone in peace. A time comes, of course, when all the available geriatric beds are taken, but this again is a perfectly calm and peaceful stage of the long waiting list.

As a geriatrician with a high turnover and no long-stay problem I must admit that I am a "spiv." Yes, "somebody must carry the can" for me. They are my own long-suffering consultant colleagues in other specialties who just have to learn to deal

with their own geriatric problem instead of getting their "chronic cases" transferred to the geriatric unit. Some of them do it in good humour, some of them with grinding teeth. But they all do it. There is just no alternative.—I am, etc.,

STEPHEN SZANTO

Geriatric Departments,
Langthorne and Plaistow Hospitals,
London

Disco Deafness

SIR,—Early deafness in young people as a result of exposure to excessive noise in "discos" must now be assuming epidemic proportions. The importance of this problem has been brought especially to my mind because an 18-year-old medical secretary, who has worked for me, has now been found to be suffering from this condition. If every general practitioner in the country had one such new case a year there would be 20,000 new cases in the country annually.

We can only guess at the degree of disability in later years when the normal hardness of hearing in old age would be replaced by disabling deafness in many people. This is a preventable cause of deafness and the medical profession should press for controls to regulate sound at "discos." No doubt controls will eventually be applied, but in view of the enormity of the problem, the sooner the better.—I am, etc.,

M. S. SWANI

Birmingham

Variation in Intravenous Infusion Rates

SIR,—We share the views of Drs. F. C. Flack and T. D. Whyte (17 August, p. 439) that most hospital staff are probably unaware of the variability of intravenous infusion rates under normal ward conditions. In a recent study at this hospital we measured the time over which 1,898 infusions were administered to 141 medical and surgical inpatients. The times at which the infusions were set up and discontinued were recorded by the nursing staff and later compared with the rate of administration prescribed by the physician or surgeon.

The results, which are shown in tables I and II, illustrate the fact that less than half the infusions were administered over the

TABLE I—Proportion of 1,898 Infusion Bottles Which Deviated from the Prescribed Rate

Deviation (%)	Percentage of bottles	
	Fast	Slow
<20	8.58	16.58
20-40	6.64	8.06
40-60	2.00	4.43
60-80	0.68	1.74
80-100	0.53	0.95
>100	0.05	1.31

No deviation in 48.42%.

TABLE II—Comparison of Deviations Found with Solutions Containing Additives and Those without Additives

Infusion Rate	Bottles with Additives	Bottles without Additives
Too fast	18.0%	18.9%
Too slow	27.9%	37.7%
Correct	54.1%	43.4%