takes a somewhat outdated view.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 accuses Locke, and this article ends with praise of Locke's truthfulness.

In 1674 Locke received a bachelorship of medicine and was appointed to a medical student and "other biographical reasons" strongly, 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 injury and worn continuously for several months. Proper management of the injury demands an awareness of the different types of fracture and of the different 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.

With established non-union of the scaphoid the problem is different since there is frequently evidence of carpal instability. It is this instability which is commonly responsible for the weakness of the wrist, the susceptibility of the fracture to further injury, and the radiocarpal osteoarthritides. 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 Russian 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 osteoarthritides 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 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 Britrow Orthopaedic Hospital, Pyruford, Woking, Surrey


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. 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., Orthopaedic Clinics of North America, 1970, 1, 299.

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.

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 (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.