volves training in adaptive behaviour. This technique is not developed in the same way in other branches of nursing.

A co-ordinating function. The mental defective who is admitted to hospital must of necessity be exposed to the skills of other specialists—for example, specialist teachers, clinical and educational psychologists, etc. In order to consolidate and co-ordinate these experiences and make them meaningful for the patient, he must have an adequate relationship with a significant adult, this giving the security which is necessary for the maximum effect of all these learning experiences. Continuity of patient care cannot be achieved without this co-ordinating function being fulfilled (learning by our definition involves much more than acquiring knowledge of the 3 Rs). The ideal person for this co-ordinating aspect is the nurse trained in the specialty of mental deficiency.

We accept that change is inevitable, and indeed needed, but it is our contention that mental deficiency nursing should remain a specialty. We expect that a much more detailed review, including research, of the function of nurses in mental deficiency be

carried out before any major change in their role is suggested.—We are, etc.,

SISTER CELESTE
Principal Tutor

St. Joseph's Hospital,
Rosewell, Midlothian

MICHAEL HEGARTY
Principal Nursing Officer

Gogarburn Hospital,
Edinburgh

EVELYN KEANE
Principal Nursing Officer

Lynebank Hospital,
Dunfermline, Fife

ALEXANDER H. SUTHERLAND
Principal Tutor

Stratheden Group School of Nursing,
Fife

JOHN G. SUTHERLAND
Chief Nursing Officer

Royal Edinburgh and Associated Hospitals Group

BRYAN G. WILSON
Chief Nursing Officer

Stratheden and Associated Hospitals Group,
Fife

1 Scottish Home and Health Department. Scottish Health Services Council. *The Staffing of Mental Deficiency Hospitals*. Edinburgh. H.M.S.O. 1970.

Normal Range for Serum Transaminases

SIR,—We wish to draw attention to an apparent discrepancy between a manufacturer's stated normal range for serum transaminase given with their kit, and the normal range found in our laboratories on plasma. The Boehringer Corporation manufacture two types of kit, both for aspartate transaminase (commonly known as GOT) and for alanine transaminase (commonly known as GPT): the former standard kit (UV test), and the new "optimized method" kit with a much higher substrate concentration. The most widely used and accepted non-kit spectrophotometric procedure for both these enzymes is that of Henry *et al.*,¹ with substrate concentrations of aspartate and of alanine between those of the standard and the optimized kits.

Estimations were performed on fresh heparinized venous plasma using an LKB Reaction Rate Analyser at 35°C with the different types of kit: all results were con-

verted to 25°C. The results obtained are given as a conventional normal range of mean $\pm$ 2 S.D. for both sexes, and are shown in the Table.

We consider that the older standard kits with the lower substrate concentrations should no longer be used. The optimized kits gave similar results to the method of Henry *et al.* and are satisfactory. However, the normal range given by the manufacturers for aspartate transaminase was significantly too high in our hands.—We are, etc.,

D. N. BARON
G. E. LEVIN

Royal Free Hospital School of Medicine,
London W.C.1

J. H. WILKINSON

Charing Cross Hospital Medical School,
London W.C.2

1 Henry, R. J., Chiamori, N., Golub, O. J., and Berkman, S., *American Journal of Clinical Pathology*, 1960, 34, 381.

Enzyme	Method	Laboratory Normal Range I.U./l.	Manufacturer's Stated Normal Range I.U./l.
Aspartate Transaminase	"UV-test" kit	♂ 5-12 ♀ 4-10	
	"optimized method" kit	combined 3.5-12.5 ♂ 7-15 ♀ 6-11 combined 5-15.5	<12 6-21 5-18
Alanine Transaminase	"UV-test" kit	<17	<12
	"optimized method" kit	<24	♂ 6-33 ♀ 5-21

Serum Albumin and Survival in Myelomatosis

SIR,—In the report on a Myeloma Workshop (8 May, p. 319) Dr. D. A. G. Galton reported that in the M.R.C. trial for the treatment of myelomatosis the serum albumin concentration at presentation correlated strongly with survival, and that the fall in serum albumin was not a result of urinary loss. Dr. R. Peto in the same symposium suggests that it was probable that a myeloma can somehow catabolize circulating albumin or inhibit its synthesis, and low albumin indicates a very active myeloma.

Reciprocal changes occur in the levels of albumin and globulin in the presence of hyperglobulinaemia and Bjornboe¹ postulated that the mechanism by which albumin falls in these circumstances might be related to a mechanism affecting control over oncotic pressure. Good evidence exists to support this hypothesis.²

It would be of interest to know whether any results are available from the M.R.C. trial which correlate serum globulin concentration at presentation with survival, for

it is possible that those patients with the lowest serum albumin might have been those with the highest serum globulin. In myelomatosis it is likely that the highest levels of serum globulin are seen in patients with the most advanced disease.—I am, etc.,

D. P. M. HOWELLS

Department of Medicine,
Welsh National School of Medicine,
Cardiff

1 Bjorneboe, M., *Acta Medica Scandinavica*, 1946, 123, 393.

2 Oratz, M., in *Plasma Protein Metabolism*, ed., M. A. Rothschild, and T. Waldmann. New York, Academic Press, 1970.

Vibration-induced White Finger

SIR,—The Industrial Injuries Advisory Council has recently been considering the question of the prescription of vibration-induced white finger and has published an interim report.¹

In an attempt to collect further evidence on vibration-induced white finger, the Department of Health and Social Security has supported a research team to survey industrial populations exposed to vibration in the form of vibrating tools (pneumatic tools, power chain saws, and hand-grinding rotating tools). In addition it is of immediate interest to follow up two other aspects of this syndrome, namely does the vibration-induced white finger lead to a change of occupation in the more severe cases, and what is the ultimate long-term effect on the fingers of repeated episodes of ischaemia?

Our attention has been drawn recently to Raynaud's phenomenon of occupational origin proceeding to an irreversible reduction in blood flow in the fingers. We write to ask for the co-operation of general practitioners, and of medical and surgical consultant colleagues in reporting to us severe cases of vibration-induced white finger, the signs and symptoms of which have resulted from continuous, long exposure to vibration stimuli. We ask for evidence on those more severe cases since a number of isolated cases throughout Britain have already been reported to us.—We are, etc.,

W. TAYLOR

University of Dundee

P. L. PELMEAR

University of Birmingham

P. B. JAMES

University of Liverpool

1 Industrial Injuries Advisory Council. *Vibration Syndrome*. Cmnd. 4430, London, H.M.S.O. 1970.

Laparoscopic Sterilization through Cusco's Speculum

SIR,—The Medical Defence Union is glad to note that in his letter (14 August, p. 430) Mr. Patrick Steptoe has stressed the importance of the operator having been fully trained in the technique of this procedure. Since the beginning of this year no fewer than six cases with serious complications following laparoscopic sterilization have been reported to the Union. Two of these ended fatally. In only one of these six cases was the operator of consultant status.

The Union wishes to give the strongest support to Mr. Patrick Steptoe's warning.