from the activities of our council I could mention the Department of Health and Social Security's grant towards treatment and rehabilitation of alcoholics, and also the Medical Research Council's support of research being carried out at the addiction unit of the Institute of Psychiatry, and also at the University of Glasgow.

There is much to do in terms of education, early detection, and prevention, and communication among the many bodies working in this field is of paramount importance in dealing with a problem of national health which has been so seriously neglected in the past.—I am, etc.,

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Luteinizing Hormone and Progesterone Levels after Hysterectomy

SIR.—Removal of the uterus has a profound effect on ovarian function in many lower animals,¹ suggesting that the uterus secretes a luteolytic substance necessary for normal cyclical activity. The psychological effects of simple hysterectomy in woman also suggests a disturbance of ovarian function, though the available evidence does not support this.² Methods of assessment of ovarian function hitherto employed, such as the appearance of the ovaries at laparotomy, vaginal cytology, temperature charts, and urinary oestrogen and pregnandiol excretion, have been imprecise. We have therefore studied the circulating levels of hormones in women who had undergone hysterectomy with conservation of the ovaries and who presented with psychological and other complaints.

Seven subjects whose ages ranged from 26 to 35 years and who had had a hysterectomy 3 to 42 (mean 19) months previously were studied. In each case the ovaries had been conserved. In none was there evidence of major physical or endocrine disease. Blood was taken on the second, fourth, and sixth day of each week over a period of four weeks and was immediately centrifuged and deep frozen while awaiting assay. All specimens from any one subject were assayed together. Luteinizing hormone (LH) was assayed in all samples by a double antibody radioimmunoassay technique.³ Progesterone assays (by a competitive protein-binding technique⁴) were performed only on selected samples chosen either to show the presence of luteal activity after high LH values such as might be associated with "mid-cycle peaks" or to show the absence of such activity during other phases of the cycle. The results were similar in all seven patients and are shown for one typical patient (see Fig.).

Plasma LH (graph) and plasma progesterone (histogram) levels in typical patient.

LH values showed fluctuation from a basic tonic level to short-lived high values consistent with a mid-cycle peak. The mean LH level preceding the presumptive peak was 13.6 mU 2nd I.R.P./ml (range 4.5-38), the mean "peak" value was 67 mU 2nd I.R.P./ml (range 40-130), and the mean level after the peak was 14.2 mU 2nd I.R.P./ml (range 4-49). Progesterone values preceding the LH "peaks" were uniformly low, but rose to between 11 and 23 ng/ml during the presumed luteal phase in each patient. In two of the patients two LH "peaks" were observed, one near the beginning and the other towards the end of the period of sampling. The time between these peaks was respectively 23 and 26 days. The mid-cycle LH peak is of short duration and may easily be missed unless daily specimens are obtained. Though our samples were taken at 48- or 72-hour intervals, fortunately we were able to show rises in LH levels in all our subjects. Nevertheless, most of the values we have ascribed to the mid-cycle peak were probably related to the days immediately preceding or after the peak itself. This may be the main reason why the mean peak level for our subjects is rather low. Considering the shortcomings of the sampling technique our LH and progesterone values are surprisingly close to those reported in normal women when samples are collected daily.^{4,5}

It seems that in the years immediately after a hysterectomy with preservation of the ovaries cyclical ovarian functioning was maintained in our seven subjects.

We thank Professor M. G. Gelder and Drs. B. M. Mandelbrote and P. C. B. MacKinnon for advice and facilities and Mrs. M. Daly for work in collecting blood samples. The work was supported by a grant from the Medical Research Council (Grant G.970/227C). Miss S. Turnbull was supported by a grant from the Oxford Regional Hospital Board.—We are, etc.,

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Estimating Fibrin Products in Urine

SIR.—The immunochemical method of estimating F-R antigen in urine based on the tanned red cell inhibition technique is not only tedious, because urine concentration is required, but also expensive. We have therefore used a method based on precipitation of fibrin from urine with protamine sulphate.

To 2.0 ml clean unconcentrated urine from a 24-hour collection in thymol preservative is added 3.0 ml 0.9% saline and then 0.5 ml 1% protamine sulphate. After 24 hours the precipitate is spun down and redissolved in 2.0 ml 40% urea in 0.2N sodium hydroxide pH 7 and the optical density read at 280 mU in a spectrophotometer. The result is read as fibrin (milligrams per ml) from a standard curve.

The figure shows that there is a good relation ($r=0.7$) between the immunological method and the protamine sulphate (PS)

precipitation technique. The discrepancy in the actual quantitation is yet to be explained. Nevertheless, the results indicate that this is a much simpler method for estimation of fibrin products in urine.—We are, etc.,

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Dietary Fibre and Calcium Metabolism

SIR.—Dr. J. K. Anand (14 October, p. 112) queries the effect of the phytate content of additional dietary fibre on calcium metabolism. Mr. N. S. Painter and his colleagues (15 April, p. 137) recommend the use of All-Bran, Weetabix, porridge, wholemeal (not brown) bread, and two teaspoons of unprocessed bran (which contains the germ naturally present) three times a day, to be increased after two weeks if necessary. This quantity, according to the size of teaspoon used, gives 20-30 g bran a day.

The average phytate phosphorus content of mill-bran is approximately 1%.¹ Each millimole of phytic acid, containing 186 mg of phosphorus, requires 240 mg of calcium for neutralization; 30 g bran containing 1% phytate would require 387 mg Ca for neutralization. This quantity added to the recommended intake of 500 mg Ca a day² would give a total well within the average national intake of over 1 g Ca a day for the past seven years³ and would therefore presumably be safe. But if true wholemeal bread not fortified with creta praeparata and other foods with a high percentage of phytic acid phosphorus are used the safety limit may be exceeded. A better recommendation when bran is prescribed would be to use brown or white bread—lower in phytate content but higher in calcium content because of fortification.

A further factor which may need to be considered is the reduced fermentation time in modern bread-making processes, which limits the action of phytase in flour used. There may certainly be a danger of deficiency of calcium if bran is added to diets of reduced calorie value for treatment of obesity, when the quantities of the main calcium-containing foods (milk, cheese, and fortified bread) are considerably reduced. In such cases an additional source of dietary calcium of comparatively low calorie content