fied into 6 groups dependent on pathology, tumour stage and prognosis, without knowledge of results of PHA testing.

Control and early cancer patients responded best to 0·8 μg PHA/ml but also had a good response to 0·3 μg/ml. Patients with advanced disease responded maximally to 4·0 μg/ml and poorly to 0·3 μg/ml. The highest dose (4·0 μg/ml) did not discriminate as well between the groups, as did the other 2 doses.

A dose-response curve of PHA response provides more meaningful information than estimations performed at one dose. Results correlate with the expected prognosis in breast cancer.

DETECTION OF DISEASE OF THE BREAST IN WOMEN ATTENDING A FAMILY PLANNING ASSOCIATION CLINIC. T. HAMILTON, R. J. PRESCOTT and N. B. LOUDON, Department of Clinical Surgery, and Medical Computing Group, University of Edinburgh and Family Planning Association.

A long-term project has been established to determine the influence of contraceptive habit on the breast. A total of 13,451 women attending a Family Planning Association Clinic in Edinburgh over a period of 5 years were offered annual clinical examination of the breast. In this time 233 women (1 in 58) attending were referred for surgical opinion; 115 were examined and reassured; 118 (1 in 114) were submitted to biopsy; benign lesions were present in 106 and carcinoma detected in 12 women. Those with carcinoma were all included in the 17% of the screened population aged over 35 years (1 in 195). It is concluded that screening, certainly for carcinoma, might reasonably be restricted to women over 35 years, and that below this age, examination of the breast is probably unnecessary for those attending for contraceptive advice.

HUMAN TUMOUR CELLS IN SHORT TERM MONOLAYER CULTURE—CELL CYCLE KINETICS AND EFFECT OF HORMONAL STIMULATION. M. E. LLOYD and P. P. DENDY, Neurology Research Laboratory, The London Hospital.

Cell cycle parameters of human tumours in primary monolayer culture were established using a method of continuous exposure to ^{3}H-TdR. The effect of prednisolone on kinetics was also studied.

A remarkable similarity in durations of cell cycle parameters was found between specimens, S phases averaging 6 h and Tcs 35 h. However, the wide range in values of maximum Labelling Index (24 → 95%) indicated considerable differences in the percentage of cells cycling for different specimens. For some specimens prednisolone increased the % cycling cells with no effect on phase durations of cells already cycling. The durations of S phase are low, compared with those found by other workers. This may be due to the short period of growth in culture but the implications of these results in the study of S phase of tumour cells *in vivo* is uncertain.

Prednisolone studies indicate that some of the cells unlabelled during long exposure to ^{3}H-TdR have not necessarily left the cell cycle permanently.

A PILOT STUDY OF THE VARIABILITY OF NUCLEAR FORM AND DNA CONTENT IN SMEARS OF HUMAN URO-EPITHELIAL BLADDER TUMOURS. R. C. L. FENELEY and J. M. N. Boss, Bristol United Hospitals and Department of Physiology, University of Bristol.

From 19 patients, subsequently observed for 2–2½ years, 27 smears (20 Feulgen and 7 haematoxylin stained) of transurethrally resected material were made, with independent histological grading as "low", "average", or "high". "Pleiomorphic" smears had nuclei > 20 μm $\times > 10$ μm with indentations > 2 μm deep. "Variable" smears had standard deviation $> 0{\cdot}60 \times$ mean for microdensitometry of 25 nuclei each. The 3 sites without tumours and 7 patients treated and clear on repeated review, yielded neither "pleiomorphic" nor "variable" smears. Of the 4 "pleiomorphic" smears 3 were from patients since dead, and the 4 "variable" from patients now dead (3) or still with recurrence (1). In the clinically heterogenous "average" grade are 6 living (none "pleiomorphic"; 1, with recurrence, "variable") and 4 dead (3 "pleiomorphic", none variable, but 3 with no Feulgen stain). (The work was assisted by an M.R.C. grant to J. M. N. Boss.)