then be easily passed through after lifting the staples in one corner.

The observation room is completely blacked out and the room under observation brightly illuminated. The observers should preferably wear dark clothes or a dark smock as white or pale colours will reflect the light coming through from the interview room. The screen is not, of course, sound-proof; while this means the observers must keep still, it obviates the need for microphones, amplifiers, etc.

A notice board can be fitted over (on either or both sides) when the screen is not in use. If the board is fairly thick or padded the rooms will be as sound proof as they ever were.—I am, etc.,

ELIZABETH SPINDLER BARTON

Meanwood Park Hospital for
the Mentally Handicapped,
Leeds 6

Unbalanced Deoxyribonucleotide Synthesis Caused by Methotrexate

SIR,—The report by Dr. A. V. Hoffbrand and Miss Edith Tripp (15 April, p. 140) of changes in the pools of deoxynucleoside triphosphate in cells exposed to methotrexate is of great interest. Their results are, however, different from those recently reported by Baumunk and Friedman,¹ who found that the deoxythymidine triphosphate (dTTP) content of HeLa cells was not altered by exposure to methotrexate or 5-fluorouracil. Their statement that a rise in deoxyadenosine triphosphate (dATP) levels inhibits ribonucleotide reductase, although certainly true for some bacterial and mammalian systems, is not true for all mammalian cells.² Furthermore, the ribonucleotide reductase activity of bone marrow cells from patients with pernicious anaemia has been found to be greatly increased,³ and this would appear to conflict with Dr. Hoffbrand and Miss Tripp's suggestion that ribonucleotide reduction may be inhibited in megaloblastic cells. Lastly, their suggestion that DNA ligase activity may be inhibited in methotrexate treated cells is a most interesting and easily testable hypothesis. However, Cleaver⁴ has studied DNA repair in HeLa cells exposed to a wide variety of cytotoxic agents. He was unable to demonstrate any defect in DNA repair in cells exposed to cytosine arabinoside or fluoro-deoxyuridine, both agents which induce megaloblastic change.

I have measured the pools of purine and pyrimidine deoxynucleoside triphosphates in mouse L5178Y lymphoma cells following their exposure to methotrexate.⁵ In every experiment the level of dTTP in treated cells has been reduced, but no consistent change in dATP has been found. It may be that the discrepancy between my results and those of Dr. Hoffbrand and Miss Tripp is explained by the different cell lines studied and by the fact that my cells are a heterogeneous population while the latter's cells are synchronized by their exposure to phytohaemagglutinin.

Finally, a mechanism for the well-recognized masking of megaloblastosis by iron deficiency⁶ does emerge from Dr. Hoffbrand and Miss Tripp's observation. Iron is a cofactor for mammalian ribonucleotide reduction⁷ and in its absence reduction of ADP→dADP will be inhibited, thus pre-

venting a rise in the dATP level, which they maintain is the basis for megaloblastic change.—I am, etc.,

M. H. N. TATTERSALL

Chester Beatty Research Institute,
Royal Cancer Hospital,
London S.W.3

- ¹ Baumunk, C. N., and Friedman, D. L., *Cancer Research*, 1971, 31, 1930.
- ² Fujioka, S., *Acta Haematologica*, 1971, 45, 136.
- ³ Fujioka, S., and Silber, R., *Journal of Laboratory and Clinical Medicine*, 1971, 77, 59.
- ⁴ Cleaver, J. E., *Radiation Research*, 1969, 37, 334.
- ⁵ Tattersall, M. H. N., Furness, M. E., Jackson, S., and Harrap, K. R., *Proceedings of the Biochemical Society*, in press.
- ⁶ Van der Weyden, M., Rother, M., and Firkin, B., *British Journal of Haematology*, 1972, 22, 299.

Removal of Extruded I.U.D.

SIR,—Six days after reading Dr. Ursula E. Mountrose and Mr. W. L. Whitehouse's letter (8 April, p. 113) recommending colpotomy to remove an I.U.D. extruded into the pouch of Douglas a 23-year-old patient was referred complete with x-ray (Fig.). The Lippes loop had been inserted on 6 April 1972, six weeks after confinement, with no difficulty or symptoms at that time, but the threads could not be seen or felt five days later. The only subsequent complaint had been vague pelvic discomfort.

The uterus was anteverted and well involuted, and on careful bimanual examination the loop could be felt in the hollow of the sacrum. She was admitted with her breast-fed baby two days later for colpotomy under anaesthesia. One finger through into the pouch of Douglas easily located and removed the loop. There was no reaction and she went home 48 hours later. I would agree with Dr. Mountrose and Mr. Whitehouse that colpotomy should be considered whenever the extruded loop remains in the pelvis.—I am, etc.,

R. R. MACDONALD

Department of Obstetrics and Gynaecology,
University of Leeds

Bran and Diverticular Disease

SIR,—As Mr. Neil S. Painter and others (15 April, p. 137) refer to my own experience, it may be constructive to say that I used unprocessed bran in the Royal Navy for some 30 years. At first I experimented cautiously on myself, but my first communication (22 March, 1941, p. 461) described 10 years of constantly-widening experience with this material. I was at that time the senior medical officer of the battleship *King George V* and, owing to the scarcity of fresh

fruit and vegetables, found such bran invaluable for correcting the constipation afflicting the ship's company. The ship's canteen bought the bran by the hundred-weight-sack and sold it at the present equivalent of only 1p per lb—which amount often lasted a man for several weeks. The sailors loved the stuff by comparison with purgatives, and on one occasion, when the supply failed, many fell in at "Captain's Request-Men" to ask if it could be restored, as they felt its loss greatly. I think it is a great tragedy of our present age that, with M.R.C. workers^{1,2} showing at least 15% of the population to be on regular purgatives, this precious material is ever lost through the manufacture of white flour.

I have not only used unprocessed bran with almost invariable success among thousands of naval personnel at sea, as described above, but also for nearly 20 years during specialist duties as a physician in naval hospitals, where I always declined to prescribe aperients, relying on an enema if any serious arrest was already present and then solely on the unprocessed bran for future prevention. I can understand that old or frail people would require gradual habituation to it but this was never a problem in the Navy, as long as the bran was taken *before* meals, to prevent any overloading of the stomach. Meanwhile, the cheapness and naturalness of this product not only facilitate its use on an institutional scale, but also correct certain vitamin deficiencies that can be very real in old people, especially if living alone.

I must disagree entirely over one crucial point in Mr. Painter and colleagues' article. The introduction of the roller mills in 1880 made precious little difference to the amount of fibre removed from the flour. The reason for this is that the fibre (bran) is placed by nature on the outside of the grain, to protect it from injury. Therefore it is the first substance to be removed in the milling. Indeed, Horder, Dodds, and Moran³ have shown clearly that even a 90% flour (that is one that contains 90% of the whole grain) has already lost two-thirds of the fibre present, and the extra loss of fibre that arose when the old stone-milled 80% flour, introduced over a century earlier, was replaced by the roller-milled 70% flour around 1880 amounted to only about 1%.

No. As I have argued,^{4,5} the various diseases that sprang into prominence in the latter part of the nineteenth century, in which I included the intestinal conditions of appendicitis and diverticular disease, owed much to the refining of flour, but still more to the refining of sugar, the consumption of which, as shown in my chart in Mr. Painter's article, was rising at that time with frightening speed. Not only is much more fibre lost in the refining of sugar, but the effect of the sugar on the proliferation of the *E. coli* and other bacterial inhabitants of the intestines is of decisive importance.

None of this, however, in any way alters the importance of a true wholemeal bread in our nutrition today, and far from reducing its bran content to any extent whatsoever, it is far more logical to add an extra 10% of bran, so as to effect at least some compensation for the fibre lost in the refining of sugar. This extra bran adds to, rather than detracts from, the flavour, and such bread is now being increasingly produced in London as the "bran plus" loaf which I have described in our joint work. Such bread is obviously of particular indica-

tion in cases of obesity or difficulty with the bowel, since the high fibre content reduces the calorie value but increases the aperient properties.—I am, etc.,

T. L. CLEAVE

Fareham, Hants

- ¹ Morris, J. N., *Lancet*, 1941, 1, 51.
- ² Connell, A. M., Hilton, C., Irvine, G., Lennard-Jones, J. E., and Misiewicz, J. J., *British Medical Journal*, 1965, 2, 1095.
- ³ Lord Horder, Dodds, C., and Moran, T., *Bread*. London, Constable, 1954.
- ⁴ Cleave, T. L., *Journal of the Royal Naval Medical Service*, 1956, 42, 55.
- ⁵ Cleave, T. L., and Campbell, G. D., *Diabetes, coronary thrombosis and the saccharine disease*, Bristol, Wright, 1966.

Varieties of Memory

SIR,—As an amateur pianist, I was very interested in the last paragraph of "Personal View" by Professor L. J. Witts (1 April, p. 43) and can perhaps throw a little light on the subject of how performers memorize music. He draws attention to visual and auditory memory. I believe that there is a third type, which might be described as kinaesthetic, which stems from the muscles, joints, and nerves of the upper limb.

When learning the piano 50 years ago I soon found that after practising a piece of music I could close the book and play it from memory having made no conscious effort to memorize it; visual memory played no part at all in this and auditory memory a minor one, but my fingers seemed to know where to go next. This facility persists, for I still find that I can play a piece of music from memory which I have not played for perhaps 20 years or more.

I am sure that the degree to which these various forms of memorizing are used varies with the individual performer and their relative importance varies, but I also think that without kinaesthetic memory—even well developed visual memory—it would not be possible for a concert pianist, say, to command his large repertoire of memory performances.—I am, etc.,

T. D. CULBERT

Manchester

New Thoughts on Essential Hypertension

SIR,—Your leading article "New Thoughts on Essential Hypertension" (15 April, p. 121) argues against the prolonged use of diuretics in mild hypertension and therefore must interest the obstetrician in his treatment of pre-eclampsia, wherein they have been employed. You have indicated that low levels of sodium thereby brought about could act as a stimulus for renin release and defeat the desired hypotensive effect.

In this connexion the risk of provoking hyponatraemia in pregnancy has long been recognized, while recently Chesley¹ has warned against their use, but for a different reason. He has brought evidence to show that as "toxaemia" mounts hypovolaemia and haemoconcentration also increase and these two states are exacerbated by the resultant plasma depletion.

Leyssac² maintains that changes in glomerular filtration rate are secondary to alterations in the reabsorptive rate of the proximal tubule. Thus the increased loss of fluid by the tubule would effect a corresponding increase in glomerular filtration, in turn producing a reduction in the tone of the glomerular afferent arteriole and implying a reduction in its stimulation by renin.

Therein may lie its hypotensive action.

Though it is difficult to account for the effects of specific changes in glomerular pressure per se on reabsorption, such a mechanism could well underlie the usefulness of diuretics in pre-eclampsia.—I am, etc.,

JOHN SOPHIAN

Worthing, Sussex

- ¹ Chesley, L. C., *American Journal of Obstetrics and Gynecology*, 1972, 112, 440.
- ² Leyssac, P. P., *Acta Physiologica Scandinavica*, 1963, 58, 236.

Sabbatical Year

SIR,—While I agree to a large extent with Dr. R. E. Loder (22 April, p. 226) and many consultants in the National Health Service both deserve and need a real break from routine duties at long intervals, I think that this applies particularly to those working maximum part-time or whole-time clinical appointments outside teaching hospitals. While consultants in teaching hospitals are not immune to pressures or to stress the scale of assistance is usually much higher than for their contemporaries in non-teaching hospitals, upon whom heavy routine work falls far more directly.

If Dr. Loder's suggestion were acted upon I believe that many early retirements would be prevented and that the standard of consultant working in those whose burden has been exceptionally heavy would be preserved to a degree which is at present seldom achieved.—I am, etc.,

T. J. WILMOT

Tyrone County Hospital,
Omagh, Co. Tyrone

Family Doctors and Contraception

SIR,—The vice-president of the Pharmaceutical Society, Mr. J. P. Kerr, speaking in Glasgow on Sunday, 26 March at a conference sponsored by the Socialist Medical Association, pressed the Society's view that oral contraceptives should be available on the National Health Service. Mr. Kerr outlined the Society's proposed scheme, in which family doctors would issue prescriptions on a modified E.C.10 form. This special form would be similar to the E.C. 19 form and would contain a total of three separate prescriptions. At each consultation the doctor would issue prescriptions for three or six months' supply (see the *Pharmaceutical Journal*, 8 April 1972, p. 312).

Dr. Lorna Naismith, speaking on behalf of the Family Planning Association, agreed that contraceptive services should be completely free. However, she felt that contraceptives should be supplied only by those who had received special training. Asked to comment on the Pharmaceutical Society's plan, Dr. Maurice Miller (who takes a weekly birth control session at a London Family Planning Association clinic) replied that he also had reservations that the training of many general practitioners in this specialized field was not deep enough. Early detection of untoward side effects, for which the family doctor had neither the time nor the experience, was best carried out at family planning clinics, he added.—We are, etc.,

B. L. FURMAN

A. L. HARVEY

R. M. WADSWORTH

Department of Pharmacology,
University of Strathclyde,
Glasgow

Fair Wage for Auxiliaries

SIR,—Dr. B. E. Brocks (18 March, p. 753) is to be congratulated on the firm stand he has taken on behalf of the remedial professions, particularly in respect of their system of grading and appallingly low salaries. His words come as a timely warning in a situation which is rapidly worsening.

He does them a disservice, however, by referring to them as medical auxiliaries, when in fact they are recognized by Act of Parliament, with other groups, as the "professions supplementary to medicine." Without wishing to be accused of pedantry, I am sure Dr. Brock will appreciate the subtlety of the difference between the dictionary definitions of "auxiliary" and "supplementary." It adds a measure of gloss to the skills and enthusiasm of the supplementary professions.—I am, etc.,

R. BROOKS

Public Health Laboratory,
Swansea

Future of Mental Health Services

SIR,—We read with interest the well-intentioned letter by Drs. F. A. Bleaden and J. H. Price (4 March, p. 624). As they are so critical of psychiatric units in general hospitals and the policy of the Manchester region, some clarification is necessary. We are not qualified to express any comments on the future of services for mentally sub-normal patients, but we have sufficient experience of general hospital psychiatry to make the following comments.¹

For most of us who studied carefully the findings of the Whittingham Hospital Inquiry,² it must be fairly obvious that the sorry state of affairs at that hospital was more due to other failings than to lack of funds. Finance, however, inadequate as it has been for most of us in the N.H.S., should not be the decisive factor in formulating future policy. One of us has already criticized the mistaken policy of a premature run-down on mental hospital beds until adequate facilities are developed in the community and better care provided for the increasing number of elderly confused patients.³

We agree that a greater flexibility in planning is needed than that displayed in the White Paper recently published by the Department.⁴ Local conditions and existing facilities must be taken into account. We disagree entirely with Drs. Bleaden and Price that acutely disturbed psychotic patients cannot be treated as adequately (not "housed") in an active therapeutic community of a general hospital, with its modern clinical facilities, as in a sometimes remote mental hospital. Similarly, personality disorders are better managed in a day hospital nearer home or in the outpatient clinic. Many of those with them should not be hospitalized at all. Many fail to respond, wherever they are.

We think that in the foreseeable future there will still be a real need for active, progressive, mental hospitals with their own areas of clinical responsibility and greater involvement with community services. Some may develop regional special units for forensic psychiatry, drug addiction, and rehabilitation for long-stay patients. They will become smaller and easier to manage when