lations, including tetanus toxoid. The injector is supplied with two nozzles—one for intradermal and the other for subcutaneous and intramuscular injections. So far as I could determine from the literature there was no certainty as to the maximum depth of penetration, and before considering the use of this machine for giving intramuscular injections the following study was undertaken.

With the co-operation of Dr. Philip Sheldon, consultant radiologist, Oxford United Hospitals, and with the help of the manufacturer's chief engineer, I received 1 ml. 45% Hypaque (sodium diatrizoate) into the deltoid area. A series of x-ray pictures were then taken to determine the spread and depth of the injection. A block of wood was used to compress the soft tissues in order to demonstrate clearly the thickness of skin, subcutaneous fat, and muscle.¹ As will be seen from the illustration, after the material has penetrated the skin, there is an immediate spread in all directions, and the best that can be expected is for the material to reach the subcutaneous layer.

Perhaps it would reach the muscle in a really thin subject, or a child, but, unless one could predetermine depth penetration for each subject, it might be better to accept the machine as a means of reaching no deeper than subcutaneous regions.—I am, etc.,

W. G. WHITE,
Senior Medical Officer,
British Motor Corporation Ltd.

Cowley,
Oxford.

REFERENCE

- ¹ Meema, H. E., Sheppard, R. H., and Rapoport, A., *Radiology*, 1964, 82, 411.

Premedication for Hypotensive Anaesthesia

SIR,—Dr. P. J. Thompson (2 August, p. 300) raises some interesting points regarding hypotensive anaesthesia for micro-aural

surgery. Over the past five years I have anaesthetized some 280 patients for these operations, using hypotensive methods, and I would like to make the following observations.

Adequate microscope haemostasis cannot be achieved unless the systolic blood pressure is dropped to 40 mm. Hg or below. This cannot be done in normotensive patients without the use of a ganglion-blocking agent, and I use pentolinium tartrate (Ansolsen) for this purpose. The average dose administered is 10 mg. in addition to the thiopentone, N₂O and O₂, halothane anaesthetic technique, using a Ruben's valve.

More resistance to hypotension was noticed when atropine premedication was used, and after experimenting over the years I have found Omnopon 10 mg. and Scopolamine 0.4 mg. (hyoscine hydrobromide) one hour preoperatively to be the most satisfactory.

It is difficult to produce adequate hypotension in teenagers, and I have long since given up using hypotensive drugs on patients under 21 years of age.

Instant reversal of hypotension can be achieved by the administration of methylamphetamine 10 mg. intravenously plus 10 mg. intramuscularly. Since the ear is packed after operation no persistent postoperative bleeding has resulted.

Despite the low blood pressure produced no patient has as yet given any anxiety during or after operation. All patients are vetted carefully, and if the slightest suspicion of cardiovascular disease is present no hypotensive technique is used. Likewise not a single patient has shown any cardiovascular complication after operation, in spite of the fact that profound hypotension has been produced for up to one hour's duration. This may be accounted for by the fact that blood loss is virtually non-existent under these conditions.—I am, etc.,

A. R. KERR.

Royal Infirmary,
Huddersfield, Yorks.

Cancer Research

SIR,—It is indeed surprising that your recent leading article (5 July, p. 4) summarized the main branches of cancer research in four words—namely, diagnosis, treatment, causation, and prevention. I venture to suggest that the order be reversed, as not enough emphasis is given to prevention where “causes” are known.

The family doctor cannot see what benefits accrue to his patients suffering from cancer, and he has good reason for so thinking. Our patients with cancer do not appear to be living longer. Can anyone show breast cancer survival rates have increased? Has the outlook improved for lung cancer and large bowel and rectal cancer? New operative procedures are not the product of medical research. The fall in death rate from gastric cancer is not shown to be the results of the efforts of workers in the laboratory.

As a general practitioner I wonder what has happened to the suggestions made by Professor P. Beaconsfield (15 October, 1966, p. 948) concerning the shortcomings of the present organization of research, when he wrote that “millions are wasted on cancer research.” This was over two years ago, and in my opinion the millions are still being wasted.

If £26m. are being allocated annually for medical research purposes in the United

Kingdom (and a large proportion of this goes to cancer research laboratories), from the results thus far obtained it is evident that this branch of research needs an agonizing reappraisal. The only people who can do this are the clinicians, because their contact with the patient gives them a sense of drive and urgency which is quite unknown to the scientist in his ivory tower.—I am, etc.,

M. MACLEOD.

Wallasey, Cheshire.

Asymptomatic Bacteriuria in Pregnancy

SIR,—We were interested in the paper by Dr. G. L. Williams and others (26 July, p. 212). One of their main findings was that a defective urinary concentrating ability occurred in 31 (31%) of 100 pregnant women with bacteriuria, but not in non-bacteriuric pregnant control patients. They point out that previous workers have found the incidence of defective concentrating ability to be higher and claim their observations to be new.

However, results almost identical to those of Dr. Williams and his colleagues were reported by us in 1968.¹ Our results showed a defective urine concentrating ability in 30% of 63 patients with bacteriuria in pregnancy but in only 1 of 33 non-bacteriuric pregnant women. The findings of Dr. Williams and colleagues therefore confirm those already reported by ourselves. Incidentally, they also found that the lower limit of concentrating ability in pregnant women without bacteriuria was 750 mOsm/kg. Reference to our paper shows that we had come to the same conclusion.—We are, etc.,

W. BRUMFITT.

Edgware General Hospital,
Edgware, Middx.

D. S. REEVES.

St. Mary's Hospital Medical School,
London W.2.

REFERENCE

- ¹ Reeves, D. S., and Brumfitt, W., in *Urinary Tract Infection*, ed. by F. O'Grady and W. Brumfitt, 1968, p. 53. London, Oxford University Press.

Prolonged Labour

SIR,—The recent article by Dr. Kieran O'Driscoll and others (24 May, p. 477) advocating active management in the first stage of labour emphasizes the changing view towards prolonged labour associated with incoordinate uterine action and posterior positions of the occiput.

On a recent visit to Czechoslovakia sponsored by the Royal College of Obstetricians and Gynaecologists I observed the practice at the Institute for the Care of the Mother and Child in Prague. In 1968, out of 1,002 deliveries only 54 patients laboured longer than 16 hours in the first stage, and only six laboured longer than 30 hours. The incidence of intrapartum foetal death was 1:1,000, the forceps rate was 3%, the caesarean section rate was 4%, and the mean birth weight was 3,350 g.

These results were obtained by a policy of early amniotomy, and oxytocic infusion when progressive cervical dilation ceased. It is interesting that analgesia was used sparingly and consisted mainly of nitrous oxide and pethidine. A senior obstetrician with