The following experiment was carried out to discover the effect of such variations in *p*H upon E.S.R. determinations by the Westergren method. Three bottles of 3.8% sodium citrate solution were autoclaved at 15 lb. pressure for increasing lengths of time. The *p*H levels then determined were 7.8, 8.5, and 9.5 in the different bottles. An acidified solution of *p*H 6.5 was also prepared. Four simultaneous E.S.R. measurements were then made on the blood of three patients, using a different citrate solution for each of the four measurements. At the end of one hour readings were taken. In one patient the levels were equal in all four tubes, but in the other two the readings were greater in the tubes containing alkaline citrate, the greatest difference being 2.5 mm. between 10 mm. and 12.5 mm. (a 25% addition).

It appears, therefore, that the *p*H of the anticoagulant can affect the E.S.R. reading; and that for comparable results to be obtained a standard anticoagulant of specified *p*H should be used.—I am, etc.,

Bridge of Earn Hospital, Perthshire. M. E. MORGAN THOMAS.

Transmission of Hepatitis during Blood Transfusion

SIR,—It is an established fact that hepatitis (homologous serum jaundice) can occur two to six months after transfusion of human serum or plasma. In some episodes it has been possible to incriminate certain batches. With some batches the incidence of affected persons has been as high as 60%. In other instances only isolated cases occurred, and the vast majority of recipients showed no ill effects. In the first group the transmission of an icterogenic agent is undoubted. The cases in the second group are more difficult to understand. An explanation might be that apart from the serum or plasma used some icterogenic material was administered accidentally. Such an inoculation will occur through syringes contaminated with icterogenic material and inadequately sterilized between injections (*Lancet*, 1945, 2, 116). Moreover, in some hospitals a Higginson syringe is used for creating a positive pressure in the transfusion bottle. This Higginson syringe is not always sterilized before use, but is attached to the bottle by a sterile glass tube containing the cotton-wool plug acting as a filter. If one such transfusion were carried out with icterogenic material, the Higginson syringe may, by reflux of the icterogenic material, be contaminated and later on the icterogenic agent passed on to bland bottles. The cotton-wool plug in the connecting glass tube may not afford enough protection. It should be, therefore, a routine to clean and autoclave Higginson syringes after each transfusion in order to avoid the possible transmission of hepatitis by this method.—I am, etc.,

S.W. London Blood Supply Depot, Sutton. K. MAUNSELL.

Artificial Pneumothorax Needle

SIR,—Dr. A. Allan's article (Nov. 3, p. 607) describing a needle specially designed to minimize the grave danger of air embolism in artificial pneumothorax work prompts me to mention a simple technique which I adopted for similar reasons.

Any refill needle is used that will fit on a Record syringe; I find a 1-c.cm. syringe a convenient size. So fitted, the needle is inserted through the chest wall into the pneumothorax space. The piston of the syringe is then withdrawn, and if the needle is correctly inserted air must enter the syringe and thus give absolute proof that the aperture of the needle is not in soft tissue. At the same time the needle is cleared of any remaining drop of fluid. Then by a feat of dexterity (easily achieved by five minutes' practice beforehand) the syringe is detached while the needle is left *in situ*, and the rubber tubing from the refill apparatus is connected in its place. I use a small metal connecting-piece on the end of the rubber tubing, so that the nozzle of the rubber tubing is made exactly similar to that of the Record syringe. The change-over should easily be made in less than a second, and if carried out during expiration no unfiltered air enters the chest, and the amount of air blown out is so small as not to affect the pressure readings. If a Maxwell's refill apparatus is used and the air is run in not too fast the manometer registers a swing throughout the refill, thus enhancing the certainty that all is well. I would emphasize Dr. Allan's statement that one has to experience the feeling of confidence which results to appreciate the value of certainty that the needle is correctly inserted. During the refill, should the operator suspect that the needle may have slipped, it is easy to reverse the change of nozzle and repeat the attempt to withdraw air. In addition to reassurance this commonly clears the needle of a little blood.

This technique confirms the presence of an air space before any air is run in should, by any chance, the patient not have been screened immediately prior to refill. It also avoids using a wide-bore needle, with the attendant anaesthetic. I disagree with Dr. Allan that "humanity and common sense call for the anaesthetization of the needle-track." Provided that the needle is inserted swiftly, and withdrawn swiftly—which is important—practically every patient I have come across prefers to be refilled without anaesthesia. I certainly do myself.—I am, etc.,

Tuberculosis Dispensary, Reading. W. H. TATTERSALL.

Acute Inversion of the Uterus

SIR,—On reading Dr. Doreen Daley's letter on acute inversion of the uterus (Nov. 3, p. 626) one or two questions arise naturally in one's mind. For instance, the writer implies, though not distinctly stating, some surprise "that such strenuous efforts to combat the shock were quite ineffective *until replacement was carried out*." Apart from the well-known difficulty of getting anything into the circulation at all when the blood pressure is reduced so low as is usual in cases of shock, one would have thought that the maxim that the first step in the treatment of any disease is to remove, if possible, the cause rather than to treat the symptoms would apply equally well to the treatment of acute inversion of the uterus. So long as the chief cause of shock persists it is hardly reasonable to expect the shock to respond to other treatment. One can have little doubt that, as the writer says, this woman would have died but for the correction of the inversion of the uterus.

Then there arises a further question. In a case where there has been severe haemorrhage a blood transfusion is obviously indicated. But why proceed to put 10 pints of blood into the circulatory system of a patient who was believed to have lost some 4 pints, not to mention the following up of this big transfusion by "a slow saline drip continued for a few more hours"? There must surely be a limit to the capacity of the circulatory system. It is generally stated in textbooks on physiology that the average amount of blood in the body is round about 12 to 13 pints, and recognized authorities on blood transfusion have stressed the dangers of giving excessive amounts. Besides blood transfusion the patient was given methedrine—twice—as well as ergometrine; and subsequently it was thought proper, *for prophylactic purposes only*, to give sulphadiazine and *B. welchii* serum.

Now, I ask, how is it possible to adjudge the effects of so many different remedies given within one short period of time? This patient in grave danger needed: (1) a supply of fresh blood to make up for the loss; (2) replacement of the uterus, the inversion of which was the main cause of all the trouble; whether the one or the other should take first place we leave to the experts. How far the other injections were worth anything, or even justifiable before the replacement of the uterus, is open to doubt, and I should really be glad to know on what grounds scientifically the transfusion of as much as 10 pints of blood plus a 4-hours saline drip infusion is justified.

It is true that it would be very easy to quote any number of articles or letters in the medical journals of recent years in which at least half a dozen different drugs, all requiring great caution in usage, had been administered within the space of a few hours for various emergencies (or even in the mere "premedication" preliminary to anaesthesia). The patient, of course, makes a wonderful recovery, but we are left wondering how far all the medication assisted, or whether the patient is not to be rather congratulated on having successfully survived the bombardment. But I have chosen this particular case, in which the medication is relatively quite mild, because of the special interest attaching to the blood transfusion, and because I feel sure that there is much abuse of this most useful measure.

I make no pretence to any special knowledge of obstetrics, but write only from a general medical standpoint and, as one belonging to the now vanishing Victorian-Edwardian-Georgian era, I shall be only too pleased if the adherents of the modern school of therapeutics can convince me that my doubts as to the great advances in the scientific use of new drugs (in the wide