

Blood Groups in Great Britain

SIR,—In your issue of September 30 (p. 712) Dr. Edward Billing stresses the importance of the genetical and ethnological data on the O, A, B system of blood groups, which should be obtainable from the extensive activities of the blood transfusion service.

With the co-operation of the sectors and depots of the London area we were able, at the Galton Laboratory, to accumulate data on over 58,000 persons, which we put on record at the International Genetical Congress at Edinburgh last August, and which will be published in more detail in the *Annals of Eugenics*. Much of this material has since been subdivided for sex, but in cases in which forms have been already distributed to a large number of hospitals it has not always been possible to effect this subdivision. The Scottish empanelling centres are, however, now sending in material completely classified for blood group and sex. This we regard as of the highest importance. We should, therefore, like to appeal to all empanelling centres now active to co-operate by sending in from time to time numbers classified in eight classes. By so doing they will not only swell the totals and so throw light on points which require very large numbers for their elucidation, but will open up the field, at present wholly unexplored, of the homogeneity or heterogeneity in respect to blood groups of the population of these islands.—We are, etc.,

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Blood Transfusion Technique

SIR,—The booklet describing blood transfusion methods recently circulated by the Medical Research Council contains a section on the adaptation of certain apparatus to the vacuum method of blood collection described by us in the *Lancet* (1939, 1, 388). The advice given in this section is unsatisfactory, and, if followed, will lead to so many failures that its circulation is regrettable. The chief defects are as follows:

Type of tubing to be used for blood collection.—It is necessary for smooth working that pressure tubing should be used. If the tubing distributed by the M.R.C. (No. 8, 3/16th inch internal bore) be used as they suggest it will collapse under the influence of the vacuum and the flow of blood will be impeded. A six-inch length of tubing is also too short for convenience, and about nine inches should be used.

Type of collecting needle.—The 15/10 needle has great advantages over the 24/10 size recommended by the M.R.C. In the first place it simplifies venepuncture, which is an important consideration when blood has to be collected by workers with little experience from donors who are not specially selected for the large size of their veins. The smaller needle will fill the bottle just as efficiently as the larger one, which is in fact more likely to be obstructed by collapse of the vein on to its orifice. The 15/10 needle has the further advantages of lower cost and uniformity with the needles recommended by the M.R.C. for blood administration.

Preliminary filling of the tube with citrate.—We have now performed several hundred collections using dry-sterilized apparatus as originally described, and have never encountered any difficulty due to clotting of blood in the tube. We do not therefore see any reason for this measure, and we disapprove of it because it increases the risk of contamination which our method was designed to minimize and which it has almost succeeded in eliminating. We have cultured seventy bottles of preserved blood collected at this hospital during the early days of the war, in some cases by junior officers recently introduced to the technique. After removal from the refrigerator these bottles were incubated for twenty-four hours before the cultures were made, and they have all been found to be sterile. This desirable standard of sterility will not be maintained if unnecessary manipulations are introduced.—We are, etc.,

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October 9.

Treatment of Fractures

SIR,—In an annotation of Trueta's book on war wounds and fractures (*Journal*, September 30, p. 694) the closed-plaster or Winnett-Orr treatment of infected fractures is described as a method which "contrasts sharply with all accepted surgical principles." This observation is inaccurate and should be corrected, because it encourages a prevalent and somewhat dangerous view that the Winnett-Orr technique is a no-drainage method.

The treatment is actually based on four accepted surgical principles—namely, excision of wounds, free drainage of infected tissues, immobilization of injured soft parts as well as of bone, and protection from oedema by firm external support. The only practice which is abandoned is that of frequent inspection and dressing of the wound, and this is not an accepted surgical principle. It is a practice which is often harmful, has been given up in the treatment of varicose ulcers, and is rapidly disappearing in the treatment of other wound infections. But because the wound is covered with plaster and is not dressed it does not follow that it is not drained. The observation that "no provision is made for drainage or dressing" is very misleading. Provision *must* be made for drainage, and the drainage must be wide, free, and generous. Every infected plane must be freely incised, every recess carefully packed, and the wound converted into a wide open crater. Treatment should in fact be guided by the usual and accepted principles of surgery. The only instinct which the surgeon need suppress is that of demanding a clean dressing. Discharge is harmless even if it accumulates in the dressing and plaster.

Having accepted this, the results are no longer to be described in the terms of your annotation as "extraordinary," "astounding," "revolutionary." What is more reasonable than to immobilize a fracture, drain the wound, and refrain from meddlesome interference? Why should we be astounded that the fracture unites and the wound heals? It is true that by this technique limbs can be saved however grossly comminuted the fracture, however severe and widespread the infection, and however complete the destruction of skin. It is true that amputation has almost disappeared from the repertoire of the traumatic surgeon, and that the mortality has been reduced to a negligible fraction. It is a fact, moreover, despite your reviewer's suggestion, that the method has already been tried out fully in this country in many hundreds of cases over a period of no less than ten years, and that in several fracture clinics it has long been adopted as part of routine treatment. The crushed and mangled limbs of severe motor crashes, which differ in no respect from the injuries of modern warfare, are restored to normal in a very large proportion of cases. But the technique will gain its deserved popularity by proving its soundness and reliability rather than by proclaiming it as an astonishing departure from accepted principles.

Furthermore, we must recognize that it is the second-best and not the first-best treatment of an open fracture. However efficient the treatment of an infected fracture may be, recovery can never be so rapid, so certain, or so complete as when the infection is avoided. The ideal treatment of an open fracture is to convert it into a closed fracture at the first possible moment, and in this way to gain the advantages of rapid union and freedom from bone infection, sequestration, muscle fixation, and adhesion formation, which characterize the repair of closed fractures. The wound is completely excised, devitalized tissue in which organisms can multiply is removed, haemostasis is secured, *no catgut or any other foreign body is buried*, and the skin alone is sutured. A Thomas's splint, plaster slab, or plaster cast with a large window is applied, the wound is exposed to the air to keep it dry, and the limb is elevated to prevent oedema. In many cases first intention healing is secured, and recovery is complete in less than half the time which is necessary for the treatment of an infected fracture. Moreover, if the excision fails and infection develops nothing has been lost. The skin sutures are promptly removed, the wound is packed with gauze, and treatment is continued as for an infected fracture.