and small towns surrounding the hospital, to which cases could be sent at an early stage of departure from normal growth. Through the assistance of county councils a series of units of this kind had been formed at which a specialist could be consulted and at which orthopaedic nurses worked. The Princess Margaret Rose Hospital with its clinics provided this system, and also provided for a long stay with education of the child where this was necessary. It still remained in Scotland to secure a centre for vocational training for certain types of children.

Gray's Hospital, Elgin

A new annexe to Gray's Hospital, Elgin, erected at a cost of £20,000, was opened on May 31 by Dr. John Taylor, honorary surgeon to the hospital. The extension includes a new out-patient department with departments for *x*-ray examination and electrotherapy, and the cost has been defrayed by public subscription. The building is of two storeys and connected by passages to the main hospital.

Correspondence

Treatment of Gunshot Fractures of Lower Extremity

SIR,—I was much interested in Mr. A. Tudor Hart's articles on war surgery in Spain (May 27, p. 1099, and June 3, p. 1146). He produces important evidence and gives excellent advice on the conservative treatment of war injuries. In your issue of June 3, however, under the heading of the treatment of lower limb injuries, he made some statements in regard to which I should like to register a mild protest.

The Braun-Böhler splint, I agree, is very useful for treating fractures below the knee, but I am by no means convinced that it is always superior to the Thomas splint in treating compound fractures of the femur. Even the Hodgen splint may, I think, be found useful when handling a fracture of this bone complicated by a wound high up on the dorsal aspect. I do not wish to be dogmatic on what type of splint should be employed for these injuries, and anybody who understands the mechanical problem of these fractures can achieve his end with diverse and often quite simple apparatus. I think, however, that the suspension of one or both legs in some type of skeleton splint may simplify nursing of difficult open fractures of the thigh. When it comes to classifying splints as museum pieces and the like, I would note that the Braun splint is a direct descendant of the double inclined plane, which dates well back into the nineteenth century! Though the Thomas splint also originated in that prehistoric era, its use in various forms for fractures of the femur was not generally developed till 1915 or later.

In regard to the use of skeletal traction for fractures of the femur, its utility is unquestioned as a general principle, and the Kirschner wire appears to be the best form of skeletal traction available at the moment. In my experience, however, transfixion of the condyles of the femur, which Mr. Hart advocates, though mechanically satisfactory, has one grave drawback, and that is that in a good proportion of the cases so treated the presence of the transfixion pin or wire at this level gives rise to the development of adhesions, either within the knee or between the quadriceps and the bone. It may even give rise to infection of the joint. These complications lead subsequently to varying degrees of stiffness of the knee-joint. Limitation of movement caused in this way is extremely difficult to correct by any later treatment. I am quite convinced of the truth of this statement both from my experience of six years at a pensions hospital after the war and from my experience of the treatment of fractures in civil life.

Traction exerted through the crest of the tibia on a fracture of the femur does not strain the knee-joint until union is commencing. Traction applied to the tibia in the presence of an ununited fracture of the femur exerts its pull on the quadriceps and hamstring muscles, which are inserted near the level of pin transfixion. At this stage the lower fragment of the femur is for practical purposes floating, and no strain is imposed on the mechanism of the knee-joint. When union commences to occur in the fracture the skeletal traction can be replaced by an adhesive one in most cases, the amount of pull required to maintain alignment being at this stage negligible.

Mr. Hart says that the degree of traction should amount to 10 kg. at first. I do not think this should be accepted as sound for all conditions. If there is acute or progressive infection of the thigh the inflammatory exudate increases the tension within the aponeurotic sheath. This tension is further increased by long axis traction, and if that traction amounts to as much as 20 lb. I think it may have a deleterious action on the local defence mechanism. Further, I am sure that skeletal traction has resulted in overpulling of a good many fractures and led to delayed union.

I trust these observations on Mr. Hart's views will not be taken as in any way depreciating the very excellent results he quotes and the useful advice he gives on many practical problems of war surgery.—I am, etc.,

London, W.1, June 5. C. MAX PAGE.

Anaesthesia in War Time

SIR,—I am surprised that no mention has been made of cyclopropane for emergency anaesthesia in war time. A cylinder holding 75 gallons occupies very little space and will last approximately fifty hours. The apparatus required is not elaborate, and consists of a double yoke for cyclopropane and oxygen plus two flowmeters: it is made complete with carrying handle by Messrs. A. Charles King. With the addition of a Waters's carbon dioxide filter and rebreathing bag it is both practical and portable. The high percentage of oxygen administered with cyclopropane makes it an almost ideal anaesthetic for badly shocked patients. Personally I cannot imagine any more dangerous anaesthetic for badly injured persons than intravenous drugs or spinal anaesthesia, especially as war injuries are likely to be associated with considerable haemorrhage, with the result that the patient's oxygen reserve will be greatly diminished.

I expect the wrath of Olympus will descend upon me for making these suggestions, but I feel sure that anaesthetists who use cyclopropane regularly will testify to its value for more or less moribund patients. Moreover, it can be administered by the most simple technique and under all sorts of adverse conditions.—I am, etc.,

Newcastle-upon-Tyne, June 12. PHILIP AYRE.

Vinesthene Anaesthetic Mixture

SIR,—I was interested to read the article by Dr. F. F. Cartwright in your issue of May 27 (p. 1081).

About eighteen months ago I suggested to Messrs. May and Baker that they should lay more stress in their litera-

ture about vinesthene on the value of the mixture with ethyl ether. I had been searching for a suitable anaesthetic for infants and young children, particularly for comparatively short operations, such as circumcision, and as an inducing agent. The technical objections to chloroform disturbed my peace of mind, although I confess that I often used this agent, and I was not altogether happy about ethyl chloride. The latter seemed to me to be somewhat dangerous. It could not be used for any length of time alone, and there were sometimes difficulties in an ethyl-chloride–ether sequence. Theoretically, I believe, it is a drug whose toxicity resembles that of chloroform.

Vinyl ether seemed to have been sent direct from heaven, but there were certain drawbacks. The administration of pure vinyl ether by the open method requires a certain amount of dexterity to regulate the dosage on account of its potency, and as it has to be used from the 25-c.cm. bottle it may be costly, as the bottle, once opened, rapidly becomes valueless. Some bottles were actually empty when taken from the carton. One felt that the ampoules were a much better packing.

The mixture avoided these drawbacks. It was easier to handle and could be made up from the ampoules. If a drop-bottle marked in drachms were used, 3 c.cm. of vinesthene could be placed in it from an ampoule, and ethyl ether added to make 3 drachms of the mixture. This made calculation so simple as to be almost non-existent, and provided a very useful anaesthetic agent for the purpose I have mentioned. I found that 3 drachms of the mixture was often hardly enough, while 6 drachms was often rather more than necessary, so I suggested to the makers that vinesthene should be put up in 5-c.cm. ampoules for this purpose. I notice that this has now been done.

Messrs. May and Baker were good enough to send me a sample of the mixture for experimental purposes. This seemed very useful for hospital work, but I was not sure of its keeping qualities once the bottle had been opened. One had been led to understand that vinesthene deteriorated when exposed to the air, and I could obtain no convincing assurance that the addition of ethyl ether did much to counteract this. As I have not used the mixture for long operations I have not purchased the ready-made mixture, but make my own p.r.n.

For induction I find that I am using the pure vinesthene in a Goldman's inhaler more frequently. It is rapid in action, and the subsequent change to ether is very easy. For tonsillectomy the procedure which has been found to be very satisfactory is to induce with closed vinesthene, continue with ethyl ether until the patient is stable, and maintain the anaesthesia with intrapharyngeal gas-and-oxygen with minimal ether.—I am, etc.,

J. S. HAWES, M.R.C.S., D.A.,
June 9. Hon. Anaesthetist, Seamen's Hospital, Tilbury.

Accessory Sinus Disease

SIR,—As a medical student I was taught that the three cardinal conditions present in inflammation were swelling, redness, and pain, and that in medical terminology the affix "itis" indicates inflammation.

At the forthcoming Annual Meeting of the B.M.A. at Aberdeen the Section of Oto-Rhino-Laryngology includes in its proceedings a discussion on sinusitis in children. It is a pity that the term "sinusitis" is used in this connexion, for actual sinusitis in children is a comparatively rare condition and unimportant for discussion, as its treatment is obvious.

I have been told by recent medical arrivals from the British Isles who have studied disease of the nasal accessory sinuses that such disease is much more prevalent in Australia than in the British Isles, which on superficial consideration appears to be a remarkable and unexpected state of affairs if the statement be true, and I have no reason to doubt it, for years of practice in the specialty of oto-rhino-laryngology have impressed upon me how common is accessory sinus disease; but sinusitis is by no means such a common condition. The conclusion has been forced upon me that accessory nasal sinus disease is actually a congenital condition; its causation does not lie in infection, which when it occurs later on is a secondary occurrence; the actual cause of the sinus disease is a biochemical one, and is possibly closely related to the modern artificiality in life and food.

Two features which have been strongly forced upon my notice are (1) that this sinus disease occurs particularly in children of parents who are careful, or perhaps I should say fussy, as to their children's health, food, etc.; (2) that when a child of school age is brought to me suffering from this sinus disease, upon inquiry I find that contrary to one's expectations the child is of very good mentality and occupies a high position in class at school. These cases are a constant source of worry to the rhinologist for some years, but I am glad to state that I have now been able to see children upon whom I operated (radical antrum) at the age of 6 to 8, who at the same time had the advice as to diet, etc., of a specialist in diseases of children, and who were a source of anxiety and worry for years, are now in early adult life in good health (and with good teeth) and free from symptoms of the wretched sinus disease; whereas I believe that had they not been so treated some of them to-day would have been troubled with polyposis and ill-health.

There is a wide scope for organized research into the causation of this accessory sinus disease, and the first step is to drop the misleading term "sinusitis."—I am, etc.,

Brisbane, Queensland, May 27. ERNEST CULPIN.

Para-nitrophenol for Fungous Diseases

SIR,—In the *Journal* of June 29, 1935 (p. 1339), a letter appeared from one of us (M. E. R.) on the subject of para-nitrophenol in the treatment of ringworm. This was followed in the *Journal* of July 20, 1935 (p. 136), by a letter from Dr. O. Marriott recording the successful results he had obtained with this substance in the treatment of intractable ringworm of the foot. Last summer one of us contracted "athlete's foot," and tried para-nitrophenol with considerable success. During the winter months he recommended it to several of his friends who were suffering from this disease, and in every case (four male, one female) the trouble was cured in about three weeks.

It had been found through laboratory experiment that para-nitrophenol loses most of its efficacy as a fungicide when mixed with oil. Our treatments, therefore, have all been carried out with aqueous or alcoholic solutions. In the cases referred to here the para-nitrophenol was dissolved in 98 per cent. ethyl alcohol to make a 1 per cent. solution, which was swabbed on to the affected parts each night, using a small pad of cotton-wool. After about one week considerable improvement was effected, and in about three weeks all signs had usually vanished. It was recommended that it should also be applied whenever using communal changing rooms, and when it has been so applied no recurrence of the trouble has been found.

Para-nitrophenol forms a pale yellow solution in alcohol, and causes only slight staining of the skin and garments