

improvement of many ambulant patients with hypertension, with a comparative convenience of administration. A. W. Kay and A. N. Smith (*British Medical Journal*, 1950, 2, 807), who were the first to use hexamethonium orally, determined that 500 mg. by mouth produced an effect upon gastric secretion and motility equal to that of 100 mg. intramuscularly. We have confirmed this finding on many occasions in gastric secretion. We have found this dosage ratio to obtain approximately in the maintenance treatment of hypertension, and it is reasonably in accord with the relative biological toxicities prepared by one of the manufacturers of this drug (May and Baker, Ltd.), which are for the bromide salt in mice 0.026 mg. per g. intravenously and 0.70 mg. per g. orally, approximately 3 : 1.

We are in agreement with Dr. Lockett that there is a greater tendency to constipation when hexamethonium is administered orally. However, during treatment of some 50 patients at this hospital, there were only two instances of paralytic ileus. These occurred at the beginning of our experience. A mild laxative such as liquid paraffin has since been routinely prescribed to all patients receiving hexamethonium and there has been no further instance of this complication, which was recorded by A. Campbell and E. Robertson (*British Medical Journal*, 1950, 2, 804).—We are, etc.,

Paisley.

J. GIBSON GRAHAM.
A. CAMPBELL.

Electrophrenic Respiration in Asphyxia Neonatorum

SIR.—It was with considerable interest that my colleagues and I read the report of Dr. K. W. Cross and Mr. P. W. Roberts, and the related annotation, in the May 12 issue of the *British Medical Journal* (pp. 1043 and 1070) on the subject of electrophrenic respiration in asphyxia neonatorum. We are in a position to appreciate keenly the organizational effort as well as the investigational endeavour that must have gone into this study and were highly gratified that a method in which we have been so interested seems to have found some area of usefulness as applied to the newborn infant. It seems worth while to address this to you both for the purpose of expressing the above and of mentioning several related observations pertinent to the above report.

In preparation for a study on electrophrenic respiration in neonatal asphyxia we have, with the encouragement of Dr. Clement Smith, been training several of the house-officers of the Boston Lying-in Hospital in the use of the electrophrenic respirator. We have produced effective ventilation in 28 consecutive infants between the ages of 8 and 48 hours. None were in need of respiratory assistance. The programme was undertaken in support of our view that an emergency procedure, and especially electrophrenic respiration, is best practised at some length before the user brings the method to an actual emergency situation.

We can support the observation of Cross and Roberts that newborn infants require an appreciably higher voltage than adults for effective phrenic stimulation. It is well known that myelination of motor nerves is far from complete in the newborn infant and that, in general, the electrical threshold of excitability of nerve fibres is inversely proportional to their degree of myelination. It is not surprising, therefore, that a newborn infant's motor nerve requires a higher potential for the excitation of a propagated impulse. This is, of course, of theoretical interest, but of little practical importance, since in practice one simply increases the potential until a phrenic motor response is obtained. One scarcely bothers even to observe the potential used, since it is not the electrical threshold but diaphragmatic descent in which one is interested. Needless to say, the maximum output of which the electrophrenic respirator is capable has been held well below that capable of causing injury. It was with some surprise that we noted that Cross and Roberts did not obtain inhibition of spontaneous respiration in infants as they did in adults until we considered the rate of respiration they were using. The factors involved in the

suppression of spontaneous respiration have been clearly set forth (Paul O. Chatfield and Stanley J. Sarnoff, "Role of Pulmonary Proprioceptive Reflexes in Suppression of Spontaneous Breathing During Electrophrenic Respiration," *Amer. J. Physiol.*, 1950, 163, 118). It is no more reasonable to expect that their rate of 18 per minute would inhibit a newborn infant's spontaneous breathing than it would be to expect a rate of nine per minute to do so in the adult. Suffice it to say that clear suppression of spontaneous respiration was obtained by us in each of the 28 infants in which electrophrenic respiration was tried. Rates of between 30 and 45 per minute were used. We are unaware of any significant hazards to be feared from moderate overventilation for the periods of time used by Cross and Roberts in their study.

The apparatus used by Cross and Roberts was, we presume, constructed with a view to yielding important and needed data in addition to producing artificial respiration. However, as pointed out in the annotation mentioned above, the various electrical designations may prove confusing to the average physician. The physiological advantages of this method over positive pressure breathing are manifest. Whether or not it becomes a generally useful method revolves plainly and simply around the problem of feasibility. It is for this reason that the clinical apparatus now commonly in use in this country has only non-electrical designations—e.g., "Rate," "Depth," and "Distribution" (long or short inspiration) and an off-on switch. Knowing how many amperes or volts are being applied contributes absolutely nothing to the ability of the user to produce effective ventilation in either the newborn infant or adult. When first starting to use electrophrenic respiration by external stimulation, we had the subject's head turned away from the side on which stimulation was to be applied, and indeed it was this positioning which Dr. Cross saw demonstrated by us in 1949 before the British Physiological Society, so that he was entirely justified in assuming that that was what had proved most useful in our hands. Since then, however, we have observed that if the head is held straight forward in the anatomical position this has the effect of relaxing the sternocleidomastoid muscle and permits the electrode to be placed more effectively in relation to the motor point of the phrenic nerve on the anterior surface of the scalenus anticus muscle. If one uses this positioning of the head and a somewhat smaller electrode than that used by Cross and Roberts it is possible to elicit solely a diaphragmatic response without the activation of muscles supplied by nerves of the cervical or brachial plexus.—I am, etc.,

Harvard University.

STANLEY J. SARNOFF.

The Case for the Billroth I Gastrectomy

SIR.—I should like to say a small word both in support of Mr. Brendan Hickey's (April 14, p. 818) observations and those of Mr. Lang Stevenson (June 9, p. 1329) on the subject of the Billroth I gastrectomy for both gastric and duodenal ulcer. It has always seemed to me purely on anatomical grounds to be the sounder operation, because at the end of the operation you have a gastro-duodenal tract which approximates to the physiological stomach in its continuity. I believe that there are a number of reasons, and rarely adequate ones, for the unpopularity of this operation as compared with the Polya and Hofmeister-Finsterer resections. The first is that the operation is more difficult because the greatest caution must be observed in mobilizing the first part of the duodenum, and this may be both difficult and hazardous in the presence of a penetrating ulcer. If this ulcer extends for some distance along the first part of the duodenum the posterior lip of the duodenal surface to be anastomosed is devoid of peritoneum, and this may introduce a fear of leaking from the subsequent junction. Mobilization of the second part of the duodenum of course presents no difficulties. Another reason for abandoning the Billroth operation is fear of stenosis at the junction with greater curvature of the stomach.

I submit that this fear is unwarranted if the interrupted stitches in two layers are employed. Personally I use fine linen thread, but I think the material used is of less importance than the avoidance of continuous sutures. I have done more than 200 gastric resections by this method and have never had either bleeding or leaking at the site of the junction. I must confess that I am not an enthusiast for combining vagotomy with gastric resection, on the principle that if the vagotomy is done temporary atony and dilatation of the stomach may be expected, and I feel that this might throw a strain on the suture line. A Ryle's tube for the first four days after operation might, I suppose, alleviate this, but I always allow my gastrectomies to take fluids by mouth within 12 hours of operation; and I like to think that the stomach is emptying itself in the normal way.—I am, etc.,

London, W.1.

GEOFFREY PARKER.

Potassium Bromate Poisoning

SIR,—I read with interest the article on potassium bromate poisoning by Dr. A. Parker and Dr. Johnston R. Barr (June 16, p. 1363), as I had a similar case about three weeks ago, unfortunately before the publication of their article. The patient, a boy of 4 years, weighing 30 lb. (14 kg.), had found a packet of "hair neutralizer," some of which he had sprinkled into a cup of milk and then swallowed. The amount was unknown, but, judging by the amount left in the packet, it could not have been very much. The child had been put to bed in the evening, when he had appeared normal. Later he had woken complaining of abdominal pain and vomiting. When seen, about four hours had elapsed from swallowing the neutralizer. The child was pale and fretful, and repeatedly vomited small amounts of blood-stained mucus, the staining being bright red. An immediate stomach washout was given, using sodium bicarbonate. The washout was continued until no mucus or blood was obtained. Then half a pint (284 ml.) of cream, with an egg yolk whipped up in it, was given to him, partly by mouth, partly by Ryle's tube, as he found it too rich. The child was drowsy but resented any interference sufficiently strongly to make an intravenous injection of picrotoxin impracticable, so 5 mg. of D-amphetamine sulphate was given with the cream to counteract the drowsiness. About half the cream was retained. The child remained drowsy for the next 48 hours, during which time the pulse, at first 160, fell slowly to 100, then rose to 140, and then gradually settled to 100. He then became brighter and more normal, the pulse rate, however, varied between 140 and 80 until the fourth day. Methaemoglobin was never present in detectable quantities and there was never any anuria. The child was discharged on the twelfth day.—I am, etc.,

Chesterfield.

G. I. BENSON.

POINTS FROM LETTERS

Successful Homograft

Dr. F. C. ENDEAN (London, S.W.1) writes: The leading article on homografts in your issue of May 26 (p. 1157) recalls a case I grafted successfully. Briefly, an Australian volunteer ordinary seaman was put ashore at Singapore some time during 1917 for circumcision. A week after the operation the sites of the stitches necrosed and the condition extended until the entire skin covering of the body of the penis was destroyed. A skin graft taken from the patient's thigh failed. The local condition was all against grafting. Then the idea suggested itself to me to try a homograft from a boy due to be circumcised. After the operation I dissected off the inner layer of the boy's prepuce and cut it into four pieces and stitched these in a row downward to the right corpus cavernosum. A saline drip was used to keep the site of operation as clear as possible. Before the tenth day the lower three grafts turned black and fell away, but the top graft, although shrivelled and black, was still adherent on the 14th day. The next day the last graft came off and a magnifying glass revealed a small white speck which eventually grew to cover the whole affected area. The patient made an uneventful convalescence and returned to duty. After the war he wrote from Australia stating that everything was perfect.

Obituary

E. H. HARRIES-JONES, M.D.

Mr. E. H. Harries-Jones, ophthalmic surgeon to the Northampton General Hospital for 50 years, died in Northampton on June 7, aged 77. Evan Harries Harries-Jones was born at Rhyl. He was Welsh to the bone and was proud of it, speaking the Welsh language fluently. As a youth he was apprenticed to Dr. Hughes, of Ruthin, and his academic medical training was taken at Edinburgh and Dublin. After graduating M.B., C.M. in 1897, he proceeded M.D. Edin. in 1900. His early work in surgery of the eye was done in the Birmingham Eye Hospital, where he occupied every residential post, from junior house-surgeon to resident surgical officer. In 1901 he was appointed as the first honorary ophthalmic surgeon to the Northampton General Hospital. His success was great, and he became a leading figure in the public and professional life of the town. In later years he was one of the founders of the Oxford Ophthalmological Congress and was also President of the Midland Ophthalmological Society. Secretary of the South Midlands Branch of the B.M.A. from 1901 to 1924, he was its President in 1927-8. He made several important contributions to the literature of his specialty.

W. M. R. writes: Conditions were difficult when "H.J." started in Northampton, since there were no ophthalmic beds and no special out-patient department. I remember him telling me with a twinkle in his eye that he was amused by the large number of cataracts in the left eye which he found on the waiting-list for operation when he took over, but none for the right eye. This he attributed to the fact that few general surgeons are ambidextrous. In 1924 one of his private patients, in order to help others similarly afflicted and as a token of gratitude to "H.J.," presented to the General Hospital those fine in-patient wards and out-patient buildings, complete with operating-theatre, private rooms, etc., which are known as the Singlehurst Block. This new department was opened by our present King, who was then Duke of York. It was in these buildings that Harries-Jones subsequently did all the fine work for which Northampton and its area are so duly proud and thankful. In 1926 he was joined by Mr. S. H. G. Humfrey. Together, by strenuous work, these two maintained a thoroughly efficient ophthalmic service for this extensive area until the coming of the National Health Service Act.

Harries-Jones had a national reputation amongst ophthalmic surgeons, with whom he kept in close touch at their annual and other meetings. His life, however, had other interests in spite of the pressure of professional duties. From his youth Freemasonry had an intense attraction. As the years went by he succeeded to higher and higher honours. He became Provincial Prior of the Order of Knights Templar, which was his favourite Order, and in 1945 reached the peak as Provincial Grand Master for the Province of Northants and Hunts. As a colleague Harries-Jones had the charm and loyalty which transform a hospital staff into a happy family. His staunch adherence to what was ethically sound never allowed him to be found at a disadvantage. He was loved by us all. He was, moreover, a man of reading, and historical works had