THE ASSOCIATION OF PHYSICIANS OF GREAT BRITAIN
AND IRELAND
1963
FIFTY-SEVENTH ANNUAL GENERAL MEETING

The Fifty-Seventh Annual General Meeting was held in College Hall of the United College, St. Andrews University, on Friday and Saturday, April 5 and 6. The attendance book was signed by 215 members and 31 guests.

The President, Dr. Ernest Bulmer, was in the Chair.

The Minutes of the last Annual General Meeting, having been published in the Quarterly Journal of Medicine, were taken as read, confirmed, and signed. The Officers, Executive Committee, and Honorary, Senior, and Ordinary Members listed below were elected unanimously.

Executive Committee

President: Professor I. G. W. Hill.
President-Elect: Professor L. J. Witte.
Hon. Treasurer: Dr. C. M. Fletcher.
Hon. Secretary: Dr. G. de J. Lee.

Members for England and Wales:
- Dr. C. A. Clarke.
- Professor M. L. Rosenheim.
- Dr. Sheila Callender.
- Dr. F. Avery Jones.
- Professor Clifford Wilson.
- Dr. H. G. Miller.

Members for Scotland:
- Dr. E. G. Oastler.
- Dr. C. D. Needham.
- Dr. J. Hallday Croom.

Members for Ireland:
- Dr. J. F. Pantridge.
- Dr. P. Gatenby.
- Dr. R. Mulcahy.

Election of Honorary Members
Professor C. E. Dent.
Sir Charles Dodds.
Professor L. J. Witte.

Election of Senior Members
Dr. D. E. Bedford.
Dr. E. R. Boland.
Dr. L. B. Cole.
Dr. J. A. McCluskie.

Election of Ordinary Members
David Edwards, M.D., M.R.C.P., Physician, University College Hospital, London.
Donald Emaline-Smith, M.D., M.R.C.P., Senior Lecturer in Medicine, University of St. Andrews.
Charles Stewart McKendrick, M.D., M.R.C.P., Physician, Mossley Hill Hospital, Liverpool.
Ivor Mills, M.D., M.R.C.P., Professor of Medicine, University of Cambridge.
Ross Galbraith Mitchell, M.D., M.R.C.P.E., Professor of Child Health, University of Aberdeen.
Francis Muldowney, M.D., M.R.C.P., Lecturer in Medicine, University College, Dublin.

Gavin Shaw, M.B., M.R.C.P., Physician and Cardiologist, Southern General Hospital, Glasgow.

George Ranken Tudhope, M.D., M.R.C.P., Physician, United Sheffield Hospitals.

Election of Overseas Ordinary Member

Derek Gordon Abrahams, M.D., M.R.C.P., Associate Professor of Medicine, Prince Henry Hospital, Sydney, Australia.

The Treasurer presented the accounts, and showed that the financial state of the Association was satisfactory. He next informed the Association that he had had a meeting with the Inland Revenue Authority who had pointed out that the present rules of the Association precluded it from registration as a Charity. This would be necessary if the Association was to avoid paying Income Tax. The Treasurer therefore proposed that Rule 1 of the Association should be amended to read:

'The Association shall be called the Association of Physicians of Great Britain and Ireland. Its object will be the advancement of Internal Medicine.'

The Treasurer indicated that this form of words for Rule 1 was the only one likely to be acceptable to the Inland Revenue Authority if the Association was to benefit from the Charities Act. He was aware that the amendment of Rule 1 in this way altered its whole meaning, for the Association had been founded with the joint purpose of advancing Internal Medicine and promoting friendship amongst physicians.

The Treasurer therefore proposed a new additional rule to read:

'The Meetings of the Association shall be conducted in a manner that promotes friendship amongst physicians.'

He regretted that the Inland Revenue Authorities had indicated that this rule could not be included in Rule 1 if the Association wished to be registered as a Charity. Discussion by members also showed their regret at the necessity for altering the rules. The amendment of Rule 1, however, was unanimously approved, as was the new additional rule proposed by the Treasurer. The Association allowed the Executive Committee to decide what place the new additional rule should take in the list of rules. The President warmly thanked the Treasurer for all the trouble he had taken on the Association's account over this matter.

The President next paid tribute to the retiring Secretary, Dr. R. I. S. Bayliss, who had carried on the traditions of his office so well and with such felicity. He pointed out that these traditions had been set largely by Professor Witts, the President-Elect, when he had held the post of Honorary Secretary.

Place of Future Meetings. It was announced that the Annual General Meeting in 1964 would be held in Oxford on April 10 and 11. In 1965 the meeting will be held in London.

Dr. Bulmer drew the attention of the Association to the fact that it was the first time in its history that it had met in St. Andrews University. The newly elected President, Professor Ian Hill, then took the Chair. He welcomed the Association to St. Andrews and expressed the thanks of the Association to the retiring President, Dr. Bulmer.

SCIENTIFIC BUSINESS

Friday morning, April 5

1. Mr. R. G. Cant (introduced by Professor I. G. W. Hill) gave a brilliant and delightful account of the History of the University of St. Andrews.

2. Dr. J. Crookes, Dr. S. Abdul-Khair, Dr. A. C. Turnbull, and Dr. F. E. Hyttken (introduced) described an Investigation of the Incidence and Causes of Thyroid Enlargement during Pregnancy.

In 184 pregnant women in Aberdeen, visible and palpable thyroid enlargement was found in 70 per cent. Observer variation studies showed that the criteria for identification of thyroid enlargement were satisfactory. In a further 600 cases it appeared that neither maternal age and parity nor the stage of gestation had any obvious influence on the incidence of goitre in pregnancy. They pointed out that physicians often suspected thyroid disease when a goitre was found during pregnancy, particularly if there were associated symptoms such as nervousness, heat intolerance, excessive sweating, and tachycardia, all of which were common in pregnancy. Since this diagnostic problem could be resolved only when the mechanisms which produced pregnancy goitre were clearly understood they had studied thyroid function and iodine metabolism in 15 pregnant women using the isotope of iodine, $^{131}$I (physical half-life 2.3 hours). At intervals during pregnancy and during the
uptake. By contrast they had a normal renal clearance of iodine and a normal PBI. ‘The phobe tumours, nine as basophil, one as eosinophil, and five as mixed basophil chromophobe tumours, histologically verified and associated with unmistakable Cushing’s syndrome reported in the literature were analysed. Of these, 28 were classified as chromo-

phobe growths. Twelve of the tumours were thought to be Tna.ligna.Tit,, an incidence greater than that found in the commoner non-functioning chromophobe tumours. Three tumours resulted in developed pituitary tumours after adrenalectomy. One was malign and found at post-mortem. Another enlarged the pituitary fossa and was removed surgically. Two patients studied in Belfast. There were four basophil adenomas. One was found at post mortem. Another enlarged the pituitary fossa and was removed surgically. Two patients developed pituitary tumours after adrenalectomy. One was malignant and resulted in death; the other was benign and removed at operation. A fifth patient had a large pituitary choristoma (granular cell tumour of the posterior lobe). Hypophysectomy failed to cure her Cushing’s syndrome and bilateral adrenalectomy had to be performed. The pituitary was normal at autopsy in two, while the state of the pituitary, in the remaining 19, was unknown, although in all of them the sella was radiologically normal.

3. Dr. D. A. D. Montgomery spoke about Pituitary Tumours in Cushing’s Syndrome, and described the incidence of pituitary lesions in 26 patients with Cushing’s syndrome studied in Belfast. There were four basophil adenomas. One was small and found at post-mortem. Another enlarged the pituitary fossa and was removed surgically. Two patients developed pituitary tumours after adrenalectomy. One was malignant and resulted in death; the other was benign and removed at operation. A fifth patient had a large pituitary choristoma (granular cell tumour of the posterior lobe). Hypophysectomy failed to cure her Cushing’s syndrome and bilateral adrenalectomy had to be performed. The pituitary was normal at autopsy in two, while the state of the pituitary, in the remaining 19, was unknown, although in all of them the sella was radiologically normal.

The records of 43 patients (including three from Belfast) with clinically demonstrable pituitary tumours, histologically verified and associated with unmistakable Cushing’s syndrome reported in the literature were analysed. Of these, 38 were classified as chromophobe tumours, nine as basophil, one as eosinophil, and five as mixed basophil chromophobe growths. Twelve of the tumours were thought to be malignant, an incidence greater than that found in the commoner non-functioning chromophobe tumours. Three tumours antedated the onset of the Cushing’s syndrome, 31 occurred with the endocrine disturbance,
while in nine, pituitary tumours developed after adrenalectomy. It was concluded that the latter do not differ from tumours which develop before or at the same time as the endocrine disorder.

The management of Cushing's syndrome was discussed briefly in the light of these findings. The removal of a pituitary tumour was recommended for the rare cases in which a pituitary lesion is found, otherwise adrenalectomy should continue to be performed for those with autonomous adrenal lesions and adrenal hyperplasia.

In reply to a question by Dr. R. I. S. Bayliss, Dr. Montgomery said that pituitary tumours were present probably from the onset of the disorder. These tumours were difficult to detect in the early stages but it seemed likely that they were present before skin pigmentation developed. Dr. G. M. Barrett asked if those patients with Cushing's syndrome who experienced a striking remission of their disease were especially likely to have a pituitary tumour as the basis of their endocrine disorder. Dr. Montgomery replied that spontaneous remissions had been reported in Cushing's syndrome, but not in patients with obvious pituitary tumours. In reply to Dr. J. Badenoch he said that he knew of no report that pituitary tumours had ever occurred as a response to adrenal failure in Addison's disease. However, adrenal insufficiency requiring cortisone replacement was found in 50 per cent. of the patients treated by bilateral sub-total adrenalectomy in Belfast. Professor A. G. MacGregor asked if it had been possible to measure quantitatively the melonocyte stimulating hormone (MSH) activity present in the serum of any of Dr. Montgomery's patients. In one such deeply pigmented woman who developed a greatly expanded sella turcica following bilateral adrenalectomy for Cushing's syndrome, Professor F. W. Landgebre in Cardiff had found the serum level of MSH to be quite abnormally high. In reply, Dr. Montgomery said that the levels of melanocyte stimulating hormone were estimated in two patients by Professor F. W. Landgebre. In the first, pituitary-tumour tissue contained 2 I.U./mg. In the other, there was a blood level of 0-15 I.U./litre. The pituitary-tumour tissue from this case (a posterior-lobes choristoma) contained 0-005 I.U./mg.

4. Dr. A. Price Evans (introduced by Dr. C. A. Clarke) discussed Inherited Variability in response to drugs: Isoniazid and Sulphadimidine polymorphism. He said that the reasons why patients responded differently to certain drugs had hitherto been obscure. A new branch of medical science, 'pharmacogenetics', offered an explanation for some of these phenomena. An example of this new discipline was described. The rate of inactivation of isoniazid in humans had been studied in 287 white members of 53 two-generation family units. It had been demonstrated that slow inactivation was an autosomal recessive mendelian character and that in European populations 50 per cent. are 'slow' and 50 per cent. 'rapid' inactivators. The biochemical mechanism in which the polymorphism lay was acetylation. The extent to which sulphadimidine was acetylated had been shown to be polymorphic, and controlled by the same genes as determined the speed of isoniazid metabolism. Acetyl transferase was an enzyme in liver cells which transferred acetyl from a common acetyl donor—coenzyme A—to various acetyl acceptors. The activity of this enzyme had been shown to be much greater in rapid inactivators of isoniazid than in slow inactivators. It had been demonstrated that whilst this character was not of importance in the response of tuberculosis to current orthodox treatment, slow inactivators were more prone to develop peripheral neuropathy when treated with isoniazid. He suggested that the existence of polymorphisms of this sort may, when unrecognized, interfere with the results of clinical trials and also provide an explanation for some drug idiosyncrasies.

Professor J. Crofton opened the discussion by commenting that there was no good evidence at present that special dosage schedules of isoniazid were required in the treatment of patients with tuberculosis who might be fast inactivators of the drug. The speaker agreed with this and stated that the only clinically important point was the development of clinical neuropathy in response to isoniazid. This complication occurred more frequently in countries where there was malnutrition. When it took place it did so more frequently in slow inactivators than in the rapid inactivators of the drug. It might well be prevented by the incorporation of vitamin B6 with isoniazid in the treatment regime. Dr. R. W. Luxton commented that certain people seemed to recover from the anaesthetic effects of thiopentone more quickly than other people. He wondered if this was a manifestation of an inherited polymorphism of the metabolism of this drug. Dr. Price Evans replied that he and his collaborators (Ann. Hum. Genet., Lond. 1962, 26, 1-3) had investigated the polymorphism of thiopentone in tasters and non-tasters of phenylthiocarbamide in a series of 58 people. There was no evidence of polymorphism in the rate of fall-off of plasma thiopentone following intravenous injection. Also the metabolism of the drug as
assessed in this way seemed to be the same in tasters and non-tasters of phenylthiocarbama
dr. charles fletcher inquired about the significance of "metabolically active mass" mentioned by dr. price evans in his paper. he replied that this term was simply the body weight to the power 0.7 (drabkin, d. l., 1969, Perspectives in Biology and Medicine, 2, 473). professor c. h. stuart-harris asked whether dr. evans had examined patients infected with isoniazid-resistant strains of tubercle bacilli, in order to determine whether or not there was any relation between acetylation of isoniazid in man and the development of bacillary resistance to the drug. dr. price evans replied that this had been investigated by j. p. biehl (1957, trans. conf. chemother. tuberc. 16, 108) and by h. w. harris (1961, trans. res. conf. pulm. dis. 20, 39). the evidence indicated that the development of isoniazid-resistant organisms occurred as frequently in the two phenotypes. professor m. d. milne asked whether the polymorphism had been sought in the acetylation of substrates which occurred naturally in the body. dr. evans replied that he had not yet had an opportunity to do this.

5. dr. c. c. booth spoke on the studies undertaken with dr. d. l. mullin on the treatment of intestinal malabsorption due to extensive lesions of the distal small intestine. he said that until recently, relatively little was known of the functions of different segments of the small intestine. the recognition in recent years that the small intestine, like the renal tubule, had specific functions in different parts of its length led to an improved understanding of the absorption defects which occurred in different types of malabsorption syndrome. it was now possible, knowing the sites of absorption of different substances, to predict what type of malabsorption would result from disease or resection of a particular segment of the small intestine so that appropriate treatment could be given. surgical operations on the small intestine not infrequently lead to intestinal malabsorption. the common causes of this type of malabsorption were resections, fistulae or blind loops resulting from side-to-side entero-enteral or entero-colic anastomoses. operations causing such lesions were more commonly performed on the ileum than on the proximal small intestine and these lesions therefore often involved the distal small bowel. the patterns of malabsorption in patients suffering from intestinal abnormalities of these types were characteristic and predictable and depended on the extent rather than the nature of the causative lesion. the purpose of his paper was to describe the malabsorption syndrome which resulted from extensive lesions of the distal small intestine, whatever their cause, and to outline its treatment.

the treatment of patients with this type of malabsorption was best understood if the sites at which absorption of different substances occurred were known. substances such as glucose, iron or folic acid, and ascorbic acid or vitamins of the b group, were absorbed rapidly. absorption therefore took place in the jejunum, as soon as the absorbing surface of the upper intestine was reached. fat and protein, however, were absorbed more slowly and the rate of motility of the proximal bowel propelled them more distally before absorption was complete. the extent to which fat reached the ileum depended also on the dietary load. although on low dietary intakes most of the fat was absorbed in the jejunum, as the dietary fat increased more and more escaped absorption proximally and passed on to be absorbed in the ileum, which acted as a functional reserve. finally, the physiological absorption of vitamin b12 was limited to the ileum and could not occur in the jejunum except under exceptional and unphysiological circumstances.

Dr. D. L. MULLIN spoke on the studies undertaken with dr. d. l. mullin on the treatment of intestinal malabsorption due to extensive lesions of the distal small intestine. he described the detailed clinical course of six individuals selected from 30 patients with extensive lesions of the distal small intestine, there was malabsorption of vitamin b12. there was also partial malabsorption of fat, causing steatorrhoea, and the degree of steatorrhoea was determined partly by the dietary intake and partly by the extent of the intestinal lesion. in addition there was often steatorrhoea due to interference with protein absorption. however, unless the lesion was very extensive, there was no interference with the absorption of glucose, folic acid, iron, or other water-soluble vitamins. a patient with an extensive distal intestinal lesion therefore required treatment with parenteral vitamin b12, but it was not usually necessary to give any other water-soluble vitamin. provided that steatorrhoea was controlled by a low-fat diet, it also appeared to be unnecessary to give fat-soluble vitamins, in contrast to idiopathic steatorrhoea and coeliac disease, in which the pathological lesion predominantly involved the proximal intestine. osteomalacia and vitamin k deficiency did not occur, presumably because sufficient absorption of such vitamins took place from the residual proximal small intestine. a low-fat diet was of vital importance since high-fat intakes caused marked steatorrhoea in the absence of the reserve capacity of the ileum, and if allowed to continue, this depleted the body of electrolytes such as calcium, magnesium, and potassium. a high-protein diet was also necessary, partly to compensate for faecal loss of protein and partly to increase caloric intake.

He described the detailed clinical course of six individuals selected from 30 patients with
malabsorption associated with extensive resections or blind loops of the distal small intestine in order to illustrate their responses to this simple but effective regime. The place of surgery in the management of these patients was also discussed. The patients had been observed for periods of between four and thirteen years and had remained well.

Dr. J. W. Faulley asked Dr. Booth if he could explain the improved absorption in two patients on parenteral $B_12$ alone. This was not uncommon, and also occurred in steatorrhoea with iron-deficiency anaemia when given parenteral iron. He suggested that the raised alkaline phosphatase mentioned by DB. Booth might be due to cholostasis even without $DB$. BOOTH with iron-deficiency anaemia when given parenteral B$_{12}$ alone. This was not uncommon, and also occurred in steatorrhoea also, it was wiser to treat the patient in the traditional manner with supplements of other vitamins too, particularly vitamin K.

Professor M. D. Milne asked whether high-protein diets had increased the faecal nitrogen output. Dr. Booth replied that it did not appear to increase.

Professor D. A. K. Black suggested that Dr. Booth's recommendations were a return to the practice of Hamilton Fairley, from which there had been some tendency to depart, on the grounds that a more liberal fat diet might allow the absorption of more fat. If the percentage of fat absorption remains the same, could a figure be given for the desirable fat content of the diet? Dr. Booth replied that it was only in the distal gut and in ileal disease that one needed to restrict fat intake.

Dr. A. H. James asked whether the type of dietary fat was important, as distinct from its amount. It had been said that patients with malabsorption were less tolerant of cooked than of uncooked fat. Dr. Booth replied that he had no information on this point.

Dr. K. D. Keeler noted how Dr. Booth had emphasized that most of the fat and vitamins except vitamin $B_1$ were absorbed high in the small intestine. He wondered if this could account for the fact that, in his experience, the only instances in which a high-fat diet had helped in steatorrhoea were in those cases following partial gastrectomy, and this only very occasionally. He cited an example of such a case in a woman who thrived on a 120-g fat diet per diem, and not on fat restriction.

8. Dr. W. C. Watson, who was introduced by Professor E. M. McGirr, spoke of the Incidence and Mechanism of Anthocyaninuria. In his introduction Dr. Watson said that anthocyaninuria was the red coloration of the urine which followed the eating of beetroot. Opinions about its incidence varied from the unsubstantiated belief that it would occur in anyone who ate enough beetroot to the claim that it was only found in those with food allergy. A standard test had been devised and used on normal people and on patients of certain clinical groups. The 'normal' incidence of anthocyaninuria, he reported, was 14 per cent. The incidence in patients with megaloblastic anaemics receiving vitamin $B_12$ or folic acid was 43 per cent., while in those with iron-deficiency anaemia it was 47 per cent. In iron-deficient patients who had not received oral iron it was 87 per cent., while in those who had been given iron it was only 8 per cent. The difference between these two groups was not due to a difference in haemoglobin level, but to the administration of oral iron. Iron by mouth seemed to be more effective than parenteral iron in reversing positive tests. Since the phenomenon of beeturia seemed to depend on a mechanism permitting absorption of betanin rather than an inhibition of its degradation once absorbed, the role of apoferritin as a betanin-carrier substance was tentatively considered.

A 39 per cent. incidence of positive tests in a malabsorption group was also significantly high but more difficult to interpret because of the clinical heterogeneity of the group. A subclassification of this group based on biopsy evidence of small bowel atrophy suggested that beeturia might occur in certain kinds of 'idiopathic enteropathy'.

Finally, it was considered that the normal incidence of beeturia was more likely to be related to the fluctuating iron needs of normal people than to latent food allergy.

In the discussion that followed his paper Dr. Watson replied to a question by Dr. Alice Stewart by saying that it did not appear that one developed a tolerance to beet pigment. However, in those people who ceased to excrete pigment in the urine probably changes in the absorption mechanism had occurred. Dr. A. M. Cooke asked if he had studied the mechanism producing urinary excretion of methyl mercaptan in asparagus eaters. Dr. Watson replied that he had not studied this, and pointed out that the suggested familial basis of anthocyaninuria required reconsideration since the phenomenon was not always reproducible in normal people. Dr. W. Phillips spoke about a clinical study he had undertaken on this phenomenon when in the army. Dr. Watson was interested to note
that the incidence of three cases of ‘beeturia’ amongst Dr. Phillips’s 26 normal soldiers was an incidence of 12 per cent., which came very close to his normal incidence of 14 per cent.

Replying to Dr. C. C. Booth he said that a few Fe absorption studies had been carried out in his subjects. One of the pernicious anaemia patients with ‘beeturia’ had absorbed 60 per cent. of the labelled dose of iron. Dr. J. M. Levingham asked about the association between anthocyaninuria and haemochromatosis. Dr. Watson replied that two such patients had been studied but the clinical features had been so complex that no worthwhile conclusions were possible. Dr. Sheila Callender suggested that it would be interesting to examine the urine in blood donors a few days after their venesection, to see if non-excreters of the beet pigment became excreters at this time.

The morning meeting was followed by sherry and an excellent luncheon served in St. Salvator and St. Regulus Halls, where members of the Association were the guests of the Master and Council of St. Salvator’s College. During the afternoon members were free to study the many excellent demonstrations that had been provided in the Younger Hall, and the Association was also especially privileged in being invited to visit the Upper Library in St. Mary’s College. An afternoon Scientific Session was also held.

Friday Afternoon, April 6

7. Dr. J. P. D. Mounskey described a study of The Cardiac impulse and the movements of the Heart which he had undertaken with Dr. A. A. Dellyannis, Dr. F. M. S. Gillam, and Professor R. E. Steinke (introduced).

The genesis of the apical impulse in health and left ventricular hypertrophy had been studied, using the impulse recorder described by Beilin and Mounskey (1962) and serial timed left ventricular angiocardiograms. In addition a detailed study of the myocardial architecture in normal and hypertrophied hearts had been made, using the technique of layered muscle dissection of Mall (1910).

Three types of apical impulses were met. In health there was an outward movement followed by retraction in the last third of systole. In the overacting heart the impulse showed increased amplitude. Outward movement of the impulse, sustained throughout ventricular systole, characterized left ventricular hypertrophy. In the left ventricular angiocardiogram, the movements of the heart responsible for the cardiac impulse had been visualized. Two groups of patients had been studied. In ventricular septal defect with an overacting impulse the healthy left ventricle erected on the stalk of the aortal arch in early systole; hence the initial outward apical impulse: in later systole the heart both contracted in diameter and retracted in length, so that the apex withdrew from the anterior chest wall. In left ventricular hypertrophy from chronic valve disease, the essential abnormality responsible for the sustained apical impulse in late systole was seen to be failure of retraction of the cardiac apex from the chest wall with simultaneous up-tilting of the downward enlarging heart. Layered dissection of the healthy heart showed that the middle circular layer of fibres covered only the basal three-fifths of the heart, the lower two-fifths and the apex being composed almost entirely of spiral fibres. Thus, while the basal portion of the heart was squeezed in systole by the circular muscle fibres, the spiral fibres sustained retraction of the apex. In left ventricular hypertrophy, the circular muscle layer was found to be a broader band extending down to the apex. It would thus inhibit the longitudinal shortening action of the spiral fibres and explain the diminished apical retraction seen in the angiocardio gram and the sustained apical impulse of left ventricular hypertrophy.

8. Amnésie de Mémoration: Anatomical and Physiological factors: was next discussed by Dr. W. R. White Russell, who said that the study of the brain, like that of the universe, has become a matter of prestige to the great nations. There was always great interest in the possibilities of making use of patients who suffered from mental disorders due to specific disease or injury, and in this connexion, one clinical syndrome now of special interest was that which involved a disappearance of the capacity to memorize, while remote memories remained well preserved and accessible. From the physiological point of view, the fixing of new memories involved a dynamic process which continued in the brain for a long time after the episode concerned; while from the anatomical point of view it had become clear that this process required the integrity (at least on one side) of the limbic system of the brain. As a contribution to the anatomical problem, eight cases of brain wound were briefly described, in which amnésie de mémoration was a striking feature of the clinical picture.
In the discussion that followed Dr. Ritchie Russell's paper Dr. Helen Dimsdale suggested that as the hippocampal region was relatively larger in comparison with the cerebral hemispheres in the lower primates than in man, one might expect these animals to show a greater capacity for learning. Dr. Bernard Schlesinger said that the Association had heard from Dr. Ritchie Russell about what his patients forgot. Dr. Schlesinger was also interested in what they remembered. The late Dr. Collier once demonstrated a case in Dr. Schlesinger's student days. This was a polyglot waiter who became temporarily aphasic after a stroke. When his speech returned it was in the original order in which he had learnt his languages.

9. Studies of the Retinal Blood-vessels with Fluorescein: were described by Dr. C. T. Dollery (introduced), Dr. J. V. Hodge, Dr. D. J. Scott, and Professor J. McMichael.

A retinal camera had been modified by inserting a blue filter in the light source and a green one in the film carrier. The standard electronic flash unit had been replaced by a more powerful apparatus that could be discharged every 24 seconds. Photographs were taken as dye passed through the retinal blood-vessels after an intravenous injection of fluorescein.

The arterioles filled quickly and irregularities of their lumen showed clearly as indentations on the column of fluorescence. The capillary bed filled as a background blush but individual capillaries could be seen as a meshwork on the best photographs. The fluorescein appeared in the veins as lines of dye running, at first, along their edges. These lines became thicker and later confluent. They arose because flow in the veins was laminar and the veins entering near the disk were the first to carry the fluorescence which formed a layer along the edge of the vessel. At this stage the blood in the central stream of the vein was undyed because it came from the periphery of the eye and had a longer circulation pathway.

The separate streams in the veins were mixed or disturbed by turbulence set up where arterioles nipped veins in the eyes of hypertensive patients. Microaneurysms were demonstrated as a cluster around soft exudates in the retinas of patients with severe hypertension. After several weeks of blood-pressure reduction the exudates cleared and most of the microaneurysms also disappeared. Soft exudates usually became fluorescent and the source of leakage appeared to be the neighbouring vascular abnormalities.

Microaneurysms showed clearly on fluorescence photographs of diabetic patients. Several hundred aneurysms were visible on a single photograph of a patient with diabetes mellitus and Cushing's syndrome; most of them invisible with the ophthalmoscope. Abnormal tortuous vessels were visible in the retinas of many diabetic patients and these stood out more clearly on fluorescence photographs. These vascular abnormalities often became surrounded by a fluorescent glow as dye leaked from them. Dr. Dollery said that fluorescence photography of the eye is a promising tool for investigating both the incidence and the evolution of disease of small blood-vessels in man. It reveals the fine structure of the vascular bed, the pattern of blood flow through it, and regions of abnormal leakage from vessels.

Sir Robert Platt opened the discussion of this paper and said that there were some who had doubted whether the veins were really compressed at the arteriovenous crossings in the retina or whether the appearance of narrowing was an artefact due to thickening of the vein wall at the crossing. This seemed the first demonstration that there was an actual interference with flow and it might explain why segmental venous thrombosis seemed to be relatively common in the hypertensive fundus, as Friedenwald suggested many years ago. In reply, Dr. Dollery said that disturbance of the stream lines in the veins only took place when the nipping appeared to be severe. Dr. Ritchie Russell asked about the use of the fluorescein method for studying the circulation time in the limbs. Dr. Dollery replied that fluorescein dye had been used earlier to study circulation through skin grafts and during regional perfusions, but not for detailed studies as in the retinal circulation. In reply to a question by Dr. W. C. Watson he said that he had not yet studied the effects of lipemia on the retinal circulation. Dr. K. W. Keeler asked how early in the diabetic process might the retinal changes be seen with fluorescein. Could lesions be seen in the retina with fluorescein in the latent or prediabetic stage of the disease? Dr. Dollery replied that although the fluorescein method usually revealed many more vascular lesions in diabetic patients than were suspected with the ophthalmoscope, the retina was usually normal when examined with fluorescein if it appeared completely normal clinically. Professor D. A. K. Black asked whether pressure on the eye-ball affected the retinal picture after fluorescein; and whether spasm of the retinal vessels had been seen. Dr. Dollery replied that this had not yet been studied, but that studies of changes in vessel calibre in hypertensive patients were in progress, but using colour transparencies for measurement and not fluorescence photographs.
The Annual Dinner

The Annual Dinner was held in the dining-hall of University Hall. Before dinner the Association was kindly entertained to sherry by the Dundee members. Dinner was especially memorable for those members from south of the border, for the haggis was piped to the table in traditional manner, to the general acclaim of those present. After the Loyal Toast, the President introduced Mr. Lewis Robertson, Chairman of the Eastern Regional Hospital Board, who proposed the Toast of the Association, to which the President replied. Sir Derek Dunlop proposed the toast of The Guests, and the Master of St. Salvator’s College replied.

Saturday Morning. April 6

10. Dr. J. D. Spillane and Dr. C. E. C. Wells (introduced) discussed the Neurology of Jennerian Vaccination and presented 39 cases with acute involvement either of the central or of the peripheral nervous system which they had encountered during the 1962 epidemic of smallpox in South Wales. All cases had occurred within three weeks of successful vaccination. Two patients died, one during the acute illness and another of an unrelated condition six months later. The remaining 37 cases had been followed either to the stage of full recovery or for a period of at least six months from the onset of symptoms. In drawing attention to the variety of central nervous syndromes, the authors suggested that earlier confusion and present debate were partly due to failure to distinguish between encephalomyelitis and encephalopathy. Post-vaccinial encephalomyelitis was a disorder sui generis, with definable clinical parameters, typical changes in the spinal fluid and in the electroencephalogram, and with a well-recognized histological pattern. It was clearly different from other types of encephalopathy occurring after vaccination and was not seen in infants under two years of age. Another feature of the epidemic had been cases with a focal disorder of the brain-stem which ran a course very similar to that of acute demyelination. Two of these patients had had a prior illness diagnosed as multiple sclerosis. Present doubt about the consequences of all kinds of vaccination and prophylactic inoculation suggested the need for compulsory notification of all complications, and for the publication of a summary of every such case in the national records.

In the discussion that followed, Dr. F. F. Kane commented that the patients in this series with post-vaccinial encephalitis were not infants; there was only one child and the other ten were adults. All became ill in the second week after vaccination. In his experience also this complication is nearly always encountered after infancy although one might have thought that the nervous system of the infant was more susceptible than that of the adult. In Northern Ireland legislation has just been passed making infant vaccination no longer compulsory. It is now optional and advisedly done during the second year of life.

Dr. Kane supported the proposal that all complications of vaccination should be made notifiable.

Professor D. Hurdle inquired about the hazards of vaccination in the first year compared with the risks in the second and third year of life.

Dr. T. E. Guntert wondered whether the Army, with its vast experience of vaccination of young adults, had any interesting data at their disposal.

Dr. J. M. Ledingham asked whether there was any evidence that encephalitis following revaccination became more frequent as the time interval after primary vaccination increased. Was there a safe period following vaccination during which a further vaccination could be given without risk of encephalitis?

In reply, Dr. Spillane said that no cases of post-vaccinial encephalitis had been seen in infants, but he pointed out that the three patients who had developed post-vaccinial encephalopathy were all young children. The most recent published figures (Griffith, 1962) stated that there were 60 cases of encephalitis in the period 1951–8, and that 36 of these were in infants in the first year of life. This was a very different story to his own experience and was one of the reasons why he considered the differential diagnosis between post-vaccinial encephalopathy and post-vaccinial encephalitis to be important. Statistical data on this topic without the accompanying clinical information was suspect. He and Dr. Wells had no information on which to base an opinion whether vaccination was more or less dangerous in the first year as compared with the second or third year of life. Whether the danger of encephalitis following revaccination increased with the passing of years after primary vaccination was not known either. Of their ten adult cases of encephalitis, six had been vaccinated in infancy, and five of these were middle aged. These numbers were too small to consider in this context.

Dr. Spillane did not know what the Army experience was on this topic. Certainly their figures would be interesting. Dr. Miller, after the last war, had inquired of the Ministry of
11. Dr. W. H. S. Thomson next described a Trial of Therapy in Muscular Dystrophy which he had undertaken with Mr. K. E. Guest (introduced by Dr. J. B. Gaylor). Dr. Thomson said that there was evidence that parenteral nucleotides and nucleosides might be of benefit in progressive muscular dystrophy. Serial assays for about a month in morning pre-ambulatory specimens of the serum enzymes aldolase, GOT and GPT, continued discharges into the blood stream by the diseased muscle, gave characteristic measures of the individual dystrophic process. The arithmetic means of these values indicated the total enzyme efflux of the remaining muscle mass, and their standard deviations, being their degree of scatter about the mean, measured the effect of ordinary physical activity on this abnormal efflux. Through time both measures diminished slowly as the diseased muscle disappeared and physical activity declined. Statistically significant sudden diminutions, however, of either or both measures had been found to occur after treatment. These findings suggested some amelioration of the dystrophic process, especially since they had been accompanied in each case by an increase in muscle power, measured by the M.R.C. grading for basic information and, with gravity eliminated, by mechanical testing against spring scales to give refined measures of change. After presenting illustrations of the general effects of rest and activity on these serum enzyme values in muscular dystrophy, Dr. Thomson demonstrated the findings in two brothers in the early stages of Duchenne-type dystrophy, both of whom after therapy fulfilled these stipulated criteria suggesting improvement of their condition. Similar results in several other patients were presented owing to lack of time, and because those given were sufficiently representative.

Professor M. D. Milne opened the discussion of this paper by asking Dr. Thomson whether the injected nucleotides could possibly have some inhibiting effect on serum enzyme activity which would lead to falsely low readings in in vitro determinations. Dr. Thomson thought that this was highly unlikely since these substances occurred not only in serum but in all living cells, on whose internal enzyme activity life itself depended. Further, in the youngest patient treated, although muscle power increased with diminution of several enzyme activities, their rates of diminishing as in other patients, actually increased after therapy, perhaps due to the difficulty in adequately treating a large muscle bulk, which therefore responded biochemically only in part. Dr. J. N. Walton said that Dr. Thomson's findings were of considerable interest but should be treated with considerable reserve. Variations in serum aldolase activity in patients with muscular dystrophy can be very striking in relation to periods of activity, as Dr. Thomson himself had previously shown, and it might have been wiser to use the serum creatinine kinase as a positive indicator of improvement as the values of this enzyme tend to be less labile and are not significantly influenced by physical exertion. In the past few years many forms of treatment for muscular dystrophy have been introduced and hailed with enthusiasm, only to be shown subsequently to be valueless. Recently a great deal of publicity had been given to some American work suggesting that anaesthetic steroids were of value, but the observations in the American trial were completely uncontrolled, and a recent controlled trial carried out in Newcastle upon Tyne had shown that these drugs were of no value. Despite the findings of Dr. Thomson and Mr. Guest, Dr. Walton felt very strongly that no claims for the value of any form of treatment in cases of muscular dystrophy could be made without a rigidly controlled double blind trial.

12. Dr. Celia M. Oakley who was introduced by Dr. J. F. Goodwin spoke on her work with him, Mrs. W. P. Cleland, and Mr. H. H. Bentall on the Diagnosis and Treatment of Congenital Aortic Stenosis. She said that sudden death was a real danger in aortic stenosis at any age and early recognition, assessment of severity, and surgical relief were therefore of vital importance. Thirty-nine patients with congenital aortic stenosis under the age of 20 were studied. The stenosis was valvar in 30 and discrete subvalvar in nine. Even when stenosis was severe symptoms were often absent and were never demanding. Physical development was usually normal. Two patients had Turner's syndrome. The site of obstruction was located clinically by an aortic ejection click in valvar stenosis and in subvalvar stenosis by the absence of a click and the presence of an early diastolic
murmur. A fair guide to severity was the length and intensity of the ejection murmur and the phonocardiogram was of value. In severe valvar stenosis the click was early and dwarfed the first sound, whereas in milder cases the first sound was louder, the click later, and the murmur shorter. An anacrotic pulse was exceptional in valvar stenosis and never seen in subvalvar stenosis. Some left ventricular hypertrophy was seen in the electrocardiograms of most of the severe cases, but was inconstant and often not very striking. Radiological evidence of cardiac enlargement was unusual, and a prominent ascending aorta was as common in subvalvar as in valvar stenosis.

In valvar stenosis the size of the effective orifice was clearly delineated by the undyed jet producing the stenosis might mechanically interfere with the convex dependent portion of the valve cusps so that they did not close properly in diastole. She said that true bicuspid valves were a rarity in their experience. More often there was a residual commissure which was totally fused producing a functionally bicuspid valve. The valve was really a tricuspid one, but asymmetrical with total fusion of the one commissure and varying degrees of fusion of the other two.

Open operation was performed in 21 patients with valvar stenosis and in nine patients with subvalvar stenosis. All the patients with valvar stenosis and all but two of those with subvalvar stenosis survived operation. Post-operatively the reduction in gradient and murmur testified to its effectiveness. Diagnostic methods, indications for operation, and ultimate prognosis were discussed.

In the discussion which followed, Dr. M. B. Matthews asked what the mechanism was of the diastolic murmur in subvalvar aortic stenosis, and also what treatment Dr. Oakley's surgical colleagues used when aortic valvar stenosis was found to be bicuspid. Dr. Oakley replied that there were two possibilities for the diastolic murmur. Commonly there was post-stenotic dilatation involving the valve ring in sub-aortic stenosis, and this could lead to valve incompetence. In addition it had been suggested that the diaphragm producing the stenosis might mechanically interfere with the convex dependent portion of the valve cusps so that they did not close properly in diastole. She said that true bicuspid valves were a rarity in their experience. More often there was a residual commissure which was totally fused producing a functionally bicuspid valve. The valve was really a tricuspid one, but asymmetrical with total fusion of the one commissure and varying degrees of fusion of the other two.

Dr. Lawson McDonald was interested in the behaviour of the second heart sound in exercise. He said that temporary reversal of the second sound after exercise was useful in the early diagnosis of important aortic stenosis. He also commented that he had found pressure gradient measurements unhelpful without flow measurements, and also thought that catheter studies via the aorta might block a tight aortic stenosis. Dr. Oakley said that she had not specifically studied the splitting of the second heart sound in exercise, but had found no strict correlation between abnormality of the second heart sound and the gradients across the aortic stenosis. She placed more weight on the aortographic appearances than on the measured gradient across the valve, but agreed that measurements of flow made gradient figures more meaningful. As it had been rare for the catheter to pass the valve in the severest cases, blocking of the valve and the production of spuriously high gradients had not arisen.

13. Dr. D. J. Weatherall, who was introduced by Dr. C. A. Clarke, discussed the Diagnosis of α-Thalassaemia. He described the starch gel electrophoretic analysis of umbilical-cord blood samples obtained from 900 negro infants born at Johns Hopkins Hospital, Baltimore. Nineteen infants carried a rapidly migrating haemoglobin identified chemically as haemoglobin Bart's. This haemoglobin had disappeared by the age of six months. The affected infants showed persistent hypochromic and morphological abnormalities of their red cells, despite normal serum iron levels. Family studies showed similar haematological abnormalities in one parent of each affected infant and in one or more family members. Sensitive starch gel electrophoretic studies revealed a trace of haemoglobin H in haemolysates prepared from some of the affected family members.

These results were examined in the light of modern concepts regarding the genetic control of haemoglobin synthesis. Adult globin consists of 2 α- and 2 β-chains (α2β2) while foetal haemoglobin has 2 α- and 2 γ-chains (α2γ2). During the neonatal switch from foetal to adult haemoglobin synthesis there is a rapid switch from γ- to β-chain synthesis, both these chains competing for available α-chains. It is suggested that the presence of haemoglobin Bart's in infancy results from the presence of an inherited defect in α-chain synthesis (α-thalassaemia). During the switch from γ- to β-chain synthesis this defect results in an excess of γ-chains causing the production of haemoglobin Bart's (γ4) and a smaller excess of β-chains forming haemoglobin H (β4). As the infant grows older γ-chain synthesis ceases and there are almost enough α-chains to bind the β-chains except in periods of haematological stress when small amounts of haemoglobin H might appear. Thus an inherited disorder was described, the true nature of which was determined during one
phase of development. It was also pointed out that, using a sensitive electrophoretic technique, the haemoglobin genotype can be determined at birth. The therapeutic possibilities of these findings were discussed.

14. Dr. Ronald Finn (introduced by Dr. R. B. McConnell) described some Further Studies on the Experimental Prevention of Rh Haemolytic Disease. He suggested that Rh sensitization might be prevented by the inactivation of the Rh antigen sites on the surface of any Rh positive foetal red cell present in the maternal circulation. This might be achieved by the passive administration of Rh antibody (anti-D) to the mother.

In order to test this hypothesis Rh negative male volunteers were given repeated antigenic stimuli consisting of 5 ml. of Rh positive blood tagged with $^{32}$Cr. The men were divided into two groups; a control group who were given only Rh positive blood as an antigenic stimulus, and a treated group who in addition received passively administered Rh antibody (plasma) 30 minutes after each antigenic stimulus. The general aim of the experiments was to compare the sensitization rate in the treated and the control group. Using high-titre saline antibody in a dose of 10-20 ml. the sensitization rate was increased from 9.1 per cent. in the control group to 68.7 per cent. in the treated group after a maximum of 2 antigenic stimuli ($p = 0.01$). It was suggested that this enhancement phenomenon was due to the increased rate of entry of partially coated cells into the reticulo endothelial system in the treated group. Using 50 ml. of high-titre blocking (incomplete) antibody the sensitization rate after a maximum of 4 stimuli was reduced from 62.4 per cent. in the control group to 14.3 per cent. in the treated group ($p = 0.02$). It was further shown that protection was most likely to occur when the donor Rh positive cells were cleared from the circulation within 24 hours, and it was suggested that the rate of clearance of the donor cells from the circulation was proportional to the degree of coating with antibody. Complete coating with antibody should block all the Rh positive antigen sites and thus prevent sensitization. Dr. Finn pointed out that incomplete antibody could only be given with safety to women following delivery when the foetus could not be damaged. There was, however, evidence that the sensitizing transplacental haemorrhage was most likely to be associated with the traumatic process of delivery.

Dr. A. W. Franklin commenting on Dr. Finn's paper drew attention to the dangers of exchange transfusion and said how valuable prophylaxis against sensitization of rhesus negative mothers would be if a practical method could be devised. He asked if there was any clinical evidence of a correlation between the placentoc transfusion at the time of delivery and sensitization of the mother. It had been suggested from antibody studies that very often these increased during pregnancy. Dr. Finn replied that he had no data on this particular point, but that the risk of transplacental haemorrhage was definitely associated with obstetric procedures at the time of delivery, such as manual removal of the placenta and caesarean section. In reply to Dr. W. C. Watson's question concerning the relationship between transplacental haemorrhage and subsequent Rh sensitization, Dr. Finn pointed out that there was a clear relationship between large transplacental haemorrhages (i.e. haemorrhages greater than 1 ml.) and the subsequent development of Rh antibodies in the puerperium.

15. Dr. Benjamin Burrows (Chicago, introduced), Dr. C. M. Fletcher, Dr. N. L. Jones (introduced) and Dr. A. H. Nitzen (Chicago, introduced) described a Standardized Comparative Study of 'British Bronchitis' and 'American Emphysema'. They had compared 50 male patients aged 45-65 with chronic obstructive lung disease in the Bronchitis Clinic at Hammersmith Hospital with an equal number in the Emphysema Clinic at the University of Chicago, using standardized techniques. The types of patient in the two clinics were remarkably similar. The numbers with cough, sputum production, dyspnoea, polycythaemia, and evidence of cor pulmonale were almost identical. The results of pulmonary function tests were also very similar. There was, however, a higher incidence of acute disabling chest illnesses in London and a little more radiological emphysema in Chicago. In both clinics it was possible to separate two groups of patients. At one extreme, cases with radiological emphysema and scanty sputum had no CO$_2$ retention and little evidence of cor pulmonale. At the other extreme were cases with profuse sputum and radiologic evidence of chronic inflammatory disease many of whom had alveolar underinflation, polycythaemia and cor pulmonale. At autopsy the former type usually had severe emphysema while the latter type had little or no emphysema.

Dr. Paulley said that Dr. Burrows's paper would have been much appreciated by Heckscher of Copenhagen whose views seemed to be little known here if the inability of our libraries to produce his books was evidence. Heckscher's teaching was that habitual overfilling of the chest ('volumen pulmonum auctum') due to, or associated with, abnormal 'soldier' or 'sway back' postures ran as a common causative thread through asthma,
chronic bronchitis, and emphysema. The concept of tracheo-bronchial compression, now attracting attention, lent support to Heckscher's ideas which were most useful in practice. It did, however, mean educating one's physiotherapists away from forced expiration and tension-producing techniques. He thought the key points were adjustment of posture to favour a flatter chest, and relaxed abdominal breathing.

Professor Croxon inquired whether the two groups had received the same treatment with drugs. This might have affected the amount and purulence of the sputum, as well as the time off work. Dr. Burrows replied that no standardized treatment had been undertaken between the two groups. However, the treatment was not discussed in the two groups. The measures were, however, made under standard conditions some cases at least, and one could not discount a possible local increase in irritability as a result of the probe. The measurements were, however, made under standard conditions so that valid comparisons were possible from patient to patient, and in the same patient under different circumstances. It was of some interest that the degree of local irritability of the bronchi as judged by the complication of coughing appeared much less in the two

DB. FUCHS said that Dr. Burrows had mentioned that both in Chicago and in London certain patients were regarded as predominantly or entirely suffering from bronchitis, and certain others were regarded as suffering mainly from emphysema. How many were there in each series from each of these groups? Dr. Brunsows replied that there was always the difficulty over clinical definition when such a question was asked. He felt that where he had used these terms the overlap in clinical diagnosis had been small and the diagnosis between bronchitis or emphysema had been plain.

16. Dr. A. C. Douglas (introduced), Professor J. W. Croxon, and Dr. D. C. Simpson (introduced) reported on their Studies in Bronchoapam. A method had been evolved for the measurement of the pressure exerted by the bronchial walls during expiration. This was done by means of a balloon inserted into a segmental bronchus at bronchoscopy. The bronchial intraluminal pressure, proximal to the balloon, and the intra-oesophageal pressure were measured at the same time. By studying the ratio between the balloon and oesophageal pressures it was possible to distinguish between pressure exerted on the outside of the bronchus and pressure exerted by muscle within the wall. An attempt had been made to measure the contribution of true bronchospasm to respiratory obstruction in patients with chronic bronchitis and with asthma. In some bronchitics, contraction of bronchial muscle appeared to make an important contribution to respiratory obstruction, but in others there was little evidence of bronchospasm. Study of a patient with severe asthma suggested that most of the airway obstruction was indeed due to spasm of bronchial muscle and that this was impressively affected by intravenous aminophyl ine. Anti-spasmatic drugs had a variable and much less predictable effect in bronchitic patients.

Dr. T. E. Gompert queried the distinction that Dr. Douglas made between asthma with infection and spasmodic asthma. Dr. Douglas replied that this was the old problem of semantics again. It may only be possible to classify such cases accurately in retrospect when the effect of relieving bronchospasm had been observed. Dr. Fuchs said how the forced expiratory volume had been measured. He also asked Dr. Douglas why he was so sure that his technique really measured bronchospasm. Could it not be measuring bronchial elasticity? Dr. Douglas replied that it was not possible with the apparatus at present in use to measure the changes in FEV at the time of the recording of the bronchial squeeze pressures. The FEV recordings were usually made on the day preceding the measurement of bronchial squeeze, and, as the patients were having no bronchodilator drugs at the time, and were in a relatively steady state as far as airway obstruction was concerned, the findings could reasonably be taken to represent the responses obtained to bronchodilator drugs at the time of the bronchial squeeze investigation. With regard to the question of elasticity, if the bronchus were behaving like an elastic tube it should, on the analogy of a rubber tube, become narrower as it is lengthened and wider as it shortens. In fact the bronchus does the opposite. It seems improbable, therefore, that elasticity contributes importantly to the bronchial squeeze pressure. Moreover, it seems highly unlikely that any increase in elasticity could account for squeeze pressures as high as 100 cm. water as was recorded in one of the patients.

Dr. C. Robertson asked what effect the local irritation of the probe could have on the measurements. Dr. Douglas replied that this might be a factor of some importance, in some cases at least, and one could not discount a possible local increase in irritability as a result of the probe. The measurements were, however, made under standard conditions so that valid comparisons were possible from patient to patient, and in the same patient under different circumstances. It was of some interest that the degree of local irritability of the bronchi as judged by the complication of coughing appeared much less in the two
asthmatic patients studied (one other not included in the series) than in the bronchitics. Indeed, contrary to expectation, the procedure in the asthmatic proved to be extremely simple technically, and was well tolerated by the patient.

17. DR. B. PENTECOST, DR. J. CALNAN, AND PROFESSOR R. E. STEINER (introduced) and DR. J. P. SHILLINGFORD described their experience of Venous obstruction in Idiopathic Unilateral Lymphoedema of the Leg. DR. PENTECOST described an investigation into the possible role of venous obstruction in the aetiology of lymphoedema praecox. Twenty patients (18 females and two males) with this condition had been studied. In each case the oedema had commenced during puberty or adolescence. Percutaneous venograms performed via the femoral vein showed in a proportion of cases an obstruction of the left common iliac veins where it normally enters the inferior vena cava. Numerous venous collateral vessels were demonstrated crossing the pelvis and coursing superiorly into the abdomen. In those cases where radiological obstruction was found, a reduced blood flow was demonstrated from the left common iliac vein when compared with its fellow from the right side. Where it proved possible to pass the obstruction with a cardiac catheter a pressure gradient was demonstrated. Among the 20 cases described, venous obstruction had been demonstrated in nine; eight of these cases had an obstructed left common iliac vein as described and occurred among the 12 patients in whom lymphoedema was restricted to the left leg. The remaining patient had an obstructed right common iliac vein, the result of old peritonitis. In five cases hypoplastic lymphatics had been demonstrated. Attention was drawn to the fact that where the left common iliac vein enters the inferior vena cava it is crossed by the right common iliac artery, while posteriorly it is the anterior surface of the fifth lumbar vertebra. Degenerative changes in the vein at this site have been previously ascribed to trauma from the overlying artery. Lymphoedema praecox had a high incidence among women at puberty when pelvic rotation about a horizontal axis was occurring which increased the prominence of the fifth lumbar vertebra. This would lead to some compression of the common iliac vein, and the resulting venous obstruction in the presence of hypoplastic lymphatic vessels may determine the distribution and onset of oedema. Findings at operation were illustrated by a photograph showing a well-marked groove in the left common iliac vein were the artery crossed it, beyond this point the vein was distended.

In the discussion which followed DR. LEXINGTON asked if the low venous flow in the left leg could be a normal phenomenon. DR. PENTECOST replied that he had performed flow estimations on many patients without evidence of lymphoedema and had never encountered this phenomenon. Venograms were seldom performed in this region but he believed that the important factor was probably a combination of venous obstruction and lymphatic insufficiency. DR. B. E. C. NORDIN asked if there was any clinical difference between chronic venous and lymphatic oedema. DR. PENTECOST said he could not distinguish between the two clinically. PROFESSOR T. COUNIHAN wondered whether turbulent flow in the short left iliac vein might not be the explanation of spuriously low venous flows on the left side. DR. PENTECOST produced evidence to show that this was not so. PROFESSOR MILNE wondered if clinical selection of cases was responsible for the incidence of left-sided leg oedema in these patients. In reply it was stated that the cases had been selected at that stage in the work when it became clear that patients with lymphoedema involving the lower limb more frequently showed venous obstruction. DR. LUXTON commented that femoral vein thrombosis in typhoid is said to be more common on the left side. DR. PENTECOST said that he had no experience of this of his own. DR. J. B. STANTON commented that DR. PENTECOST had indicated that this condition arose more often in young females at the time of puberty and had suggested that one element producing the compression of the left common iliac vein was the change in pelvic tilt occurring at puberty. He drew attention to another factor which causes increase in pelvic tilt at this age, namely the wearing of high-heeled shoes, and he asked whether DR. PENTECOST had any evidence that the wearing of such shoes aggravated this condition and whether the wearing of flat shoes could relieve it. DR. PENTECOST replied by saying that they had increased the degree of pelvic rotation by placing a cushion beneath the buttocks with the patient in a supine position and this manoeuvre had indeed reduced the blood flow along both common iliac veins. In reply to PROFESSOR OLIVER FITZGERALD, he said he had no experience with the techniques described in phlegmasia alba dolens. DR. O'GILVY asked why DR. PENTECOST had felt justified in studying normal subjects with his techniques. In reply DR. PENTECOST said that by 'normal' patients he meant those in whom there was no evidence of lymphoedema. The experience of such cases had largely been obtained through investigation of patients with intermittent claudication and other peripheral vascular disease. No completely normal subjects had been studied.
This concluded the business meeting of the Association. The Association was entertained to luncheon on Saturday by the Chairman and members of the Eastern Regional Hospital Board, again in St. Salvator and St. Regulus Halls. In the afternoon conducted tours of the University, Culross, and Falkland Palace had been arranged for members of the Association, who greatly appreciated these opportunities. A considerable number of members also took the opportunity to improve their golf, while one or two intrepid explorers penetrated to the snows of Aviemore for ski-ing.