

ONE HUNDRED AND FOURTH ANNUAL  
MEETING

of the

British Medical Association

HELD IN OXFORD, JULY, 1936

THE SECTIONS

SUMMARY OF PROCEEDINGS

*During the next few months there will be published in the BRITISH MEDICAL JOURNAL the opening papers communicated to the Scientific Sections of the Annual Meeting at Oxford. The reports of discussions in this and successive issues are intended to give members who were not present a general idea of the proceedings.*

SECTION OF MEDICINE

Wednesday, July 22nd

The Treatment of Chronic Rheumatism

With Dr. A. G. GIBSON, President of the Section, in the chair, the discussion on the treatment of chronic rheumatism was opened by Dr. H. LETHEBY TIDY. He regarded rheumatoid arthritis, osteo-arthritis, and fibrositis as the three principal groups included in the term "chronic rheumatism." A search should be made for a septic focus; only if such were definitely identified was vaccine treatment justifiable. Among drugs gold was the only one for which a specific effect could be claimed, but this method required care both in use and in assessment. Schemes of dieting derived their chief effect from alteration in weight, and the opener did not regard thyroid as exercising any specific beneficial effect in chronic rheumatism. The object of treatment in the acute stages was to provide absolute rest and at the same time prevent deformities and adhesions; hence the use of splinting and a single movement of each joint each day. Heat was indicated in all forms of chronic rheumatism, and this might be applied locally or by electrical and balneological methods. Dr. Tidy confessed scepticism regarding the special effects claimed for the waters of particular spas, but admitted the advantages to be obtained by the external use of such waters through their physical effects upon the skin. He held that all physical treatment and balneotherapy should be under the sufficient supervision of a medical man.

Dr. R. G. ABERCROMBIE (Sheffield) stressed the importance of the psychological element. The disposition and mental state of the patient might influence the effect of treatment not only through the repression or exaggeration of painful stimuli, but also by the direct effect of the mind upon the tissues. As examples he quoted the physiopathic hand, seen most commonly in military practice, and the "post-sciatic hysteria" which is sometimes a relic of acute sciatica. Another problem in treatment of chronic rheumatism was the chronic pain in the back so often associated with vague ill-health and vague mental depression. He felt that one of the aims of therapy was to restore confidence, and consequently institutional treatment would fail if it did not succeed in reinforcing the morale of the patient. The adventitious aids in chronic rheumatism were important, notably suitable supports for the knee and foot where necessary. The help of a good

surgical instrument maker sometimes proved to be invaluable.

Dr. C. W. BUCKLEY (Buxton) spoke on certain aspects of physical treatment. He agreed with Dr. Tidy on the subjects of rest and movement for affected limbs, but regarded the use of heat, particularly moist heat, as of particular benefit. In general, the prolonged use of moderate warmth was more advantageous than shorter periods of greater intensity. In this connexion he quoted the dictum of Openshaw that a flannel bandage was of more value than many complicated applications. Massage often inflicted new trauma on tissues already inflamed, whereas the effects of deep baths would frequently be beneficial. Regarding the question of absorption through the skin, he believed that some transfer did take place, but that probably the factor of skin stimulation was more important.

Mr. G. R. GIRDLESTONE (Oxford) felt that the attitude of the orthopaedic surgeon to chronic rheumatism should be that of a "biologically minded mechanic." Usually the role of surgery in rheumatoid arthritis was the relief of pain, while in osteo-arthritis it was the correction of deformity. From the standpoint of treatment he separated the polyarticular fusiform type of rheumatism from the periarticular form associated with round-celled infiltration. The former group required a persuasive and very slow passive movement, while the latter required manipulation in the later stage for the breaking down of adhesions. Various operative procedures, useful according to the type and stage of the disease—such as lumbar sympathectomy, arthrodesis, and arthroplasty—were described.

Dr. KERR PRINGLE (Harrogate) stressed the importance of accurate diagnosis. He considered that gout was a factor too often ignored at the present day, and took the view that a large number of cases were of metabolic origin. Physical treatment, like salicylates, while a valuable ancillary to general systemic treatment, could not cure. Dr. G. D. KERSLEY (Bath) felt that spas had in some measure earned the scepticism expressed by Dr. Tidy. However, they did afford a complete change for the patient, and brought together the various remedies available. For acute rheumatoid arthritis he urged the use of gentle manipulation, preferably in tepid water, as a means of relaxing spasm and neutralizing the effect of gravity. He demonstrated a light splint for the prevention of ulnar deviation of the hand and fingers in arthritis of the wrist.

Dr. W. S. C. COPEMAN felt that a new outlook was required rather than a new remedy, and that surgeons were apt to concentrate too much on remedial operations. The proper role of surgery should be rather the prevention of deformity by co-operation with the physician during the acute stages. Dr. L. S. POTTER (Buxton) distinguished between active or passive congestion in joints. The former was characterized by an increase of pain during activity, while in the latter condition pain was worse during rest and gradually wore off in the course of movements. Counter-irritation was indicated when active congestion was present. Dr. GERALD SLOT spoke on gold therapy. This method had now passed the experimental stage, and, provided the technique and the case were suitable, gave good results. Although blood crises and dermatitis were possible ill effects, he had not seen any reactions severe enough to cause anxiety. Dr. J. B. BURR (Bath) held that radioactivity in spa waters might well be beneficial through the action of  $\beta$  rays, which could penetrate the skin. He thought that physicians should keep a more open mind regarding the possibilities of various forms of treatment. Dr. H. BALME (Lingfield) spoke as a patient, and regretted that even among experts there was no agreement regarding a definite programme of treatment in any particular case. Much was heard of this or that treatment in "appropriate cases," but these were never exactly defined.

In reply, Dr. TIDY defended the principle of "multiple" treatment in chronic rheumatism. He was still unrepentant on the subject of spa treatment, and thought it was up to them to find arguments in their favour. He agreed that gold therapy was sometimes effective, but regarded its reputed specific effect still as an open question.

## SECTION OF SURGERY

*Wednesday, July 22nd***Demonstrations on Experimental Research**

With Professor G. E. GASK, President of the Section, in the chair, a series of demonstrations on experimental research was given at the morning session by representatives from the Royal College of Surgeons Research Laboratories, the Buckston Browne Research Farm, Downe, Kent, and the Surgical Research Department, University of Edinburgh.

**Experimental Hypertension**

Mr. R. J. KELLAR (Edinburgh), in a paper on experimental hypertension, described a method of producing experimental glomerulonephritis in rabbits with a serum prepared from ducks. An ingenious method of measuring the blood pressure in these animals by means of an isolated carotid loop was also demonstrated. After injection of the serum it was noted that there was a latent period of from seven to twelve days before the blood pressure began to rise. Albuminuria appeared after the onset of hypertension and not before. This method of producing changes in the kidneys was much superior to the previously investigated oxalate nephritis, which is only a transient phenomenon. Dr. W. M. ARNOTT (Edinburgh) described a preliminary series of experiments using this form of glomerulonephritis. Rabbits which had had the right kidney removed and the left denervated did not get hypertension after the production of the serum nephritis. The right kidney was removed because of the difficulty of its total denervation. The conclusion was that integrity of the renal nerves was essential for the development of the hypertension of renal damage.

Mr. L. F. O'SHAUGHNESSY and Dr. D. SLOME briefly reviewed the work they had done to determine the aetiology of traumatic shock. They produced evidence eliminating the fluid loss factor and the production of tissue toxins, and showed photographs, obtained by means of a cathode-ray oscillograph, of nerve impulses which their investigations had proved to be continuously discharged from the traumatized area during the period of the fall in blood pressure.

**Intestinal Strangulation**

Dr. SLOME also gave an account of experiments carried out in conjunction with Mr. G. C. KNIGHT on the toxic factor in intestinal strangulation. He produced evidence that a toxin, which has been shown to cause marked depression of blood pressure, and even death, when injected intravenously into a normal animal, arises within the wall of the strangulated segment of the intestine and passes from there into the venous blood and lymphatics. This toxin appeared to be a new product formed as a direct result of strangulation, and not a substance previously existing in the gut lumen, which was merely absorbed. Experiments were described showing the presence in high concentration of a similar depressor substance in the dialysate of the urine and, after a period of twelve hours' strangulation, in the peritoneal fluid of patients with intestinal strangulation. Early results of attempts to identify this depressor substance indicated that it differed from histamine and from acetylcholine.

Mr. IAN AIRD and Dr. W. K. HENDERSON (Edinburgh) also reported the results of experiments in intestinal strangulation, in which they had found that if an intestinal loop of medium length was subjected to complete venous strangulation, and if peritoneal absorption of the transudate from the loop was prevented by enclosing the loop within a rubber bag, the experimental animal would live indefinitely. The transudate contained at least two toxic elements: one was a complex protein, a euglobulin, in all probability a mixture of bacterial toxins; the other was diffusible, and appeared to be histamine, since the histamine content of the transudate increased progressively to a maximum concentration of 1 in 5,000 to 1 in 20,000 after twenty-four hours. This indicated the importance of removing all blood-stained peritoneal transudate at the time of operation in cases of clinical strangu-

lation. Regarding still viable strangulated loops, they had found that if a long intestinal loop was distended, returned to the abdomen, and deflated later, the consequent effect on the blood pressure was a variable one. If distension was maintained for less than six or eight hours its release was followed by a rise in blood pressure. If it was maintained for more than six or eight hours its release then was followed by a fall in blood pressure and sometimes by death, even after complete denervation of the distended loop. This suggested strongly that the blood stagnating in the distended bowel vessels became endowed with depressor properties, the effect of which was exercised when the distension and congestion was relieved. After release of long-maintained intestinal distension and congestion the portal blood appeared to contain detectable amounts of diffusible depressor material. This lent support to those who advocated more frequent resection of strangulated but still viable loops, and encouraged those who sought a practical method of gradual decompression of obstructed bowel.

**Toxicity of Fluid from Burned Areas**

Mr. A. N. ROXBURGH (Edinburgh) reported work carried out in conjunction with Mr. J. S. JEFFREY and Mr. W. C. WILSON (Edinburgh), upon the toxicity of oedema fluid from burned areas. They had found that this fluid in experimental animals gradually acquired toxic properties which were not dependent upon the action of bacteria. The toxin was a higher protein derivative associated mainly with the globulin fraction, and was presumably a result of autolysis of devitalized tissue. It was neurotoxic and vaso-depressor, and produced degeneration of liver cells.

Mr. W. A. D'A. ADAMSON (Edinburgh) demonstrated an apparatus devised for the purpose of stimulating autonomic nerves in an unanaesthetized animal. The stimulation could be carried out at intervals over periods of months. A coil of 500 turns of fine copper wire was buried within an animal. A rectifier was attached to this coil and the electrodes were led to the nerve to be stimulated. A current was induced in the coil by passing a high-frequency current through these coils arranged outside the animal's cage. This current gave a tetanizing effect after its passage through the rectifier.

Mr. J. R. J. CAMERON (Edinburgh) presented a preliminary communication on experimental observations on the use of skin as a living suture. A series of animal experiments had been performed to study the behaviour and utility of the cutaneous connective tissue when employed as a deep graft in various forms to repair artificially produced defects. The skin of pigs was used as auto-transplants to reconstruct the abdominal wall and to replace tendons. It formed firm fibrous plates and tendinous cords, and its value as a reconstructive agent in surgery had been proved. Survival of dermal and epidermal epithelium was, however, a disadvantage. Gross sepsis had not occurred.

**Nerve Grafts**

Mr. F. H. BENTLEY gave a brief description of an investigation, carried out in association with Miss MARGARET HILL, into the relative value of fresh and degenerated nerve grafts, both autogenous and homogeneous. He demonstrated that there was no difference in the time of recovery of physiological function between animals which have had fresh and those which have had degenerated grafts. He showed also that the number of new growing axons which pass into the distal segment of the nerve was determined by the amount of scar tissue formed at the junction of the nerve with the graft. The conclusion was that absolute accuracy of approximation and almost exact equality of size of the cut ends of the graft and nerve were essential to reduce the production of scar tissue to a minimum and thus to obtain the best results.

Mr. A. S. KERR, describing his investigations, in collaboration with Dr. JOHN BEATTIE, into the control of visceral activity by the hypothalamus, said that systematic exploration of the hypothalamus, carried out

by means of a modified stereotaxic instrument, originally designed by Mr. H. S. Souttar, had demonstrated that the most anterior region of the hypothalamus, the supra-optic area, would, on stimulation, lead to an increase in bladder tonus. Stimulation of the more distal parts of the hypothalamus and upper mid-brain produced the reverse of this effect. He also gave a preliminary account of attempts to obtain some indication, by means of a sensitive cathode-ray oscillograph, of the electrical activity of the hypothalamus. These had been performed to determine what share the hypothalamus had, if any, in the action potentials which had been recorded from the surface of the brain.

Commenting generally on the papers and demonstrations which had been presented, Dr. BEATTIE said that both the Edinburgh and the London schools had come to the conclusion that the cause of death in intestinal strangulation was due to pressor and depressor substances, which had now to be identified and a line of treatment elaborated. Excision of still viable segments of intestine sounded a severe measure, but there seemed to be evidence for it. The investigations upon the hypothalamus might lead in time to a proper understanding of visceral activity and behaviour.

Sir DAVID WILKIE said that the practical issues from the studies of intestinal strangulation were that doubtful loops should be resected, that there should be gradual relief of distension, and that the peritoneal cavity must be emptied of transudate.

#### Viruses in Relation to Cancer

At the afternoon session Dr. W. E. GYE, Dr. L. FOULDS, Dr. F. SELBIE, and Dr. C. RUSSELL AMIES gave a demonstration of viruses in relation to cancer. In cancer it was known that most tumours of birds could be propagated by cell-free filtrates, and were therefore caused by viruses, and in at least one tumour of a mammal, the Shope papilloma, a causative virus could be demonstrated.

### SECTION OF OBSTETRICS AND GYNAECOLOGY

*Wednesday, July 22nd*

#### Maternity Services

The opening paper was by Sir EWEN MACLEAN (Cardiff), Professor H. BECKWITH WHITEHOUSE (Birmingham) being in the chair.

Sir Ewen Maclean, reviewing the present maternity services, drew attention to the good that had resulted from more general ante-natal and post-natal care, and to the fact that more thorough training in the hospitals had enabled the practitioner efficiently to supervise the pregnancies of his patients in cases where ante-natal clinics were not available. No proposed maternity service could afford to neglect the importance of the general practitioner, since the majority of confinements still took place in the patients' own homes. Finally he appealed for good will and co-operation on the part of all the personnel and institutions that might be included in any national maternity service, but considered that representative central and local advisory boards with responsible status would be necessary for this essential element to success to be fully realized.

Professor F. J. BROWNE agreed that the services of the general practitioner were indispensable to any national maternity service. He deplored the inadequate training of the present-day medical student in obstetrics. This he attributed partly to the small number of maternity beds in the modern teaching hospital in relation to the numbers of students trained. The student should be thoroughly instructed in the conduct of normal pregnancy and labour, in the early recognition of emergencies, and in the treatment of their more common varieties. Graver abnormalities should be left to specialists, for in these times of rapid communications and transport there was little excuse for continuing treatment in the patient's own home. He suggested that any future maternity service should be staffed by specialists, and that one or two such experimental units might be established in the "black areas."

Dr. WYNDHAM PARKER (Worcester) welcomed the raised status of midwives that would result from the new Bill. There was, he said, little to bear out the often-repeated assertion that normal midwifery cases were passing from the hands of practitioners to those of the midwives. The increasing number of deaths from septic abortion were swelling the figures of maternal mortality, and he suggested that the two might well be considered in different categories. The present ante-natal services should be extended and improved, and abnormal cases should be confined in hospital rather than in the patients' homes.

Dr. R. E. MOYES (Morpeth) told of the experiences of a practitioner in an industrial area. He had found that in recent years patients showed much greater confidence in hospitals, and were quite ready to enter them for their confinements. There was no organized ante-natal service in his area, but arrangements could be made for the patient to be sent to a consultant or be seen in her own home if necessary. Every pregnant woman should be seen by a medical practitioner, and only normal deliveries should be conducted by a midwife. It was his experience that most minor emergencies could be dealt with by the practitioner, and in graver cases specialists should be within easy call to attend at the patient's own home. He suggested that the local authority should supply aseptic equipment for the confinement and special nurses to care for suspect and infected cases, and also that provision should be made for the payment of anaesthetists when called in for emergencies.

Dr. A. T. JONES (Mountain Ash) described the conditions obtaining in one of the black areas—namely, the mining valleys of South Wales. In past years the birth rate in these districts had been very high and large families very common. Of late the depression had caused a change, and marriage was later and families smaller. Asepsis, he said, was difficult to preserve when conducting a confinement in an overcrowded mining cottage, and the provision of a maternity hospital in his area in 1926 was followed by a striking fall in the morbidity rate and the deaths from puerperal sepsis. The position was still far from satisfactory, and he advocated the more general establishment of ante-natal supervision in the district.

Dr. N. C. PENROSE (Banbury), speaking as a practitioner in a rural district, disagreed with Dr. Wyndham Parker, and considered that the midwife was seriously encroaching on the medical practitioner's obstetric practice, this tending to limit the latter's experience in normal cases. He thought that in rural areas ante-natal clinics were of little use, and that supervision during the pregnancy should be by the doctor who attended the confinement. Any maternity service should provide for the payment of practitioners when required.

Professor J. C. WINDEYER (Sydney) agreed with Professor Browne that training in obstetrics left much to be desired. The present method of instruction was not only too short, but also too concentrated; in his own hospital the course was spread over three years. Critics of modern teaching methods had stated that no fall in maternal mortality statistics had occurred, but in his opinion the full results of improved teaching would not be felt for many years after the doctor had qualified. Already in New South Wales the death rate from puerperal sepsis had fallen very considerably. Professor E. FARQUHAR MURRAY (Newcastle) stressed the importance of whole-hearted co-operation with the public health authorities in any proposed maternity service. Far too many cases in the training schools were given to the student midwives, the majority of whom would never practise. He advocated fully trained midwives to work in co-operation with doctors, a special nurse for "suspect" or infected cases, and the provision of aseptic obstetric dressings by the local authority. Mr. R. H. J. M. CORBET (Dublin) said that maternity services were not fully organized in his district, but that schemes for their improvement were already in hand. Professor WHITEHOUSE said that there was too much teaching in obscure conditions in the medical curriculum, and there was a tendency, which he deplored, to make a specialist of every student. There was little warning of emergencies in obstetrics, and

he advocated the provision of small hostels in necessitous areas to which patients could be removed with no loss of time in case of need. Antiseptic obstetric dressings would be of greater value than aseptic when employed by midwives.

### Ergometrine

Mr. J. CHASSAR MOIR read a paper on clinical experiences with ergometrine, Dr. F. G. PROUDFOOT (Oxford) being in the chair.

Mr. Moir remarked that in 1932 he had called attention to the fact that the clinical action of ergot on the uterus was not mainly due to ergotamine or ergotoxine, but that some unknown alkaloid must also be present. In 1935 this alkaloid was isolated in this country and given the name of ergometrine. Reports from foreign countries that further active principles had been isolated had proved false, all these substances being identical with ergometrine. Ergometrine had a much smaller molecule than the other ergot alkaloids, and was a highly active substance, causing powerful contractions of the puerperal uterus without other unpleasant effects; also there was no risk of the development of peripheral gangrene, which might result from prolonged treatment with ergotamine. In the case of the post-partum uterus, ergometrine did not cause a continuous spasm, but a series of rapidly repeated single contractions, so that complete relaxation did not occur in the early stages after its administration. The action was prolonged, usually lasting three or four hours at least, after which there was no contraindication to a second dose if necessary.

The chief indication for the use of the drug was the prevention and treatment of post-partum haemorrhage after the third stage of labour, and where rapid action was required it could safely be given intravenously. The points in its favour in such conditions were that it was less erratic in its action than pituitrin, and the danger of shock was eliminated. Other suggested uses for ergometrine were in Caesarean section, incomplete abortion, and certain cases of menorrhagia, though in such conditions its action did not appear to be much superior to that of pituitrin. He did not believe that the administration of ergot affected the rate of involution of the post-partum uterus; attempts to hasten this probably did more harm than good, especially when uterine sepsis was present. The drug was entirely unsuitable for use during labour itself, as it had a variable action on the uterine contractions and foetal death often ensued. Mr. Moir suggested that the time had arrived for the investigation of the action of ergometrine in the treatment of migraine and exophthalmic goitre, and concluded by saying that wherever there were indications for ergot therapy the new drug should be used, as it was far more efficient and completely supplanted the older preparations.

At the end of the talk a film was shown which demonstrated in a simple but practical manner the rapid and powerful action of ergometrine on the post-partum human uterus.

## SECTION OF OPHTHALMOLOGY

*Wednesday, July 22nd*

### Tuberculosis of the Eye

With the President, Mr. P. E. H. ADAMS (Oxford) in the chair, Mr. F. A. WILLIAMSON-NOBLE opened a discussion on the tubercle bacillus as the cause of obscure disease of the eye.

Apart from some clearly defined tuberculous lesions of the eye, he said, there were a larger number of conditions which were regarded as tuberculous in origin by some observers, particularly on the Continent. The evidence in such conditions was inconclusive, being based on indirect deductions rather than on established clinical facts. The experimental work of Finnoff and others showed that not only living tubercle bacilli, but the dead organisms, could produce eye lesions when injected into the circulation. Further, the lesions were much more virulent if the animal was first sensitized to the tubercle bacillus. But, on the other hand, ocular lesions

were rare in patients suffering from frank tuberculosis, and the proofs that the many conditions ascribed to tuberculosis occurred in latent forms of that disease were open to serious objections. Neither the Mantoux test nor the Verne test could be regarded as conclusive evidence. Some authorities fell back upon the therapeutic proof of tuberculin; but here again a number of objections could be raised, for there was evidence that tuberculin acted in a non-specific manner. In the speaker's opinion focal and general reactions in the course of tuberculin treatment were probably the least objectionable proof of the tuberculous aetiology of a doubtful lesion. As regards the mode of action of the tubercle bacillus, Mr. Williamson-Noble was inclined to attach more importance to allergic reactions than to the lodgement of tubercle bacilli or the action of tuberculous toxins. The problem was bound up with the problem of the relation between allergy and immunity. The tuberculous eye lesion of the kind discussed was probably caused by the flaring-up of a healed tuberculous lesion, the disintegration—through the acquired immunity—of the liberated bacillus, and the consequent action of the breakdown products on tissues which had become sensitized; for the patient, in addition to developing immunity, had also developed hypersensitiveness.

Sir STEWART DUKE-ELDER compared the type of lesion under discussion to that regarded as due to focal sepsis: pyaemia, like frank tuberculosis, rarely gave rise to eye lesions, and in the eye lesion in focal sepsis the incriminated organisms could not be isolated from the eye. The assumption of Löwenstein that there was a tubercle bacteriaemia in clinically healthy people found its parallel in the work of Okell and Elliot, who demonstrated a transient streptococcal bacteriaemia in dental sepsis. The problem therefore resolved itself to the question why a blood condition that was clinically innocuous should set up reactions confined to the eye. Of the two possible explanations—selective localization by the organisms or supersensibility of the eye—the second was the more acceptable, and was supported by much significant experimental work. Granted that the eye became sensitized during the course of general infections, and that transient bacteriaemia was not uncommon, many of the difficulties in obscure eye disease cleared up.

Dr. S. R. GLOYNE remarked that there were practically no post-mortem records as to the prevalence of eye disease as a complication of tuberculosis. The records in animals were only a little less meagre. He classified the lesions into five groups: (1) rare lesions suggesting the eye as a portal of entry; (2) those of haematogenous origin; (3) those following direct extension from the brain or meninges; (4) destructive disorganizing disease of the orbit; (5) lesions suggestive of allergy. He held that the majority were probably haematogenous in origin and fell into two groups: (1) those isolated lesions occurring early in the disease and tending to become quiescent under treatment; and (2) those which were part of a generalized miliary tuberculosis. It was one of the difficulties of tuberculosis pathology that one lesion might progress whilst another was regressing. Tuberculo-allergy in relation to obscure disease of the eye had also given rise to considerable difficulties, and he stressed the fact that in tuberculosis in general there were at least two different types of reaction—a local reaction round a collection of tubercle bacilli, and a local reaction apart from the collection of bacilli. Dealing with the high percentage of positive findings obtained by Löwenstein in his tubercle blood cultures from eye cases, he pointed out that there had been serious criticisms of the technique, and the method had given these positive results only in the hands of Löwenstein and his co-workers in Vienna.

Mr. JAMESON EVANS (Birmingham) confined his remarks to recurrent retinal haemorrhages in adolescents, dealing mainly with Eales's disease. He pointed out that the original cases of Eales's showed a clear-cut entity: all the patients were youths (14 to 20); all were troubled with constipation of varying severity; all had high arterial tension, but no renal disease; all had epistaxis; and in all but one case the left eye was affected. In Eales's cases the retinal vessels were tortuous and dis-

tended in both eyes and the haemorrhages were roundish and diffuse; in only one case were they striate. Recurrences were common, and in no case was there any constitutional disease to account for the retinal lesion. The speaker was inclined to agree with Eales's original explanation that the haemorrhages were secondary to increased blood pressure owing to stimulation of the splanchnic nerves, with local alimentary canal symptoms and compensatory dilatation of the peripheral terminal vessels, leading to haemorrhages in the ill-supported capillaries of the nose and eyes. It was also possible that endocrine dysfunction associated with the developmental changes of puberty and adolescence, and perhaps also vitamin deficiency, were factors. Some cases were undoubtedly tuberculous or septic. The tuberculous cases were generally associated with latent tubercle, and the septic cases with apical dental infection. In such cases inflammatory reaction such as periphlebitis and choroiditis were likely to be present and to be followed by proliferating changes in the retina and vitreous, leading to detached retina. He did not therefore consider such to be examples of Eales's disease, a designation which should be confined to the narrower group indicated by the original observer.

Dr. WILLIAM STOBIE (Oxford), discussing the question of diagnosis by tuberculin, said that the various skin tests might be misleading if ophthalmic surgeons laid overmuch stress on them. A focal reaction to old tuberculin was likely to be most helpful, and the danger associated with the test was exaggerated. He agreed that eye disorders in patients with open pulmonary tuberculosis were extremely uncommon, and that patients coming to the eye hospital with questionable tuberculous eye lesions appeared generally to be in good health. He suggested that *x*-ray photographs of the chest might be a useful addition to methods of diagnosis, and showed three slides with old lung lesions in patients whose eye condition was regarded by the President as probably tuberculous.

Mr. M. H. WHITING stressed the difficulties of the oculist in cases suspected to be tuberculous. In general medical and surgical tuberculosis the symptoms might be incompatible with another diagnosis, and positive evidence could be obtained clinically or post mortem. In ophthalmology the criteria were less conclusive. Speaking of tuberculous iritis he suggested the consideration of both negative and positive features in helping to establish a causal diagnosis. The negative features were those which eliminated other likely sources of the inflammation. The positive features were: (1) a characteristic persistence without remission, ending in recovery or in blindness; (2) positive tuberculin tests; (3) the presence of a tuberculous focus elsewhere. Dr. R. L. VOLLUM (Oxford) discussed the significance of Löwenstein's work on culturing tubercle bacilli from the blood. He thought that the methods employed were valuable; the interpretations by Löwenstein and his co-workers were open to serious objection. Mr. ARNOLD SORSBY drew attention to the high incidence of positive tuberculin reactions in phlyctenular ophthalmia. His experience in White Oak Hospital, Swanley, showed that 70 per cent. of phlyctenular cases under the age of 6 gave positive reactions, and the chest findings, though inconclusive, were suggestive. Sir JAMES BARRETT (Melbourne) stressed the greatly diminished frequency of phlyctenular ophthalmia. In his view this was due to improved social conditions rather than to any therapeutic measures. Dr. LEONARD MITCHELL (Melbourne) advocated touching isolated phlyctens with a swab soaked in 2 per cent. silver nitrate. Attacks were thus cut short and much discomfort avoided. Lieut.-Col. E. W. O'G. KIRWAN (Calcutta) said that ocular tuberculosis was uncommon in Bengal and Calcutta, although pulmonary tuberculosis was not infrequent. Phlyctenular keratitis was common, but responded well to treatment. Mr. JAMES CRAIG (Belfast) referred to the effect of intercurrent disease in tuberculous eye lesions. He instanced a case of phlyctenular keratitis which resisted all treatment and then cleared up on the development of acute sinusitis with high pyrexia, and a case of uveitis improving during the course of erysipelas. Mr. G. T. CASHELL (Reading) referred to the tuberculous nature of uveo-parotid fever, as proved in his case by a section from the parotid gland.

He had found krysolgan useful. Dr. G. W. HARTY (New Zealand) said that, although ocular tuberculosis was uncommon in New Zealand amongst the Maori people, he had met a form of tuberculous episcleritis which responded well to the oral administration of guaiacol carbonate (5 grains, in capsules, thrice daily). Mr. J. GRAY CLEGG (Manchester) described and illustrated the clinical course of a case of tuberculous iridocyclitis with massive granulation. Mr. D. V. GIRI (Eastbourne) advocated the therapeutic use of tebeptrotin as superior to other tuberculin derivatives. Dr. ANTHONY PALIN (Edinburgh) said that at Edinburgh tebeptrotin had been found useful when other tuberculin preparations had failed.

## SECTION OF PATHOLOGY AND BACTERIOLOGY

Wednesday, July 22nd

### Tuberculosis in Childhood and its Prophylaxis

With Professor E. W. AINLEY WALKER in the chair, a discussion on tuberculosis in infancy and childhood, with special reference to its prevention, was opened by Dr. J. W. S. BLACKLOCK (Glasgow).

Dr. Blacklock, in an investigation of 434 cases with tuberculous lesions out of a series of 3,000 necropsies, found that the incidence was exceptionally low in the first three months of life, but thereafter gradually rose to a peak in the third year. He did not feel that the post-mortem index of infection was a true one in the higher age groups. To ascertain the incidence of infection in another way a series of Mantoux tests were carried out in nearly 2,000 children. These showed that in the first three years the percentage of positive reactions was below that of tuberculous lesions found at necropsy. The incidence of positive tuberculin reactions and positive post-mortem findings was much the same for the 3 to 6 year group, and thereafter the percentage of positive tuberculin tests rose to almost double that of the positive necropsy findings. This suggested a higher level of mortality during the first three years, followed by a resistance increasing with age.

Dr. Blacklock said that in late childhood minimal infections might result in some degree of immunity. He was not in favour of indiscriminate application of B.C.G. vaccine to the child population. On the other hand, the possibility of producing immunity with killed cultures should be considered. The tubercle bacilli gained access to the body through the respiratory tract in 65.2 per cent. of cases, and through the alimentary tract in 34.3 per cent. Of the cases of primary alimentary tuberculosis the portal of entry was the bowel in 32 per cent. and the pharynx in 2 per cent. Intestinal tuberculous ulcers with caseous mesenteric glands were found in twenty-four of the 140 abdominal cases, and in the remaining 116 no ulcers were observed but the mesenteric glands were tuberculous.

There was a higher incidence of tuberculosis in girls than in boys, and this might be due to the fact that in working-class homes they were more domesticated, and thus more frequently exposed to any familial infection. Prevention of alimentary infection depended on the milk being free from tubercle bacilli. Unfortunately infection with bovine bacillus accounted for a small proportion of the total tuberculosis mortality. The higher incidence of bovine infection in rural districts suggested a greater contamination of country than of town milk, and might be reduced by efficient pasteurization. The majority of infants were infected from adults with whom they were closely associated. The prevention of this continuous exposure was one of the most important measures in the control of infantile tuberculosis, and could only be brought about by isolating the infant from familial infection.

Dr. G. LISSANT COX (Preston) said that preventive work should be based on a sure pathological foundation. Research had shown that children exposed to risk in an infected household had a death rate greatly in excess of children living in other households. It had been found that the death rate from non-pulmonary tuberculosis of young children under 5 years exposed to risk was greatly

in excess of the rate from the same cause among children in Lancashire serving as "controls." Further, the mortality rate was greater in those exposed to infection from a tuberculous mother than in those exposed to infection from a tuberculous father. The four principles that could be adopted to safeguard the child from infection were indicated by the words isolation, immunization, environment, and education. In Lancashire the basic principle was: find, isolate, educate, and treat the adult positive case. This would safeguard the child. The percentage fall in the last twenty-one years in both the death rate and the case rate in pulmonary tuberculosis per 1,000 of the child population in the county of Lancaster had been over 80. Only a minority of tuberculosis workers in this country advocated inoculations for immunization, but further experiments should be made. The recent investigation into causal factors in tuberculosis on Tyneside, undertaken by Dr. F. C. S. Bradbury at the instance of the National Association for the Prevention of Tuberculosis, established the fact that overcrowding, under-nourishment, the occupation of tenement dwellings, and poverty definitely contributed to the prevalence of tuberculosis in the areas dealt with.

It would, Dr. Cox said in conclusion, be generally admitted that a better environment—a higher standard of living and of housing—would directly safeguard against infection, and the great diminution which already had occurred in the number of cases and deaths from tuberculosis was due in part to improvements in the well-being of the people.

Dr. R. L. VOLLUM (Oxford), discussing the experimental aspects of B.C.G., said that it had been used extensively for the immunization of cattle, without, however, any general agreement as to its effectiveness. There was no evidence of immunity being produced in guinea-pigs with B.C.G.; there was, however, evidence that it was produced in cattle. However, together with Dryer he had shown that it was possible to produce a fairly solid immunity in cattle with dead vaccine.

Dr. K. NEVILLE IRVINE (Henley) said that B.C.G. had been taken up in a fanatical rather than a scientific way in France. The most important question was: Is B.C.G. safe or is it not? A million and a half children had received B.C.G., and so far nothing untoward had happened. It was not yet known what was going to happen, as the oldest child vaccinated was 14. He thought that the B.C.G. died in about two years, and the immunity produced became gradually less. In present circumstances he advocated that where small children were exposed to infection in their homes they should be given B.C.G. vaccine. Dr. N. J. ENGLAND (Oxford) doubted whether isolation would be effective in prevention; he also doubted whether immunity by B.C.G. would achieve much in this direction.

Dr. J. V. DUHIG (Brisbane) thought that Australian experience might be of interest. The incidence of tuberculosis was falling in Australia, as it was generally in other countries, and he thought this general fall should be remembered in assessing the effect of improvement attributed to public health measures. In Queensland tuberculosis in children was almost always a meningitis, which was uniformly fatal. Glandular, bone, and joint tuberculosis was hardly ever seen. Respiratory tuberculosis must exist, since it was seen in adults at necropsy, but was not severe enough to produce serious or fatal disease. He believed that nutrition and climate played a most important part in the incidence of tuberculosis. In Queensland they had a wide, varied, and abundant dietary, and a dry, sunny climate. Professor W. CAMPBELL (Capetown) emphasized the importance of improving housing, of proper feeding, and of eliminating all factors of infection which might be attributed to poverty. He was against the use of B.C.G., and favoured a scheme of compulsory and controlled pasteurization of milk. The coloured people of the Cape showed an appalling incidence of tuberculosis, mostly of the human variety. This was probably due to the bad housing and general economic conditions. Dr. H. C. TROWELL (Uganda) said that in East Africa they could see what happened to a native

population when tuberculosis was introduced. There, too, they had the advantage of practically no tuberculosis in cattle. Tuberculosis now assumed the second most important cause of death, and it corresponded to the infantile type of tuberculosis as seen in this country. Dr. EDWARD DOVEY (Hong-Kong) raised the question of acidity and alkalinity. He thought that the biochemists should cooperate with the bacteriologists.

### Prophylaxis of Pneumonia

Professor LLOYD D. FELTON (Boston, U.S.A.) described an experiment in the production of prophylaxis of pneumonia. He thought the ideal would be to find a substance which would produce a non-specific immunity—that is to say, an immunity to all the different types of pneumococcus. He stated that a polysaccharide substance had been isolated which had given results which suggested that such an immunity might eventually be achieved.

Dr. G. L. MONTGOMERY (Dundee) read a paper on the urea clearance test of van Slyke.

## SECTION OF ANATOMY

Wednesday, July 22nd

### Scope of Teaching and Research in Anatomy

Professor W. E. LE GROS CLARK (Oxford), the President of the Section and chairman of the meeting, opened the proceedings with a discussion of the scope of teaching and research in anatomy. Anatomy, he said, was the science of form and structure, and its scope was the investigation not only of structure as revealed by direct observation, but also of all factors which might be concerned in the development and maintenance of the parts of the body. The experimental method was essential in the elucidation of anatomical problems, but though its development was partly stimulated by early anatomical workers in this country, it was for a long period discarded by English anatomists as a weapon of research. Experimental techniques in the hands of physiologists had provided a rich harvest of anatomical as well as of physiological facts, and anatomists in consequence had to thank physiologists for much of their fundamental anatomical knowledge of the nervous system. The traditional bias against using the experimental method in anatomy had been breaking down in recent years, and English anatomy might now look forward to a phase of development no less full of promise than that which had been realized with the method by American anatomists. Professor Le Gros Clark pleaded for the simplification of the teaching of anatomy by relieving the student of the necessity of memorizing details of topographical anatomy that were of little practical importance. He also pressed for recognition of the fact that the rightful place of histology was within the field of anatomy, and he pointed out the value of a "functional" outlook in morphological teaching.

### Problems of Experimental Embryology

Mr. C. H. WADDINGTON (Cambridge), who followed, dealt with problems of experimental embryology. The refutation by modern biology of Victorian ideas of embryonic recapitulation, and the consequent failure of comparative morphology to provide any explanatory concepts for embryology, had placed the latter on its feet as a definite field of inquiry. Beginning with Spemann in 1918, a dynamic view of ontogeny had been developed, and had eclipsed in importance the older descriptive embryology. Experiment had revealed the fundamental importance of organization centres and organizing substances in the reactions of the developing organism. It had also indicated the significance which had to be attached both to the competence of embryonic tissues to react to the organizing stimulus, and to the integrated manner of their responses. Mr. Waddington illustrated his paper with examples from his work on the cross-transplantation of organizing centres from chicks to rabbits. He also showed two films on the development of the newt and chick respectively.

### Anatomy of Peripheral Sensation

Professor H. H. WOOLLARD began a paper on the anatomy of peripheral sensation with a reference to the strong stimulus anatomy received from its close association with medical teaching, and he also paid tribute to the influence Sir Grafton Elliot Smith had had in the development of the newer and more vigorous outlook of English anatomy. Professor Woollard then gave an account of his recent investigations of the histological background of the punctate theory of cutaneous sensibility. Maps were made of the nerve endings in defined areas of skin, which were then shaved in successive layers, each of which was examined histologically. A fundamental finding was that one nerve fibre bore only one kind of nerve ending. The deeper layers of the epidermis were supplied with some nerve fibres, frequently ending in Merkel's corpuscles, which were associated with touch. Pain was subserved by a subepidermal meshwork of naked, varicose, fine nerve fibres. The sensation of cold was received by compact terminal expansions of small medullated fibres.

### Structural and Functional Homologies of the Reproductive System

A paper by Dr. S. ZUCKERMAN (Oxford) on structural and functional homologies of the male and female reproductive systems completed the morning's programme. Recent work on the differentiation of the gonads was reviewed, and the development of Wolffian and Müllerian ducts considered in relation to various views on the influence played by the sex hormones in the process. Dr. Zuckerman then considered the specificity of the sex hormones. The gonadotropic hormones of the pituitary gland affected males and females equally, and the male gonadal hormone, testosterone, was effective on the female reproductive organs. Oestrogenic hormones again had numerous effects on the male. So far as sex hormone antagonism was concerned, Moore's views, which had been current until recently, would have to be revised in view of these recent findings on the effects of the gonadal hormones of one sex on the reproductive organs of the other, and of the findings on peripheral antagonism of the sex hormones when in the blood stream.

## SECTION OF DISEASES OF CHILDREN

Wednesday, July 22nd

### Obesity in Children

With Dr. R. C. JEWESBURY, President of the Section, in the chair, a discussion was held on obesity in children.

Dr. H. GARDINER-HILL, in opening, emphasized the importance of early recognition and prevention of obese tendencies in childhood so as to avoid the troubles occasioned by this state in adult life. It was often difficult, he said, to convince the lay public of the importance of food intake and energy output in the production of obesity, and what was termed "allowing Nature to take its course" often meant non-interference with a clearly abnormal appetite. It was difficult to draw a sharp line between the so-called simple type of obesity and that associated with definite endocrine disorder. Great restriction in activity, as, for example, in children with heart disease, might lead to obesity in its simplest form, but even with such a history it was notable that the onset often coincided with the early stages of puberty. While obesity certainly occurred in a number of endocrine syndromes, it was not at all frequent in its severe forms in recognized states of endocrine deficiency. Gross obesity was by no means the rule in pituitary defects, for example; and Fröhlich's syndrome was too often diagnosed when there was no real defect in sex development or growth. As regards other factors, the psychological aspects of appetite and the impulse to activity or repose had to be considered, in connexion with hereditary influences and possibly endocrine alterations. Evidence suggested that obese children presented an abnormal capacity for storage, possibly associated with some part played by insulin, and that water-salt storage was a factor in some

types of obesity. Here again endocrine control was probably the essential feature, and it would eventually explain why the obese child stored all excess of energy intake over output.

Dr. P. C. MALLAM (Oxford) thought obesity was due to a general breakdown of the metabolic process rather than to a special defect on the anabolic side. It could be stated that obesity was always due to excessive intake, that the amount of such excess necessary to produce obesity depended upon the degree of breakdown of the metabolic mechanism, and there was always some water and salt retention as well as storage of fat. It was a real unkindness to leave fat children without help. In contrast to adults, fat children were usually willing and anxious to co-operate in treatment, and it was essential for success to obtain definite assurances from parents that they also would co-operate fully. The first steps in treatment should be dietetic restrictions pure and simple. Not only must fat and carbohydrates be restricted, but it was very important to limit the daily intake of fluids. Diuretic drugs might also be valuable in getting rid of excess of fluid in the body tissues. Obese children, Dr. Mallam said, often ate far too quickly, and overshot the point at which appetite had really been appeased. Thyroid and prolactin would certainly help to control weight, but it was probably unwise to administer substances known to upset the metabolic balance when this was already disturbed by unknown factors. He thought that success was obtained when a child's weight could be kept stationary, and this should be aimed at rather than great decreases in a growing organism.

Dr. R. W. B. ELLIS said that obesity for practical purposes might be classified as (1) simple, and (2) the result of gross endocrine disturbance—for example, tumour or atrophy. The simple cases could be further subdivided into those in which exogenous factors (food intake, lack of exercise) appeared of primary importance, and those in which endogenous or personal idiosyncrasies exerted most influence. Of these, he continued, indication might be given by family history and age of onset—for example, puberty. In every case, however, both endogenous and exogenous factors must be to some extent operative. In fifty consecutive cases he had investigated with Dr. K. H. Tallerman no evidence was found of gross endocrine disturbance, and none approximated to the Fröhlich type. Sexual development had begun in the thirty-one which could be followed to the age of 14. The deposition of fat was generalized, but tended to be most marked over the breasts and lower abdomen in both endogenous and exogenous cases. The blood pressure was often considerably raised. The endogenous cases showed, on the whole, an increase of carbohydrate tolerance as compared with the exogenous. Many of the cases suffered from some degree of genu valgum. A question as to the universal advisability of treatment was raised. The problem differed from that of obesity in the adult, since it was important not to starve the growing child of carbohydrate, and also undesirable to give a healthy child a sense of invalidism. It was wise to aim at allowing the child to grow up to its weight—that is, to keep the weight stationary rather than to cause a rapid fall in weight. Thyroid should be kept for those cases in which there was any evidence of hypothyroidism, and pituitary extracts for those very rare cases in which there were confirmatory signs (such as lack of growth, true hypogonadism, delayed ossification, polyuria, or polydipsia) of pituitary dysfunction.

The PRESIDENT said that in out-patient work the common type of fat child was alert, overgrown, and full of activity, not suggesting that lack of exercise played any important part in the production of the condition. He agreed that it was best to wait until puberty was past before giving radical treatment, as, for example, by thyroid gland extracts. In infants excessive fatness was becoming less common than previously, but he occasionally met examples in breast-fed babies often actually having a quantity of breast milk which was theoretically inadequate. Dr. E. P. POULTON said that there was a simple relation between metabolism and body weight, and since a sudden increase in height occurred after the

end of the first year, together with increased exercise, there was often a definite falling-off in fatness after this period. It might well be that fluid retention rather than fat retention accounted for cases of children with an increase in body weight associated with a lessened metabolism, and such "watery" children might be treated with thyroid gland. He thought it unwise to restrict fluid intake in children, as it caused great discomfort. Restriction of fat was likely to be more popular than restriction of carbohydrate. Dr. S. P. HUGGINS (High Wycombe) mentioned cases of obesity which followed septic infections. As medical officer to a girls' school he was struck by the way in which girls who had been abnormally fat at school returned in their early twenties to reunions perfectly normal and slim. In his experience school authorities were not worried about obesity. Dr. P. M. F. BISHOP, speaking about pituitary preparations, stated that there were none on the market with any proved effect upon obesity, and no pituitary preparation was of the slightest use when given by the mouth.

#### Blood Transfusion

Mr. DENIS BROWNE, opening a discussion on the indications for and the value of blood transfusion in childhood, said that this procedure had rapidly reached a stage where it appeared destined to remain for some time with no change in principle or widening of the field for application. While this was satisfactory, he continued, it was probably true to say that only about 10 per cent. of those who would be benefited by a transfusion received one. An ideal organization would cover the whole country, so that specially trained men, constantly performing transfusions, would be available everywhere. Every individual, said Mr. Browne, should know his own blood group, and the methods used for transfusion should be uniformly standardized as regards technique and the best apparatus to be used. Direct transfusion was inadvisable because of the speed of flow required. The citrate method was best, and the blood must be put in as slowly as for a correspondingly larger amount in an adult. The propelling force for the blood was a matter of some importance in view of the small calibre of a child's veins, and, since the measure was necessarily urgent, it was essential that at a pinch it could be carried through without any assistance.

Dr. ALAN KEKWICK, in presenting a paper by himself and Dr. H. L. MARRIOTT, dealt with drip transfusions. The two fundamental principles involved in this method, he said, were concerned with the dose of blood and the rate of its administration. The dose should be determined by the degree of anaemia present, and the ideal to be achieved was to raise the haemoglobin to a normal percentage. A pint of blood in an adult would raise the haemoglobin by about 10 per cent., and hence in very anaemic subjects large amounts were indicated, and could only be given by the drip method at a rate not exceeding one pint every four hours. In children it was assumed that the total blood was one-eleventh of the normal body weight, and the administration of one-tenth of the calculated blood volume raised the haemoglobin by 10 per cent. The rate of transfusion in children had to be slightly quicker than in adults, but modifications in the apparatus used were being tested to avoid this if possible. In a small baby two drops per minute was probably the ideal rate.

Mr. R. H. ROSE-INNES (Oxford) spoke of the difficulty of obtaining donors for blood transfusion. An excellent donor service existed in Oxford, but it was not sufficiently known, and only too often the volunteers were working men instead of young women with leisure to recuperate. In searching for donors he sometimes made use of patients with high blood pressure, for whom a venesection did good. In regard to details of technique, the speaker said that he had discarded the anterior fontanelle as a route, and used instead the great saphenous vein in the leg. Infants were restrained on a small padded crucifix, and the blood must be carefully warmed. He had used blood transfusions for certain acute infective conditions, but it was essential in such cases to run the blood in very slowly.

The PRESIDENT spoke of the difficulties encountered in the transfusion of very small wasted infants. Even experienced surgeons could not easily get into a vein in such subjects. He thought that blood transfusion demanded a very special training. Dr. C. F. HARRIS thought that there was a real danger of blood transfusion being regarded as a panacea for almost anything. He did not agree that the indications for its use were by any means settled. It might be useful in certain toxic states, but it did not always appear to do good. More information was needed on results obtained. Direct matching was essential when infants were given blood.

#### SECTION OF OTO-RHINO-LARYNGOLOGY

*Wednesday, July 22nd*

##### Acute Streptococcal Infection of the Ear and Nasopharynx

With Mr. LIONEL COLLEDGE, the President, in the chair, Mr. W. M. MOLLISON opened a discussion on streptococcal infections of the middle ear and nasopharynx.

After discussing the possible routes of infection of the middle ear, Mr. Mollison said that in the summer, bathing in fresh-water baths was the common cause of acute otitis media. He then dealt with prophylaxis and treatment. Although Mr. Mollison concurred in the modern view concerning expectant treatment, he still favoured paracentesis in cases of a red, bulging drum associated with pain and pyrexia. Many cases of apparently mild otitis media subsided under expectant treatment so far as the acute inflammation was concerned, but seeds of deafness were sown the results of which only became evident some years later. The speaker drew attention to the great advance in the treatment of severe infection effected by blood transfusion and injections of pentnucleotide.

Mr. E. D. D. DAVIS said that streptococcal infections of the pharynx and larynx could be divided into two chief degrees of inflammation: tonsillitis of varying degrees of severity, and gangrenous cellulitis with septicaemic symptoms. There were many cases between these two extreme types. Although the causal organism was usually the haemolytic streptococcus, the pneumococcus was sometimes responsible, and the infections ran a similar course. It appeared, he said, to be universally accepted that anti-scarlatina streptococcal serum should be given in large doses.

Dr. H. T. GILLET (Oxford) recommended that auto-genous vaccines should be given to patients with mastoid infection. He insisted that the best results were obtained with freshly prepared cultures.

Sir STCLAIR THOMSON called attention to the peculiar fact that acute streptococcal infection seemed to have its maximum effect on people who appeared to be in robust health, and that the apparent weaklings were often only mildly affected. His experience had shown that cases which had to be tracheotomized nearly always proved fatal. Although he did not agree with massive douching of the nose, he believed in cleansing the nose by spraying and sniffing. He warned practitioners against assessing the severity of the infection from laboratory reports, and urged them to rely particularly on the appearance of the patient. He also warned them against the use of powerful hypnotics in cases of upper respiratory tract infections. Dr. JAMES ADAMS (Glasgow) thought infection by the pneumococcus was often more severe than infection by the streptococcus. Mr. M. VLASTO endorsed the views expressed by the openers that bathing was a frequent cause of infection of the throat and ear; whether this was due to a diminution of the bactericidal effect of the mucus or to direct infection he could not say. Dr. F. E. CAMPS (Chelmsford) demonstrated charts showing infection with the streptococcus in a children's hospital ward, and how reinfection was brought about by different types of streptococcus. These were cases of infectious disease, and should be isolated whether sore throats were present or not. The variations in the clinical types might be due to different infections.



RICHARD FRANCIS (Sydney) called attention to the dangerous, silent type of infection by the *Streptococcus mucosus*. He recommended that emergency tracheotomy should be carried out in bed. The fact that the patient could be propped up with pillows behind him rendered the operation less distressing to the patient and easier for the surgeon. Dr. LÜSCHER (Berne) said that the Swiss were not in favour of tonsillectomy in the acute stage, but that apart from the difficulty of the operation no bad results had been noted. Protosil had been extensively used in Switzerland, but the results had not been conclusive. He thought that the use of the drug in the earlier stages might show better results. Mr. E. WATSON-WILLIAMS (Bristol) thought that to increase the spacing between the beds in a ward was a useful measure in limiting the spread of infection in these cases.

#### Inflammatory Tumours of the True Vocal Cords

Dr. GABRIEL TUCKER (Philadelphia) then read a paper on inflammatory tumours of the true vocal cords, illustrating his remarks with lantern slides. He stated that chronic inflammatory tumours of the true vocal cord tended to increase in size because of the functional activity of the cords. A vicious circle was set up, but this could be dealt with and the normal contour of the cord restored by direct laryngoscopic removal of the tumour, followed by voice training to restore the musculature to normal. Microscopical examination of tissue removed by direct laryngoscopy provided a histological basis for diagnosis. He showed films to demonstrate his methods. Dr. V. L. PARMAR (Bombay) showed films illustrating the removal of tonsils by diathermy and by dissection.

### SECTION OF RADIOLOGY

Wednesday, July 22nd

#### Pathological Changes in Bones and Joints Induced by Injury

The President, Dr. R. H. SANKEY, occupied the chair, and the proceedings opened with a paper by Dr. J. F. BRAILSFORD (Birmingham) on pathological changes in bones and joints induced by injury.

After stressing the importance of taking radiographs in two planes when dealing with fractures, Dr. Brailsford drew attention to the value of serial radiographs at monthly intervals after the injury as giving valuable information concerning the progress of union. Sometimes, although much callus was formed, the gap between the bones was not bridged, and a false joint might result. In successful bone grafting, the graft assumed the normal appearance of the bone concerned. In unsuccessful cases the graft might be absorbed, or might retain its calcium, such a graft being ultimately discharged through a sinus, or having to be removed. In compound fractures serial radiographs enabled the observer to distinguish between sequestra and living fragments. Kümmell's disease—a non-tuberculous rarefying osteitis—was probably caused by spinal trauma unrecognized at the time of injury. Damage to the cancellous tissue could not be demonstrated radiographically at the time of injury, but collapse of the vertebral bodies occurred later. Similar changes took place after injury to the carpal scaphoid and the acetabular wall.

Wires and plates used in the treatment of fractures resulted in chronic inflammation, causing increased plasticity and bending of the bone even years after operation. They should therefore be removed as soon as their purpose was served. Some cases of rarefying osteitis which had hitherto been regarded as tuberculous were probably traumatic in origin. Ossification in haematomata near the site of fracture was apt to be misleading, and sarcoma of the bone had occasionally been diagnosed. Trauma might cause injury to cancellous tissue, giving rise to a cyst-like appearance, the commonest site being the carpal scaphoid. Diminution in the joint space might result from injury, and might be an early stage of the changes commonly recognized in osteo-arthritis. Dislocation and subluxation might be followed by secondary changes in

the bone, and the trauma inseparable from manipulation was also responsible for such changes. After immobilization of a limb osteoporosis might develop, affecting particularly the cancellous extremities of long bones and of the bones of the foot and hand. The condition usually cleared up on subsequent normal use of the limb, but might become progressive, giving rise to what was sometimes called "acute bone atrophy." The radiographic appearances were often difficult to interpret, and diagnoses of tuberculous disease and of sarcoma had sometimes been made.

There was experimental evidence in animals that bone abscess followed trauma to bone if pathogenic organisms were circulating in the blood, and this was confirmed by the occurrence of septic abscess, tuberculosis, or gumma of the bone after trauma in patients who had septic, tuberculous, or syphilitic lesions elsewhere. The connexion between trauma and malignant disease of the bone was ill-defined, but there was little doubt that injury played some part in the aetiology, and this was supported by Ségond, Coley, and Ewing.

Dr. GILBERT SCOTT (London) doubted whether trauma alone produced such changes as Dr. Brailsford had suggested; there must be some other factor. It was important to discover whether the injury concerned had been the actual cause of subsequent bone changes, whether it had aggravated pre-existing disease, or whether it had led to the discovery of a lesion which was already present. Dr. Brailsford had quoted no fewer than thirty conditions as being caused by trauma, but he felt that the mere fact that trauma had occurred before the disease was recognized was not sufficient evidence that it was the cause. Protrusio acetabuli—which in Dr. Brailsford's opinion was traumatic in origin—was often inherent.

Mr. S. A. S. MALKIN (Nottingham) did not agree that injury resulted in subsequent tuberculous disease. Bony changes in the femoral neck after the reduction of congenital dislocation of the hip were not due to manipulation but to natural malformation. Dr. J. DUNCAN WHITE, speaking of congenital dislocation, said that he had seen osteo-arthritis in hips which had been reduced, but never in those which had been left alone. He did not agree with Dr. Gilbert Scott that protrusio acetabuli was a congenital condition, and quoted cases in support of this. Dr. G. B. BATTEN cited the case of an athlete whose fractured tibia had been wired twenty-four years ago and who had had no trouble since. He believed, however, that plates should always be removed.

Dr. BRAILSFORD, in reply, denied that he had adduced trauma as the cause of these bone diseases. He thought, however, that trauma appeared to play some part in causation. There were many cases of well-defined bone lesions in which previous injury was too recent and too prominent to be ignored as a cause. He did not agree that protrusio acetabuli was congenital, and maintained that arthritic changes followed manipulative reduction of congenital dislocation of the hip.

#### Bronchiectasis in Children

Dr. C. G. TEALL (Birmingham), in a paper on the radiological aspect of bronchiectasis in children, said that bronchiectasis was often the result of bronchopneumonia following measles or whooping-cough, or after sinus infection, and was more common than was usually recognized. The radiographic appearances were due to cavity formation and coexistent fibrosis. He used a degree of penetration proportionately greater than in adults; without this exact work was impossible. There were two distinct methods of examination: direct examination, and examination after lipiodol injection. The appearances on direct examination were largely due to fibrosis of the lung, so that early cases might show no abnormality. As early diagnosis was all-important in this condition, he had come to the conclusion that direct examination in the early stages was of no value. The study of the radiographs of 250 cases of suspected bronchiectasis examined by the direct method confirmed this.

Since the introduction of lipiodol diagnosis had become more reliable, and could be made earlier. The technique varied, but in older children the simplest method was

injection through the crico-thyroid membrane. In infants the best method was injection by means of a catheter passed, under general anaesthesia, through the larynx. In early cases cylindrical or fusiform dilatation of the bronchi was seen, and fluid levels might be demonstrated. Later, sacculation developed, and sometimes an intermediate stage—varicose bronchiectasis—could be defined. Lipiodol showed the nature of a certain type of basal shadow, hitherto thought to be due to mediastinal effusion. Such shadows occurred at the base of the lung, and were evidence of bronchiectasis in a collapsed lower lobe. Congenital bronchiectasis, which had hitherto been regarded as a rare condition, was fairly common. The disease was probably due to a developmental error, and radiographs showed a honeycomb appearance without associated fibrosis. Treatment by bronchoscopic suction was beginning to give good results, but it was important that all cases suspected of bronchiectasis should be investigated by lipiodol in order to make the diagnosis as early as possible.

Dr. C. HILLIARD said that the use of lipiodol had changed our conception of bronchiectasis. He showed several radiographs illustrating the results of lobectomy in this condition. Dr. J. DUNCAN WHITE said that although lipiodol could remain in the tissues for long periods without ill effect, he thought it wise to examine radiographically the stomachs of children who had had lipiodol injected into the trachea. If there was much lipiodol present he washed the stomach out to obviate iodism. Dr. BRAILSFORD emphasized the importance of careful investigation of both sides of the chest, especially in those cases in which surgery was contemplated.

Dr. TEALL, in reply, said that he was interested to see Dr. Hilliard's films illustrating the results of lobectomy. He had only seen one case in which the operation was thought possible. He did not wash out the stomachs of children after lipiodol injection, and had never yet had a case of iodism. The youngest age at which he had encountered bronchiectasis was 15 months. Dr. RUSSELL REYNOLDS showed many cineradiographic films illustrating bronchiectasis and pneumothorax.

## SECTION OF PUBLIC MEDICINE

Wednesday, July 22nd

### The Haemolytic Streptococcus

With Dr. W. M. WILLOUGHBY, the President, in the chair, Dr. DUNSTAN BREWER (Swindon) opened the discussion on the haemolytic streptococcus, with special reference to scarlet fever.

Dr. Brewer said that diseases caused by the streptococcus fell into two groups: (1) the three notifiable diseases—scarlet fever, erysipelas, and puerperal fever; (2) a widespread miscellaneous group. With the human nasopharynx as the streptococcal reservoir it was necessary to combat the spread of infection by the use of masks in surgery and midwifery, by the relative isolation of sources of infection, and by adequate spacing of the sick. With regard to the interaction of scarlet fever and the puerperium, while implantation at the normal site, the nose or throat, resulted in both scarlet fever and the puerperium following their normal course, implantation in the genital canal produced serious effects. In the latter case the potential resistance, inherent in the nose and throat, was lacking, and any trauma during delivery facilitated a direct entry of organisms into the blood stream. By contrast, surgical scarlet fever due to implantation of streptococci on wounds or burns was usually trivial. Scarlet fever was the most frequent, but the least serious, of streptococcal infections, its mortality rate having decreased sensationally in recent years. There was evidence that a definite attack of scarlet fever gave at any rate some protection against subsequent streptococcal invasion. With regard to the connexion between scarlet fever and so-called acute rheumatism, future research would probably demonstrate that the same strains of haemolytic streptococci were responsible for both conditions. The use of serum conferred immunity against the toxæmia of scarlet fever, but there was no

evidence of protection against streptococcal invasion and septicaemia. The difficulty lay in the local character of streptococcal immunization.

Dr. B. A. I. PETERS (Bristol) predicted an increase in the severity of scarlet fever. In Bristol the incidence had risen, mastoid complications with extensive bony damage were frequent, and nephritis had occurred in 3 per cent. of cases, with three deaths. This more severe type, which often recurred within three months, did not show rheumatic and endocardial complications. Since 1934 nine of the staff had contracted scarlet fever, despite immunization, and everything pointed to a more severe strain of infection. Drug treatment, though somewhat empirical at present, held hopes for the future, and treatment with the complex substances S.U.P. 36 and S.U.P. 468 was producing good results. It was highly important that municipal authorities should allocate adequate funds for purposes of research.

Dr. H. J. PARISH (Beckenham) regarded the Dick test as a most sensitive indicator of immunity to scarlet fever; but this did not apply to puerperal infection. As he showed by statistical tables on the screen, inoculation reduced severity, complications, and death rate. In other streptococcal infections, however, it was of little benefit and might do harm. Immunization caused a marked diminution in the percentage of cases. The production of anti-bacterial sera from animals presented difficulties on account of the variety of strains. Dr. J. D. ROLLESTON stressed the importance of otitis as a complication of scarlet fever, and stated that in the London area scarlet fever was generally of a mild type at present. Dr. D. S. SUTHERLAND (Manchester) said he had found that an increase in the incidence of scarlet fever was accompanied by a corresponding increase in erysipelas and puerperal sepsis. Possibly in the future scarlet fever would be treated in general hospitals, resulting in an advantageous collaboration between the clinical and scientific staffs.

Dr. BREWER, replying, stated that the severer type of infection noted in Bristol was spreading east, and had reached Swindon and Oxford. The streptococcus was liable to enormous variation in virulence, with a tendency to revert to a non-pathogenic type. He reiterated his hopeful outlook for the future and the necessity for research.

### Shellfish and the Public Health

Dr. R. W. DODGSON, Director of Shellfish Services, Ministry of Agriculture and Fisheries, read a paper on shellfish and the public health, which was printed last week at page 169. Dr. Dodgson's paper was followed by an excellent film, showing the methods of mussel collection and purification at Conway. Dr. H. P. NEWSHOLME (Birmingham) regarded the question from the point of view of an inland authority obliged to safeguard the health of consumers in its area. Naked-eye inspection was useless for shellfish. In bacteriological examination standards of *B. coli* infection had to be taken from the number per c.cm. in an oyster, owing to variations in size. In the case of any epidemic there was a long time lag before delivery of suspected shellfish could be stopped. Mutual unofficial collaboration between inland and coastal authorities was often satisfactory. In 1933 two cases of typhoid, with one death, were traced to mussels, and it was found that the so-called purification bed was exposed to three main sewers. Birmingham had since obtained parliamentary powers to prohibit the sale of shellfish from certain districts, if a danger to public health. Coastal authorities might well combine into groups for the purposes of properly controlled purification.

Dr. C. BANKS (Nottingham) expressed his dissatisfaction with the mussel trade, having encountered cases of typhoid caused by mussels in three different towns. All mussels ought to be treated by the Conway scheme, and traders would be wise to collaborate with sanitarians. Legislation was required to make it illegal to sell mussels not thoroughly purified, and he suggested that the meeting should pass a resolution to this effect. Professor J. W. BIGGER (Dublin) regarded the presence of acid and gas as the red light of danger, and their appearance within twenty-four hours should be taken as an indication of faecal pollution. It was advisable to err on the side of

caution, and it was an urgent necessity that shellfish should not be sold unless carefully controlled and bacteriologically examined. Dr. C. F. WHITE (Port of London Sanitary Authority) described the cheapness, simplicity, and compactness of the oyster purification plant at Brightlingsea. He proposed the following resolution:

The time has now arrived when the Ministry of Health should be requested to make regulations prohibiting the sale for human consumption in this country of molluscan shellfish, whether home-produced or imported, which are not certified to have been cleansed by a recognized method at a station approved for the purpose by the Minister of Health.

Dr. BANKS seconded this resolution, which was carried *nem. con.* Dr. J. D. ROLLESTON spoke of the high incidence of typhoid from oysters in France, where drinking wine was thought to have some prophylactic effect.

Dr. DODGSON, in reply, confirmed Dr. Rolleston's remarks, stating that the deaths from typhoid in Marseilles numbered 700 per annum. With regard to legislation the Ministry of Health had already considerable powers, but there were many difficulties to overcome before achieving the goal of universal purification.

## SECTION OF NUTRITION

Wednesday, July 22nd

### Nutrition in Health and Disease

With the President, Dr. ARTHUR F. HURST (Ascot), in the chair, Sir ROBERT McCARRISON (Oxford) opened a discussion on nutrition in health and disease.

Sir Robert McCarrison said it was becoming apparent that the science of nutrition was the foundation of a more rational medicine. Food was the instrument of nourishment; nutrition was the act of using it; but only within recent years had the important relations of certain food essentials received due attention. So far as was at present known the foodstuffs which, when properly combined in the diet, ensured perfect nutrition were: a good cereal preparation, milk and the products of milk, eggs, green-leaf vegetables, root vegetables, legumes, fruit, meat, and water. The condition of the gastro-intestinal tract was dependent on the adequate provision in the diet of water, proteins, mineral elements, and vitamins. Vitamins of the A, B, and C classes had all a profound relation to the structural and functional efficiency of the alimentary tract, particularly in respect of such conditions as gastric dilatation, gastritis, peptic ulcer, enteritis, and colitis. Food deficiencies also deranged both the normal production of hormones and the functional perfection of sympathetic nervous control, and the effect of such deficiencies upon pregnant and nursing women indicated the necessity for proper feeding in these circumstances. The connexion between nutrition and intelligence and backwardness in school children afforded examples of the importance of nutrition in psychological medicine. Malnourished, weakly, and ill-nourished children were peculiarly susceptible to inflammatory states of the nose, ear, and throat, and there was a definite relation between faulty nutrition and respiratory diseases in general. Sir Robert McCarrison added that malnutrition was not necessarily dependent upon poverty, and he believed that it could exist in the midst of plenty. Education of both the public and the medical profession was necessary. The student should be taught less about "disease" and more about "health" and nutrition, which was the basis of health.

### The Vitamins

Professor R. A. PETERS (Oxford) said that investigation had shown that vitamin B complex probably comprised at least six different entities, of which vitamin B<sub>1</sub> and lactoflavine had been obtained in a pure form. Differences in apparently similar foodstuffs might exist by reason of variations in the influence of soil and temperature upon growth and of the differing diets of farm animals. Individual dietary idiosyncrasies might be responsible for variations in effects observed in different persons. Vitamin B<sub>1</sub> was an essential catalyst in the oxidation of pyruvic acid. In conditions of B<sub>1</sub> deficiency

pyruvic acid accumulated in the blood. Further, this vitamin could be shown, *in vitro*, to have a specific catalytic effect upon the brain tissue of pigeons suffering from B<sub>1</sub> deficiency. There was now clinical support for the statement that we should look for the use of vitamin B<sub>1</sub> in conditions of loss of appetite, oedema, palpitation and breathlessness, especially where there was defective removal of blood lactic acid after exercise, and neuritic conditions. To obtain proper effect, crystalline vitamin B<sub>1</sub> should be injected in amounts of 500 units a day up to a total dose of about 2,500 units.

Professor H. N. H. GREEN (Sheffield), discussing the fat-soluble vitamins, stated that the fixing of precise standards for vitamins A and D had been of great value to the physician. Cod-liver oil still retained its predominance in prophylaxis and treatment, and calciferol was only necessary in florid rickets and for premature children. The susceptibility of vitamin A deficient animals to septic lesions was generally ascribed to a fall in local resistance as a result of epithelial metaplasia. Some evidence had been obtained, however, that a slight fall in general resistance occurred in an early stage of deficiency of this vitamin. Vitamin A deficiency was not uncommon in tropical regions, and there was some evidence that epidemics of meningococcal meningitis were also associated with a similar deficiency. The liver reserves of this vitamin in many women dying in the puerperium were found to be low when judged by normal standards, and this indicated the need for a plentiful supply of vitamin A during pregnancy.

Dr. S. S. ZILVA criticized the view that the blood was capable of converting ascorbic acid to, and storing it as, the reversibly oxidized form of vitamin C. The tendency of the body was to reduce dehydro-ascorbic acid, and to protect the reduced form from oxidation; the vitamin was concentrated as ascorbic acid in certain selective tissues, including the eye. No cataract could be observed when the eye of the guinea-pig was depleted of vitamin C, notwithstanding assertions to the contrary. Dr. Zilva said it was now established that the Jensen rat sarcoma possessed the capacity of selectively concentrating the vitamin, and this fact suggested that probably similar concentration occurred in human malignant tissue, provided an adequate amount of ascorbic acid was supplied in the food. The quantity of ascorbic acid excreted in the urine by human subjects depended on both the amount present in the body and the quantity consumed. A more or less constant level of excretion could be obtained when the subject was "saturated" with respect to vitamin C, and a wide margin of "unsaturation" could exist which so far had not been shown to be associated with any pathological condition. Experimental work suggested that accumulated ascorbic acid did not act as a store in the true sense of the word.

### Minerals in Nutrition

Dr. DONALD HUNTER enumerated the principal minerals necessary for adequate nutrition. Sodium had recently assumed importance in therapeutics. In the treatment of oedema it was withdrawn from, and in heat cramps it was increased in, the body. The urine of a miner with such cramps contained no chloride and the blood chloride was increased. Dehydration occurred in many clinical states, and it must be regarded as a loss of body fluid as distinct from a loss of body water; the administration of plain water to a dehydrated person could be dangerous. In Addison's disease, however, there was loss of sodium from the body without proportionate loss of water. Manganese was essential for the reproductive function in animals. There need be no fear of copper deficiency; in any case it was a natural impurity of the medicinal salts of iron. Calcium was removed from the soil by plants, and the green parts were especially rich in this mineral. Its most obvious bodily function was the formation of bone; the skeleton acted as the only reservoir of calcium in the animal body. Man probably required one gram of calcium a day, and was dependent mainly upon an intake of milk, cheese, butter, fish, and green vegetables. A high calcium diet was essential for pregnant and lactating women. Phosphorus was essential for life; in certain

parts of the world, however, the soil was grossly deficient in this element, and, in cattle, this led to a pathological craving for bones. At the most the daily iodine requirement of the adult was 0.05 mg., and deficiency in certain parts of the world led to the prevalence of endemic goitre. An inverse relation existed between the goitre rate in an endemic area and the quantity of iodine in the diet. The addition of five parts per million of potassium iodide to table salt had proved highly successful in the prophylaxis of goitre in these circumstances.

**Nutritional Anaemias**

Dr. LUCY WILLS said that a review of the subject of nutritional anaemia must begin with a consideration of the factors necessary for the maturation of the circulating blood from the primitive haemocytoblast of the bone marrow. Iron was only one of the factors that were an essential part of the red cell, the other factors for maturation being possibly hormone-like in their actions. The common nutritional anaemia in this country was an iron-deficiency state, occurring particularly as the nutritional anaemia of infancy, idiopathic microcytic anaemia, and the simple iron-deficiency anaemia of the adult. These were mainly due to a low iron intake, and women were more vulnerable subjects by reason of the demands of menstruation and pregnancy. Post-haemorrhagic anaemia was largely conditioned by diet, and frequently large doses of iron effected a cure. Anaemia consequent upon chronic sepsis or intoxication would only respond to cure of the primary condition. Other deficiency anaemias included those due to a lack of vitamin C, copper, bile pigments, and chlorophyll. There was also a large group due to a deficiency of the pernicious anaemia factor and responding to marmite or liver, and also others of which pernicious anaemia was an example, responding to liver products only.

The PRESIDENT said that, as a clinician, he experienced certain difficulties—for example, notwithstanding an extensive experience of anorexia nervosa, he had yet to see a case of this malady which exhibited signs of vitamin deficiency. He was unconvinced that a nutritional factor played a part in the causation of many gastro-intestinal disorders, and he inquired as to the possible effects of vitamin excess. He believed that, so far as beri-beri was concerned, it was necessary for an infection to be present, in addition to vitamin deficiency. Dr. C. C. UNGLEY (Newcastle-upon-Tyne) described three cases in which a polyneuritis resembling that in beri-beri occurred in association with disorders of the gastro-intestinal tract and responded to injections of vitamin B<sub>1</sub>. Professor PETERS suggested that the President should treat a case of anorexia nervosa with vitamin B<sub>1</sub>.

Later, Sir Robert McCarrison gave a lantern demonstration on the pathology of dietary deficiency, and Mrs. May Mellanby and Dr. J. J. D. King (Sheffield) a demonstration of dental disease in experimental animals and man.

**SECTION OF DERMATOLOGY**

*Wednesday, July 22nd*

**Preventive Measures in Dermatology**

With the President, Dr. S. E. DORE, in the chair, Dr. R. M. B. MACKENNA (Liverpool) opened a discussion on preventive measures in dermatology.

Dr. MacKenna began by considering some of the problems presented by psoriasis—for example, whether psoriatic persons should marry, in view of the recognized influence of heredity in this condition; whether the severity of the condition depended on the inherited characteristics of the individual, on his environment, or on his lack of adaptation to that environment; and the influence of fat metabolism. He said that prophylactic measures against occupational dermatitis fell under three heads: (1) the selection of employees; (2) the selection of materials; and (3) active methods of prophylaxis. With regard to (1), the exclusion from irritating processes of those who suffer from hyperidrosis, seborrhoea, xeroderma,

and hyperthyroidism and hypothyroidism would probably reduce the incidence of the disease. Much could be done in the way of active prophylaxis. Cleanliness and the use of fatty "barrier" substances with which to coat the hands before work were two important factors. Highly alkaline or chemical solvents or grit in the cleansing preparation, however, might in themselves be productive of dermatitis.

Dr. AGNES F. SAVILL thought that the adoption of a correct diet was the most important prophylactic measure in dermatology. Vulval pruritus and eczema could be prevented in most cases by treating vaginal and urethral discharges. Electrical methods were the best for these conditions. Discussing the dangers associated with cosmetics, Dr. Savill said that the continual use of face cream without any soap and water might lead, in some cases, to the formation of telangiectases. A greater danger, however, arose from the various materials of which cosmetics were made, which might be irritating or actually dangerous. Powders often contained orris root, to which some people were sensitive. Vermilion, a mercurial salt, was no longer employed for colouring, but some of the other colouring matters might be injurious. Perfume was often responsible for irritation produced by powders, lotions, and creams. The erythema and pigmentation that occasionally followed the use of perfume when the skin was subsequently exposed to strong sunlight seemed to be due to the spirit in the perfume. To give a violet or jasmine odour methyl heptene carbonate was employed; in other preparations benzylidene acetone and aromatic aldehydes were often present. All these substances tended to irritate the skin. Vanishing creams required an excess of free stearic acid to prevent an irritating alkaline reaction developing when the cream was stored. Hair-dyes, especially those containing dyestuffs of the paraphenylenediamine group, might cause any degree of dermatitis; they also gave rise to slow systemic poisoning. Cases of conjunctivitis, one of which was fatal, had been recently reported in America, where these dyestuffs had been used to darken the eyelashes. Mercurial lotions were employed for the hair with impunity, and mercurial dermatitis and poisoning had, in at least one case, been traced to this source. Cholesterol had been in favour of late, especially on the Continent, for the treatment of seborrhoea. Experiments had been reported to suggest that it was not as harmless as might be supposed.

Dr. ALICE CARLETON (Oxford) said that a new element of danger had been added to depilatory preparations by the inclusion of thallium acetate. Rudolph had recently reported a case of a woman who had used a face-cream containing 7 per cent. of thallium for fourteen months, with resultant optic atrophy, gastric pain and vomiting, and stiffness of the limbs. She did not agree with Dr. Agnes Savill about the harmful effects of the everyday use of cold cream and vanishing cream. No proof existed of their deleterious nature, whereas there was some partial proof to the contrary. McCafferty and Genovese had experimented with cold cream, and could find no "blocking of the pores." And she herself had experimented with vanishing cream using one side of the face as a control. It produced slight desquamation in only 1 out of 40 cases, and in the others was either neutral or beneficial in its effect.

Dr. J. GOODWIN TOMKINSON (Glasgow) said that there were so many cases of comparatively benign psoriasis and so many instances where there was no history of inheritance that it should not offer any obstacle to matrimony. Obviously there were many cases where the disease was transmitted, as every dermatologist knew, but this alone should not lead him to put his professional ban on such patients marrying. Unfortunately, from time to time, cases of practically universal distribution occurred. In such instances the patients themselves would hesitate to make or accept a proposal of marriage. With regard to occupational dermatitis, there were so many factors concerned in its production that until better methods of selection of employees and more effective means of protection were devised, it would continue for a long time to demand the attention of all practitioners. In the matter of solar irritation of the skin at Alpine altitudes, the free

application of vaseline or lanolin before exposure was of some considerable prophylactic value, but it should on no account be used if a dermatitis, due to neglect of such protection, had already occurred.

Dr. SYBIL HORNER spoke of the importance of examination of new workers, preferably by a dermatologist and by a works nurse or other responsible person, when they were actually in employment. The use of a "barrier" substance on the skin before work to limit contact with irritants and to facilitate cleansing was perhaps the greatest advance in preventive measures. There were at least two sides to the question of cleanliness. Too great zeal in the removal of dyes and french polish from the skin might itself be the cause of dermatitis. With regard to the recurrence of industrial dermatitis, it was important to remember that the risk of this was increased if (1) work was continued after the onset of dermatitis, and (2) a return to work was allowed too soon. There should be a period of three to four weeks after the skin appeared normal in every way. Dr. DORE had not found natural or artificial sunlight a preventive of relapses in psoriasis.

Dr. SYDNEY THOMSON said personal experience discounted the value of a fat-low diet in psoriasis. Sunlight seemed to lose its virtue as a prophylactic measure after some years, and family histories of psoriasis could be elicited in less than half the cases. He agreed with Dr. Savill's comments concerning the caecum, colon, etc., and added that pelvic infection—for example, tubal—might be suspected in acne which started in the early twenties in young women who had hitherto been normal. The inclusion of known irritants in cosmetic preparations did not affect the main question of simple creams. Certainly simple soaps often caused erythema and desquamation. Cosmetics probably did not cause any appreciable ill effects if no dyes, scents, or caustic chemicals were employed.

Dr. NORMAN BURGESS (Bristol) had shown a series of cases in 1931 in which two unrelated psoriatics had married and all of whose three children were affected with the disease. He would say that two psoriatic persons should not marry, but that there should be no ban to the marriage of a psoriatic person with a normal individual. He had been disappointed in the results of treatment of psoriasis with a fat-low diet, and had seen exacerbations of the disease after unwise over-exposure to the sun. With regard to occupational dermatitis, an important factor in prophylaxis was the efficiency of the welfare worker. He agreed with Dr. Savill as to the importance of a proper diet in the treatment of the seborrhoeic state. He stressed the importance of the treatment of retro-auricular fissures in the case of infective diseases in order to prevent acute attacks of impetigo of the scalp. Much could be done to prevent the spread of epidermophytosis of the extremities in institutions: regular inspection of students and staff, the provision of clean bath-mats for each person, the prohibition of walking about in bare feet, the wearing of bathing shoes, daily washing and powdering of the feet, and the daily scrubbing of bathrooms and shower-baths. In lupus erythematosus, xeroderma pigmentosum, and hydroa, in which patients were sensitive to sunlight, a quinine protective cream should be applied before exposure to sunlight.

#### Angiomata of the Skin

Dr. ROBERT KLABER, in a paper on the treatment of angiomata of the skin, said that Morgan's spots or senile angiomata often called for the assurance that they were only related to cancer in a common age-incidence. Usually no treatment was required. Spider naevi or stellate angiomata could be easily treated by the galvanic cautery point or electrolysis. The former method was preferable in the case of children, the latter being reserved for adults. Naevus flammeus, or port-wine stain, was notoriously resistant to treatment. The capillary naevus was best treated by the use of the CO<sub>2</sub> snow pencil, which usually gave a good cosmetic result. When this condition was combined with a subcutaneous cavernous naevus this method was too often ineffective. Excision or the injection of sclerosing solutions was best reserved

for special regions. The areas most usually affected were the scalp and face, and here some form of gamma radiation was required. There were technical disadvantages in the use of x rays. The surface application of radium needles approached the ideal, but was only possible in the larger centres. The same was true of radium plaques, which had certain disadvantages. Dr. Klaber described and demonstrated the use of radon seeds to form a plaque on adhesive sponge rubber. This method was especially useful where radium needles were not available, and produced equally satisfactory results.

#### Seborrhoeic Dermatitis

Dr. G. H. PERCIVAL (Edinburgh) read a paper on seborrhoeic dermatitis.

He said that seborrhoea indicated excessive activity of the sebaceous glands. The term had come to be used as a descriptive adjective for catarrhal conditions affecting certain areas. Finally, so many other forms of eczema had been so described as to give rise to considerable confusion. These eruptions should be considered as belonging to three main groups:

1. *Seborrhoea*.—This was probably dependent on some endocrine disturbance, though *Bacillus acnes* might play a part in some of its secondary manifestations. It was often associated with premature baldness, acne, or rosacea.

2. *Pityriasis*.—This condition was associated with infection by a yeast-like organism, the co-called pityrosporon. Its simplest form, pityriasis capitis, or ordinary dandruff, might be complicated by more definite inflammation producing dry petaloid eczematides (seborrhoeides) on the trunk, which sometimes became generalized. *Staphylococcus albus* was then found in large numbers together with the pityrosporon.

3. *Flexural Eczema*.—This group was characterized primarily by moist lesions affecting skin folds (intertrigo). The region most frequently affected was the retro-auricular fold. The infra-mammary and intergluteal regions were the next most frequent starting-points, but any of the other flexures might be involved. The condition spread symmetrically outwards from the centre. Sudden symmetrical involvement of the trunk and limbs might occur later. The streptococcus was usually present, and probably played an important part in the aetiology. Attempts to reproduce the condition in volunteers by the applications of streptococcal poultices, however, had so far been unsuccessful.

#### INTERNATIONAL UNION AGAINST TUBERCULOSIS

The Italian Government has decided to grant for the year 1936-7 six scholarships at the "Carlo Forlanini" Institute in Rome. The conditions are as follows:

These competitive scholarships, of a value of 3,000 lire respectively, plus board and lodging, are intended to enable foreign medical practitioners to stay at the "Carlo Forlanini" Institute in Rome for the purpose of following a course of studies. This stage of eight months will correspond with the academic year (from November 15th to July 15th), including the usual holiday periods.

The scholars will reside at the Institute. The scholarships will preferably be awarded to young physicians who are already familiar with tuberculosis problems, and who wish to improve their knowledge of this branch of medicine. The kind of work undertaken at the Institute will be subject to an agreement between the director and the candidate. The publication expenses resulting from this work may be defrayed partly or entirely by the Institute.

The scholarships will be awarded at the next session of the executive committee, which will meet in Lisbon on September 7th, 1936. The names of candidates, accompanied by particulars as to their age, qualifications, and professional experience, must be forwarded *not later than August 19th* to the secretary, National Association for the Prevention of Tuberculosis, Tavistock House North, Tavistock Square, London, W.C.1.