

Institute of Public Health on the control over tuberculous milk in Manchester by veterinary examinations, the report of the Vice-regal Commission appointed to consider the scarcity of milk in Ireland and its effects on public health, and the special reports issued by the English Local Government Board on the biological properties of milk and on the bacteriology of food poisoning. The increased cost of foods of all kinds which has taken place during the last eight years is officially computed at about 13 per cent.³ and shows no signs of abating. Hence the question for the working class of the most economic way of spending money on nutritious and palatable food is increasing in importance, and the subject is receiving attention from public health authorities in many of the larger towns. In Glasgow a valuable report on the diet of the labouring classes has been made in the physiological department of the University under the auspices of the corporation.

The Public Health Medical Services.

The above notes of public health matters during the year necessarily relate to new movements rather than to the results of some of the more familiar activities of the medical officers of the large number of public bodies, central and local, whose functions include public health questions. If the health and comfort of the public are looked at as a whole, a year's progress would be barren indeed without the results of the labours of medical officers who, following well-established lines of work and investigation, have attempted day by day to secure better and more wholesome conditions of living in whatever direction they are able to do so. The new movements, added to the old, are naturally producing great alterations in the conditions of local service, specially marked in the large municipalities and in counties, where the bulk of the daily work has to be undertaken by "assistant" medical officers. The assistant officer hitherto has had reasonable chance of seeing himself later on a principal officer, but it must be admitted that the prospects of those who have lately entered local services as assistants, particularly in the school medical service, are not always encouraging, and the year has given many evidences of the demand which is arising for consolidation or reform of the public health medical services in various directions.

ANÆSTHETICS.

AT the Seventeenth International Congress of Medicine special interest attached to the Subsection of Anæsthesia, for, as the President, Dr. DUDLEY W. BUXTON, pointed out, anæsthesia for the first time was accorded a place in the programme of these international meetings. He contended that the anæsthetist of to-day was guided by a much more robust knowledge of the science of his art, having at his disposal a wide range of methods from which to select. The discussions embraced these methods: spinal and local analgesia; anæsthesia obtained by ether given by the "open" system, by intratracheal insufflation, by nasal and pharyngeal inhalation, by intravenous infusion, or by rectal and colonic absorption and intramuscular injections; chloroform inhalation by dosimetric methods; nitrous oxide with oxygen employed by the Teter method

for major surgery; the adjuvant employment of such alkaloids as atropine, scopolamine, and morphine; hedonal and similar drugs introduced directly into the blood stream. The modern anæsthetist has not only to immobilise his patients, but to deal with "shock" in so far as methods of anæsthesia may increase or diminish the effects of trauma. Hence discussions were held in the subsection on "anoci-association" (CRILE), the "acapnia" theory (YANDELL HENDERSON), and on those curious and little-understood group of symptoms variously called delayed chloroform poisoning, acidosis, post-anæsthetic toxæmia. The last-named subject was brilliantly discussed by Dr. WILLIAM HUNTER and Dr. LEONARD GUTHRIE, to the latter of whom belongs the credit for the first clear clinical presentation of this matter in this country. At the concluding discussion Dr. J. F. W. SILK summed up all the preceding work dealing with the selection of the best anæsthetic and most appropriate method of using it, including both local and general anæsthesia. The work of the section focused the present knowledge alike of anæsthesia and of analgesia in a remarkable manner, giving an impetus to the adoption in the country of the newer methods and to the more careful study of continental and transatlantic systems.

Spinal Analgesia.

Professor TUFFIER,¹ one of the pioneers, regards spinal analgesia as best accomplished by an intradural method. He has used stovaine and tropacocaine, but recently has adopted novocaine, a drug which he regards as the safest of the synthetic group of cocaine derivatives. He deprecates the employment of cocaine and the addition of strychnine and suprarenin to the injected fluid. The extradural injection made between the sacral and coccygeal vertebræ Professor TUFFIER thinks is safe, although at present it seems a less valuable method; with this view Mr. C. A. LEEDHAM-GREEN concurs. The relative safety of spinal analgesia and general anæsthesia resolves itself into a comparison less of the methods than of the persons who employ them. The statistics advanced by Professor TUFFIER in favour of the spinal method are those of experts, while those of general anæsthesia are those of individuals who for the most part are both inexperienced and at times careless, while their methods are frequently open to adverse criticism. Both systems, it is admitted, have dangers, but each has its peculiar advantages in appropriate cases. Dr. G. GELLHORN,² in reviewing this subject, refers to KROENIG'S 2542 cases without a death, but with two cases of asphyxia which were recovered; in 63 cases GELLHORN, using novocaine with suprarenin, had three cases of incomplete analgesia, six in which ether had to be used, and one case of collapse, another with "air hunger." Vomiting was frequent when the peritoneum was opened; he had one case of intractable headache. SELLHEIM reported 1000 cases and one death. This percentage he regards as so satisfactory as to make the spinal method the "method of election." STRAUB'S and GAUSS'S views, that if the injection is made in the sitting posture the analgesic becomes "fixed," so that there is but slight danger of its travelling into dangerous places, are interesting, although not fully borne out by

³ Board of Trade Report on Cost of Living of the Working Classes, 1913.

¹ THE LANCET, August 23rd, 1913.

² Journal of the American Medical Association, Oct. 11th, 1913.

clinical records. Syphilitics need not be debarred from this method, although GELLHORN has noticed that in their case the amount of cerebro-spinal fluid is markedly lessened. DOEDERLEIN and KROENIG consider cardiac and pulmonary sequelæ to be less frequent after spinal than after general anæsthesia.

Dr. W. W. BABCOCK,³ reporting 5000 cases, has chiefly employed stovaine. He reviews the physiology of the method. Stovaine applied to the floor of the fourth ventricle in the medulla of dogs stops respiration, but it is recoverable by artificial respiration. He regards artificial respiration as the correct method for resuscitation. Pre-existent shock is a contraindication to spinal injection since shock is increased by it, although the shock incident to the operation may be diminished. He finds that blood pressure falls in high injections and that interference with respiration occurs. He gives stovaine, 0.08 gramme; acetic acid C.P., 0.2 c.c.; alcohol C.P., 0.2 c.c.; distilled water, 1.8 c.c. Cyanosis is a danger signal. The preliminary use of alkaloids, although increasing the danger of respiratory failure, lessens nausea and vomiting. He prefers the method for operations in the lower abdomen and for cases of acute infection of the peritoneum. He considers that neurotics are unsuitable for it, as they often believe that spinal degeneration is developing and attribute it to the lumbar puncture. CHAPUT⁴ points out that in persons over 40 the intraspinal ligaments are often calcified, and so a lateral puncture or incision through the structures under ethyl-chloride spray is necessary. He withholds food from the patient, giving him chloral hydrate and bromide of potassium half an hour before the puncture. He excludes children under 12, the aged, and those seriously ill, from the use of spinal methods. On the other hand, Mr. TYRRELL GRAY, speaking at the Congress, strongly advocated spinal analgesia for even very young children, and in a wide experience had seen no danger. M. DIMITRION and M. SAGHIESCO,⁵ in their practice in a Roumanian military hospital, have adopted Jonnesco's high puncture, using small doses of stovaine, 0.03 to 0.04 gramme. If they fail to enter the theca at the first attempt the patient is sent back to bed for four or five days. K. VOGEL and A. KRAEMER⁶ report a curious result of spinal puncture, severe vagal disturbances with bradycardia in a man aged 75. Tropacocaine was used. Professor J. T. J. MORRISON (Birmingham) in his Ingleby lecture,⁷ gives his experience with tropacocaine in 1295 cases. He refers to syncope as common, and finds that incontinence of fæces may persist for weeks owing to paralysis of the sphincter. In two cases artificial respiration was called for, both being injections in the tenth dorsal interspace for operations on the liver. In one tracheotomy was necessary owing to paralysis of the diaphragm. In 5 per cent. severe headache; in 10 per cent. it was present, but less severe. There was one death, that of a patient in a very serious condition, in the series. Papers by Dr. FREEMAN ALLEN⁸ on spinal analgesia and by Dr. W. S. CARTER⁹ on the effects of intrathecal injections of Ringer's solution under varying pressures and in varying quantities should be noted. Large injections produced dangerous phenomena. After such injections atropine raised

the blood pressure and cocaine stimulated the respiratory centre.

BEDESCHI¹⁰ reports the results of 924 spinal stovainisations. Dose 4 to 7.5 centigrammes; average length of analgesia 40 to 45 minutes. In one case, as a result of inverting the patient, the analgesia reached to the top of the head. He found that when a patient who had had a spinal injection required further operation within a few days he needed a larger dose of stovaine to produce analgesia. If this observation is confirmed by other workers in this line it would suggest that the effect of stovaine is physical and persistent and not a mere transient interference with function. Pallor, sweating, partial failure of respiration and circulation, nausea and vomiting, and rectal incontinence (30 per cent.) are reported. In two cases severe collapse occurred; headache and retention of urine (10 per cent.) with persistent paralysis of the sphincters are noted among BEDESCHI'S cases, and he regards these accidents as detracting from the value of the procedure. Dr. W. S. BAINBRIDGE'S¹¹ record of spinal work is interesting; it consists of over 1000 cases. He used stovaine or tropacocaine in solutions approximately equal in density to that of the cerebro-spinal fluid. Seven cases of more or less serious after-effects and two deaths were noted. One death was attributed to lymphatism and one to the effect of "pathological conditions"—atheroma, cardiac, renal, hepatic, and pulmonary disease. As these conditions are commonly urged as contraindicative to general anæsthesia and indicative to the use of the spinal method, it is noteworthy that even that system appears to be open to similar limitations as are the older methods.

Sacral analgesia is discussed by Dr. SCHLIMPERT.¹² He describes the technique. Veronal is given both on the night before and in the morning before the operation, while scopolamorphin or scopolamorphin is ordered three hours before the puncture, since it is contended that scopolamine has an amnesic effect. The dose is lessened in the case of the cachectic. The patient lies on his side or in the knee-elbow posture. The pelvis is raised and the lower opening of the sacral canal is chosen, its position being marked in the hiatus canalis sacralis by the cornea sacralia. A hollow tube carrying a sharp mandarin is introduced, care being taken to avoid wounding the veins. The sense of resistance enables the operator to judge of his success. If a swelling follows the injection the fluid has gone into the loose tissues and not into the canal. This method is only serviceable for brief operations; it does not always give relaxation of the abdominal muscles and is inappropriate for fat persons. Novocaine and suprarenin in saline are employed for the injection.

Local Analgesia.

Professor HEINRICH BRAUN reported to the International Medical Congress on this subject. He showed pictures of his methods whereby every superficial area of the body can be injected, and further demonstrated how to apply his methods to the deepest regions. These methods had been rendered possible owing to the supersession of cocaine by the safer synthetic novocaine and by the introduction of suprarenin. Ischæmia is produced by the adrenal derivative, so that little of the analgesic is required. The adoption of a regional method made it possible to block

³ Surgery, Gynæcology, and Obstetrics, vol. xv., No. 5; also Journal of the American Medical Association, Oct. 11th, 1913.

⁴ Journal de Chirurgie, tome ix., No. 2.

⁵ Presse Médicale, April 5th, 1913.

⁶ Medizinische Klinik, March 2nd, 1913.

⁷ Birmingham Medical Review, August, 1913.

⁸ Journal of the American Medical Association, Nov. 23rd, 1913.

⁹ Archives of International Medicine, Nov. 12th, 1913.

¹⁰ Gazzetta degli Ospedali, Feb. 25th, 1913.

¹¹ Journal of the American Medical Association, vol. lix., p. 1855.

¹² Surgery, Gynæcology, and Obstetrics, May, 1913.

all sensory conduction from the traumatised tissues. The details of Professor BRAUN'S technique are accessible in the third edition of his "Lokalanaesthetie," which has been recently issued. For infiltration he used 0.5 per cent. novocaine with suprarenin, and for conduction analgesia a 1 per cent. to a 4 per cent. of novocaine with suprarenin according to the tissues to be acted upon. Mr. LEEDHAM-GREEN, although restricting his practice within narrower limits, accepted Professor BRAUN'S statements as being in consonance with his own experience. With novocaine he was satisfied, but his use of hydrochloride of urea and quinine had not been so successful. Dr. EARLE¹³ records a case of serious sloughing after the use of this analgesic compound. Professor BRAUN¹⁴ suggests injecting the brachial plexus as it passes over the first rib by means of novocaine and suprarenin, for fractures and dislocations of the shoulder and arm. For the lower limb he relies upon injections made at the site of injury; these must be multiple and varied in direction. In the case of the hip-joint long needles are required to inject into the structures around as well as into the acetabulum. A 1 per cent. strength of the solution is said to be sufficient. The anterior superior iliac spine is the guide to the acetabulum in cases of dislocation, the needle being passed behind this point and kept against the bone until it enters the cavity. He claims that the muscles become relaxed so that reduction is rendered easy. KULENKAMPFF¹⁵ adopts the following method of analgesing the brachial plexus; 2 per cent. novocaine solution with suprarenin is injected, while the patient sits up with his head supported. The subclavian artery is felt for above the clavicle, and a superficial infiltration is made immediately outside—i.e., opposite the middle third of the clavicle. The finger pressing inwards and backwards will make the first rib perceptible, as well as the cords of the plexus passing over it. The needle is made to enter at this point, and if the patient experiences tingling the cords are carefully injected. If no tingling is felt the needle must be partly withdrawn and its point moved backwards and forwards until a cord is struck. W. F. NEIL and F. CROOKS,¹⁶ in 40 cases, only failed to reach the plexus four times. That there is some danger is shown by the experience of A. E. STEIN;¹⁷ he failed to reach the plexus but damaged the phrenic nerve, paralysing the diaphragm, and causing very severe neuralgia. Useful papers on this subject are those of Dr. J. F. MITCHELL¹⁸ and Dr. F. ROOD.¹⁹ CARL DEUTSCHLÄNDER²⁰ discusses methods of obtaining analgesia of joints. It is essential to empty the joint tissues of blood which can be done by the use of BIER'S method. This accomplished the injection is made into the joint, not into the synovial membrane. The plan fails when the synovial membrane has been destroyed by disease, as no absorption can take place. Injections into the great sciatic nerve are made, according to P. BABITSOKI,²¹ without difficulty. The finger is introduced into the rectum, and the needle, which pierces the gluteal muscles towards the ischial spine, is felt and guided to the nerve which

passes beneath the pyriformis muscle. The method of Wilm for analgesing the pelvis is described by FRANKE and POSNER.²² The patient is placed in the lithotomy position, a needle 12 to 15 c.m. long is introduced in front of the anus in the long axis of the trunk until a resistance (the levator ani) is felt. The finger in the rectum feels the ischial spine and guides the needle to the pelvic border of the bone. The needle is partly withdrawn and reintroduced for 2 to 3 c.m. just to the outer side of the ischial spine and 10 to 15 c.c. injected, which should parese the internal pudic nerve. The other side is then done, subsequently the structures between the rectum and prostate, and, last, the subcutaneous tissues. G. MAHÉ and P. VANEL²³ suggest that to obviate the dangers of suprarenal extracts in dental surgery they should be replaced by peroxide of hydrogen. Five volumes of peroxide and five of either a 1 per cent. cocaine solution or 4 per cent. novocaine are slowly injected until blanching of the gum appears.

Recent Methods of General Anæsthesia.

Ether.—Dr. R. H. FERGUSON (New Jersey, U.S.A.), dealt with the Open Ether Method²⁴ and demonstrated the value of a true drop method, using a mask (Dr. Ferguson's design).

Intravenous ether infusion.—Professor BURKHARDT (Nürnberg) opened the discussion. The veronal series (hedonal) he regards as less safe than the fatty acid series, and chloroform (he uses 0.97 per cent. in saline) is less safe than ether (he uses 5 per cent.). Isopral he suggests as a means for "introducing" ether; as soon as the patient is unconscious the isopral solution is succeeded by the ether. Renal complications do not in his experience of 600 cases follow ether infusion unless there is pre-existing nephritis. Asphyxia is due to the unduly rapid entry of ether. He regards the existence of a high blood pressure as a contra-indication to the method. Professor KÜMMEL extolled this method, speaking from a long experience with its use. W. F. HONAN and J. W. HASSLER²⁵ have used intravenous infusions of ether (5 per cent.), hedonal (0.75 per cent.), also a mixture of ether (3 per cent.) with paraldehyde (2.5 per cent.).

Intravenous infusion of hedonal.—Dr. Z. MENNELL²⁶ is convinced that although hedonal has many shortcomings it is valuable and chiefly in brain surgery, provided the narcosis is kept very light—i.e., the skin reflex active—and only small quantities employed. He deprecates its employment in all operations upon the air passages. SEUKEVITCH reports 100 cases²⁷ of hedonal given per rectum as a preliminary to chloroform. It is dissolved in water and alcohol and is readily absorbed.

Intravenous infusion of paraldehyde and other drugs.—H. NOEL and H. S. SOUTTAR²⁸ employed a mixture of paraldehyde and ether, 5–15 c.c. of each in 150 c.c. of a cold 1 per cent. solution of sodium chloride in distilled water *free of dead bacteria*, or, failing this, an ordinary boiled tap-water. The solution must be clear after being shaken. They employed the salvarsan apparatus of Fildes and McIntosh, and introduced the needle direct into a vein. The temperature of the mixture must be below 25° C. They regard the method as of value for brief operations. The duration and depth of

¹³ Interstate Journal, Feb. 13th, 1913.

¹⁴ Deutsche Medicinische Wochenschrift, January, 1913.

¹⁵ Beiträge zur Klinischen Chirurgie, Band lxxix., Heft 3.

¹⁶ Brit. Med. Jour., Feb. 22nd, 1913.

¹⁷ Zentralblatt für Chirurgie, April 19th, 1913.

¹⁸ Journal of the American Medical Association, Sept. 13th, 1913.

¹⁹ Brit. Med. Jour., Dec. 21st, 1912.

²⁰ Zentralblatt für Chirurgie, March 15th, 1913.

²¹ Ibid., vol. xv.

²² Archiv für Klinische Chirurgie, Band xcix., Heft i.

²³ Presse Médicale, April 19th.

²⁴ See THE LANCET report of the International Medical Congress.

²⁵ Medical Record (U.S.A.), Feb. 8th.

²⁶ THE LANCET, August 23rd, p. 555.

²⁷ Roussky Vrach, October, 1912.

²⁸ Annals of Surgery, January, 1913.

narcosis depend upon the dose. Mr. O. ATKEY,²⁹ using this method, infused a patient suffering from tetanus with paraldehyde and copious injections of saline.

Intratracheal insufflation of ether.—Professor S. J. MELTZER,³⁰ to whose extremely able report THE LANCET has already referred,³¹ opened the discussion upon this subject at the Congress. He detailed the physiological experiments done by him and Dr. AUER which initiated the intratracheal method for etherisation. The method produces intrapulmonary plus pressure, rendering operations on the lungs possible without the production of artificial pneumothorax. The method also by limiting the respiratory excursion facilitates abdominal operations. The effect of the force of the return blast of air is to prevent completely any aspiration of fluids from the mouth or nasal passages into the lungs. The danger of traumatic emphysema of the lungs is obviated by interpolating a safety valve of mercury between the supply tank and the tube feeding the intubating catheter. If, as is usual, the maximum pressure is fixed at 22 mm. Hg, this valve automatically allows the escape of the air-ether mixture, preventing any excessive intrapulmonary pressure.

Dr. F. J. COTTON with Dr. W. M. BOOTHBY³² fix the limit of intrathoracic pressure at 15 mm. Hg. Dr. MELTZER states, however, that a much higher pressure is safe although not desirable. It is essential, they say, that the patient should be deeply anaesthetised by some inhalational method before the catheter, usually of the French gauge 22 or 23, is introduced by the aid of direct illumination. The head should be slightly extended with the tongue drawn forward; this allows the epiglottis to be drawn out of the way, so the catheter passes easily into the larynx. If it enters the œsophagus and the stomach is distended the viscus must be emptied before withdrawing the catheter. Since ether boils at 96.5° F., if it is heated to this temperature ether vapour will pass into the lungs with dangerous effects. They deny the advantage claimed by Dr. GWATHMEY of superheating the ether-air mixture. The results of experiments upon cats are cited in elucidating the effects produced by the method. They conclude: (1) This method is the only safe one which ensures competent lung ventilation without thoracic movements; (2) hence its value for operations which *per se* interfere with the normal mechanism of respiration; (3) thus its value in intrathoracic operations and those upon the mouth, jaws, tongue, and upper air passages; (4) an ether-air mixture, the supply of which is controlled by a foot pump, is the best anaesthetic, although the nitrous oxide-oxygen mixture with minimal quantities of ether is indicated in some cases; and (5) a safety-valve preventing intrapulmonary pressure exceeding 15 mm. Hg is absolutely essential. Dr. C. N. PECK³³ gives his experience of the method in 412 cases. He met with six cases of lung complications occurring after the operation. Dr. SAM ROBINSON,³⁴ in reviewing 1400 cases, records seven deaths in patients who were in a very serious condition at the time of the operation. He asserts that the use of too small a catheter leads to persistence of the thoracic move-

ments, and even to aspiration of fluids from the mouth. A useful and practical paper by Dr. CHEVALIER JACKSON³⁵ describes the technique of passing the catheter into the larynx. Various forms of intratracheal insufflators were exhibited at the Congress in the Subsection of Anæsthetics³⁶—viz., those of Dr. Elsberg, Mr. Kelly, Dr. Shipway, that of Mr. Boyle,³⁷ which is simple and easily worked, and that of Dr. Ehrenfried (Boston), an apparatus which fulfils the desiderata given by Dr. BOOTHBY and Dr. COTTON. Dr. Janeway's apparatus was demonstrated by Dr. NAGLE, and is an excellent one; he gave his experience, a favourable one, of 300 cases.

A valuable paper of experimental research into the percentages of ether vapour during anaesthesia, by Dr. W. M. BOOTHBY,³⁸ is worthy of reference.

Nitrous oxide and oxygen in major surgery.—Dr. TETER's full presentation of the advantages of this plan before the Congress focuses the knowledge we possess of the method. His improved apparatus makes a prolonged anaesthesia possible. He advocates some rebreathing, insists on warming the vapours, and upon accurate control over the pressure of the gases and upon the quantity which passes in a unit of time. Mr. H. M. PAGE, who has employed the method in this country, contributes a paper to the Royal Society of Medicine.³⁹ Papers may be noted by H. FAIRLIE,⁴⁰ H. G. SLOAN,⁴¹ S. LEIGH,⁴² C. S. HURST,⁴³ R. C. COBURN,⁴⁴ and E. H. EMBLEY.⁴⁵ This last named paper gives some important experimental work anent this method and shock. Dr. SKEEL⁴⁶ and THE LANCET of Feb. 1st criticised adversely the method in question.

The use of alkaloids, either replacing or as adjuvants to general and local anaesthetics, was discussed at the Congress by Dr. GAUSS (Freiburg), Dr. W. J. MCCARDIE (Birmingham), and Dr. GIUSEPPI, while Mr. L. E. C. NORBURY and Mr. A. F. MORCOM have published their experience.⁴⁷

Anoci-association and shock.—Dr. CRILE's vigorous exposition of his views has appeared fully in THE LANCET⁴⁸ and Professor YANDELL HENDERSON's views upon the importance of preserving a normal CO₂ content in the blood are too well known to need detailed description of his acapnia theory. Dr. SEELIG, Dr. TIERNEY, and Dr. RODENBAUGH⁴⁹ give valuable experimental data on this point.

Chloroform.—Dr. DUDLEY BUXTON's report upon the dosimetric method was published in THE LANCET of August 16th, p. 464.

Toxæmias associated with anaesthetics.—Besides the important pronouncements of Dr. W. HUNTER and Dr. L. GUTHRIE and of Mr. TYRRELL GRAY made at the Congress, and reported in THE LANCET, a valuable paper by Dr. J. E. PIPER has appeared in our pages.⁵⁰

³⁵ Ibid., October.

³⁶ See also Proceedings of the Royal Society of Medicine, Section of Anæsthetics, December, 1912, p. 8; March, 1913, p. 44.

³⁷ Brit. Med. Jour., April 26th.

³⁸ Journal of the American Medical Association, Sept. 13th.

³⁹ Proceedings, Section of Anæsthetics, vol. vi., p. 27.

⁴⁰ Practitioner, August.

⁴¹ Journal of American Medical Association, Sept. 13.

⁴² American Journal of Surgery, June.

⁴³ International Journal of Surgery, April.

⁴⁴ American Journal of Surgery, October.

⁴⁵ Australian Medical Journal, April 9th.

⁴⁶ American Journal of Obstetrics and Gynæcology, January.

⁴⁷ Proceedings of the Royal Society of Medicine, Section of Anæsthetics, vol. vi., pp. 57 and 62.

⁴⁸ THE LANCET, July 5th, p. 7.

⁴⁹ American Journal of Medical Science, August

⁵⁰ THE LANCET, August 23rd, p. 535.

²⁹ THE LANCET, Jan. 18th, p. 168.

³⁰ Rockefeller Institute, New York.

³¹ THE LANCET, August 16th, p. 508.

³² Annals of Surgery, January, p. 43.

³³ Journal of the American Medical Association, Sept. 13th.

³⁴ Surgery, Gynæcology, and Obstetrics, March.

THE NAVAL, MILITARY, AND INDIAN MEDICAL SERVICES.

ROYAL NAVAL MEDICAL SERVICE.

The record of the medical department of the Royal Navy continues, we have reason to believe, to be one of contentment regarding the essential conditions of service. The retirement of Surgeon-General Sir JAMES PORTER, K.C.B., from the position of Director-General, at his own request, was a great loss to the Royal Navy. He had proved a capable head of the medical department during a period of transition, and considerable advances in the organisation and nursing arrangements of naval hospitals were effected during his term of office. He has been succeeded by Surgeon-General A. W. MAY, C.B., who has served with distinction in the Egyptian and Soudan expeditions of 1882-85, and throughout the whole course of the Boer war.

The recently established medical college at Greenwich continues to fulfil the expectations formed as to its efficiency and popularity. The proximity to the centres of medical thought and training in the metropolis cannot fail to have a good effect and lead to a general advancement of the standard of professional efficiency, such as has been so noticeable in the kindred institution of the military medical service at Millbank. A portion of the curriculum continues to be carried on satisfactorily at Haslar, so that there has been no breach of continuity in the associations with that historic centre of naval medical training.

The Lords Commissioners have adopted certain recommendations¹ of the Medical Consultative Board made with the object of remedying to some extent the shortage in the medical branch. Some distinct emendations of the conditions of service ought to have the designed effect.

The Honours list for the year includes a K.C.B. conferred upon Inspector-General DUNCAN HILSTON, who has served in the New Zealand war of 1863, and in Abyssinia; and a C.B. for Deputy Surgeon-General W. M. CRAIG. Special promotion has been granted to Surgeon G. M. LEVICK and Surgeon E. L. ATKINSON (to fleet and staff rank respectively) for service in the recent Antarctic expedition.

The death roll has been a short one during the past year. Deputy Surgeon-General J. LLOYD THOMAS had served in the China-Japan war of 1894-95, and was present at the relief of the Peking legations (1900). Serving with the Royal Navy, though not a member of the Naval Medical Service, was EDMUND ADRIAN WILSON, whose death in Captain Scott's Antarctic Expedition led to a widespread and spontaneous expression of affectionate regard and admiration.

THE ARMY MEDICAL SERVICE.

Scientific Research Work.

Sir DAVID BRUCE and his coadjutors on the Sleeping Sickness Commission have continued the study of trypanosomes. Their earlier observations pointed to the conclusion that the organism of the human disease in Nyassaland, *T. rhodesiense*, is a species related to, but distinct from, both *T. brucei* and *T. gambiense*, and that therefore the human trypanosome disease of N.E. Rhodesia and Nyassaland is not the same as that known as sleeping sickness in Uganda and on the West Coast of Africa. The native name "kaodzera" was suggested for this

new disease. From the most recent researches, however, it appears probable that *T. rhodesiense* and *T. brucei* are identical.

Major W. S. HARRISON has studied streptococcus rheumaticus, and does not consider it to be the cause of the usual form of rheumatic fever. He has found a bacillus resembling that of diphtheria in rheumatic joint fluids and pleural exudations which possibly may be causative. Valuable observations have been carried out by Captain P. J. MARETT on phlebotomus flies (commonly mis-called "sandflies," which belong to the genus *Simulium*) in Malta. An accurate knowledge of their life-history and habits leads to the carrying out of effective measures of prevention, and much improvement has already resulted from this practical application of scientific research. Major S. L. CUMMINS and Major C. C. CUMMING have been engaged in the differentiation of staphylococci present in vaccine lymph.

An important research has been carried out by Lieutenant-Colonel W. W. O. BEVERIDGE, D.S.O., in conjunction with Mr. J. HARTLEY DURRANT, of the British Museum, on the temperature reached in the baking of biscuits. Army biscuits are liable to become infested with various species of insects, lepidopterous and coleopterous. It was found that biscuits enclosed in tins hermetically sealed and still intact were infested. Consequently either the heat in baking is insufficient to destroy the ova, or moths and beetles gain access and deposit their ova during the processes of cooling or packing the biscuits. It was determined, by experiments with a thermo-couple, that the temperature in the interior of the biscuits reaches 100° or 105° C. during the baking process, and that infestation must take place after baking, during cooling, and before the tins are soldered up. The observers recommend that the biscuits should be rapidly cooled after baking and access of moth prevented. Major S. L. CUMMINS, in his Parkes Memorial Essay on Causation and Prevention of Enteric Fever in Military Service, has recorded a long series of observations and experiments as to the survival of *B. typhosus* in the excretions, and on the clothes and persons, of carriers and in food. Successful prevention will consist in the discovery and disposal of chronic carriers, the detection of early, atypical, and abortive cases, and in the inoculation of all troops of the expeditionary force during peace time and of all drafts proceeding to the scene of operations during war. Colonel W. H. HORROCKS has continued his experiments on the variation of bacillus typhosus cultivated under certain conditions, especially with regard to the effect of bacteria-free toxins. He has found that *B. typhosus* may be converted into *B. fæcalis alkaligenes*: this appears to have no pathogenic effect on the ordinary laboratory animals, and it has not been possible to re-convert this variant into *B. typhosus*. The treatment of syphilis by intravenous injection of salvarsan and intramuscular injection of mercury has been carried out on an extended scale by Lieutenant-Colonel T. W. GIBBARD and Major L. W. HARRISON with most excellent results. Their observations and record of this therapeutic investigation were communicated to the International Congress of Medicine and were received with great interest and appreciation.

Military Medical Organisation.

No changes of importance have taken place during the past year in the organisation of the medical

¹ THE LANCET, Dec. 6th, 1913, p. 1649.