slopes. These are now placed in the incubator at 37° C. overnight. If any gas bubbles appear in the medium, the tube is discarded. If the stab shows a clean growth with no bubbles the tube is set aside for further examination.

Having arranged the suspicious cultures in a rack, the next procedure is the agglutination of these organisms to identify them definitely.

Different dilutions of the standard serums are made, say from 1 in 20 to 1 in 500. Drops of the serum in these different dilutions are placed on a clean slide and a small loop of twenty-four hour culture of the homologous organism is emulsified in the serum dilution. The slide is now rocked from side to side, and in a satisfactory dilution agglutination of the organisms should be seen easily in a few seconds. Each serum is tested in this way with each type organism, to learn the proper titre to use in testing the unknown cultures.

Having obtained the proper titre, the same procedure is adopted with regard to all the unknowns, and although in some instances agglutination reactions may overlap, the culture may be called positive and higher dilutions used in definitely determining the organisms as being "para" A or "para" B. An emulsion of *B. coli* should also be used each day as a control with each serum dilution.

Of 1,200 specimens examined from enteric convalescents, 45 were found positive for paratyphoid A, 12 positive for paratyphoid B, and 13 positive for typhoid bacilli. Two cases were definite carriers of paratyphoid A, and from these occasionally plates showed pure cultures of this organism.

Following the publication of the paper by Leitch,[1] who used brilliant green and telluric acid with excellent results, we began a series of experiments, using these substances in the peptone water; unfortunately, the cases were suddenly ordered to be sent elsewhere, and we could not continue the work, but 100 specimens were put through in this way, and one positive was found which had been overlooked by direct plating on Endo's medium.

In examining specimens of urine about 2 c.cm. is added to a melted Hiss tube, and plates are poured and smears made on Endo's medium at the same time. Suspicious colonies are then treated in the same way as the cultures from faeces.

Summary.

In a laboratory where pathological examinations of all kinds are asked for, and where a large amount of work is done with a small and sometimes inexperienced staff, a routine as uncomplicated as possible must be used. The procedure for examination of faeces as described here is not recommended as being the best, providing one has time to prepare other media, such as the different sugars; but where a large number of men may be waiting for release, the reports must be given in as short a time as possible, so long as this does not interfere with their reliability.

Endo's medium I have always found superior to any other for plating, and it is the most easily prepared. The slope agar Hiss tube is a valuable adjunct, and saves at least twenty-four hours in identifying a suspicious colony.

The results of these examinations would seem to compare favourably with those reported when other methods have been used.

June 1st, 1917.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, September 2nd, 1916, p. 317.

IN 1913 (*Deut. med. Woch.*, March 15th, 1917) there were 620,455 deaths in Prussia—321,980 males and 298,475 females. In 1914 the deaths increased to 766,828 (males 449,645, females 317,183). The average relative mortality of males and females in the period 1886–1913 was as 109 to 100. According to this ratio, the deaths among males in 1914 should have been 345,729. By subtracting from this hypothetical figure the actual number of deaths among males in 1914, the figure 103,916 is obtained, representing the number of deaths due to the war. The death-rate per 1,000 in 1913 (not including stillbirths) was 14.9. In 1914 it had risen by 3.2 to 18.1. It was, however, almost as high (17.9) in 1906, and in 1905 it was higher (19.6).

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

DISORDERS AND DISEASES OF THE HEART IN SOLDIERS.

No one engaged in military medical work could fail to read with interest and advantage Sir T. Clifford Allbutt's article in the BRITISH MEDICAL JOURNAL of August 4th. The responsibility of estimating the degree of disability in cases labelled "D.A.H." (disordered action of the heart) and "V.D.H." (valvular disease of the heart) is no light one, and it has been some consolation to read Sir T. Clifford Allbutt's very modest statement in his article "Overstress of the Heart" (Allbutt and Rolleston's *System of Medicine*, 1909) that, after an experience dating from 1870, he still approached with diffidence the problem of distinguishing the "functionally fretful" from the "strained" heart. This attitude of a very eminent authority, one of the pioneers of investigation of "the soldier's heart," is in striking contrast to certain loose but confident opinions, as to diseases and disorders of the heart, expressed during the war.

No doubt undue importance was at one time attached to murmurs, and the value of concomitant physical signs and symptoms was not fully appreciated. Nevertheless one has viewed with uneasy suspicion Sir James Mackenzie's dictum that bruits may be disregarded (wherever they may be heard) in estimating capacity for military service. Safe enough in Sir James Mackenzie's hands, this doctrine seemed calculated to engender a too cheery optimism in practitioners called upon to form (without the polygraph or the electrocardiograph) a prognosis as to the patient's capacity for further military service. Moreover, it is a moot point whether the practitioner's duty ends with a prognosis "for the duration of the war." The patients in 90 per cent. of cases are young men, and they may claim not unreasonably that more remote effects of wear and tear demand consideration.

During the winter of 1916–17 I gave all the time I could spare to the investigation of myocardial efficiency in cases of "D.A.H." and "V.D.H." under my care, employing, in addition to the usual physical examination, Dr. Strickland Goodall's exercise-blood-pressure test, with certain modifications.[1] My results were embodied in a short paper, read before the Reading Pathological Society, and I showed charts in which the systolic and diastolic pressures, pulse, and respiration rates were recorded before and at intervals after exercise. I drew attention to the fact that in a considerable proportion of cases of "D.A.H." a murmur is audible, which in my opinion is too lightly dismissed as "functional," "haemic," "transitory." The murmur is systolic in time, and it is audible in the third, fourth, and fifth left intercostal spaces along the left border of the sternum—that is, in the tricuspid area. The cases presenting this murmur (and others in which it does not occur) show an increase upwards of superficial cardiac dullness in the left parasternal line; the dullness extends usually to the upper border of the third interspace. In most of these cases there is a variable degree of displacement of the apex beat outwards. It seems difficult to resist the conclusion that the murmur indicates dilatation of the right heart and regurgitation through the tricuspid valve. Sir T. Clifford Allbutt explains the importance of such murmurs, even when they are transitory, and he points out that "the efforts cast upon such a heart should not be immoderate"—in other words, the murmurs have a significance, and are not to be disregarded.

The important part played by infections in causing disability of the myocardium and rendering it liable to strain is duly emphasized in the article under consideration. Unfortunately, both in civil and military practice, the more remote effects of acute infections, apart from rheumatic fever, upon the myocardium are apt to be forgotten.

Reading. GORDON LAMBERT.

IN the correspondence in the BRITISH MEDICAL JOURNAL on soldier's heart it has been stated that the systolic murmur heard at the base over the pulmonary area is due, in the vast majority of cases, to the friction between the

[1] Dr. Strickland Goodall: The Estimation of Myocardial Efficiency, BRITISH MEDICAL JOURNAL, October 14th, 1916

pulmonary artery and the chest wall or adjacent structures. I am in charge of a camp of over 2,000 lads under 19 undergoing military training, a large number of whom are classed in low categories, and I am much struck by the number of cases in which this systolic murmur occurs, and by the fact that it is generally associated with poor physique in lads who are undersized and showing bad or retarded development. It may be that their chests are smaller and the friction more likely to occur, but my impression is that although there are seldom signs of cyanosis, the underdevelopment also applies to the heart itself, and that there is probably some relative or actual narrowing of the pulmonary artery, such as occurs in the commoner forms of congenital heart disease. Certainly the symptoms associated with D.A.H. (disordered action of the heart) are very common with these lads, and I have advised a more graduated course of physical training for some of them.

It would be very interesting if those who have had the opportunity of making *post-mortem* examinations on patients who have complained of symptoms of D.A.H. would report on the condition of the pulmonary artery and valve in these cases.

H. M. Raven,
Lieutenant R.A.M.C.

TREATMENT OF SCABIES.

I have read with great interest the paper by Captain Clark and Captain Raper on the chlorine treatment of scabies, published in the British Medical Journal on July 28th.

My interest, however, was chiefly aroused by the details these medical officers give of the history and previous treatment in the fourteen selected cases. Six had already been treated by sulphur before they were subjected to the gassing process; four of these must have suffered from very severe sulphur dermatitis, for it is stated that they had received three months' sulphur treatment (Case 2); three months' treatment, probably irregularly (Case 4); many treatments with calcium sulphide during five months (Case 9); and sulphur treatment for two weeks (Case 12).

If Captain Clark and Captain Raper will try the effect of sulphur ointment applied for *three days only*, after a preliminary hot bath, they will find, if the details are properly carried out, that a cure of the scabies has been effected in practically every case.

Henry MacCormac, M.D., F.R.C.P.,
Major R.A.M.C.(T.C.).
General Hospital, B.E.F., France.

ADIPOCERE IN THE BODIES OF THE DROWNED.

The dead body of a middle-aged man was recently recovered from the sea outside Milford Haven. The scalp, with skin of forehead and eyelids, were missing, also the lips; both forearms were absent. The boots and clothing were fairly well preserved. There was complete absence of all unpleasant smell or odour; the surface was white and covered with minute marine growth of barnacles. The tissues had, instead of disintegrating, undergone a change into adipocere, which covered chest, back, and abdomen like a solid case, and no doubt prevented escape of gas, etc.

It would be hard to answer the question, How long has this body been in the sea? I think much longer than might be supposed possible for a dead body to float—possibly for months. If it had not been for this formation of adipocere this body would have sunk long ago, and would not have been recovered.

I think it possible that this dead body will be in just as good preservation years hence as it is to-day. It was not possible to identify the individual.

H. W. Bernard,
Lieutenant R.A.M.C.
Dale, Milford Haven.

THE DETECTION OF DEAFNESS.

Members of medical boards occasionally meet with men who state that they are "stone-deaf" in one or both ears, and much more frequently men who state that they are "hard of hearing" in one or both ears. In a number of these cases the examiner suspects malingering, or at least an exaggeration of the deafness. The usual tests, such as the watch and the tuning-fork, take time, depend upon the statement of the subject as to whether he hears them or not, and are therefore open to serious objections.

Some months ago, while examining with the speculum a man suffering from chronic otorrhoea, I noticed his eye blinking in the normal way, and it occurred to me to make use of this to discover simulation or exaggeration of deafness, because the act may be said to be involuntary.

I employed the following plan on the next subject, who stated that he was "very hard of hearing." First, I asked him which ear was the deafer, and then requested him firmly to close it with the index finger of the hand of the corresponding side. Next, standing on his opposite side, with my face about six or eight inches away from the other ear, and having pretended to examine the ear carefully for a few seconds, I whispered quickly, "Shut your eyes." He was a malingerer, and having been taken by surprise he closed them before he could take thought.

This method may also be employed as a ready, but perhaps a rough, test for varying degrees of deafness, by gradually raising one's voice or bringing one's mouth nearer the ear of the subject.

John J. Eyre,
English Physician to the Baths of Salsomaggiore, Italy; Member of the Shoreditch Medical Board.
London, W.C.1.

Reports
on
MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

THE KING GEORGE V HOSPITAL.

LARGE FRAGMENT OF SHELL CASING EMBEDDED IN ORBIT: FRACTURE OF ORBITAL WALL AND LACERATION OF GLOBE: SUCCESSFUL REMOVAL AFTER LOCATION BY X RAYS.

(By Sir William J. Collins, M.P., K.C.V.O., M.S., M.D., B.Sc.Lond., F.R.C.S.)

Pte. G. A., aged 20, 54th Canadians, was admitted to King George's Hospital on October 24th, 1916. He was wounded on October 21st at Courcelette, he states, by "shrapnel." The left eye was markedly proptosed and apparently perforated, the tension being −2. There was great chemosis of the conjunctiva, some blood visible in the anterior chamber, and the fundus was unilluminable. An inch and a quarter behind the left external angular process was a small wound, with ecchymosed margins, and some subcutaneous blood clot. There was great tenderness of the eye and parts adjacent to the orbit. There was no perception of light. Temperature 100°; pulse 64. No other wound, and the other eye was normal.

A radiogram taken by Mr. Ironside Bruce showed a "large fragment of shell casing lying behind the eye in the upper part of the orbital space, the posterior wall of the space being involved." On October 27th, under chloroform administered by Mr. Harwood, after disinfection of the eye and wound, Sir William Collins enucleated the lacerated globe. With the index finger he located the piece of shell casing fairly firmly fixed into the orbital roof, while portions of bone, apparently from the great wing of the sphenoid, were extracted from the orbit. The fragment of shell was cautiously freed from surrounding semi-organized clot and periosteum, and then seized with sequestrum forceps and gently extracted. The wound in the temporal fossa had clearly been the site of entry, and some portions of the outer and upper wall of the orbit had been fractured. The impact of the fragment thus arrested in its course had, after penetration, been sufficient to rupture the upper and posterior part of the globe of the eye. Drainage tubes were inserted in both the orbit and the temporal wound, the edges of the latter having been excised. Convalescence was uninterrupted, and by the end of November the wound was healed, the socket healthy, and only some stiffness of the left temporalis muscle remained.

The piece of shell casing, erroneously but commonly described as "shrapnel," measured 17 mm. × 11 mm. × 8 mm., and was of the irregular contour shown in the accompanying radiograms (p. 245).

The Services.

GRATUITIES OF OFFICERS, R.A.M.C. TERRITORIAL.

A CORRESPONDENT tells us that he has been informed that the yearly gratuities earned by the officers of the R.A.M.C., Territorial, are "washed out" in the event of an officer's death in action or on service.

*** Our correspondent's information appears to be incorrect. The matter is governed by Army Order No. 406 of 1915, which deals with the issue of gratuities to Territorial Force officers. It provides that the gratuity is issuable to the estates of officers who die while serving. Attention may be specially directed to paragraph 5 of the Order.

EXCHANGES.

OCULIST R.A.M.C., ophthalmic centre, France, wishes to exchange with officer holding similar appointment in United Kingdom.—Address, No. 2700, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

R.A.M.C. Exchange wanted. M.O. to a reserve park (horse transport) in France desires exchange with M.O. of a home service unit. Write for particulars to M.O., No. 2 Res. Park A.S.C., B.E.F.

Medical News.

THE Wellcome Historical Medical Museum will be closed for cleaning from September 1st to the 30th inclusive.

A NEW periodical entitled *Laboratorio* has recently appeared in Spain. It is devoted to the biological sciences and experimental medicine. It is published by G. Domenech-Reig y Cia, Pelayo, 24, Barcelona.

MR. GEORGE W. BRACKENRIDGE of San Antonio, Texas, has given £10,000 to enable Columbia University to open its doors to women students of medicine this autumn. The existing buildings will be extended to provide additional laboratory facilities for work in chemistry, pharmacology, pathology, and bacteriology.

TWO or three years ago we reviewed Dr. J. P. McGowan's report upon his *Investigation into "Louping-ill" or "Trembling"* (BRITISH MEDICAL JOURNAL, August 7th, 1915, p. 221) which is somewhat prevalent amongst sheep in Scotland and the north of England. The names "louping" or "leaping-ill" and "trembles" were given by stock-owners because some of the affected animals show nervous excitement by leaping off the ground, and others exhibit muscular tremors. Sir Stewart Stockman, of the Board of Agriculture and Fisheries, has contributed to the *Journal of Comparative Pathology and Therapeutics* an account of special investigations carried out by him into the etiology and epizoology of this disease with special reference to the "tick theory," which has been the subject of much discussion, but has never received general acceptance. The infective agents of tick-borne diseases are protozoan parasites. The result of Sir Stewart Stockman's close investigation of the fluids and tissues of sheep affected with louping-ill has been to furnish strong evidence against the idea of a protozoan organism carried by ticks being the cause of this malady.

THE Howard Association was formed fifty years ago to promote efficient methods for the prevention and treatment of crime and juvenile delinquency. In the annual report for 1916, now published under the title of *Crime and its Treatment*, the committee notes that the two outstanding features of the year were a decrease of nearly half the number of adult offenders, and an increase of one-third in the number of juvenile offenders. Before the war the prison population of England numbered 16,727; at the present time it is somewhere about 9,000. On the other hand, whereas before the war there were some 37,000 delinquent children a year, there are now 50,000. All the reformatories and industrial schools are reported to be full. The association's office has become a clearing-house for information on this matter, and a report, entitled *The Child and the War*, was prepared by the secretary, and published for the benefit of judicial and educational authorities. Two facts were revealed by this survey—a shortage of adult leaders of children's organizations, and an overlapping of effort. Steps were accordingly taken to strengthen and co-ordinate the work of children's societies in each area. With regard to the decrease in the prison population, which has occurred in Scotland and Ireland as well as in England and Wales, three main causes are given—enlistment of many habitual petty offenders; the restrictive orders of the Liquor Control Board and of justices and military authorities; and the great demand for labour, rendering employment easy and well paid, and resulting in ability to pay fines. The association considers that the dull, mechanical routine of the reformatory industrial schools ignores the individual, and does not tend to produce the type of citizen which life to-day demands.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

The address of the Central Medical War Committee for England and Wales is 429, Strand, London, W.C.2; that of the Reference Committee of the Royal Colleges in London is the Examination Hall, 8, Queen Square, Bloomsbury, W.C.1; and that of the Scottish Medical Service Emergency Committee is Royal College of Physicians, Edinburgh.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

IT appears to be necessary again to remind correspondents that no notice can be taken of contributions not verified by the writer's name.

QUERIES.

X. Y. Z. asks for advice as to the nature and treatment of the following condition in a child aged 3½ years: A marked linear blush, about half an inch wide, over the left cheek, extending along the line of Stenson's duct, from the ear to the mouth, appears whenever the child masticates its food. There is no paralysis of the face nor anything to point to a cause for this condition, which has evidently been present since child was an infant. It would seem as if the parotid secretes into the tissues instead of into a duct.

W. M. B. asks for advice in the treatment of epilepsy in a boy, aged 9, who had had several major convulsions; potassium bromide 30 grains a day was given, and the major attacks stopped, but minor attacks supervened—as many as twelve to fifteen in twenty-four hours, and have not been affected by continuance of the bromide. Should bromides be continued? Some authorities recommend perseverance with them; others, not to give bromide at all. Our correspondent also asks for references to recent literature.

LETTERS, NOTES, ETC.

THE ALLEGED PERILS OF URIC ACID.

DR. D. DUNCAN (London, S.W.) writes: "Atophan" (the composition of which is stated to be 2 phenylchinolin 4 carbonic acid) eliminates uric acid as shown a few hours after the first dose. The symptoms at once diminish, and soon disappear, as does the excess of uric acid on continuing the treatment. This week, he adds, the first consignment of a British substitute has reached me. I tested the preliminary sample and found it innocuous and effectual. The makers will doubtless introduce it to the profession in the usual manner.

ROYAL EARLSWOOD INSTITUTION FOR MENTAL DEFECTIVES.

DR. A. G. NEWELL (Harringay, N.) asks any medical man who has votes in the election for cases for admission in this institution, or can influence any votes, to consider the case of Miss Veera Cherry at the election in September. It is a most deserving case, and any further particulars he will gladly give.