abruptly it seems to make the child peculiarly restless and irritable. As to surgical operations, one case became distinctly worse after the removal of tonsils and adenoids, another was unaffected in any way by the same operation, while a third seemed to improve. One case suffering from rather bad phimosis showed no improvement as regards the convulsions after being circumcised.

Conclusion.—From what has been said it seems difficult to avoid the belief that convulsions in infancy associated with reflex causes have a much more serious prognostic significance than is usually supposed, not only as regards the frequency of the convulsions but still more as to the probability of future mental and moral deterioration. The reason why it has been customary to attach so much importance to convulsions of idiopathic origin is twofold: (1) the great *a priori* probability of such a view, and (2) the failure to follow up for any considerable length of time cases of convulsions associated with reflex causes. It is only the latter more humble task which I have been attempting here: at the same time, one might point out that the *a priori* reason is not so formidable as it seems. “*Cessante causa, cessat et effectus*” sounds very conclusive, but, of course, when we speak of rickets, teething, specific fevers, &c., being reflex causes, in strictness of logic they are merely antecedent (or concomitant) conditions, the cause being simply the totality of antecedents among which the intrinsic condition of the brain may possibly be the most important. One might also readily argue that a convulsion, to whatever cause it may be due, must have some effect upon the brain and that the nervous system very easily forms habits, so that the fact of having had one convulsion, however induced, renders it more liable to have another quite apart from any extrinsic cause. However this may be, the fact remains that in 200 cases taken haphazard, carefully investigated and followed up, the prognosis as to the future moral and mental condition of the child does not appear to be any better when the first fit is associated with a reflex cause which can be removed than when it is of idiopathic origin. It will, however, be necessary for our knowledge of the pathogenesis of epilepsy to be much further advanced than it is at present before its precise relationship to infantile convulsions can be determined.

Green-street, W.

THE PROPHYLACTIC USE OF ANTI-DIPHTHERITIC SERUM.

BY WILLIAM W. SHACKLETON, M.D. DUB.

THE following short account of the prophylactic use of anti-diphtheritic serum during an outbreak of diphtheria last autumn in a school containing over 300 boys may be of interest.

On Sept. 7th, 1905, two cases occurred in a junior house (which I will call E House) which had at the time 44 boys resident in it. From that time to the 13th four more cases occurred in this house and one in a senior house. In addition to these a boy in E house was removed and isolated on account of having a nasal discharge in which Klebs-Löffler bacillus was found; this boy was placed amongst the diphtheria cases and by douching a quantity of the membrane was removed from the nasal cavity. Out of 45 boys seven had developed diphtheria. I therefore on the 13th inoculated all the boys remaining (38) in House E with 2000 units of anti-diphtheritic serum supplied by Burroughs and Wellcome. The next morning (the 14th) one case occurred and after that not a single case occurred for five weeks in this house. I examined these boys' throats every day and took swabs therefrom. I found nine boys with the diphtheria bacillus present. These boys I isolated (not putting them, however, with the diphtheria cases) and kept them so until swabs were obtained free from the bacillus. The bacilli were persistently present in one boy's throat for five weeks, at the end of which period he developed small patches of membrane on each tonsil. He had been inoculated on the 13th with his house. This is interesting as tending to support the view generally held that the prophylactic effect of the serum lasts about five weeks.

On the 28th I saw a boy from a senior house who had well-marked membrane on the tonsils and soft palate. The

diphtheria bacillus afterwards was proved to be present. He acknowledged that he had had a sore-throat for two or three days but had kept the fact to himself. I therefore examined all the school (317) and found two cases of diphtheria. On the following day, with the help of my colleague, Mr. G. Francis Smith, and Dr. J. H. Hebb, all the boys in the school (with the exception of E house previously done) were inoculated with 1000 units of anti-diphtheritic serum supplied by the Lister Institute. No more cases occurred amongst the senior boys.

In E house, which was the original focus of infection, one case occurred on Oct. 18th. This case was that of a boy who had come back on Oct. 14th and was not inoculated. He was the only boy in the whole school (except those who had actually developed diphtheria previously to the inoculations) who had not had a prophylactic dose of serum. Amongst the 317 healthy boys inoculated no ill-effects ensued. One boy was kept in bed two days as there was a good deal of pain and swelling in the region of the inoculation. No other boy was absent from the school or unable to play games. Many had slight urticarial rashes. I found that the least painful place to inject was the buttocks. The inoculation of this large number of boys was done in about two and a half hours, thanks to the able assistance of the staff. All that we had to do was to fill the syringes and inject. By having a good supply of needles a sterilised needle was always ready. The skin was previously well scrubbed with soap and antiseptic and covered with a moist dressing, gauze being strapped on immediately after the injection. On the 19th the boys of E house were for a second time inoculated with 1000 units of serum. This I did after the boy who had missed being inoculated developed diphtheria. A month had elapsed since the first inoculation.

To sum up. No case occurred amongst boys belonging to E house after the first inoculation for five weeks, except one, and that on the day following the injection. The case that did occur at the end of five weeks had the Klebs-Löffler bacillus present during the whole of that period. One other case occurred in E house but that was in the case of the only boy who had not received any serum. No case occurred amongst the senior boys after the injection, although three cases had occurred and these were freely mixing with their companions until detected and removed. That no cases did occur and escape detection I am pretty certain, as I made a daily inspection of all the boys' throats for a considerable time. I may add that all the 14 cases of diphtheria did well. With the one exception of the boy at large for two or three days all of them got inoculated within a few hours after the first symptoms of the disease had manifested themselves.

Bushey, Herts.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF FAUCIAL ANGINA WITH FALSE MEMBRANE (NON-DIPHTHERITIC) SIMULATING DIPHTHERIA.

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A WOMAN, aged 38 years, felt her throat uncomfortable on August 5th, 1906. She sought advice on the 6th, when the pharynx was found to be slightly congested and a thin film was observed on the tonsils which, however, were not noticeably enlarged. There was no nasal discharge nor were any glands unduly enlarged. The film on the tonsils was easily removeable without leaving a bleeding surface. These early clinical signs were on the whole against a diagnosis of diphtheria. Cultivations made from a swab showed the presence of cocci and a few wedge-shaped bacilli. On the 7th there was a more pronounced film, a second swab cultivation showing streptococci and other cocci. On the 9th there was definite false membrane of considerable extent and thickness. Large patches were visible on the left tonsil

and behind the posterior pillar of the right fauces. A piece of membrane stained and examined for bacteria showed the presence of streptococci and other bacteria. A swab cultivation after 24 hours' incubation showed the presence of spirilla, large fusiform bacilli, small faintly stained bacilli, a few tetrads, and streptococci. The combined clinical and bacteriological evidence at this date appeared to indicate a case of Vincent's angina. In view, however, of the definite typical false membrane diphtheria antitoxin (2000 units) was administered. Pure iodo and undiluted tincture of iodine B.P. were applied to the patches and a mixture of the perchlorides of iron and mercury was administered. On the 16th the following note was made: "Membranous formation still continues. The subjacent tissue, which at first was merely congested, has later become ulcerated and bleeding occurs on removal of the false membrane." A further swab cultivation showed numerous long streptococci but no diphtheria bacilli. From this date onward improvement gradually set in, the membranous formation (which was removed two or three times a day) becoming thinner, until finally it appeared to be nothing but the exudation from healing granulations.

Apart from the very definite false membrane of considerable extent the clinical signs were in my opinion against a diagnosis of diphtheria. This opinion was sustained by no fewer than five or six carefully made *negative* swab cultivations and by the clinical course of the case. The temperature did not at any time fall below normal. The case emphasises the importance of bacteriological confirmation of a provisional diagnosis of diphtheria, if such diagnosis is based on membranous formation alone. It further emphasises the importance of reserving an opinion until all the evidence available has been obtained. The reservation of diagnosis should, however, not interfere with the prompt administration of a small dose of diphtheria antitoxin, which should be administered without delay in every doubtful case without waiting for bacteriological evidence. It is unnecessary, I hope, to add that all necessary precautions were taken in the way of isolation and antiseptic applications throughout the case, for even if not a case of diphtheria such a throat is probably of an infective nature. Amongst precautionary measures for the prevention of spread in cases of infectious diseases, in addition to the efficient isolation of the patient I always advise the daily methodical use of an antiseptic gargle (preferably a solution of permanganate of potash) on the part of others living in the same house or who have otherwise been exposed to infection.

As to the etiology of the above case there was a history of dust having been blown into the mouth a day or two before onset. This dust probably carried in deleterious bacteria, such as streptococci, &c. The organisms cultivated from the false membrane were probably saprophytic bacteria which had found a suitable nidus for development in the false membrane. An important diagnostic point is the course of the temperature. In true diphtheria this soon becomes, and for a long time remains, subnormal. In the present case the temperature was never subnormal.

Southend-on-Sea.

FRACTURE OF THE EXTERNAL CONDYLE OF THE HUMERUS.

BY W. E. HOME, M.D. EDIN.,
FLEET SURGEON, R.N.

FRACTURE of the external condyle of the humerus is so uncommon an accident that it may be well to put a case on record.

On July 28th a stoker on H.M.S. *Exmouth* caught his right elbow under the cross-head of a hydraulic engine. So violent was the blow that his arm bent the rim of a cast-brass lubricating cup. On examination he was found to have a lacerated wound on each side of the elbow. From the inner wound the finger passed through lacerated tissues down to the front of the humerus. Within the outer wound the muscles were slightly lacerated, the skin was partially separated even where not ruptured, and about an inch of the external condyle and supracondylar ridge was found lying free. No arteries bled. The loose piece of bone was fixed by a suture through its adherent soft parts. The wounds were drained and sutured (one deep silkworm-gut suture of relaxation, the others catgut continuous), and the

elbow was put up in cotton wadding with elastic bandage over all. The drain was removed from the inner wound on the second and from the outer on the third day. The after-history was uneventful. The wound is now under cyanide gauze and collodion.

H.M.S. *Exmouth*.

Reviews and Notices of Books.

Traité d'Hygiène. Publié en fascicules sous la direction de M. BROUARDEL et M. MOSNY. *Hygiène Navale* Par les Drs. DUCHATEAU, JAN, et PLANTÉ. (A *Treatise on Hygiene*, published in parts under the direction of M. BROUARDEL and M. MOSNY.—Part 10, *Naval Hygiene*, by Dr. DUCHATEAU, Dr. JAN, and Dr. PLANTÉ.) One volume in octavo, 356 pages, with 36 illustrations in the text and three coloured plates. Paris: J. B. Baillière and Son. Price 7 francs 50 centimes or in boards 9 francs.

IN this great work on hygiene the aim of the editors, the late Professor P. Brouardel and Dr. E. Mosny, is to formulate the contemporary hygienic knowledge of the world in as complete and perfect a manner as possible. It would be difficult to find two men better equipped for the task. Their names alone are an ample guarantee for the thoroughness of the work but they have, moreover, been successful in securing the collaboration of such well-known authorities as M. Chantemesse, M. Netter, M. Widal, M. Wurtz, M. Dupré, M. Thoinot, and M. Courtois-Suffit of the Faculty of Paris; M. Courmont and M. Lesieur of Lyons; M. Rouget and M. Dopter of Val-de-Grâce; M. de Launay and M. Leclerc de Puligny, engineers; M. Ogier; M. Bonjean; M. L. Martin, chief medical officer of the Pasteur Institute; M. Calmette, director of the Pasteur Institute at Lille; and M. A. J. Martin, inspector of Parisian sanitation. It is proposed to complete the work in 20 parts, and so far five parts have been published dealing respectively with Atmosphere and Climate, Soil and Water, Individual Hygiene, Alimentary Hygiene, and Naval Hygiene. The last-named fascicule, as it is termed, which has just been submitted to us for review, stands tenth on the list and is divided into two sections. The authors of the first section, which treats of the navy and occupies about two-thirds of the volume, are Dr. Jan and Dr. Planté, both senior officers on the active list. For the second section, which occupies the remaining third and is devoted to the mercantile marine, Dr. A. Duchateau, who like his colleagues belongs to the navy, is responsible.

The French navy, in common with the other first-class navies of the world, has undergone such a complete transformation during the last few years, not only as regards ironclads and cruisers but also in connexion with the still progressive development of torpedo vessels and submarines, that the best attention has been devoted to attending to the sanitary details of the new constructions. No war vessel is now projected in which the requirements of hygiene can be said to be unduly disregarded. Of course, everything must yield to expediency. A war vessel is not a pleasure yacht; before everything it must be as good a fighting machine as possible; but in many ways that formerly were overlooked the health, and consequently the efficiency, of the fighters can now be safeguarded without interfering with power. From the point of view of the pure combatant hygiene should by no means be a negligible quantity. In the first subsection of their section Dr. Jan and Dr. Planté deal with war vessels; the internal arrangements of the several types, their habitableness, ventilation, warming, lighting, and water distribution. In the second subsection the mode of life of a modern sailor belonging to the navy is exhaustively reviewed as regards recruitment, duty, general and personal hygiene, and food. The third subsection treats of pathology and prophylaxis in peace time as well as