Such in outline is the history of this remarkable effort, the results of which agree with those obtained elsewhere in Egypt. When Lieut.-Colonel Elgood introduced prophylaxis he did not in any way relax any of the other precautions.

General Conclusions.

The lesson taught by the experience in Egypt is that all the repressive measures, all the constructive social measures, all the educational efforts and all the emotional appeals result in only a limited amount of success and only reduce venereal diseases to a moderate extent. It is evident that a very large number of men either find the sexual appetite overpowering or deliberately indulge, and unless some form of prophylaxis is adopted many infections are certain. Some of the men were quite candid and stated they intended to indulge, despite generals, doctors, and chaplains, and with or without prophylaxis, though they preferred to be safe.

The conclusions reached by me were that primary prophylaxis and ablution tents are both quite effective in preventing infection. The objections raised by some people to primary prophylaxis are both moral and medical. The moralists say that the free use of primary prophylaxis would induce people to become more immoral. I am unable to follow this line of reasoning. The use of prophylactics at the time of exposure, say 9.30 p.m., cannot produce a very different moral result from the use of prophylactics half an hour later in the ablution tent.

Medically the position, as I understand it, is as follows: The civil authorities in Great Britain contemplate establishing treatment centres throughout the country. These centres will subserve treatment, prophylaxis by ablution rooms, and educational propaganda. If all these measures are carried out nothing but good can result; but I still think many cases will arise owing to geographical difficulties, in which primary prophylaxis will be requisite. If these centres are to issue the outfits, so much the better; if not, it is certain some one else will provide them.

The aim of all medical men, I submit, is not simply the reduction of the amount of venereal disease, but the removal from this globe of the spirochaete and the gonococcus, a task which does not seem to me more difficult than the destruction of other noxious animals and plants.

Medical men dislike vice rather more than any class of people because they see it on the nauseous side. They are not, however, as medical men, professors of morality. Their business is to prevent or cure disease, and they have a right to object to their action being hampered by those who seem to think that venereal diseases were created to enforce chastity.

For the benefit of those interested I will state the case in the form of questions:

1. Is there any material difference from the moral point of view in preventing venereal disease by the use of measures adopted before, at the time of, or after exposure? He who exposes himself knows that in any event he is practically safe.
2. If morality is secured by fear of infection, why not forbid treatment altogether?
3. Is a morality which depends on fear of immediate consequences worth very much?
4. In practice does fear of infection deter many men?
5. If, as Mr. V. Warren Low put it, we discover to-morrow, as we may, a vaccine which will protect those vaccinated completely against venereal disease, will any one forbid its use, in the interests of morality?
6. Is not the fundamental ethical fact which concerns us the wholesale infection of the innocent which goes on at present?
7. Is it not a fact that the *lex talionis* cannot be enforced solely against the transgressor, but is enforced with terrible severity amongst the innocent?
8. Finally, why not frankly recognize the fact that the world will not be rendered more or less moral by the extinction of venereal disease?

To me the problem of chastity involves a much wider survey. We have a physiological instinct of great intensity round which has been built up the finer feelings which we value more than anything else in life. No sane man wishes to see the animal instinct divorced from these emotions, but he cannot fail to see that if the legitimate gratification in marriage is postponed to the summer of life irregular relationships are certain to be formed. If it be asked why men and women marry so late in life, the answer is the standard of external requirements set, and, as a valued friend observed, still more the artificial assessment of those values. The matter lies largely in the hands of women. If they revise their standards of value, most of the sexual difficulties will disappear.

But any revision requires a complete knowledge of the fundamental data, a clear and sane vision, and good judgement. Until social arrangements are recast, irregular sexual relationships are likely to continue, and whilst they do prophylactics are necessary for bodily salvation.

To me, much of the value of the knowledge gained in Egypt was contact with the facts of the case. We had to deal with an organized commercial system of vice provided with agents catering for the gratification of this powerful instinct by healthy men. We found that we could not succeed by social and moral means alone, and that prophylaxis was an absolute necessity if the men were to be kept healthy. Without recasting social relationships I see no present prospect of sweeping away the whole of this hideous paraphernalia.

PRELIMINARY REPORT ON THE PRESENCE OF A "FILTER PASSING" VIRUS IN CERTAIN DISEASES,

WITH ESPECIAL REFERENCE TO TRENCH FEVER, INFLUENZA, AND NEPHRITIS.

BY

MAJOR GENERAL SIR JOHN ROSE BRADFORD, A.M.S.,

CAPTAIN E. F. BASHFORD,* R.A.M.C.,

AND

CAPTAIN J. A. WILSON, R.A.M.C.

(A report presented to the Director-General Medical Services, British Armies in France.)

DURING the autumn of 1917, and the spring and summer of 1918, observations were carried out by us on the pathology of acute infective polyneuritis. These resulted in the detection, isolation, and culture by the Noguchi method of an organism that reproduced the malady when inoculated into animals; and, further, this organism was recovered by culture from such experimental animals. The details of this work will be published in the forthcoming number of the *Quarterly Journal of Medicine*, and therefore need not be considered here.

The causative organism of polyneuritis belongs to the group known as "filter passers," in that the virus will pass through certain filters, although it is not a filter passer in the sense that some other organisms are, as it does not pass through certain filters with very fine pores.

The satisfactory results obtained in the study of polyneuritis led naturally to the same method that had proved so successful with this disease being applied to other diseases where there was either evidence, or suspicion, that the causative agent was a filter passer. A considerable number of such diseases have been investigated on these lines during the last six months in the laboratories attached to certain hospitals in the Etaples area.

Captain J. A. Wilson conducted the whole of the bacteriological portion of these inquiries in the laboratory of No. 20 General Hospital. Further, the observations on trench fever mentioned below were all made in this hospital, and Major Frank Clayton, R.A.M.C., had charge of the clinical observations on the volunteers inoculated with the virus of trench fever.

Captain Peacock controlled the whole of the entomological part of the inquiry, and more especially the provision of clean lice to control observations on infected lice.

The experimental work on animals, and the histological work on the lesions so produced, has been carried out by Captain Bashford in the special laboratory attached to the Observation Hut at No. 26 General Hospital. The present report is merely a preliminary statement as to certain results achieved; the full details—clinical, experimental, and histological—will be published later.

Trench fever was one of the first diseases examined at the suggestion of Captain Wilson. Other observers have

* Captain Bashford took no part in the portion of this work dealing with trench fever.

adduced evidence showing that the virus of this disease belonged to the group of filter passers.

Trench Fever.

The virus isolated in trench fever consists of minute coccus-like bodies, grouped in pairs, with the opposing surfaces flattened, and varying in size from 0.3 μ to 0.5 μ. It is Gram-positive and stains readily if the film preparations are washed in ether before the stain is applied. It passes through Berkefeld N and V filters, and also through Massen porcelain filters, and can be cultivated from such filtrates. It resists heating to a temperature of 56° C. for thirty minutes, and it is an anaërobe.

This organism has been recovered by culture from the blood in 11 out of 15 cases of trench fever examined during the pyretic stage, and in 3 out of 8 cases examined when apyretic. It was not found in over 40 control cases where blood culture with the same technique was carried out. A similar organism was recovered from four separate supplies of infected louse excreta kindly supplied to us by Sir David Bruce.

It was not found in thirty-one specimens of excreta from batches of clean lice.

The culture obtained either from the blood of man, or from louse excreta, when inoculated by scarification into man, produces a mild illness, and the organism can be recovered from the blood by culture during such illness, and also from clean lice fed on the patient during the illness.

Influenza.

The virus isolated in cases of influenza consists of very minute rounded coccus-like bodies, varying from 0.15 μ to 0.5 μ. It is Gram-positive, and passes through Berkefeld N and V filters and Massen porcelain filters. It is an anaërobe, and resists heating to 56° C. for thirty minutes.

It has been isolated by culture from the blood in 6 out of 9 cases examined, from the sputum in 6 out of 6 examined, from pleural fluid in 4 out of 4 examined, and from the cerebro-spinal fluid in the only case so examined. It has also been isolated from the lymphatic glands *post mortem* in the only two cases examined. This organism can not only be grown from the blood, and from exudates, but it can also be seen in stained films prepared from exudates—for example, sputum, pleural fluid, cerebro-spinal fluid.

The culture (second generation), when inoculated into animals subdurally or intravenously, produces illness in guinea-pigs and monkeys, and on *post-mortem* examination the following lesions have been found: Extensive lobular pneumonia with haemorrhages, some nephritis, myocardial and hepatic lesions, such as extreme congestion, interstitial haemorrhages of small size, and fatty degeneration. Passage experiments done from such animals when slightly ill, by injecting their blood, bile, etc., into healthy animals, causes in these more severe and even fatal illness, and *post mortem* the same lesions are found. The organism has been recovered by culture from the tissues of such experimental animals.

Nephritis.

Up to the present time (January, 1919) only one variety of nephritis has been investigated—that is, that characterized by the presence of pyrexia and haematuria at the onset.

The virus isolated in such cases of nephritis consists of a round coccus-like body varying from 0.3 μ to 0.6 μ in size, and in culture often occurring in the form of short chains of four individuals. The same organism may be seen in urinary sediments either singly or in pairs. It is Gram-positive, and passes through Berkefeld N and V filters, and also through the Massen porcelain filter. It is an anaërobe, and resists heating to 56° C. for thirty minutes.

It has been isolated from the blood in 6 out of 9 cases examined, and from the urine in 7 cases. The culture (second generation), when inoculated into animals, produces nephritis in monkeys and guinea-pigs. In monkeys this can be determined not only by *post-mortem* examination, but also clinically, since the urine contains blood, albumin, and casts. In both guinea-pigs and monkeys extensive lesions, glomerular and tubular, are found on microscopic examination. In severe cases pulmonary lesions are also present.

The organism has been recovered by culture from the tissues of the animals experimentally inoculated.

These three diseases are those that have been most studied as yet, but organisms of the same group, although differing from one another, have been recovered by culture in a number of other diseases of obscure etiology. In most of these no adequate experimental work has been possible up to the present, and in others it is incomplete owing to insufficient time having elapsed to establish results with certainty. Amongst the more important diseases where true "filter passing" organisms have been isolated by culture from the blood, and seen in suitably stained films, mumps, measles, rose measles, and typhus may be mentioned. In mumps four cases have been examined, and all gave the same positive result. Two cases of typhus have been examined, but as yet it has only been possible to get material from one each of measles and rose measles.

An organism allied apparently to that of polyneuritis has been isolated from brain tissue in cases of encephalitis lethargica, both from material obtained from England, and also from cases observed in the army in France. A considerable amount of histological work has been done on the lesions present in animals (monkeys) successfully inoculated with these cultures. These results will be published later.

If the organisms found in polyneuritis and encephalitis are excluded, all the others have many points in common and possibly belong to one group. Although exceedingly small, they present individual differences in their morphology and in their mode of growth in culture. These details must be reserved for fuller and later publication.

Etaples, Jan. 21st, 1919.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE TREATMENT OF THE WAR PSYCHONEUROSES.

IN a memorandum under this heading (January 11th, 1919, p. 42) Captain Prideaux states that forgotten experiences are the rule in psychoneurotic patients, and infers that the symptoms are in all cases to be attributed to these latent experiences, their ultimate cure being brought about by their "revival" or reassociation with the general content of consciousness. In support of this contention he quotes three cases.

Case I illustrates the fact that it is possible under a mild degree of hypnosis to restore the memory of past experiences, a sufficiently interesting fact, but one which is well known and generally accepted, and hardly relevant to the points at issue.

Cases II and III, on the other hand, show the relation of a special symptom to a forgotten experience, and, so far as they go, would appear to confirm Captain Prideaux's theory.

It would be interesting to know from what, if any, additional symptoms Cases II and III suffered, and if these also were to be referred to a forgotten incident, either the one quoted or some other not identified. It is at least remarkable that other observers who have examined a large number of cases of a similar type have been equally successful in their results, and this without invoking the particular agency he favours, and indeed in many cases by working on apparently diametrically opposite lines. I am ready to believe that "forgotten experiences are the rule in psychoneurotic patients," but I am not sure that it is not equally true of normal individuals. I am prepared to believe, moreover, that individual symptoms in a given case are definitely related to a specific but forgotten incident, but when I am asked to accept this as the principle underlying all or even the majority of the psychoneuroses I must demur.

My purpose, however, is to plead for a more catholic acceptance of the various forms of psychotherapy, and especially for a consideration of the individual cases on their merits. One may have a prejudice in favour of hypnotic or waking-suggestion, the explanatory method of Dubois, psycho-analysis, or what you will. Experience has shown that each and all have their uses and their special application. For in the domain of the psychoneuroses, if anywhere, is it true that one man's meat is another man's poison. Moreover, the discarded system of yesterday leads by a natural evolution to the accepted theory of to-day, and, apart from its quota of "cures," is to that extent justified. But for Mesmer, Braid would never have written his famous treatise on *Neurypnology*, in which