oral administration has to be substituted for the intramuscular method. Should a positive test be obtained after the first course, then three intravenous injections of the salvarsan alternative are given with the second course, which is called an intermediate course, but this does not interfere with the second, third, fourth, and fifth courses. This means a lengthening of the whole course of treatment by six weeks and of observation by twelve weeks.

Causes of Bad Results.

1. *Age.*—Patients contracting syphilis after the age of 40 seem to have more difficulty in becoming cured, as judged by the blood test, than younger cases.

2. The longer the delay in starting treatment after infection the more disappointing are the results, and vice versa.

3. *A Virulent Infection.*—This may be explained either by a low resistance of the individual or a high virulence of the syphilitic virus, or a combination of both. Clinically, it appears impossible to state when one is dealing with such a case. I would, however, state that it is difficult to get and keep the reaction negative in rupial syphilis.

4. Alcoholics are a class in which it is difficult to get good results, and for this reason total abstinence is always enjoined.

5. If the teeth are bad and the mouth septic, as so often happens in hospital cases, oral administration is to be preferred to the intramuscular method, because, if the gums are "touched"—a point of saturation with mercury to be aimed at—an uncontrollable stomatitis is liable to be set up.

6. There are a limited number of persons who do not stand mercury well, and in these the prognosis is not good. There are also a limited number who show idiosyncrasy to intravenous medication with arsenical compounds. I would give a more guarded prognosis in the case of secondary syphilis with idiosyncrasy to mercury than in the case of idiosyncrasy to arsenic compounds.

Suppose a man presents himself with an early chancre on the penis and states that he has exposed his wife recently to infection, it seems debatable whether the woman ought not to be given a few intravenous injections of salvarsan substitutes. I quite admit that it could never be known whether she had been saved from general infection or not, but when we consider the enormous difference between early and late treatment it seems a suggestion worthy of further thought.

THE TREATMENT OF VENEREAL DISEASE.

BY

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AND

SURGEON COMMANDER P. HAMILTON BOYDEN, M.D., R.N.

EVERY great war has been followed by an increase in venereal disease, so marked that on occasions it has amounted to a pestilence. Unless timely sanitary precautions are taken the greatest of all wars is unlikely to furnish an exception to the rule. We think it desirable, therefore, to give an account of an essay in preventive medicine, which, as may be judged from the following, achieved considerable success.

One of us (A. R.) has been in medical charge of a rapidly changing body of men generally numbering about 2,000. Up to the end of 1916 venereal disease was common among them in spite of numerous moral lectures and in spite of adequate provision of what is known as "early treatment"—that is, disinfection after the "contact" has returned to quarters. At the beginning of 1917 a new system was instituted. The men were instructed to disinfect themselves immediately after danger had been incurred—just as a surgeon would disinfect his hands. This procedure is what is known as prophylaxis. It differs from early treatment merely in that the man carries the disinfectant and uses it immediately. Each man who applied was given an ounce of solution of potassium permanganate (at first in a strength of 1 in 2,000, later in a strength of 1 in 1,000), a small swab of cotton-wool, and careful directions. Potassium permanganate was chosen merely because it happened to be the most accessible disinfectant. The rationale of the procedure was fully explained, so that on an emergency the man could purchase the materials from any chemist. During 1917 and 1918 about 20,000 men

passed through the station, and among them precisely seven cases of venereal disease occurred, six of gonorrhoea and one of syphilis. Of the six cases of gonorrhoea, two only were contracted by men on leave, in each case from the man's own wife. Two of the others were drunk and took no precautions. The fifth man was infected the night he arrived, and he also, being unaware of the system, took no precautions. The sixth man practised early treatment an hour after intercourse. The man who acquired syphilis also carried no disinfectant, and used it (permanganate and calomel) two hours after intercourse. He had a long prepuce, and therefore a sensitive glans, and probably did not—probably could not—rub in the calomel vigorously.

The other of us (P. H. B.) commenced prophylaxis against venereal disease in the Royal Navy in 1907. Some eighteen months ago he took over medical charge of an establishment numbering over 2,000 officers and men. The amount of venereal disease, and especially gonorrhoea, was considerable, and it was recognized that of the men who stated they had used the so-called "dreadnoughts" some 40 per cent. contracted the disease. It thus became evident that nargol jelly as a preventive was practically inert. For the past nine months the method of immediate prophylaxis by means of the application of a solution of potassium permanganate (1 in 1,000) has been employed, with results as striking as those mentioned above in the case of the soldiers. Not a single case of gonorrhoea occurred amongst those employing this method, and only one of syphilis. This latter made the application about six hours after exposure to infection, and may therefore be counted out. Unfortunately the navy is a very conservative body, and many men still persist in sticking to the "dreadnoughts." But in lectures given on the subject of prophylaxis men are gradually being convinced of the simplicity and efficacy of immediate prophylaxis. The calomel cream is still reserved for those who have omitted to carry the permanganate solution on their persons, as it seems likely that the former affords some protection, even if an hour or two has elapsed since the risk of infection has been run.

It will be seen that no man, who followed instructions and disinfected himself immediately, acquired disease. Evidently the time element is of extreme importance. Probably there is no special virtue in potassium permanganate. Any other active antiseptic would be equally effective. But permanganate is the cheapest disinfectant and the best known to the public, the least poisonous, and least irritating.

PROFLAVINE OLEATE IN THE TREATMENT OF OPEN WOUNDS.

BY

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AND

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WE desire to draw attention to the value of proflavine oleate in the treatment of certain war wounds, notably those in which an exceedingly tender raw surface of considerable extent exists, the dressing of which is productive of acute pain. Such wounds are typically seen in amputation stumps, either without flaps or with flaps left unsutured, and before the process of granulation has set in. In many of these cases superficial sloughing is going on, and the immediate edges of the adjacent skin are reddish, swollen, and indurated. These wounds are exquisitely sensitive, and the removal from them of an adherent dressing is an agonizing process to the patient. In many instances these men are very ill, and their fortitude has been broken by the combined effects of shock, haemorrhage, toxic absorption, and the suffering occasioned thereby.

The dressing with which such patients usually arrive is of gauze soaked in some antiseptic in watery solution. The water soon evaporates and the gauze adheres tightly to the raw surface. This disadvantage is obviated by the use of proflavine oleate.*

*The preparation consists of 1 per cent. proflavine oleate contained in an ointment of suitable consistence, which is made up of paraffin and calcium carbonate in about equal parts by weight. For the production of proflavine oleate in quantity sufficient for clinical use we are indebted to Messrs. Boots, Nottingham.

The method we have adopted consists in either spreading a thick layer of the oleate ointment on a single thickness of white gauze and then applying it to the wound, or spreading the oleate direct on to the surface of the wound and then covering it with a single layer of gauze. This dressing does not need to be changed for several days, and, when it is removed, strips off from the sensitive surface without any dragging or pain. It is equally applicable to any large flat-surfaced wounds, such as those left after wholesale excision of the thigh or buttock muscles, and so forth.

We have used this dressing continuously until granulation was complete; the process appeared to occur normally, no retardation or deficiency of formation of granulation tissue being observed. It has the advantage that it adheres sufficiently of itself and requires no bandage or pad to retain it in contact with the wound. The injured part can therefore, except for its covering of proflavine oleate gauze, be left fully exposed to the air under a bed cradle covered with a layer of butter muslin.

We would suggest that after all operations in which a flat raw surface is necessarily left, the wound should, from the first, be dressed with proflavine oleate, in the manner we describe.

NOTE ON THE CHEMICAL AND ANTISEPTIC PROPERTIES OF PROFLAVINE OLEATE.

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Proflavine oleate is the oleic acid salt of 3.6 diamino-acridine (the sulphate of this base being the water-soluble proflavine which has already been employed as an antiseptic in wounds). This compound is one of various salts prepared by Dr. E. L. Kennaway of this department with a view to obtaining flavine derivatives whose chemical and physical properties should fit them for special uses. Proflavine oleate is comparatively insoluble in water; but when this substance or the ointment containing it is shaken with serum the latter dissolves sufficient of the compound to acquire marked antiseptic properties. Thus the use of proflavine in the form of oleate enables a "dépôt" of antiseptic to be placed at the disposal of the tissues.

SOME EXPERIENCES OF THE RECENT INFLUENZA EPIDEMIC IN BRISTOL.

BY

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OVER 400 cases of influenza came under my care during the recent epidemic in Bristol.

Civil Cases.

I first noticed what appeared to be cases of influenza in civil practice at the end of May, 1918. The patients, who complained of pain in the limbs, feverishness, and slight catarrh, recovered in a few days. In June the same symptoms were noted, with more fever. From July onwards the cases presented more marked pyrexia, and it appeared that three distinct types could be distinguished:

1. Very sudden onset; rapid occurrence of what may be described as acute bronchiolitis; oedema of the lungs, followed by death in two or three days.
2. Influenza, uncomplicated; slow recovery, followed by debility.
3. Influenza, with pneumonia, mostly bronchopneumonia, which ensued after four or five days, followed in some cases by death, but usually by recovery with protracted convalescence.

There were three cases of the first type, two in July, one in October; all died.

There were over 60 cases in civil practice in July; they included six of pneumonia with two deaths; the deaths were of Type 1. From July 31st, 1918, to January 17th, 1919, over 200 cases were treated in my civil practice; of these, 38 developed pneumonia; there were eight deaths, two of which occurred in hospital. The total number of cases was greater than 200, but the number of deaths is correct.

The patients were largely of the artisan class, living in small rooms in a somewhat crowded district. For the most part isolation at home was impossible; there were many instances of a whole family being struck down, the incubation period ranging from a few hours to two or three days—in most cases a few hours. Many apparently weak individuals recovered and the more robust succumbed.

Several phthisical patients recovered, and similar fortune attended some cardiac cases. Two cases of acute cardiac dilatation occurred after the patients had resumed their occupations; both were examples of organic disease previously existing; both recovered ultimately.

Epistaxis was a not infrequent symptom; three cases required plugging. The help afforded by the health nurses, and the possibility of removal of bad cases to the city hospitals, were of great value.

Up to the end of July salicylate was generally given. Strychnine was useful in pneumonia; quinine was not used; alcohol was of value in suitable cases, but entirely withheld in convalescence. Oxygen was useful. No vaccines were used.

Summary of Civil Cases.—The total number of civil cases was over 270; pneumonia occurred in 44, 15 were removed to municipal hospitals and 3 to other hospitals. The deaths numbered 10.

Military Cases.

During this time I was engaged as Civilian Medical Practitioner at the White City Barracks, Bristol. There were 130 cases of influenza amongst the troops there. They presented somewhat similar features to those in my civil practice; cases I have designated as Type 1 were absent, and there were no deaths. In the early stages of the epidemic the cases presented, on the whole, a fairly high pyrexia, but recoveries were rapid and without any marked after-effects. Salicylate proved most effective in these early cases. Until June the camp hospital consisted of a wooden hutment, well ventilated, but inadequate for acute conditions or illness of any duration; it only served for very temporary accommodation. In June the new hospital was ready. Its construction and equipment, liberally supplied by the authorities, were quite sufficient for these cases, and so relieved other and more important centres much occupied at that time with the exigencies of the military situation.

On admittance patients were placed in the ward reserved for acute cases, and were not removed into the general ward until the temperature had remained normal for at least forty-eight hours, other things being equal. The infection did not spread to the general ward.

The worst cases occurred in October and November. There were twelve of pneumonia (bronchopneumonic type, scattered over both lungs) and one had a large amount of pleuritic effusion. All cases recovered.

One man showed signs of severe streptococcal infection with great prostration; this man had V.D.H. of some years' standing, after rheumatic fever. He had prolonged haemoptysis, and for some days his condition was hopeless; the urine was almost solid with albumin on boiling.

His illness began on October 30th, 1918, with a temperature of 100°, a much less severe onset than many lighter cases. After being up a fortnight he developed acute cardiac dilatation with rapid pulse and extension of cardiac dullness on December 7th. Suitable treatment proved availing, the albumin disappeared, and he is now walking about. No growth was obtained from a blood culture, which, unfortunately, was taken rather late in his illness; the Widal reaction was negative; he was inoculated in November, 1917.

Six officers, removed elsewhere, are not included in the record. They all recovered. One had a streptococcal infection of the throat, with much oedema; one was a relapse after a first attack three weeks previously.

From the onset of the epidemic all men on sick parade were treated with nasal and throat spraying with potassium permanganate and saline, and all troops warned to report if feeling the slightest symptoms of illness. Later, when the epidemic assumed a more serious aspect, thymol solution was used in Rogers's coarse crystal spray. All who slept out were so treated; the hospital and billets were daily sprayed with cresyl. Of nine women employed in the offices three acquired influenza and recovered. One female attendant in the officers' mess suffered, and out of ten in the canteen three had influenza mildly, and all recovered.

No vaccines were used either for prophylaxis or treatment. Four of the hospital orderlies were affected; one