Fournier, working on the statistics of general hospitals, gives 13 to 18 per cent. Working on analogy, London must be higher, since no control exists.

Dr. Holland, in 1854, estimated that in the United Kingdom at least a million and half persons were infected with syphilis every year.

In New York 300,000 cases of skin disease gave a percentage of 11.5 due to syphilis.

At the Moscow Hospital, Russia, from 1850 to 1870, there were 2,002 births from syphilized parents, and of these 1,425 (71 per cent.) died.

Fournier, in Paris, found:

That fully 25 per cent. of all females whom he had seen in private practice had contracted the disease innocently and undeservedly. Of the married females, in 75 per cent. of cases the disease was unmistakably traced to the husband.

In India we have results which, in my opinion, as a demonstration of the possibility of control, will never be surpassed in any country. The native population of India is 300,000,000, and there has been in the past fifty years a garrison of about 70,000 British soldiers.

In 1888, the Lock Hospital control over women was finally abolished, and venereal diseases rose year by year until, in 1895, the admissions to hospital for all forms of these diseases reached the enormous total of 537 per 1,000 of strength.

Further, in 1897, 661 invalids for venereal diseases were sent to England in one year. Control, by means of the Cantonment Code, October, 1897, again commenced in 1898. In 1908, ten years later, the admissions to hospital for all forms of venereal disease were reduced to 70 per 1,000 of strength, and 59 invalids sent to England. How did this occur?

The following will briefly explain. Under the Cantonment Code, 1897, and other measures:

- (a) Notification exists.
- (b) Diseased men and women are isolated and controlled in hospital, or otherwise, for four to eight weeks, as is the case with any other contagious disorders.
- (c) Prophylaxis by in-patient and later out-patient treatment is rigorously and systematically enforced.

The financial saving in regard to India has thus been enormous. In 1895 there were over 3,000 soldiers constantly sick in hospital with venereal disease, and in 1908 about 500. In 1897 there were 661 invalids sent to England for venereal disease, and in 1908 only 59.

A trained soldier landed in India costs the State £100, so if 661 invalids from venereal disease leave India in one year the loss represents many thousands of pounds—this quite apart from the fact that a soldier's food costs the State 1s. to 1s. 3d. per diem in hospital. The food of a diseased native woman in hospital costs 4d. I leave the details to actuaries, but the actual saving to the State would possibly pay the interest at 5 per cent. on capital sufficient to build several Dreadnoughts.

Taking the civil aspects in England, a corresponding reduction in the maintenance of lunatics, epileptics, and persons with paralysis or locomotor ataxia due to syphilis, as well as a reduction in the number of blind infants and sterile men and women who have had gonorrhoea, quite apart from lessened poor rates, etc., would probably repay in a few years the capital outlay that these Dreadnoughts cost.

"The Royal Commission on the Blind, the Deaf, and the Dumb, which reported to both Houses of Parliament in the year 1889, estimated that about 7,000 persons in the United Kingdom had lost their sight from ophthalmia neonatorum, and assess the cost to the State of each of them at £50 a year, on the basis of £25 for keep and £25 for loss of useful work. That is, the cost to the State for these cases of preventable blindness is £350,000 a year."

This disease within the last year, however, is notifiable in England.

It is to be hoped, therefore, from a financial, apart from a public health point of view that preventable diseases like syphilis and gonorrhoea will also be notifiable before the millennium.

This problem goes far beyond the purely medical aspects, and is well worthy of the consideration of those statesmen who have their country's welfare at heart, as in many instances venereal diseases are so largely dependent

on poverty and spread by the poor in a dying effort to exist.

In conclusion, we may add with Professor Fournier of Paris, in imitation of another proverb, that "the fear of syphilis is the beginning of wisdom."

We are also with him in quoting Pasteur's fine thought that "Where good is to be done duty only ceases when there is no longer power to do more, or to do better."

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A NOTE ON THE COMBINED USE OF SPINAL AND GENERAL ANAESTHESIA.

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IN spite of the advocacy of enthusiasts for spinal anaesthesia it must be realized that this method of rendering the lower part of the body anaesthetic is not yet free from danger, and it is extremely doubtful whether it will ever replace general anaesthesia for routine work. In selected cases, however, spinal anaesthesia presents such great advantages over general anaesthesia that it is certainly the method of choice. With patients who have a dread of being rendered unconscious, in cases of emergency where the operator is single-handed, in some acute abdominal conditions, and in cases of disease of the heart and lungs, spinal anaesthesia is certainly to be preferred to a general anaesthetic. Also, as I have pointed out in an article on amputation for diabetic gangrene,¹ in conditions associated with fatty changes in the liver and other organs—as, for example, diabetes, rickets, alcoholism, starvation, malnutrition, and the cyclical vomiting of children—a deep degree of general anaesthesia is to be avoided from fear of bringing on acid intoxication, which may lead in diabetes to coma and in the other conditions to "delayed anaesthetic poisoning."

But by far the most important and interesting question in considering the advantages of spinal anaesthesia, is its action in the prevention of shock. It is now generally admitted that if all impulses from the area of operation or injury be prevented from reaching the central nervous system by the employment of this method, shock from this source is either absolutely prevented or at any rate minimized. It must, however, be remembered that psychic influences may bear no small part in the production of shock, and impulses from the highest centres may affect the vital centres just as seriously as the effects of trauma at the periphery.

Crile^{2,3} has always insisted on this element in the production of shock, and has lately published⁴ the results of experiments, which show that definite changes occur in the cells of the brain as the result of fear. He has clearly proved that trauma, anaemia, infection, and fear, not only produce very definite symptoms, but that singly or in combination they damage the brain cells, and so influence the immediate results of surgical operations. In Graves's disease, when the patients are especially susceptible to fear, he has seen death occur from fear alone. Working on these lines Crile has often advocated the combination of general anaesthesia with local and regional anaesthesia, and his plan has been followed by many in cases of emergency. I have reported⁵ a successful case of amputation for diabetic gangrene in which nitrous oxide anaesthesia was used in conjunction with nerve blocking, and Crile⁶ states that since following this plan he has amputated twelve times for gangrene of the leg without a fatality. "Indeed, there is usually no noticeable operative effect."

In reporting my own case and also elsewhere⁷ I expressed the opinion that many advantages might be gained by the use of a combination of spinal anaesthesia with a light degree of general anaesthesia. By the spinal injection the vital centres will be protected from injurious impulses from below, while by general anaesthesia the effects of fear will be prevented. There are three ways in which spinal anaesthesia may be used in conjunction with a general anaesthetic. The solution of stovaine or

other anaesthetic may be injected before, during, or after the inhalation anaesthesia. If the spinal injection be administered first, the surgeon can assure himself of the success of the injection and the completeness and extent of the anaesthesia before the patient is rendered unconscious, and it may be possible to cut down the dose of the general anaesthetic very considerably. With a dosimetric method of administration it should be easy to show how small a dose of chloroform, for example, might be given to produce unconsciousness when the area of operation or injury is rendered anaesthetic. If the patient be very frightened, the general anaesthetic may be given first and the spinal injection undertaken before the operation is begun. Then, again, if symptoms of shock threaten to develop during an operation, a spinal injection may be given, while even after an operation or injury, if shock be feared, or even be present, a spinal injection of stovaine should do much to prevent it or minimize its symptoms.

With the idea of absolutely preventing the development of shock in a case of amputation of the only remaining lower limb of a very feeble old patient, I adopted a combination of these two methods of anaesthetization with strikingly successful results. The history of the case is as follows:

F. P., a warehouseman, aged 60 years, was first admitted to the Middlesex Hospital on December 13th, 1909, under the care of Mr. Sampson Handley, who transferred the case to my care, and to whom I am indebted for permission to report it. The patient was then suffering from senile gangrene of the left foot, and on January 1st, 1910, the left lower limb was amputated at the junction of the lower and middle thirds of the thigh. He left the hospital for the convalescent home, and in March, about a month after his return from there, noticed that his right foot often got very cold and painful. In spite of every care, gangrene set in, and he was readmitted to the hospital on June 4th, 1910. He was then very feeble, and looked at least 70 years of age. He suffered considerably from pain, and there was some septic absorption, the temperature rising to 100° F. each evening.

It was not until ten days after his admission, when he was still more feeble, and in an extremely nervous state, that he consented to have his right lower limb amputated, and it was then very questionable whether he was in a fit condition to have the operation performed. It was thought, however, that, if every precaution were taken to prevent damage to his medullary and other centres by cutting off impulses both from above and below, the operation should not have any bad effect.

Accordingly, on June 15th, a dose of 4 cg. of stovaine in Barker's solution was injected into the spinal theca, the puncture being made in the interval between the twelfth dorsal and first lumbar vertebrae. After about ten minutes the lower part of the body was absolutely anaesthetic, and Dr. F. E. Meadows rendered the patient unconscious and maintained a light degree of general anaesthesia. The limb was then amputated at the junction of the lower and middle thirds of the thigh. The result was that the patient did not suffer in the slightest degree from shock. From the time of the operation until the date of his discharge from the hospital he continually improved, and the satisfaction of having brought him successfully through a critical surgical operation was increased by his undoubted gratitude and unfailing cheerfulness in spite of the pitiable state to which he was reduced.

The case was one eminently suitable for such a test as this, and it was gratifying to find that shock could be prevented by isolating the lower parts of the brain from other parts of the nervous system, through which they might receive impulses likely to exhaust the vital centres.

As I have mentioned, the idea of isolating the medulla originated with Crile, who advocated the combination of local or regional anaesthesia with a general anaesthetic.

Regional anaesthesia by nerve blocking, in the case of amputation of the lower limb, entails some delay and inconvenience, and the combination of spinal and general anaesthesia is much more convenient and satisfactory.

It may be said by those who regularly practise spinal anaesthesia as a routine method in general surgical work that the light general anaesthesia is superfluous; but it will, I think, be held by the majority of surgeons that consciousness on the part of the patient is practically never desirable during a major surgical operation, not only for the sake of the patient but also for the comfort of the surgeon. The reports as to psychic influences affecting patients during spinal anaesthesia are rather conflicting, but these effects have obviously been quite noticeable from the fact that so many surgeons have adopted the use of some narcotic such as morphine or scopolamine and morphine as a preliminary to a spinal injection. I cannot but think that with the spinal anaesthetic the induction

of unconsciousness by the inhalation of a small amount of some general anaesthetic is superior to this combination.

No doubt in young children the general anaesthetic is superfluous, and probably in the later stages of acute abdominal conditions, when vomiting is taking place, spinal anaesthesia is better used alone. Fortunately these patients are as a rule markedly apathetic, and little likely to suffer much from the effects of psychic disturbances.

In the discussion on the present position and limitations of spinal anaesthesia in the Section of Anaesthetics at the recent annual meeting of the British Medical Association it is gratifying to find that Dr. Blumfeld⁸ expressed his belief that a combination of spinal with a light general anaesthesia should render surgical anaesthesia as safe as the administration of chloroform in midwifery practice, and that Gray's⁹ work on the localization of the action of stovaine was likely to do much to help this.

With regard to the choice of a general anaesthetic, ether might be given in small doses by the open method or a mixture of chloroform and ether might be used, though probably the most convenient drug would be chloroform. When, however, these drugs are contraindicated, as in diabetic patients, the best anaesthetic is nitrous oxide given with oxygen, for Crile¹⁰ has shown that this combination is less injurious to the tissues than any other general anaesthetic.

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THYROID EXTRACT IN RHEUMATOID ARTHRITIS.

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INDEPENDENT results and observations in therapeutic research are, perhaps, the strongest corroborative evidence of the efficacy or otherwise of various lines of treatment; and the writer, who has read with interest the excellent lecture by Dr. Macalister on rheumatoid arthritis, would put on record some experiences of results attained by the use of thyroid extract, without claiming any priority in treatment or originality of thought, though the use of thyroid extract by others for this complaint was unknown to him before reading Dr. Macalister's paper.

It first suggested itself to him in 1907, when called to attend an advanced case in which the patient was bed-ridden, all joints being more or less involved, with extreme wasting, anorexia, sleeplessness, and constant pain. The patient—a man of 54—had no illness until the onset of this condition, which had been coming on gradually since he was 40. He could not stand, had lost all power of locomotion, could not feed himself, nor raise his arms to do his hair!

The writer was struck with his rough, dry harsh skin, crisp hair, husky voice, and deep suprasternal notch; the prominence of the trachea and apparent absence of thyroid gland, analogy to other conditions suggesting deficiency of thyroid secretion.

Accordingly, the extract of thyroid was administered in doses of 5 grains three times daily, together with adjuvant treatment to be mentioned presently. In a month the results were remarkable. The patient could struggle on crutches from one room to another, his appetite returned, and pain was almost gone. In three months he could walk with two sticks, and in eighteen months he was able to walk three miles with the aid of one stick. His elbows and shoulders have regained their mobility almost entirely, and he has been for a year able to do without his thyroid extract without a relapse. At the present date he is able to get about well, with slight flexion of one knee and some metacarpo-phalangeal deformity, but is fat and well and enjoys life.