more adequately but with less blasphemy. There is very little doubt that with more to talk about and a wider range of interests the dirty story will suffer a similar eclipse. Pornographic literature already finds fewer adherents, whilst, thanks to the admirable writings of such men as Anatole France, the cult of the old-fashioned "French novel" and its "realistic" successor is dwindling rather than extending.

Were I asked in what way the State could best help to stop the spread of venereal disease I should answer without hesitation, Put the law against solicitation into active operation. At present it is a dead letter, and the streets of our large towns are a disgrace to the community. The women who frequent them must be well known to the police, for they may be seen day after day in the same streets. They will certainly continue their trade, but the men will then have to look for them, and many a youth will be protected from temptation. Knowledge, too, is a powerful help. The physiology of the generative system is no more a mystery than the physiology of digestion or respiration, and there is no reason why it should not be explained in a scientific manner as a part of a course of biology. Let the women teach the women—there are plenty of well-taught women nowadays who are fully equal to the task—and let the men instruct the men. The teachers themselves must be carefully chosen not only for their knowledge but for their general attainments, which should be sufficient to put their facts in proper focus.

TREATMENT.

If, as unfortunately happens only too often, a man finds that he is infected with venereal disease, he should be taught that in his own interests as well as in those of the State he ought to go at once to a doctor. Every day that he delays lengthens the duration of his cure and may even prevent it entirely. Quacks and unqualified practitioners should be carefully avoided. They may have empirical knowledge, but they lack the scientific basis which every qualified man must have in some degree. Their object is to obtain as much money as possible, and they consequently prolong the cure and work upon the fears of their unfortunate clients; indeed, of all quacks the unqualified specialist in the treatment of venereal diseases has the worst reputation. The doctor, on his side, must not assume a repellent attitude. It is his business to cure, not to moralise, and to remember that the diseases run on the same lines as any other infective disorder. He must be especially careful to make a correct diagnosis especially in syphilis, where immediate treatment alone holds out a prospect of cure. For this purpose he must avail himself of scientific tests, and must not rely solely upon clinical diagnosis. He should warn his patient from the outset of the particular dangers which are likely to arise and of the manner in which the diseases are spread. Above all, he must point out the necessity for patience, since it is only by a prolonged course of treatment that a real cure can be effected. We have now long passed the stage when the disappearance of symptoms and signs was thought to be identical with eradication of the disease, and we have learnt that the worst effects have followed a conscientious but insufficient treatment. By these means you will gain the confidence of the patient, and when you have gained his confidence the battle is half won. He will follow your advice, and if he has come early enough you can soon put him well on the road to complete cure.

THE BLACK (PIGMENTED) APPENDIX.¹

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IN THE LANCET of July 19th, 1913, p. 135,² I described a series of four cases in which a very unusual amount of pigmentation of the mucous membrane of the appendix was found after its removal for disease. Three of them were sketched, and I am able to produce the illustrations for the inspection of the section; the fourth appendix was mounted by Mr. Shattock and is also shown. It differs from the others in the fact that there has been a great destruction of tissue towards the distal extremity.

With the exception of the case of extensive pigmentation of the large bowel, due to lead deposit, described by Dr. G. Newton Pitt,³ I did not know of any similar appearance at that time. Recently, however, the subject of pigmentation of the bowel has been referred to by Sir J. Bland-Sutton,⁴ who found a very blackened state of the mucous membrane of the bowel in a woman suffering from obstruction due to cancerous growth of the large intestine. The cause of this pigmentation could not be ascertained, for the patient recovered. He refers in that address to an article by Dr. Ludwig Pick⁵ (which had escaped my notice) in which Dr. Pick refers to two cases of pigmentation found in English publications (besides that by Dr. Pitt), both of which were caused by the deposit of mercury in the tissues. 1. The case (described by Dr. C. J. Williams) of a woman, aged 74⁶, who had taken mercury regularly for 43 years. Here the submucous tissue of the large intestine from the ileo-cæcal valve to the rectum was mottled like the skin on a toad's back. The patient had rectal prolapse before death, and the mucous membrane was seen to be deeply pigmented when extruded. 2. The case of a man, aged 64,⁷ who had been under treatment for syphilis. He presented a similar pigmentation of the large bowel dependent on a deposit of mercury in the mucous membrane. In this case, which was described by Dr. H. D. Rolleston, there was no evidence of pigmentation during life.

The contribution to the subject which I wish to make now consists of two cases of marked pigmentation of the appendix met with in women of different ages and circumstances. Their residences were far apart in Berkshire and Worcestershire, whilst of the four other instances already published three came from inside London and one from Kent. The cause of the phenomena must therefore be very widely distributed.

CASE 1.—The patient was an unmarried lady, aged 48, who was seen in consultation with Dr. L. M. Guilding on April 30th, 1914. The medical history was a long one. Since the age of 13 she had been delicate, and for years past constantly under medical treatment. Since the age of 21 she had always suffered from constipation, and the bowels had not acted without the use of purgatives. She had complained of indigestion for years, sometimes worse and sometimes better; of late years she had of necessity been very careful as regards her diet. In 1899 the cervix uteri was divided for dysmenorrhœa. In 1900 she had symptoms of

¹ A paper read before the Surgical Section of the Royal Society of Medicine, Jan. 6th, 1915.

² The Black (Pigmented) Appendix, Battle.

³ Pathological Society's Transactions, London, 1891, p. 109.

⁴ Presidential Address of the Medical Society of London, THE LANCET, Oct. 17th, 1914, p. 931.

⁵ Verhandlungen der Berliner Medicinischen Gesellschaft, 1911, p. 181.

⁶ C. J. Williams: Pathological Society's Transactions, London, 1867, p. 3.

⁷ H. D. Rolleston: Ibid., 1892, p. 69.

inflammation of subacute character which were said to have had their origin in the right ovary and broad ligament. Ever since the operation in 1899 she had had occasional attacks of pain and tenderness in the right iliac fossa, during which there had sometimes been vomiting. In some of these attacks the pain was more in the upper part of the abdomen. In 1904 she had an attack which was described as acute ovaritis on the right side, and had felt "uncomfortable" on that side since. In 1911 she had an attack of "neuritis" in the right arm, which lasted nearly the whole year. She was also under treatment for colitis and a toxic condition towards the end of that year, and this was resumed for varying periods during 1912 and 1913, finishing in March, 1914. Before 1914 the right iliac fossa was not much in evidence; after the beginning of that year she had four attacks of pain and tenderness in that region, one of them being severe and accompanied with a rise of temperature and other signs of inflammation, but without vomiting. She had become thin, sallow, and pale, with a persisting tenderness over the appendix region. The diagnosis previously given was that of a chronic appendicitis with probable ileal kink and chronic intestinal stasis.

An examination by the X rays after a bismuth meal had been carried out and the following points were established: 1. A delay in the passage of the bismuth through the cæcum. 2. The ascending colon and transverse colon were distinctly dropped, and there was considerable stasis in the passage of the bismuth all along the large bowel. 3. Considerable loss of tone in the rectum. Here the bismuth lodged and distended the part, having to be evacuated by means of enemata.

When I saw her in April I agreed with the diagnosis of subacute inflammation of the appendix, with want of muscular power in the large bowel and rectum. She was rather feeble, delicate, and "tired-looking." The abdomen was slightly distended, generally tympanitic, and tenderness was complained of on examination of the right iliac fossa. Operation was performed on May 2nd, 1914. The appendix was about $3\frac{1}{2}$ inches long, slightly adherent at the tip. The meso-appendix was shortened at one point, and there were chronic catarrhal changes with submucous fibrosis. The mucous membrane was of a uniform brownish-black colour, due to the deposit of pigment. From the abrupt termination of this at the place where the appendix had been cut off it was quite evident that a similar condition extended into the cæcum. The intestine did not give any evidence of this on inspection. The right ovary was atrophied and the tube normal. A membrane united the transverse and ascending portion of the colon at the hepatic flexure, making a somewhat sharp and fixed bend. It appears to have been derived from the right margin of the omentum. This membrane was divided, and a few vessels in it were ligatured. The cæcum was somewhat larger than usual, with a tendency to drop towards the pelvis. The ovary and tube were removed. Recovery was uneventful.

CASE 2.—This case was also met with last year. On May 17th, 1914, I operated for Dr. A. A. Brockatt, of Malvern, on a young unmarried lady, aged 27, who gave the following history. Five months before she had had an attack of appendicitis which lasted five days. Two months before she had suffered from a second attack which lasted seven days. There had been some occasional pain between the attacks, but otherwise she had not been ill. She always suffered from constipation. Nothing abnormal was felt on examination, but there was some tenderness in the right iliac fossa, and she stated that pain had been present there the previous evening. The temperature was normal. The appendix when removed was found to be $5\frac{1}{2}$ inches in length, bulbous, and red at the top from recent inflammation. The meso-appendix was shortened at one point. The mucous membrane was pigmented, the shade deepening in intensity to the line of section, where it was quite black. There was submucous fibrosis. No adhesions were present. No other abnormal condition was found. This appendix was lost.

These two cases, together with those already published, make a series of six which present some common features. In the first place there was an extensive brownish-black pigmentation evidently not limited to the appendix, but spreading an unknown distance into the large bowel. The

patients were all of the female sex (aged 27, 30, 32, 43, 48, and 48) and in each there was a history of constipation of long standing, which amounted to intestinal stasis in more than one of them according to their medical attendants. It would appear as if in some the difficulty with the bowels had led to a secondary inflammatory affection of the appendix. Operation in each was for the relief of pain caused by this. The pigmentation was found on examination of the removed appendix, and in only one was there any appearance of darkening of the bowel as examined from the operation incision. Microscopical examination showed the deposit to be both in and between the cells of the mucous membrane (Shattock).

Chemical analysis of the first three specimens by Mr. Le Sueur showed that the pigmentation was produced by a deposit of iron, the exact combination not being defined owing to the small quantity of material available. There was no bismuth, lead, or mercury present. In only one patient was there any history of the taking of iron medicine, and she had been given the compound syrup of the hypophosphites ($\frac{3}{4}$ gm. ferri hypophosph.). There is very little, if any, tendency to pigmentation of intestine by iron given in the form of medicine, otherwise the condition would be frequently met with in the post-mortem room. And we should have had many references to it in our medical publications.

From the fact that I have met with these six cases within a comparatively short period there is a probability that it is more common and widely spread than we have suspected. The question arises as to the source from which the iron has been obtained. There can, I think, be very little doubt that it is derived from wheat flour prepared by the iron rollers which are used in the modern process of milling. These rollers are fluted, and the fluting wears down somewhat quickly, and although measures are taken to prevent iron particles from entering the mill none are taken to remove the iron dust and small particles which come away as a result of the rubbing of one roller against the other. The method of grinding with iron rollers was once applied to the manufacture of light-coloured pigments for painting walls, but had to be given up because of the brown patches which appeared on the walls to which such paint was applied. The rollers wear away more quickly in the grinding of wheat, especially that grown abroad, which is harder than ours, than in the preparation of pigment. Chemical examination of a quantity of best flour has shown the presence of an abnormal amount of iron, although none could be separated from the flour by means of a magnet.

I have already alluded to the fact that no measures are taken to extract the iron from flour prepared by these rollers, therefore there is a considerable quantity being taken into the alimentary canal by the population at large. It is very probable that the increased amount of troublesome constipation of recent years, which in some cases is described as "stasis" and ascribed to a kink of the bowel, is due to this cause; kinks possessing a clinical value are in my experience very rare. It would be interesting to know from the experience of the physicians whether anæmia is any less common than it used to be.

I think that it may be possible that faecal concretions are helped to form by this ingredient of flour, but it is not possible to say much on the subject. I have submitted several concretions to

the chemist for examination, but the result of examination for iron is negative; there appears to be very little in them.

The question of the influence of roller milling in the causation of appendicitis is one which has interested me for some years. Facts are accumulating to show that it is a serious factor, but this is not the occasion on which to consider it. There is, however, very little doubt that in addition to the small sharp particles which result from the disintegration of the fluting of the rollers, and which sometimes cause localised ulceration of the mucous membrane, there is a considerable amount of "iron dust," which is given out in such quantities that in certain individuals it can produce an actual blackening of the mucous membrane over extensive portions of the large bowel. This pigmentation is more extensive than could be produced by blood extravasations, and is more uniformly diffused.

Harley-street, W.

THE THEORY OF SALICYLATE THERAPY IN RHEUMATIC INFECTION.

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ANY theory formulated to explain the action of the salicylate group of drugs in acute rheumatism has one great difficulty to overcome. It is briefly this. In some rheumatic manifestations, notably arthritis, salicylate is so successful in its action as to suggest strongly that the drug has an inhibitory power over the activity of the infecting organism; while in others, particularly chorea and carditis, such a power is by no means obvious. It is this so-called "selective" action of salicylate on the various manifestations of rheumatism which is responsible for the variety of views held upon its method of action.

In a recent paper¹ I studied some of the practical objections which have been urged against the use of salicylate as a "specific" remedy in acute rheumatism, but purposely refrained from discussing the truth of the theory on which it is based. Here it is intended to support this "specific" theory, using the word "specific" as implying that the drug has the power of diminishing the activity of the rheumatic infection; the argument adopted being that this theory becomes acceptable when, but only when, the method by which the rheumatic infection produces its various results is properly understood.

Modus Operandi of Rheumatic Infection.

The modern view of rheumatism is that it is due to an infection by a particular type of micro-organism. This can be supported on strong clinical grounds as well as by the results of bacteriological research which are still unaccepted by some authorities. How this infecting organism produces its results has been made clear by the histo-pathological researches of Coombs,² supplementing earlier work of Poynton and Paine and others. He finds evidence that rheumatic infection is a bacteriæmia which results in three sets of tissue changes: 1. Interstitial inflammatory changes of a peculiar and characteristic type in the organs attacked by the infection. 2. Parenchymatous toxic changes from toxins produced from foci of infection,

either local or distant. These changes reach their maximum significance where important tissues, such as the cerebral cortex or myocardium, are involved. 3. Sclerotic changes connected with healing processes.

Modus Operandi of Salicylate Treatment.

It is evident that a drug possessed of the power of diminishing the activity of the rheumatic infection could not control these three sets of tissue changes with equal success. 1. The inflammatory processes should be well under the control of an antirheumatic drug. Assuming that the foci of infection were open to the drug circulating, its only limitations would be concerned with the virulence of the infection compared with the amount of the drug which could operate. 2. The toxic parenchymatous changes, on the other hand, could not be under the direct control of the drug. All that such a remedy could do here would be to cut short the supply of toxin at its sources, and thus prevent further damage. 3. The sclerotic changes obviously cannot be influenced by an antirheumatic drug, and need not be further discussed.

Clinically, then, salicylate, if possessed of a specific antirheumatic power, would control such rheumatic manifestations and symptoms as are dependent upon active inflammatory processes, but could only indirectly influence those dependent upon toxic parenchymatous changes. I must now review the chief rheumatic manifestations, attempting to show that their reaction to salicylate conforms to this theory.

Arthritis.—The histological changes here are those of acute inflammation of the infected tissues within and around the joint. Toxic parenchymatous changes are of minimal importance here, as there are no "noble tissues" whose degeneration might produce symptoms. Under salicylate treatment there is a rapid subsidence of the local signs of inflammation together with a fall in general temperature. This last is of special importance, particularly when it is remembered that such a fall in temperature is not produced so markedly nor so constantly in any other infection, and therefore cannot be due merely to the slight general vasodilatation caused by salicylate. A fall in temperature, occurring in conjunction with local amelioration and general constitutional improvement, is generally held to be the best evidence of diminished bacterial activity, and it is certainly difficult to account for the success of salicylate in the treatment of rheumatic arthritis except by allowing a specific antirheumatic action to the drug. Another result confirms this view—namely, the way in which salicylate puts a stop to the development of arthritis in other joints which is so characteristic of the untreated infection.

There is one limitation to the successful action of salicylate on rheumatic arthritis—that concerned with large effusions. These may remain for a week or so before disappearing, even though the temperature has fallen and the other local signs have cleared up. The fluid obtained, however, from a joint at this stage will be found not only to be sterile but to show practically no cells. It shows, that is to say, no signs of bacterial activity, and it is evident that no antirheumatic drug could have an action upon such an effusion. Its absorption is necessarily and mainly a matter of time.

The action of salicylate on rheumatic arthritis shows well how the drug successfully controls such symptoms as depend upon bacterial activity, and