puscles, many of them filled with peculiar minute straight bacilli. The same bacilli occur also outside the mucus-corpuscles. They are never missed, even where the 'comma-bacilli' are." After thinking over this matter in connection with my own experience, and after seeing Dr. Klein's specimens at the meeting at the Royal Medical and Chirurgical Society, I ventured to suggest at that meeting that it was possible that these bacilli are only young cholera-bacilli, and I thought so for two reasons. In the first place, it is precisely in these mucus-flakes that one finds, on cultivation, that the largest numbers of the cholera-bacilli are present; while, on microscopic examination, there may, as Dr. Klein says, appear to be very few of these organisms: hence some of the forms in which the curve is not very marked must also be cholera-bacilli. And, in the second place, the specimen which I saw at the meeting looked very like a specimen of young cholera-bacilli (see Fig. 1). Of course, I know that the reply to this is, that Dr. Klein has cultivated these bacilli, and has found that they are not cholera-bacilli. My answer to that is that, without doubt, Dr. Klein has cultivated small straight bacilli from the contents of the intestine, but that is no proof that the small cultivated bacilli were derived from the bacilli seen in the mucus-corpuscles; it is impossible to make a cultivation from a single mucus-corpuscle, without getting at the same time the other bacteria which are present in the contents of the intestine. Small straight bacilli, similar in growth to those exhibited by Dr. Klein, can be cultivated from the contents of normal intestines, and would naturally be present in the contents of a choleraic intestine. After all, it seems to me that these straight bacilli do not deserve the attention they have received; for Dr. Klein has never said that they only occur in the intestine in Asiatic cholera; and, unless that can be demonstrated, they evidently have no real connection with the disease.

Dr. Klein also attributes the results in the successful cases of inoculation of cholera-bacilli to septicæmia, or to the effects of the operation. The former idea is incorrect, because the operations, both in Dr. Koch's cases and in mine, were performed strictly antiseptically; and in the guinea-pigs, in my case, there were no bacteria in the blood and tissues. Dr. Klein refers, as a similar example, to fatal epidemics of diarrhoea in rabbits, in which there are no bacteria in the blood or internal organs. Of this I am quite aware, and it was to an epidemic of this kind that I referred in Series I and II in my report on micrococci in relation to wounds, etc. (BRITISH MEDICAL JOURNAL, September 20th, 1884). But the animals on which I experimented with cholera-bacilli in the way described were guinea-pigs, and they are not, so far as I know, subject to similar epidemics. I have never operated on rabbits, because I understood that they were quite refractory to the cholera-bacillus.

From what has been said, it will be evident that no facts have been brought forward in opposition to Dr. Koch's research which can bear criticism. Dr. Koch's facts remain now as correct as when he first published them. He said that this organism was constantly present in Asiatic cholera, and that it was present nowhere else. These statements have now been amply confirmed; and it is perhaps the most striking evidence in favour of the precision of Dr. Koch's methods, and of the care which he has devoted to the subject, that, though other bacilli, of somewhat similar appearance, have since been discovered, yet, by the use of his methods, it has been found easy to distinguish them one from another, and from the cholera-organism.

MEDICAL SALARIES.—The Farnham Guardians have increased the salary of Dr. William Haig Brodie, as medical officer for the Seal district, from £21 to £30 *per annum*, and fees.—The Lurgan Guardians have increased the salary of Dr. Samuel Agnew, medical officer for the Lurgan No. 1 Dispensary district, £20 *per annum*.—The Middlesbrough Guardians have increased the salary of Dr. Pearson, medical officer for the South Stockton district, from £40 to £70 *per annum*.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION.—The annual meeting was held in the Medical Society's rooms on Wednesday, April 15th, Dr. Thomas Fuller, President, in the chair. Dr. Alder Smith reported that nearly six hundred copies of the "Code of Rules for the Prevention of Infectious Diseases in Schools," had been sold and distributed since the last meeting in January, and that the following gentlemen had joined the Association:—Dr. Richards of Winchester, Dr. News-holme of Clapham, and Mr. Brudenell Carter. The following members were elected on the Council in the place of four retiring:—Dr. Briggs, Harrow; Brigade-Surgeon Clarke, Sandhurst; Dr. Fletcher, Highgate; and O'Brien Jones, Esq., Epsom College. Mr. Brudenell Carter read a paper on "Eyesight in Schools."

A LECTURE

ON

THE TREATMENT OF RINGWORM.

Delivered at St. Thomas's Hospital.

By J. F. PAYNE, M.D., F.R.C.P.,

Assistant-Physician to St. Thomas's Hospital, and to the Hospital for Diseases of the Skin, Blackfriars.

HAVING, in the last lecture of this course, spoken of the origin of this disease, of its being caused by the growth, in the skin, of the head of a vegetable fungus, and of its symptoms, I have now to speak of its treatment. The principle of this treatment is perfectly simple; it consists in applying some substance which kills the fungus, the inflammation and other incidental changes in the skin being of minor importance. This method is, in principle, identical with that employed by gardeners to destroy parasitic fungi infesting plants, and even with that which is used in curing fungus-growth in dead materials, as, for instance, the dry rot of timber. Nevertheless, such are the difficulties of bringing parasiticide substances into actual contact with the ringworm-fungus, especially when it is situated in the hair-follicles, that the cure of this fungus-disease is, in some cases, one of the most difficult problems of practical therapeutics. It might be thought that the same result would be attained by rendering the soil unsuitable for the growth of the fungus, but this method is applicable only in a very limited degree. It is difficult to render the soil unfit for the parasite without destroying its vitality altogether. We can only, in certain cases, set up a special kind of inflammation the products of which are fatal to the fungous growth.

Before speaking of the actual methods of cure, we must for a moment consider a point which should always be thought of in the therapeutics of every disease; namely, what is the natural course of the disease? What happens if it be not treated at all? Is ringworm, for instance, an acute disease, like a specific fever, with a natural progress, acme, and termination? Or is it a disease, such as syphilis, chorea, or chlorosis, which has a long natural period of evolution, but still finally comes to an end of itself? Or is it strictly a chronic disease which has no natural tendency to terminate? Ringworm is certainly not an acute disease; but the question whether it has any natural or spontaneous termination is not so easily answered. The allied disease, favus, may certainly last a lifetime. We had at this hospital, some years ago, a family with favus of the scalp. The mother had acquired the disease when a child, had grown up and married, but was still, in middle life, uncured. Her husband never caught the complaint, but her children, as they grew up, successively had it at various ages. Everyone is not liable to take this disease; but, when once established, it has no natural tendency to get well, at least, when it affects the head.

With ringworm, the case is somewhat different. This is never a lifelong disease, the reason being that the susceptibility to it at different ages is very different. Ringworm of the body may, indeed, occur at any time of life, but ringworm of the head is rarely found except in children. Infants, that is to say, up to three years old, do not very often acquire the disease, and when they do so, are easily cured, and the disease may even, perhaps, in them, die out spontaneously; but the period from four years up to the age of puberty, is that of the greatest susceptibility.¹ During this time of life, if once acquired, it easily passes into a chronic condition, and may remain for weeks, months, and even years. The influence of idiosyncrasy is as marked here as in any other of the specific diseases, and consequently some children are more liable to this disease than others, and have it more severely. There may be cases in which the susceptibility may be very slight, and in which, therefore, the disease may die out spontaneously; but this, if it occur, is a very rare event. Generally, the child who is liable to the disease is not liable readily to lose it.

The only process which can be regarded as a natural method of cure, is one which I will now describe. Among many of the cases of ringworm, there are always some in which the accompanying inflammation is severe, and this inflammation may go on to suppuration.

¹ Lately, however, two children, aged 5 and 6, were brought to the hospital, each of whom had had the disease since six months old.

Each hair-follicle may be converted into a separate pustule, and there may be also diffuse infiltration of pus through the skin. The affected portion of the skin is swollen, intensely injected, and looks as if it were about to form an abscess; though, if an incision be made, there is found to be no single collection of pus, but rather a general infiltration. The hairs become loose, and either fall out or are easily removed. This condition is called "kerion," and was formerly thought to be a distinct disease, though now known to be only a form of ringworm. It is generally supposed to be the effect of too severe treatment, but it may occur when even the mildest applications are being used, and may, I believe, arise in cases which have not been treated at all. This is, at all events, true of ringworm of the beard, or parasitic sycosis, in which deep and extensive suppuration is sometimes observed when no remedies whatever have been used. Now the remarkable fact is that, when the condition of kerion subsides, as it will do spontaneously, the disease at that particular part is cured, and a bald patch left, even though it may be making progress in other parts. Kerion, then, is a spontaneous method of cure, or, in the words of Sydenham, "an effort of nature to get rid of the morbid matter." Independently of this occurrence, the disease may spontaneously exhaust itself as children get older. It is said that at the age of puberty it always dies out. This, I dare say, is true; though, fortunately, I cannot say that I have ever observed a single case through a sufficient number of years to arrive at this conclusion from my own experience. It is, however, quite certain that, at or after fourteen or fifteen, children become less liable to the disease, and it is more easily cured.

Let me give you an instance in a family that came under my care more than ten years ago; there were six children, all in good health, when ringworm was introduced into the family. The eldest, a girl aged 17, caught the disease, but was easily cured in less than one month. The second girl, a year or two younger, did not take it. The third child, a boy of 13, took it, but was cured as easily as his elder sister. Next in the family came two girls—twins—at that time ten years old. In them the disease caused copious suppuration, in fact a condition of kerion, and both recovered after a few months. The youngest, a girl of 7, perhaps the healthiest of a very healthy family, took the disease at the same time, and, in spite of identical treatment, suffered from it for two years. All these children were treated, in the first instance, by a very experienced and careful medical man, and all in the same way.

Only last week I came across a similar instance. A boy, aged 9, was brought to me with ringworm, which he had had for five years. Five other children in the family had caught the complaint. One was cured in a fortnight; the others, after longer but variable periods. One brother had had it, in a public school, for more than a year. Some of those who recovered were said to have had abscesses in the head, that is, kerion. The inveterate case brought to me was a perfectly healthy and robust boy, and the youngest of the family.

I believe you will often meet with the same experience in families. The elder children, if treated, soon recover; the younger have the disease more severely, but also recover, especially if there be suppuration. One case may, on the other hand, be far more obstinate than the rest, and this will generally be the youngest. There must be some special predisposition in these very obstinate cases, but it is extremely difficult to say on what this depends. It does not, I think, as is sometimes said, depend on a bad state of health. One of the children above mentioned was as healthy and robust a child as I have ever seen; and if anyone were to put forward the proposition that healthy children offer a more suitable soil for the fungus than those who are delicate, it would be very difficult to refute it.

Complexion and thickness of the hair seem to have some slight influence. Coarse strong hair is less liable to be affected than that which is fine; black hair less than blond. Lately I had two sisters under my care, one fair haired, the other dark. They have been treated in the same way, and the black haired child is nearly well, whilst the other makes but little progress. But you will find many exceptions to this rule, if it be a rule; and in general no important predisposing influence can be traced, except that of age. Even this does not always hold, and it is quite impossible to account for the obstinacy of some inveterate cases. The practical conclusion which should be drawn is this, that the recovery of a considerable number of slight cases under any particular treatment, is no proof that this method has any special efficacy beyond all others. On the other hand, we must not attribute the long duration of certain cases to any special fault in the treatment. These views, I may say, whatever their value, have been formed after more than thirteen years' experience in the charge of a hospital-department, offering a large number of cases every year.

I will now speak of the treatment which we have to employ, and shall confine my remarks chiefly to ringworm of the head—*tinea tonsurans*—because ringworm of the body is far more easily cured; and, with regard to favus, this disease is so rare that it has little practical interest for us. Whatever remedy be employed, there are certain practical measures which should always be adopted.

1. Either shave or cut the hair off. In summer, and if the disease be at all extensive, shaving is better. The operation itself draws out many of the loose hairs, cleans the skin, and accelerates the cure. In winter, and in slight cases, cutting may be sufficient. Throughout the whole period of treatment, keep the hair cut quite short; at least, over the affected parts.

2. Let the head be washed thoroughly with soft soap. This rule has been sometimes objected to, and it has even been said that washing may spread the disease. Of this, however, there is no direct evidence, and it is in itself improbable. It will depend on the special mode of treatment adopted how often this washing has to be repeated.

3. Epilation, or pulling out the diseased hairs with forceps, is a valuable aid to all curative methods. This process was first introduced in Paris for the cure of favus, and is very systematically carried out at the St. Louis Hospital, where I carefully studied the cure of parasitic diseases in 1865. The method there used is, or was, to pull out all the hairs, sound or diseased, so as to render a small part of the scalp temporarily quite bald. The treatment is carried out for about half an hour at a time every two or three days. In the early stages of cure, either of favus or of *tinea tonsurans*, the hairs come out easily, and the operation gives little pain; but, as the disease progresses towards recovery, and the hairs become more firmly rooted, it is extremely painful. During the operation (and this is a most essential part of the treatment), the surface is kept wet with a solution of corrosive sublimate in water (about one grain to the ounce). In Paris, this operation is carried out by trained male hospital-attendants, a class to which we have nothing corresponding; and the difficulty in English practice is to know by whom it shall be done. It is obvious that the medical man cannot generally do it himself; and he must, therefore, instruct the mother or the nurse in the art of epilation. The process is much less painful, and nearly equally efficacious (in ringworm, though not in favus), if it be confined to pulling out those hairs which, being diseased, offer little resistance. This may be called the German method, as practised at Vienna.

With regard to the remedial substances employed, these are nearly all what we call parasiticide; but, in fact, most of them have been employed empirically for centuries. Before the existence of parasitic fungi was dreamt of, Bateman tells us that the ancients used sulphur, *atramentum sutorium* or blacking (that is, sulphate of iron), tar, soap, resin, vinegar, and other substances still in use. In the last century, tar and sulphur were generally used. The St. Thomas's Hospital *Pharmacopoeia* in 1741 contained an ointment used for "scald-head," composed of tar-ointment and train-oil in equal parts. The St. Bartholomew's *Pharmacopoeia* in 1739 has an ointment specially intended for tinea, and composed of tar, sulphur, and wax, "to be anointed once a day, the head being covered with a hog's bladder." In fact, the remedies of ancient and modern times are very similar, and may, for the most part, be arranged in the following classes: 1, metallic salts, especially those of mercury, but also of iron and copper; 2, sulphur, with which may be placed the more modern sulphurous acid; 3, aromatic and resinous substances, such as tar, oil of cade, creasote, and carbolic acid, and the compound produced by the action of iodine on tar, called Coster's paint; with these may be placed the modern remedy, chrysophanic acid or chrysarobin; 4, strong irritants, vesicants, or stimulants, such as strong acetic acid, cantharides, and croton-oil. The chief novelties in modern times are the introduction of certain chemical remedies, as borax and boracic acid, carbolic acid, and others, and also the use of mercury and copper salts in new forms. These remedies are dissolved in, or mixed with, certain materials which may be called "vehicles." These are water, glycerine, alcohol, chloroform or ether, fatty substances, and vaseline.

1. *Watery solutions* have only a limited application. We use solutions of borax, of the strength of from ten to thirty grains to the ounce, or of corrosive sublimate, one grain, or less, to the ounce. Sulphurous and acetic acids are also used in watery solution. All these lotions may conveniently have glycerine mixed with them to prevent their drying up. The disadvantage of water as a vehicle is that it scarcely penetrates the skin at all, and these lotions are therefore useful chiefly for destroying free spores, or portions of fungus which may be scattered about on the surface. A watery solution of iron salt, in the form of ink, is a well tried domestic remedy, and no doubt cures slight cases; so with the copper-solution obtained by

keeping a copper coin constantly wetted with vinegar. The list of metallic remedies might doubtless be enlarged.

2. *Glycerine* has been largely used in cases of ringworm, but has scarcely more penetrating power than water, and appears to me to be the least useful medium for applying local remedies. It has, however, one advantage; namely, that, in consequence, perhaps, of not being absorbed, it checks the absorption by the skin of poisonous substances, and hence we may use matters, which would be injurious if absorbed, with greater freedom when dissolved in glycerine than in any other medium. At one time I used glycerine of carbolic acid a great deal, but have lately almost given it up.

3. *Alcohol*.—The advantage of alcoholic applications (which they share with chloroform and ether solutions) is that they remove much of the greasy matter which covers the skin, and which is always very abundant in ringworm. By so doing, they are thought to render the skin more permeable to the remedial agent; but, considering the hardening effect which alcohol has on all animal tissues, it is difficult to believe that it can favour absorption. Tincture of iodine is an useful alcoholic preparation, and more efficacious than liniment of iodine made with water. It destroys the fungus so far as it can reach, and also, by causing desquamation of the epidermis, assists the penetration of other remedies. An alcoholic solution of boracic acid has been strongly recommended by my friend, Dr. Cavafy, and no doubt it is useful, though I generally employ boracic acid in another form. Alcoholic solutions of tars are largely used by the Germans.

4. *Chloroform* and ether remove fatty matters from the skin much more completely than alcohol, and, since they quickly evaporate, can have little effect in hardening the epidermis. They have, therefore, chloroform especially, been much recommended of late years, and, no doubt, with good reason. I have used a mixture of chloroform and oil of eucalyptus in equal parts, with great advantage. A chloroform-solution of chrysophanic acid is also highly spoken of; but I cannot think that chloroform, as a vehicle, will permanently supersede that of which I shall next speak.

5. *Fats*, or especially lard, form the main constituent of all the ointments most generally used in the cure of ringworm. Of late years, objections have been brought against the use of any fatty substance for this purpose, on the ground that the skin is already loaded with natural fat, even to excess; but I cannot think that these objections outweigh the universal testimony to the usefulness of ointments in most affections of the skin. There is no doubt that fat, especially animal fat, penetrates the skin more thoroughly than any other medium that we can use. In so doing, it carries with it the parasiticide remedy, and brings it into contact with the fungus at considerable depths below the surface. No fact is more clearly proved than that remedial substances are thus carried by fat into the skin, and diffuse into the body generally. If, for instance, we want to get mercury absorbed for the sake of its constitutional effects, we rub it into the skin along with fat; and the only objection to using mercurial ointments for their local effects, is that absorption takes place even too readily. I, therefore, believe that, notwithstanding all theoretical objections, we shall go on using ointments in the treatment of ringworm, at least for a long time to come. Of late years, a preparation of mercury has been brought into use which acts in the same way as an ointment, and has a great penetrating power, namely, oleate of mercury. This substance was first used by Mr. John Marshall, to produce constitutional effects, and is useful, locally, for the very reason that it is easily absorbed. Oleate of copper has been strongly recommended by Dr. Shoemaker. I have given it a trial at the Blackfriars Hospital for Skin-Diseases, but find it less powerful than oleate of mercury.

6. *Vaseline*, paraffin, and similar heavy hydrocarbons, have been much used lately as a substitute for lard in making ointments; they have the advantage of being unalterable, but have little penetrating power. Generally speaking, they possess no advantage over lard in the treatment of ringworm.

I will now give the formulæ for the ointments I am most in the habit of using in the treatment of ringworm, but do not claim for these any special efficacy. The same result may be attained by the use of a vast variety of similar mixtures containing the parasiticide substances above mentioned, if properly applied. In fact, we may say of all systems of treatment, that the success depends more upon who applies the remedies than upon who prescribes them. Among mercurial substances, we use an ointment containing nitrate of mercury and creasote: $\mathcal{R}$ Ung. hyd. nit. $\mathfrak{z}$ ij; creasoti $\mathfrak{m}$ x; adipem ad $\mathfrak{z}$ i. $\mathcal{M}$. Another, containing white precipitate and sulphur— $\mathcal{R}$ Ung. hyd. amm. $\mathfrak{z}$ ij; sulphuris gr. xv; adipem ad $\mathfrak{z}$ i. $\mathcal{M}$. We also use oleate of mercury. This substance is sold in two strengths, one called five per cent. and the other ten per cent. These names correspond to the

proportions—not of the salt, but of the oxide used in preparing it. The five per cent. oleate is an oily semi-fluid substance, the ten per cent. a rather firm ointment. Carbolic acid may be used in an ointment containing thirty or sixty grains to the ounce of either lard or vaseline. Boracic acid I use in the formula given by Mr. Martin, dale—paraffin (melting at 135° or 140°) 5, vaseline 15, boracic acid 4 parts.

I have lately employed a remedy which, I believe, has not been used before, namely, eucalyptus-oil, in an ointment made according to Martindale's formula, paraffin two ounces, vaseline two ounces, oil of eucalyptus one ounce.

I have also employed it in an ointment made of lard, in the strength of one drachm to the ounce, and mixed with chloroform, as mentioned above. It is very useful in early cases, and I have seen already several cases cured by it; but it is not among the most powerful remedies.

I will now give you an outline of the course of treatment pursued first, in a slight or early case, and then in more severe cases. In an early case, after removing the hair, and washing with soft soap (the latter operation should at first be repeated every day), we keep the surface of the head moistened, during the day, from time to time with a lotion; for example, boracis gr. xv, glycerini $\mathfrak{z}$ i, aquæ $\mathfrak{z}$ vij, $\mathcal{M}$.; or hydargyri perchloridi gr. i, glycerini $\mathfrak{z}$ i, aquæ destillatæ $\mathfrak{z}$ vij, $\mathcal{M}$.; or else with glycerine of carbolic acid. At night, have one of the ointments above mentioned thoroughly rubbed in, and the head covered with a cap. This treatment, with lotion and ointment alternately, should be continued for two or three weeks, or longer, till the disease has definitely localised itself in particular patches on the scalp. After this, instead of lotions, paint the patches every three or four days with either a tincture of iodine or the remedy called "Coster's paint,"² continuing the ointment in the interval as before. By these means, a certain proportion of cases, perhaps one-half, or even two-thirds, will generally be cured in a few weeks, or at most a month or two. Should the case prove more obstinate, or should we have to treat a case where the disease has already existed for some time, we slightly modify the above treatment. In place of the painting with iodine, apply blistering-fluid occasionally, or use "Coster's paint" more frequently. Blisters are dangerous in infants, and should not generally be used in children under five years of age. In such a case, epilation should be very carefully and systematically carried out (taking care to warn the parents of the temporary baldness produced). If these means do not suffice, it will be well to change the ointment, and use either a strong preparation of carbolic acid or oleate of mercury. In the circumstances here considered, washing should only be carried out about twice a week.

Should all these measures fail, and the case of ringworm be protracted more than six months, or should we be called upon to treat an inveterate case, an entirely different method is to be recommended. The best plan here will be to apply oleate of mercury, in the five per cent. strength, by means of a sponge—mop over the whole of the head once a day, without removing that previously applied. The head should be covered with a flannel or linen cap, night and day, and should be washed once a fortnight only, or once a week at most. The result of this treatment usually is, that the skin becomes somewhat inflamed; and there is, at all events, considerable seborrhœa, and the scalp becomes covered with scales. It is, in consequence, difficult to tell what progress the cure is making. Accordingly, after fourteen days of such treatment, omit the oleate, wash the head thoroughly, and use a milder application, such as boracic acid ointment, till the skin is clean. We are then in a position to judge how far the disease is eradicated. If broken hairs and stumps still remain, we revert to the oleate treatment, and continue it for another fortnightly period; then clean off the scales as before. A certain amount of suppuration is no reason for stopping the oleate application; but the least soreness of the gums will make us, of course, discontinue it. I must, however, say that I have generally found some constitutional effect produced in those instances in which the oleate has effected a radical cure of the local disease. Cases which have lasted for years may often, by this means, be cured in as many months. I have spoken of some such in the last volume of the hospital reports (*St. Thomas's Hospital Reports*, vol. xiii, p. 325).

If even this treatment fail, there is one yet more severe, namely, the production of artificial suppuration, or kerion. I will not describe this at length, but refer to Dr. Alder Smith's valuable little book on *Ringworm*. It is, I think, efficacious; but is very painful, and somewhat dangerous. Hence it is, I think, less used than it was a few years

² Coster's paint, made according to the original formula (one part of iodine with four parts distilled oil of tar), is a chemical compound, not a mere solution; and contains little free iodine. It is not irritating, and appears to me to be the best of occasional applications; but it need not be used frequently, as it forms a crust.

ago. With regard to the constitutional treatment of ringworm, I have already said that I think the state of health has little to do with the persistence of the disease. Nevertheless, a change of air, removing the patient from the influences surrounding him at home, often appears to be of great benefit. I should always recommend that, in a very tedious case, the room in which the child sleeps, and the bedding, should be disinfected as carefully as in the case of any other infectious disease. These precautions have in some cases appeared to arrest the disease, which was being treated in vain by local remedies.

With regard to ringworm of the skin (*tinea circinata*), its cure is conducted on the same principles as that of *tinea tonsurans*, but is much easier. The patches should be well painted with tincture of iodine, which is sometimes sufficient. If it should not be, wash thoroughly with soft-soap, and apply one of the parasiticide ointments above mentioned. Most cases will be cured in a fortnight.

Ringworm of the beard (parasitic sycosis) has become rather more common in London of late years than it used to be. It is treated in the same way as other forms of ringworm; but the amount of inflammation is sometimes so great, that cooling remedies, especially lead-lotion, have to be used at first. Poultices are better avoided. In the next place, painting with iodine (if the patient do not object) is very useful, both to counteract the deep-lying inflammation and to kill the fungus. In order to effect a cure, carefully eradicate the diseased hairs, and rub in one of the parasiticide ointments. The cure is sometimes tedious, but less so than in a really bad case of ringworm of the scalp.³

CASES OF HYSTERECTOMY, WITH REMARKS ON THE VALUE OF THE CARBOLIC ACID SPRAY IN THIS OPERATION.

By J. KNOWSLEY THORNTON, M.B., C.M.,
Surgeon to the Samaritan Free Hospital.

In September, 1882, I read a paper before the Boston meeting of the American Gynecological Society, "On the Relative Value of Hysterectomy and of the Complete Removal of the Uterine Appendages, for the cure of Uterine Fibroids."¹ In dealing with the statistics of the two operations, I had to record, as my contribution to them, 25 cases of removal of uterine tumour, with 9 deaths, and 8 cases of the removal of the uterine appendages with no death. From the results obtained by others, and from my own, I came to the conclusion that the removal of the appendages should, in all suitable cases, be preferred to the more formidable hysterectomy.

At the Liverpool meeting of the British Medical Association in August, 1883, I read another paper on this subject²; the year's interval having added to my personal experience six operations for the removal of uterine tumours, with one death, and seven successful removals of the appendages. I was then strongly in favour of the latter operation, and I am so still; but increasing experience and increasing boldness in dealing with uterine tumours by operation, have convinced me that, among the many things to be taken into consideration in deciding which operation is suitable for a given case, some can only be learned by actual sight and touch after the abdominal cavity is opened, and when the relative positions of the uterus, ovaries, tubes, and tumours are thus made absolutely certain. In undertaking to operate for a fibro-myoma, I therefore always tell the patient plainly that, though I believe the one or the other operation, as the case may be, will be most suitable for her, I cannot absolutely pledge myself as to which I shall perform till I have opened the abdomen.

I have now removed the appendages for the cure of fibro-myoma eighteen times, and all the patients have recovered from the operation. I do not propose to refer farther to these cases now, but I am watching their progress with care, for future publication. I have lately been seeking for cases suitable for the removal of the tumour, in order that I may thoroughly test the reasons for success and failure in hysterectomy; and I will now consider eighteen cases in which I have removed uterine tumours since I read my paper in Liverpool; and I shall especially direct attention to the value of Listerism with the spray in these operations.

The first case in my table was that of a woman, aged 47, with a very large lobulated tumour, surrounded by much ascitic fluid. The growth of the tumour and the accumulation of the fluid had been very rapid.

The patient was stone deaf and hemiplegic, the affected side being in a constant state of tremor. It was very difficult to obtain a good history from her, but, after watching for a time, I became convinced that her only chance of life lay in the removal of the tumour. She was already in very broken health, and I felt pretty certain that the tumour was uterine, and I feared that it was malignant, so that I did not operate with much hope of pulling her through, but because I thought it my duty to give her the chance.

No.	Date.	Age.	Condition.	Weight.	General Remarks.	Place of Operation	Treatment of Pedicle.	Result.
31	1883. Oct. 17	47	M	25 lbs.	15lbs. of ascitic fluid. Malignant tumour. Patient hemiplegic. Extensive adhesions	Samaritan hospital	Serre-nœud	Died in 8hs. shock
32	Dec. 29	55	S	14½	Rapidly growing fibro-cystic tumour. Extensive adhesions	"	"	Recovered
33	1884. Jan. 5	55	S	3	Severe hæmorrhage and increase of tumour after menopause	Nursing home	"	"
34	Jan. 18	58	S	5	1½ pints of pus in degenerating tumour. Constant offensive discharge from uterus	Samaritan hospital	" ovaries and tubes ligatured	"
35	Feb. 7	45	S	25	Rapid growth of tumour and pressure on ureters	Private house	"	"
36	Feb. 13	40	S	4½	Cysto-sarcoma of whole uterus. This was practically a complete extirpation	Samaritan hospital	Pin and ligatures	"
37	Feb. 20	42	S	10	Double ovariectomy with removal of broad ligament cyst as well as hysterectomy	Private house	Serre-nœud	Died on 4th day, peritonitis
38	April 5	38	M	2½	Hæmorrhage. Patient's mother died of hæmorrhage from fibro-myoma	Samaritan hospital	"	Recovered
39	May 17	45	M	7	Rapid growth of tumour, probably due to blood-supply through extensive omental adhesions	Nursing home	"	"
40	June 2	49	S	4½	Pediculate tumour removed during the performance of nephrectomy	"	Ligatures	"
41	June 11	40	S	12½	General ill-health and pressure on the ureters	Private house	Serre-nœud	"
42	Oct. 31	33	S	11½	Double ovariectomy at the same time. Symmetrical multilocular ovarian cysts, 9oz. each	Samaritan hospital	" ovaries and tubes ligatured	"
43	1885. Jan. 3	31		3	Pediculate tumour. Both ovaries and tubes so adherent that they were removed with it	"	Ligatures and flaps	"
44	Jan. 6	47	M	10	Right ovary contained a dermoid cyst	Nursing home	Serre-nœud ovaries and tubes ligatured	"
45	Jan. 10	34	S	3	Hæmorrhage. Both ovaries cystic	Samaritan hospital	"	"
46	Jan. 21	36	M	6½	Pediculate tumour growing fast. Patient came from N. Zealand for operation	"	Ligatures and flaps	"
47	Jan. 29	27	S	4½	Hæmorrhage and inability to work as domestic servant. Fibro-cystic tumour	"	Serre-nœud ovaries and tubes ligatured	"
48	Feb. 10	41	S	2	Pain and inability to do her work as a domestic servant	Nursing home	Serre-nœud right ovary and tube and left tube ligatured	"

The operation was performed on October 17th, 1883, and, after the evacuation of fifteen pints of ascitic fluid, I removed a semisolid tumour, weighing twenty-five pounds. The adhesions were extensive to the parietes and omentum, and especially close and troublesome to the cæcum and vermiform appendix. The uterus, just above the internal os, together with both broad ligaments, was clamped by Kœberlé's serre-nœud, and the mass, with both ovaries and tubes, was removed. The stump was pinned in the lower angle of the wound without undue traction, and the patient was placed in bed, after a prolonged operation, in a condition which made me hope for recovery. The tremor of the paralysed side ceased entirely; but she did not rally, and quietly sank and died in eight hours. The macroscopic and microscopic examination of the tumour showed it to be a cysto-sarcoma. The cysts were small, from the size of a marble to those only to be seen with the microscope, and they were lined with epithelium

³ A purer form of oleate of mercury has recently been introduced, which produces no inflammation or seborrhœa. In spite of this advantage, it has seemed, in hospital practice, less efficacious than the impure five per cent. oleate.

¹ *Transactions of American Gynecological Society*, vol. vii, 1882.

² *BRITISH MEDICAL JOURNAL* October 13th, 1883.