

**Abstract of all cases of tubercular disease which have been treated by Mr. Watson Cheyne with tuberculine up to the beginning of April, 1891.**

**Contributors**

Cheyne, William Watson, Sir, 1852-1932.  
Bryant, Thomas, 1828-1914  
Royal College of Surgeons of England

**Publication/Creation**

[London] : Printed by Adlard and Son, [1891]

**Persistent URL**

<https://wellcomecollection.org/works/fr4w2kne>

**Provider**

Royal College of Surgeons

**License and attribution**

This material has been provided by This material has been provided by The Royal College of Surgeons of England. The original may be consulted at The Royal College of Surgeons of England. where the originals may be consulted. This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection  
183 Euston Road  
London NW1 2BE UK  
T +44 (0)20 7611 8722  
E [library@wellcomecollection.org](mailto:library@wellcomecollection.org)  
<https://wellcomecollection.org>

(7.)

ABSTRACT  
OF ALL  
CASES OF TUBERCULAR DISEASE  
WHICH HAVE BEEN TREATED  
BY MR. WATSON CHEYNE  
WITH TUBERCULINE  
UP TO THE BEGINNING OF APRIL, 1891.



Digitized by the Internet Archive  
in 2015

<https://archive.org/details/b22378686>



ABSTRACT  
OF ALL  
CASES OF TUBERCULAR DISEASE  
WHICH HAVE BEEN TREATED  
BY MR. WATSON CHEYNE  
WITH TUBERCULINE  
UP TO THE BEGINNING OF APRIL, 1891.

---

THE amount administered at each injection is stated, and an attempt has been made to indicate the occurrence and intensity of the general reactions, and the frequency with which the injections were given. The strength of the reactions is indicated by dashes placed above the dose. Where there is no dash there was no reaction. Where there is one dash (*e. g.* ·002') there was only slight reaction, the temperature perhaps reaching 100° or a little higher, but without the patient suffering to any noticeable extent, and often not at all. Where there are two dashes (*e. g.* ·002'') there was moderate reaction, the temperature being usually above 101°, between that and 104°, and the various symptoms being moderate in intensity. Where there are three dashes (*e. g.* ·002''') there was a severe reaction, that is to say, the temperature was usually at or above 104°, though sometimes it was only 103°, and the general symptoms were correspondingly severe. Where



there are four dashes (*e. g.* ·002''''') the condition of the patient was such as to make us anxious; only two reactions of this kind will be found in the list. No attempt has been made to indicate the local reaction.

This method, of course, only roughly indicates the state of matters. In some cases, even where the temperature was up to 102°, the patients did not suffer at all, but these I must mark as moderate reactions. In other cases patients with a temperature of 102° or 103° (within my "moderate" area) have suffered more than those with a temperature of 104°. Where this has been the case I have indicated them as severe. Those with slight reaction, *i. e.* with elevation of temperature above 99°, but seldom with any other symptoms, are probably correct. Those marked severe are, no doubt, all correct. But among those marked "moderate" are some where the symptoms were very slight, and which, were it not for the temperature, ought to have been so indicated, and others which were on the border-line as regards symptoms between moderate and severe, but where the temperature was not particularly high. The idea of indicating reaction and frequency in this way was taken from a paper by Leichtenstern, but his plan has been somewhat modified.

The frequency of the reactions is also indicated in the following manner:—Where more than one injection was administered on the same day the doses are bracketed together with a comma between them, thus: (·002, ·002). Where the injections were given on succeeding days there is a hyphen between each dose, thus: ·002-·002. Where there was one clear day's interval between the injections it is written thus: ·002 ; <sub>1</sub>·002 ; where there was two days' interval thus: ·002 ; <sub>2</sub>002, and so on.

As the ultimate result depends to a great degree on the way in which the material is used, it is absolutely essential in publishing the records of cases that the above facts should be clearly indicated, otherwise it is impossible to judge of the value of the results.

It is, of course, difficult in an abstract to convey a

thorough idea of any particular case, and I have attempted to add to the value of the record by stating, in the first place, what I would have done in the case in question before the Koch period, and in the second place, what I would now do in a similar case.

K. C. H. = King's College Hospital.

P. G. C. H. = Paddington Green Children's Hospital.



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
1	<p>N. L., æet. 20, female, K. C. H., admitted Nov. 25th, 1890; discharged Dec. 30th, 1890</p> <p><i>Diagnosis.</i>— Lupus of neck and arms; disease of metacarpal bone</p> <p>Re- admitted Jan. 26th, 1891</p>	<p>One uncle died of phthisis. About 12 years ago had tubercular glands in neck which suppurred. The wounds did not heal and lupus appeared around them, and spread along each side of neck. Since that time abscesses have formed on the inner side of both arms, and patches of lupus have also appeared. About 5 years ago the metacarpal bone of the little finger of her right hand began to swell, and portions of bone have been removed. She has undergone many operations and much treatment</p> <p>—</p>	<p>Internal organs healthy; there is one large cicatrix around the under part of the jaw, and a number of smaller ones lower down. Numerous lupus nodules around the upper border of this scar, extending on to the cheek and occupying a breadth of about an inch, covered with crusts. Parts of the cicatrices are apparently healthy, but everywhere one sees lupus nodules here and there scattered over them. There are a number of patches covered with crusts along the inner side of both arms. The metacarpal bone of the right little finger is much thickened and very tender, and there is a small sinus in front, which she says has existed for 4 years</p> <p>On re-admission a few fresh lupus nodules were found around the edge of the scar in various parts, and the finger, which was painless and not swollen when she was discharged, was as bad as it was originally; the sinus had opened up again and a fresh one had formed. Portions of the scars on the arm were red, and here and there lupus nodules were seen</p>	<p>·01''; 4·01''; 16·002'' (patient declined further treatment)</p> <p>·001''; 1·001-001-001- (·001,·001)-(·001,·001)-00 (·002,·002)-(·002,·002)- (·002',·002)-(·002,·002)- (·002,·002)-(·002,·002)- (·002,·002)-(·002,·002)- (·002,·004)-(·004,·004,·00 (·004,·004,·004)-(·004,·006 (·006,·006,·006)-(·008,·01) (·01,·01)-(·02,·02)-(·03,·03 (·04,·04)-(·05',·05)- (·05',·05')-(·06,·06)- (·07,·08)-(·09,·1)-(·1,·1)-1; 1(·1,·1)-1-(·1,·1,·1''); 1(·1,·1). Beca an out-patient on March 5th to go on with ·12 every day</p>
2	<p>Miss D., æet. 42, under the care of Dr. Thin.</p> <p><i>Diagnosis.</i>— Lupus of face</p>	<p>Tubercular family history. Disease began 25 years ago as a spot in the middle of the cheek. Has been treated in all sorts of ways, as the disease has been steadily progressing, especially towards the eye. We have lately been considering the advisability of excising the whole patch, either at once or in portions, and closing the wound immediately by Thiersch's skin grafts</p>	<p>Internal organs healthy. On the right cheek there is an extensive patch of lupus extending as far out as the centre of the malar bone, as low down as the level of the angle of the mouth, and as high up as the middle of the lower eyelid, and extending along the inner side of the nose as high as and quite close to the inner canthus of the eye. On the cheek the lupus nodules are embedded in dense scar tissue, and much of it is ulcerating and covered with scabs. There is a scar on one buttock, which the patient says was a lupus patch, which commenced when she was 6 years old, and which spontaneously disappeared after several attacks of acute inflammation in it</p>	<p>·006''; 3·006''; 4·007'' 6·008''; 8·005''; 10·005'' 7·003'; 2·003'; 1·003''; 1·00 1·003; 1·003; 2·006'; 1·008 1·01; 2·01; 1·012; 1·011 2·02; 1·03; 1·05; 1·07; 1· 1·13; 1·15; 1·2; 1·27; 1·3 1·4; 2·45; 1·4; 3·2; 1·5 1·25; 1·3; 1·33; 1·35; 1·3 1·35; 1·38; 1·35; 1·38; 1· 1·4; 1·3-25-3-3-3-35-3 To continue</p>



LUPUS.

Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
Commenced Nov. 26th, 1890; 1st injection on Dec. 17th, 1890; discharged at her own request on Dec. 30th, 1890	None	When discharged on Dec. 30th the lupus patches had entirely disappeared, the sinus on the finger had healed and the swelling and tenderness of the bone had gone	The first reaction was a severe one but there were no dangerous symptoms; much local reaction. The temperature reached 104.4°, 16 hours after the injection fell a little, and again 31 hours after the injection was 104.8°. It then fell slowly, but was still about 100° when the second injection was given on Dec. 1st. There was an erythematous rash over the chest. The reaction after the second injection was much more severe, and for a few hours I was rather anxious about her. The temperature reached its highest point (105.2°) 9 hours after the injection, and during the next 24 hours she was retching a good deal, coughing, had a very weak and rapid pulse (168) and rapid respiration (60). She was also partially unconscious. Stimulants were administered and the symptoms gradually passed off, but the temperature did not reach normal till 7 days after the injection. There was violent local reaction and the lupus nodules for the most part sloughed out. There was a slight trace of albumen on Dec. 4th, but this disappeared next day. After the 3rd injection, though the temperature reached 104.4°, the general effects were comparatively slight.
Injections recommenced on Jan. 28th. Total number of injections up to April 8th = 100. Total amount of iod used = about 5.816 grms.	On March 15th Unna's strong salicylic and creosote plasters were applied over the remains of the lupus on the right side of the neck	Note on April 6th.—“Some spots of lupus can still be recognised on the neck, but the condition is steadily improving. The arms are very much better. The sinuses on the hand are still unhealed, but the swelling is less and free from pain or tenderness. On the right side of the neck are some sores due to the salicylic plasters”	The patient did not suffer during this course of treatment. The parts around the lupus patches were kept constantly red and scaling, and these patches have gradually become less visible. The hand also steadily improved, and the swelling and tenderness disappeared. On March 15th remains of the lupus nodules were still visible in places in the neck and salicylic plasters were ordered for these places; the patches on the arm were very much improved and the finger was painless, but the most recent sores had not yet quite healed. She complained a good deal of her hair falling out during the course of the treatment.
Commenced Nov. 27th, 1890. Total number of injections up to April 8th = 51. Total amount of iod used up to that time = 8.095 grms.	From time to time remnants of lupus tissue were picked out with a fine spoon, and on Feb. 16th the use of Unna's salicylic plasters was begun	Note on April 8th.—“The cheek is still in parts ulcerated as the result of the plasters, but the part looks quite healthy. Till this heals one cannot of course say how much has been gained”	The patient suffered a good deal after the early injections, there being sickness, headache, weak pulse, and pains, at first in the back, and subsequently in the limbs. After the first 3 or 4 injections she complained that at the height of reaction her limbs were powerless, and the pain in them so great that she could not move. As it seemed not improbable that there was some hysteria present, we gave an injection of the carbolic lotion without tuberculine, but no symptoms followed. By persevering steadily and

cautiously these troubles were gradually overcome, and we were enabled to raise the dose. She also had several skin eruptions, mainly erythematous. On one or two occasions several subcutaneous hæmorrhages occurred on the thighs after the injections. On March 2nd, after the injection of 4 decigrammes, she complained in about 10 minutes of great depression and of the sudden appearance of urticaria over the whole body. These symptoms very soon passed off. She had a second attack of urticaria a few minutes after the injection of .38 gm. on March 22nd, but without any marked depression. The lupus steadily improved, though at first more slowly than usual, owing no doubt to the intervals between the injections and the small dose. There were evidently still some superficial remnants of lupus tissue the treatment by salicylic plasters was begun on Feb. 16th, a treatment which she had gone through several times before without any permanent benefit.



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
3	<p>M. C., æt. 26, female, admitted Dec. 1st, 1890, K. C. H.</p> <p><i>Diagnosis.</i>—Lupus of face and palate; enlarged glands in neck</p>	<p>Mother died of phthisis. Disease began 15 years ago. The nose was first attacked, and from thence it spread on to both cheeks. Hard palate and upper gums became affected about 5 years ago and the upper lip 2 years ago. Has undergone all sorts of treatment. Scraped last on Nov. 21st, 1890</p>	<p>Internal organs healthy. Very extensive lupus. A considerable part of the cartilaginous part of the nose has been eaten away as well as the columna. It extends up over the root of the nose, and for a short distance on to the forehead. From the nose it extends on to both cheeks, on the right side covering the whole of the cheek down to the lower border of the inferior maxilla, and as far outwards as the level of the anterior border of the masseter. On the left side the disease does not extend so low, hardly reaching below the level of the angle of the mouth. The upper lip is much affected and swollen, and the disease spreads to the inner side of the lip, from thence to the front of the gums; there was also a small patch at the anterior part of the hard palate on the right side. Much of the surface is raw as the result of the recent operation. There was some discharge from the nose. There are some enlarged glands in the submaxillary region and at the angle of the jaw on the right side</p>	<p>·006''; 2·006''; 1·006''; 1·008'' 1·008''; 1·008''; 2·01'; 1·01' 1·013; 1·02; 4·03; 2·06; 1·06' 1·08'; 2·1'; 3·1'; 2·1'; 1·1'; 1·1' 2·12'; 1·12; 1·12; 2·12'; 1·12 1·15; 2·12; 1·12; 1·12; 1·12 2·12; 2·1; 1·1; 2·1; 1·1; 1·1 2·1; 1·09; 1·1; 2·1; 1·1; 1·1 2·1; 1·1; 1·(1,1)-1-(1,1)-1- 1-1-(1,1)-(1,1)-(1,1) (1,1,1)-(1,1,1) (1,1,1)-(1,1,1) (1,1,1)-(1,1,1) (1,1,1)-(1,1,1)-12- (12,12)-(12,12,12)- (12,12,12)-(12,12,12). Treatment being continued</p>
4	<p>R. S., æt. 25, female, admitted Nov. 29th, 1890, K. C. H.; discharged Feb. 2nd, 1891, to attend as out-patient</p> <p><i>Diagnosis.</i>—Lupus of nose and cheek</p>	<p>Father and mother consumptive. Began on upper lip, immediately below septum of nose, 5 years ago. Has steadily extended in spite of all sorts of treatment. Has had 24 operations, the last about 6 weeks before admission</p>	<p>Various organs healthy. About 3rd of the cartilages at the tip of the nose have been destroyed, especially on the left side; the orifices of both nostrils are considerably contracted. The centre of the upper lip is drawn up. The greater part of the nose is covered with scar tissue, in which are numerous lupus nodules and small ulcers. On the left side there is a separate patch of lupus close to the inner canthus of the eye. There is also a patch about the middle of the right cheek, which is ulcerated, and below the symphysis of the jaw is a thickened scar about 1½ in. long, probably from a suppurating gland. There was evidently some disease inside the nose, but the orifice on the left side was so small that nothing could be seen</p>	<p>·008''' ; 2·01'' ; 3·01'' ; 1·01'' 1·01'' ; 2·01'' ; 1·01'' ; 1·013'' 1·02' ; 3·03' ; 2·04' ; 1·06' 1·08' ; 2·1' ; 3·12' ; 2·12 ; 3·15' 2·2'' ; 3·23' ; 2·1 ; 4·1 ; and once a week ·1</p>
5	<p>H. F., æt. 15, male, admitted Dec. 1st, 1890, K. C. H.; discharged Jan. 28th, 1891.</p> <p><i>Diagnosis.</i>—Lupus of thigh and axilla</p>	<p>No phthisical family history. Disease began 6 years ago</p>	<p>Internal organs healthy. At the back of the right thigh, rather below the middle, is a patch of lupus 3½ in. from above downwards and 3½ in. transversely. The patch is much thickened and covered with scales; there is no ulceration, and no signs of cicatrisation. Towards the outer part of the left axilla there is a similar patch, 3½ in. from above downwards, and 2½ in. from side to side</p>	<p>·01''' ; 2·01''-01'' ; 2·013'' ; 1·013'' ; 1·015'' ; 2·02' ; 1·022'' ; 1·024' ; 1·03' ; 4·04' ; 2·05' ; 1·06' ; 1·08 ; 2·1 ; 3·12' ; 2·1 ; 3·12 ; 2·12 ; 3·1 ; 2·1. Sub- sequently attended twice a week and received ·1. Not been seen since the begin- ning of March</p>



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Dec. 2nd, 1890. Number of injections up to April 8th, 1891 = 93. Total amount of fluid used up to April 8th, 1891 = 8.705 grms.</p>	<p>Sent to convalescent home on Feb. 15th for a month. Readmitted on March 16th. On March 20th a number of nodules on the left cheek were scraped out and cauterised with nitrate of silver. On April 3rd the right side of the cheek was treated in a similar manner. In portions excised on March 20th there was still a good deal of tubercular tissue present</p>	<p>On April 8th the left cheek is still scaling in places, but there is no fresh recurrence; the parts scraped have healed. On the right side there are several sores, the result of the previous scraping</p> <p><i>Result.</i>—Great improvement in the lupus for a time; relapse. Subsequent improvement. Glands in <i>statu quo</i></p>	<p>Nothing abnormal about the reactions. The patient complained chiefly of headache, slight cough, sore throat, and the discomfort of the local reaction over this wide area. There was a good deal of local reaction, and after the first week the part steadily improved (though more slowly latterly) till she was sent to the convalescent home on Feb. 15th. On the morning of the previous day it was noticed that there were several small quite superficial bodies, almost like vesicles, on the skin just outside the lower angle of the lupus patch on the right side (on microscopical examination these were found to be really vesicles). Since the beginning of March a number of nodules have appeared at several parts of the scar, more especially towards the edge, and when readmitted on March 16th there was a considerable number of nodules over the surface, and ulceration was occurring at the nose. The left cheek was operated on as above, and the frequency of the injections was increased. Considerable improvement followed the increased frequency, and a large number of the nodules faded away. As there was still some tendency to ulceration on the nose and at one part of the cheek, these points were scraped and touched with nitrate of silver on April 3rd</p>
<p>Commenced Dec. 3rd, 1890. Total number of injections up to April 3rd, 1891, = 30. Total amount of fluid used up to April 3rd, 1891, = 2.331 grms.</p>	<p>None</p>	<p>Note on April 3rd.—“The parts remain healed, and there is no tendency to relapse. There are still several yellow spots in the scar, and the lupus patches below the eye and at the angle of the nose are not quite level.”</p> <p><i>Result.</i>—Great improvement. As yet no relapse</p>	<p>Before the temperature rose, after the first injection, patient had a rigor. She also complained of sore throat, nausea, and headache. There was a trace of albumen 2 days later, but this did not recur. The sore throat recurred after the first 9 injections; there was redness of the fauces, but no ulceration. No other noteworthy symptoms. The lupus improved rapidly and very markedly.</p>
<p>Commenced Dec. 3rd, 1890. Total number of injections = about 30. Total amount of fluid used = about 2.057 grms.</p>	<p>None</p>	<p>“When last seen, about the beginning of March, there were still remnants of lupus in both places, but most on the leg. The disease seemed to be quite stationary.” Patient has not been seen since, and cannot be found.</p> <p><i>Result.</i>—Considerable improvement, and then standstill</p>	<p>After the first injection patient had a papular rash in patches over his back and sides, and slightly over the chest and thighs, in position and general appearance not unlike a herpes zoster. This faded away and disappeared about Dec. 14th. On Dec. 22nd a small abscess was found, and opened at anterior fold of axilla, and rapidly healed. The local reaction was fairly severe, but the patient was not very ill. Tubercles were still present in tissue removed from the thigh in the middle of January, though evidently much atrophied and destroyed.</p>







Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen	Notes.
<p>Commenced Dec. 8th, 1890. Total number of injections up to April 6th, 1891, = 41. Total amount of fluid used up to that date = 3.818 grms.</p>	<p>On March 20th the strong salicylic plasters were applied to the left cheek</p>	<p>Note on April 6th.—“The condition of the face is better than when the patient was admitted, but shows a distinct tendency to relapse. On the left cheek the lupus nodules are breaking down under the plaster”</p> <p><i>Result.</i>—Improvement for a time, but tendency to relapse</p>	<p>The general constitutional disturbance after the reactions was not marked. There was a slight erythematous rash on the chest after the first injection. The local reaction was not so marked as in other cases, but was quite distinct. When she was sent home there were very few nodules remaining, but these have somewhat increased in number. On March 20th the strong salicylic plasters were applied to the left cheek.</p>
<p>Commenced Dec. 10th, 1890. Total number of injections up to April 8th, 1891 = 35. Total amount of fluid used up to April 8th, 1891 = 2.780 grms.</p>	<p>Patient was advised to apply Unna's salicylic plasters to one side, but she did not get the proper material</p>	<p>Note on April 5th, 1891.—“The condition of the lupus is markedly better than before the treatment was commenced, but there is still lupus tissue round the greater part of the margin and at one or two places in the scar. The appearance is not so good as it was some weeks ago”</p> <p><i>Result.</i>—Considerably improved, but tendency to relapse</p>	<p>After the first injections patient had a scarlatini-form rash over the trunk. The lupus steadily improved for some weeks till considerable intervals were left between the injections, when it began to show signs of going back. Lately the injections have been given more regularly and frequently, and the condition has remained pretty stationary. Patient was ordered to apply Unna's salicylic plasters to the margin of the scar about the middle of March, but did not carry out her instructions properly.</p>
<p>Commenced Jan. 16th, 1891. Total number of injections up to April 8th, 1891 = 147. Total amount of fluid used up to that date = 13.246 grms.</p>	<p>Boracic ointment to prevent scabbing</p>	<p>Note on April 8th.—“There is everywhere a smooth depressed cicatrix which is gradually becoming paler. No trace of lupus tissue. Glands in neck rather smaller”</p> <p><i>Result.</i>—Very remarkable improvement. Disappearance of lupus tissue. Glands smaller</p>	<p>There was no serious general disturbance, but the local reaction was marked, and for several weeks the seat of the disease was red and scaling. The last places to cease scaling were the upper eyelid, the tip of the nose, and the left ear, and these had ceased to scale at the end of March. In a piece excised from the margin at the middle of March there were only a few traces of tubercular tissue. In a piece removed at the beginning of April no lupus tissue was found.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
9	Miss C., æt. 43, came under treatment on Feb. 28th, 1891.  <i>Diagnosis.</i> — Lupus of face, enlarged glands in neck	Tubercular family history. The disease began 20 years ago in the middle of left cheek, and has only attacked the nose during the last 2 years. Has undergone a variety of methods of treatment	Internal organs healthy. A number of enlarged glands in neck, some of which have suppurated. The whole of the left cheek is the seat of lupus, which extends on to the left ear, part of which is destroyed, and down into the neck and under the chin to the right side. The left upper eyelid is also extensively affected, and there is marked ectropion of the lower lid. It also extends on to and affects the whole of the nose, the part over the cartilage being one mass of lupus tissue. The corresponding part of the interior of the nose is affected, and there are several spots on the upper lip. There is also an extensive patch of ulcerating lupus over the right cheek. On Feb. 20th I scraped the lupus as thoroughly as possible, applying nitric acid to the raw surfaces. There were, however, numerous nodules which I could not remove, as they were embedded in dense scar tissue, and I only scraped the nose superficially, for if I had attempted to do it thoroughly the whole of the cartilaginous portion must have come away	·002"; 2·004"; 1·007"; 1·01"; 1·01'-01'-01'-01'-01'-01'-01'- (01, 01"); 1·01'-01'- (01', 01)-012''-012'- (012, 012)-015-(015, 015)- (015', 015)-02''-(01', 01)- (01', 01)-(01', 01)- (013', 01-(01', 01)- (012', 015)-(015, 015)-02- (02', 015)-(02, 02)- (02', 025)-(025', 03)- (03, 035)-(035, 04)- (04, 05). To continue
10	W. H., æt. 21, male, K. C. H.; admitted Feb. 23rd, 1891.  <i>Diagnosis.</i> — Lupus of face, hands, and leg, enlarged glands in neck	No tubercular family history. The lupus on the face began 11 years ago, commencing on the left cheek, and has been spreading steadily ever since, in spite of various operations and other treatment. When 6 years of age had tubercular disease of one toe; this was followed 2 years later by disease of right elbow and of upper part of right tibia	Internal organs healthy. Enlarged glands in neck. Extensive lupus of the face, involving both cheeks, upper lip, and the whole of the nose, a portion of which has been destroyed, and extending on both sides below the jaw, meeting at the chin. There is a large patch of lupus on the back of the left hand, and a smaller one on the back of the left forearm at the lower part. Sore on left leg, which he states was the result of an injury a month before admission. On Feb. 25th, before commencing the Koch treatment, the left side of the face was well scraped, but the nose and the right side were left untouched	·002''; 1·002''; 1·002''; 2·002''; 1·002''; 1·001''; 1·001''-001''; 1·001-002''- 002''-002''; 1·003'-004''- 005'-005'-(005, 005)-006'- (006, 006)-006-(006, 006)- (006, 006)-(006, 006)- (008, 008)-(01', 01, 01)- (01, 01, 01)-(02, 02, 02)- (02, 02, 02)-(03, 03, 03)



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Feb. 25th, 1891. Total number of injections up to April 8th = 53. Total amount of fluid used up to that date = 881 grms.</p>	<p>Boracic ointment. Unna's strong salicylic plasters were commenced on March 12th</p>	<p>Note on April 8th, 1891.—                      "The condition of the face is very greatly improved. Parts are broken down under the influence of the salicylic plasters: portions where these have been applied are now soundly healed, and at present show no trace of disease. The parts to which the plasters have not yet been applied are still rapidly improving. Glands smaller"   <i>Result.</i>—Improving steadily</p>	<p>The patient did not suffer much from the early febrile reactions and the later reactions, which are marked slight, did not affect her at all, the temperature running up towards evening to about 100°, or sometimes a little higher. The wounds left after scraping healed in a few days. On April 2nd the places where the plasters were first applied were allowed to heal, and in the other parts, where the plaster had not been applied, the usual improvement noted in the early part of this treatment was observed.</p>
<p>Injections commenced on March 2nd, 1891. Total number of injections up to April 8th = 45. Total amount of fluid used up to that date = 393 grms.</p>	<p>On March 11th the creosote and salicylic plasters were begun on the right cheek</p>	<p>Note on April 8th.—"The left cheek is still much swollen, red, and scaling, and is improving rapidly as regards the lupus. On the right side the scar is still broken down as the result of the plaster, but is healing at the lower part. The patches on the arm and hand are already much improved. Glands unaltered"   <i>Result.</i>—Improving</p>	<p>The first five injections were followed by marked general and local reaction, and by a scarlatiniform eruption followed by desquamation. The sore on the leg also reacted, but the old scars in leg and arm did not react. The left cheek healed rapidly, and the right broke down well under the salicylic plasters. Sections of skin taken before the treatment was commenced show an unusual amount of tubercular tissue.</p>

There were thus ten cases of lupus under treatment, of which two have only been going on for too short a time to be of value ; both are steadily improving. I may say that in all the remaining eight cases improvement occurred at first, and in some it was very considerable ; in one indeed (No. 8) there is now hardly any disease to be detected. In four of the eight cases (Nos. 1, 2, 4, and 8) the improvement is maintained or increasing. In one (No. 5) when the patient was last seen the improvement had come to a standstill, although there was still a good deal of lupus tissue present. In three, after the improvement had gone on to a considerable extent, it came to a standstill, and now shows a distinct tendency to relapse, but in none is the disease nearly so bad as before the treatment was commenced. My present view as to the position which this treatment ought to occupy in the treatment of cases of inveterate lupus, is that which it occupies in the treatment of case No. 9. The greatest improvement was obtained in a case (No. 8) treated by the "continuous" plan. Case 1 is very interesting as showing the very remarkable improvement after two severe reactions, but recurrence after leaving off the treatment ; this improvement affecting not only the lupus, but also the disease of the metacarpal bone.



## DISEASES OF BONES AND JOINTS.

### A.—CASES WITH UNBROKEN SKIN.



## II.—DISEASES OF BONES AND JOINTS.

No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
11	<p>W. P., æt. 3½, female, K. C. H., admitted Dec. 9th, 1890. Discharged Jan. 21st, 1891.</p> <p><i>Diagnosis.</i>— Disease of knee-joint; enlarged glands in neck</p>	<p>No phthisical family history. Four weeks before admission the right knee was noticed to be swollen and painful, and since that time the swelling and pain have rapidly increased. No known cause. No treatment</p>	<p>Internal organs healthy. Enlarged glands on both sides of neck. Right knee much enlarged; measures across the centre of the patella 8½ in.; left measures 7½ in. Breadth of knee below adductor tubercle measured with callipers = on right side 2½ in.; on left side 2½ in. Knee flexed nearly to a right angle, and pain on attempting movement. Synovial membrane much thickened; no fluid in joint.</p> <p>(In this case before the Koch period I would have employed the expectant method)</p>	<p>·002''-·003'; 1·005'; 2·007'; 1·008'; 1·009'; 1·01'; 4·01'; 2·012'; 1·012'; 1·015'; 2·02'; 3·02'; 2·02'; 3·025'. Became out-patient, the dose being rapidly raised to ·1, the patient coming up twice a week for injection</p>
12	<p>C. F., æt. 16 months, male, K. C. H., admitted Dec. 11th, 1890.</p> <p><i>Diagnosis.</i>— Disease of knee-joint; enlarged glands in neck</p>	<p>No tubercular family history. Sent for treatment from Guy's Hospital. The disease is said to have begun 4 months ago after a fall</p>	<p>Internal organs healthy. Small enlarged glands on both sides of neck. The left knee is kept flexed, and any attempt to extend it causes pain. Cannot be extended beyond 48°. The joint is much swollen, and there is marked synovial thickening. On the outside of the joint towards the lower part is a fluctuating swelling, which, however, does not seem to communicate with the joint. Circumference of left knee over centre of patella 1½ in. more than the other. By callipers transversely just below the adductor tubercle the left side is ¼ in. larger than the right.</p> <p>(When I first saw this case I took a gloomy view of it, and while before the Koch period I would have persevered with expectant treatment for a time, I should have expected that it would come to operation ultimately)</p>	<p>·0015'; 1·002'; 2·003'; 1·004'; 1·005'; 1·006'; 1·008'; 4·01'; 1·015'; 1·02'; 1·025'; 2·03'; 3·04'; 2·04' (interval of 18 days); 1·01'; 1·015'; 1·02'; 1·03'; 2·04'; 1·05'-·06'; 1·06'; 1·07'; 1·08'; 1·09'; 1·1'; 2·1'; 1·1'; 2·1'; 1·1'; 1·1'; 2·1'; 1·1'; 1·1'; 2·1'; 1·1'; 1·1'; 2·1'; 1·1'-1'; 1·1'-1'-1'; 2·1'; 1·1'. To be continued</p>



## Cases with Unbroken Skin.

Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Injections commenced on Dec. 10th, 1890. Total number of injections up to April 6th, 1891 = 32.</p> <p>Total amount of fluid used up to the same date = 1.438 grms.</p>	<p>Extension till Jan. 13th. Massage afterwards</p>	<p>Note on April 5th.—“Child runs about, and is apparently in good health. Knee normal in size and appearance; no pain. Glands in neck in <i>statu quo</i>”</p> <p><i>Result.</i>—Very remarkable improvement. Complete disappearance of thickening and complete restoration of movement. Glands in <i>statu quo</i></p> <p>(In such a case I am afraid I would now recommend the expectant method and not Koch's treatment, for I can see nothing in this case to indicate that it would behave as it did under the Koch treatment and not as the other cases did. While one does occasionally get complete restoration of tubercular joints with expectant treatment, it is very rare where there is such marked thickening as in this instance, and certainly not in the course of 5 weeks)</p>	<p>The patient did not suffer from the injections, and the first reactions were quite slight; in fact, the temperature usually fell to between 96° and 97° a few hours after the injections instead of rising. After the first injection there was a little pain in the knee, but there was none subsequently. The swelling of the knee steadily went down, and when discharged it was only <math>\frac{1}{2}</math>th of an inch larger in circumference than the other; the pain also quickly disappeared, and the movements became free. Massage was begun on Jan. 13th, and the patient was allowed to get up on Jan. 20th, when she could stand and walk without pain. She has since been allowed to run about without any local treatment.</p>
<p>Commenced Dec. 12th, 1890. Total number of injections up to April 8th = 46.</p> <p>Total amount of fluid used up to that date = 2.7345 grms.</p>	<p>Extension and sandbags: left off on March 20th, and child allowed to move about</p>	<p>Note on April 5th.—“There is now hardly any perceptible difference between the two knees. The movement is perfect, and the child is standing and kicking in bed all day long. The glands in the neck seem to be in very much the same condition as they were originally”</p> <p><i>Result.</i>—Very remarkable improvement in the condition of the knee. Disappearance of fluid, thickening, and pain; movements perfect. Glands in <i>statu quo</i></p> <p>(I would now treat such a case as I would have done before the Koch period, for as in No. 11 I can as yet find nothing to indicate that it would improve so remarkably as it did under the Koch treatment)</p>	<p>The patient suffered very little after the injections, the chief symptoms being cough. The slight rise of temperature usually occurred on the day after the injections. The interval of 18 days was on account of an acute abscess in the scalp and a secondary one in right parotid region. These were opened and quickly healed. During the first injections the knee increased in size half an inch. On Dec. 27th it was found that the fluctuating swelling on the outer side of the joint had disappeared, and fluid was present in the joint. A drop or two was drawn off for examination, and was found to be of a glairy character with white flakes in it. After this the fluid became absorbed and had disappeared on Jan. 5th, and the synovial thickening steadily disappeared, and the movements of the joint became free and painless. The increase in size transversely was slower in disappearing.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
13	<p>J. H., æt. 6½, female, K. C. H.; admitted Nov. 26th, 1890.</p> <p><i>Diagnosis.</i>— Hip-joint disease</p>	<p>No tubercular family history. The first symptoms of hip-joint disease were noticed last August, but they became much more marked after a fall 4 weeks ago</p>	<p>Internal organs healthy. Right limb slightly flexed and adducted. Limb can be flexed with care to a right angle, but not beyond. Cannot be quite extended. No rotation or adduction, and attempts at these movements cause great pain. No shortening. Some thickening in front of the joint. Antero-posterior measurements by callipers over the head of the femur give on right side 2½ in., and on left 2½ in. Nothing noticed wrong with the eyes.</p> <p>(Before the Koch period I would have employed the expectant treatment in this case)</p>	<p>·003''; 2·003''; 1·003''; 3·002''; 1·002''; 2·002''; 1·002'; 1·002'; 2·002'; 4·003''; 2·003'; 1·004'; 1·005-006; 1·008; 1·01'; 2·01; 1·015'; 1·02; 2·025'; 1·03'; 1·04'; 4·05'; 1·06 (operation, interval of 13 days): 1·01; 2·02'; 1·03; 1·04'; 1·05; 1·06'; 2·07'; 2·08'; 1·09; 1·1; 2·1; 1·1; 1·1; 2·1; 1·1; 1·1-1; 1·1; 1·1; 1·1-1-(1,1)-1-1-1-1- 1-1-1. Treatment con- tinued</p>

Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Dec. 3rd, 1890. Total number of injections up to April 8th, 1891 = 53. Total amount of iod used up to the same date = 2.76 grms.</p>	<p>Before the occurrence of the dislocation no retentive apparatus was employed. On Feb. 3rd the ordinary anterior incision was made into the hip-joint. Remarkably little disease was found, the synovial membrane being only very moderately thickened. The ligamentum teres had, however, been completely destroyed, and hence partial dislocation of the head of the femur was readily produced. The cartilages were intact, and there was no evidence of bone disease. As much of the softened synovial membrane as possible was removed, the joint thoroughly washed out, and the head of the bone replaced in the acetabulum. Wound stitched up; no drain. Extension and sandbags.</p> <p><i>Partial arthrectomy after 24 injections.</i></p> <p>Abscess opened on April 1st (see notes).</p> <p>On microscopical examination of the synovial membrane removed on Feb. 3rd, tubercles were found for the most part much atrophied. Two guinea pigs were inoculated on Feb. 3rd with portions of synovial membrane and became tubercular</p>	<p>Note on April 5th.—“Patient much more comfortable since abscess was washed out. The dressing has not yet been changed. Anæmic, but otherwise apparently well.”</p> <p><i>Result.</i>—Marked improvement at first; dislocation; partial arthrectomy; abscess formation.</p> <p>(In such a case I would now employ expectant treatment without using Koch's method. At the same time it cannot be denied that marked improvement followed the use of this method at first, and that the subsequent dislocation, which led to all the trouble, was only due to the fact that the ligamentum teres had suffered from the disease more than any other part of the joint)</p>	<p>As regards the general effect of the injections, the first four caused high temperature, headache, sickness, and coughing. Seven days after the treatment was commenced the child was markedly jaundiced, the stools were white and offensive, and there was bile in the urine. The jaundice passed off in about a week. After the first injection the patient complained of pain in the right eye, and some vesicular keratitis was found. This recurred after the next three injections and then ceased, and the eye remained well. There was a great deal of pain in the hip after the first two injections, and the hip was more swollen, but this did not recur with the later injections. From the end of the third week very remarkable improvement was observed in the hip, the thickening entirely disappeared, and the movements became free and painless. On Jan. 7th the hip-joint seemed normal in all respects, and remained so till Jan. 25th, when the patient was allowed to get up. After being up a short time she complained of severe pain in the joint, and next day it was found that partial dislocation of the head of the femur had occurred; this was reduced under chloroform. On Feb. 3rd the joint was opened as before described. The wound healed by first intention. On April 1st it was noticed that the scar was bulging about the middle. An incision was made into this, and about an ounce of thin pus was evacuated. It did not seem to communicate with the joint. The cavity was scraped out, iodoform and glycerine injected, and the wound stitched.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
14	E. S., set. 5, female, K. C. H., admitted Dec. 1st, 1890.	Tubercular family history. The disease began last April after a fall. Has been wearing a Thomas's splint for some months	Internal organs healthy. The right limb is somewhat flexed (35°), adducted, and markedly rotated outwards; $\frac{3}{4}$ in. shortening. There has evidently been a true dislocation of the head of the bone upwards and forwards. A good deal of thickening about the joint, but no sign of abscess. Tenderness on pressure. No movement possible	<p>·002''; 2·003''; 2·003''            1·003''; 1·004''; 2·005''            1·005''; 1·006''; 1·007''            4·008''; 2·009''; 2·01''; 1·012''            2·015''; 3·02''; 2·02''; 6·015''            3·015''; 2·02''; 1·02''; 1·03''            2·04''; 1·05 (operation, interval of 11 days); 1·01''; 1·01''            1·02''; 4·02''; 1·03''; 2·04''            1·05''; 1·06''; 2·07''; 1·08''            1·09''-08''-08''-09''-1-1''; 1·1''            1-1-1-1-1-1-(1, 1)-(1, 1)            (1, 1)-(1, 1)-(1, 1)-            (1, 1)-(1, 1)-(1, 1)-            (1, 1)-(1, 1)-(1, 1)-            (1, 1). To be continued</p>
	<i>Diagnosis.</i> —Disease of hip-joint		(Before the Koch period I would have excised the head of the bone)	
15	J. F., set. 8, female, P. G. H.; admitted Dec. 29th, 1890; discharged March 18th, 1891	Phthisical family history. Losing flesh since last summer; limping for 2 months; starting at night for 2 weeks. No known cause; no previous treatment	Internal organs healthy. A few enlarged glands in neck and both groins. Pain in right hip and knee when walking. Leg fully extended and slightly adducted. No movement at hip-joint and pain on attempting it. No shortening. Fulness in front of joints. Thickening about trochanter. No thickening felt per rectum.	<p>·002''; 1·002''; 1·004''            1·004''; 1·006''; 1·008''; ·00''            1·01''; 2·015''; 1·02''; 1·0''            2·035''; 1·04''; 1·05''; operation, interval of 14 days            1·015''-02''-02''-02''-025''-03''; 1·04''-04''-05''-05''-07''; 1·09''-1''; 1·12''; 1·15''            1·15''-15''-2''-25''; 1·3''; 2''            Stopped by mistake; resumed on April 7th</p>
	<i>Diagnosis.</i> —Hip-joint disease; enlarged glands		(Before the Koch period I would have performed a partial arthrectomy of the hip in this case with the view of removing the sequestrum, the presence of which I was sure of. That a sinus might have formed after this treatment is not improbable from the results obtained in Nos. 27 and 29)	



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Dec. 4th, 1890. Total number of injections up to April 8th, 1891 = 68. Total amount of fluid used up to that date = 4 252 grms.</p>	<p>On Feb. 10th, 1891, the abscess was opened and thoroughly cleared out and the head of the bone removed. The articular cartilage was partially destroyed. The acetabulum was filled up with soft material which was removed. Wound stitched up; drainage-tube inserted at the upper part of the wound. Extension. Drainage-tube left out 3 days later.</p> <p><i>Excision of the hip-joint after 23 injections.</i></p> <p>Two guinea pigs were inoculated with material removed, and became tubercular</p>	<p>Note on April 5th, 1891.—“There is a sore where the drainage tube was with tubercular granulations. The middle of the scar is also breaking down. General condition good.”</p> <p><i>Result.</i>—Abscess formation; excision; breaking down of the wound.</p> <p>(In a similar case I would now excise the head of the bone and only employ the Koch treatment if the wound would not heal or if it broke down)</p>	<p>Did not suffer much after the injections, and there was very little local reaction. After the first injections there was a slight papular rash on the face and back, and a good deal of cough. For a time the thickening around the hip diminished, but on Jan. 1st the tenderness returned, and an abscess soon showed itself in front. (This renewal of tenderness was coincident with an injection made directly over the joint instead of into the back.) Excision was performed on Feb. 10th and the wound healed by first intention except where the drainage-tube was. This sore has remained unhealed, and at first extended somewhat, but has not done so lately. On changing the dressing on April 5th it was, however, found that a point in the centre of the scar had broken down.</p>
<p>Injections commenced on Jan. 5th, 1891. Total number of injections up to March 17th = 36. Total amount up to same date = 2 482 grms.</p>	<p>On Feb. 5th the hip-joint was opened by the anterior incision and a large sequestrum was found and removed from the usual seat in the neck of the femur. Some curdy matter in joint, cartilages intact, synovial membrane not much thickened. As much of the tubercular material was removed as possible. Wound stitched up, no drain. Sand-bags on each side of limb. No extension</p> <p><i>Partial arthrectomy after 14 injections</i></p> <p>Numerous tubercles were present in the synovial membrane. Sent to convalescent home on March 18th</p>	<p>Note on April 7th, 1891.—“Small sinus in middle of scar; leads to bare bone in the neck of the femur; hardly any discharge. Condition of patient good. Glands in <i>statu quo</i>”</p> <p><i>Result.</i>—Slight improvement at first; partial arthrectomy; healing of the wound; formation of a sinus after the treatment had been stopped</p> <p>(In such a case I would now perform partial arthrectomy at once and then use the Koch treatment)</p>	<p>After the first injection temperature was highest (104°). After 19 hours there was a good deal of pain in the joint. After the second injection there was no further pain. On 19th Jan. it is noted that there was no pain in the joint, and that slight movement was possible. This mobility increased up to the time of the operation, and the thickening in front of the joint steadily diminished. Operation wound healed by first intention. When sent to the convalescent home on March 18th the injections were stopped by mistake. About the 1st of April a small sinus formed in the middle of the scar. Injections recommenced on April 7th.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
16	<p>H. F. C., æet. 5, male, K. C. H., admitted Jan. 20th, 1891.</p> <p><i>Diagnosis.</i>— Disease of hip-joint with abscess</p>	<p>Tubercular family history. Disease began after a fall at the end of 1889. Patient was admitted to hospital in Feb., 1890, and sent out in July wearing a Thomas's splint. In Dec. last a swelling was observed about the trochanter</p>	<p>No disease of internal organs. Right limb slightly adducted; no flexion; no shortening. Slight movements of abduction and adduction and rotation causing pain; no flexion possible. Just above and behind the trochanter is a small abscess. There is a good deal of thickening in front of the joint</p> <p>(Before the Koch period I would in this case have excised the abscess, but not have opened the hip-joint)</p>	<p>·002''; 2·001''; 1·002''; 1·003''; 2·005''; 1·006 (operation, interval of 11 days); 1·002; 1·004; 1·006; 1·008; 2·01; 1·015; 2·015'; 1·02; 1·03; 2·04; 1·05; 1·06; 2·07; 1·08; 1·09; 2·1-1-1- (1, 1); 1·1; 1·1; 1·1; 1·1</p>
17	<p>W. R., æet. 32, male, K. C. H.; admitted Nov. 29th, 1890; discharged Feb. 18th, 1891</p> <p><i>Diagnosis.</i>— Disease of knee-joint and tibia</p>	<p>No phthisical family history. Disease began about 3 years ago after an injury to his knee (combination of twist and blow). The knee has improved from time to time when he lay up; on resuming work it always became painful again. Lately has been treated by rest and Scott's dressing</p>	<p>Internal organs healthy. Left knee somewhat swollen, more especially at the inner side. There is marked swelling over the inner side of the head of the tibia and tenderness on pressure at that part. The main synovial thickening is just above this. There is a slight amount of flexion without pain; attempts to bend it beyond half a right angle cause pain; the joint cannot be fully extended</p> <p>(Before the Koch period I would have cut down on the inner side of the head of the tibia and removed as much of the affected tissues as possible)</p>	<p>·01''; 2·01'; 2·015''; 1·015; 2·02''; 1·02'; 1·03'; 2·04; 1·045; 3·04; 4·05-06; 1·08; 1·1; 1·12; 2·15; 3·15; 2·2'; 3·1 (operation, interval of 11 days); 1·05''; 1·04'; 2·06'; 1·07'; 1·1; 2·1; 1·12; 1·1; 2·1. Injections discontinued</p>

total amount injected  
= 1·429

examined  
found the  
side of the  
chess in  
the portion  
out of it  
projected  
through  
tubercular  
only high  
was found  
up—no  
by first  
point has  
the neck  
the disease  
of them  
found. It  
especially  
aggravated



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Jan. 25th, 1891. Total number of injections up to April 8th, 1891 = 30. Total amount of fluid used up to the same date = 1·419 grms.</p>	<p>On Feb. 10th the usual anterior incision was made and the hip-joint examined. There was very little synovial thickening, and the cartilages were intact. The abscess was also opened, and did not communicate with the joint. It was thoroughly cleared out. Wound stitched, drainage-tubes being inserted into both wounds. On Feb. 15th both tubes were left out.</p> <p><i>Partial arthrectomy after 6 injections</i></p> <p>Tubercles were found in the synovial membrane on microscopical examination.</p>	<p>Note on April 5th.—“The wounds are apparently soundly healed and the thickening in front of the joint has disappeared. Patient in good health.”</p> <p><i>Result.</i>—Healing of the arthrectomy wound and the abscess. Disappearance of the thickening in front of the joint.</p> <p>(I would now treat such a case as I would have done formerly, without employing Koch's treatment)</p>	<p>The first reaction was severe, the chief symptom being rapid breathing; there was no evident local reaction. In this case it was thought advisable to operate at an early stage. The wounds healed rapidly, both being soundly healed by March 11; they remain healed.</p>
<p>Injections commenced Nov. 30th, 1890; discontinued Feb. 18th, 1891. Length of treatment = 80 days. Total number = 28. Total amount of fluid used = 1·945 grms.</p> <p>Examination. The incision was continued downwards over the inner side of the head of the tibia, and some cheesy material was found under the periosteum, close to the upper part of the bone. A hole was also gouged in the bone because it was thought that there might be a tubercular deposit in the bone, but only highly vascular inflamed bone was found. The wound was stitched up—no drain. Healing occurred by first intention. Back splint (no plint had been used previously). On microscopical examinations of the tissues removed tubercles, many of them undergoing atrophy were found. In the synovial membranes specially they were very much regenerated.</p>	<p>On Jan. 23rd an incision was made into the joint on the inner side, the synovial membrane was granular on the surface, but very slightly thickened; a portion was removed for microscopical examination.</p>	<p>Patient seen on April 1st. and said that the knee was quite comfortable. The waterglass bandage was not removed, but he was given permission to walk with the bandage on.</p> <p><i>Result.</i>—Improvement in all respects for a time. Removal of portions of the affected tissue, healing of the wound.</p> <p>(In such a case I would not now trouble to use Koch's method, but would operate in the manner previously indicated)</p>	<p>After the first injection there was a good deal of pain in the knee, some effusion into the joint and enlargement of the part. This soon subsided, and as the treatment went on the enlargement decreased somewhat, the synovial thickening diminished, and the range of painless movement of the knee markedly increased; in fact, the patient could bend the knee to a right angle without pain. A trace of albumen was found in the urine the day after the first injection, but disappeared next day and did not recur. Patient was allowed to walk about on Jan. 12th, but this was followed by recurrence of swelling, slight pain, and fluid in the joint. These symptoms subsided on rest, but as the tibia now remained tender, the operation was performed.</p> <p>The patient was sent home on Feb. 18th, the whole limb being put up in waterglass. He returned on March 16th and the waterglass was removed. The line of incision remained soundly healed, and was somewhat drawn in at its centre. Knee still somewhat larger than the other, but quite free from pain or tenderness. There was an obscure sense of fluctuation at the inner side of the knee in the neighbourhood of the incision. Waterglass reapplied.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
18	<p>P. C., æt. 5, male, K. C. H.; admitted Nov. 30th, 1890; discharged Feb. 20th, 1891; re-admitted on March 23rd, 1891</p> <p><i>Diagnosis.</i>—Disease of knee-joint; enlarged glands in neck</p>	<p>No tubercular family history. The disease began at least 6 or 8 months ago. Has not been treated</p>	<p>Internal organs healthy. An enlarged gland on right side of neck. The knee is flexed, swollen, and very painful on any attempt at movement or pressure. The synovial membrane is moderately thickened and there is apparently enlargement of the internal condyle of the femur. The knee is <math>\frac{3}{4}</math>-inch larger in circumference than the other</p> <p>(Before the Koch period I would have persevered in the expectant treatment in this case)</p>	<p>·002"; 1·003'; ·003'; 1·004' 2·005; 1·006; 2·007; 1·009; 4·01-012; 1·015; 1·02 1·03; 2·04; 1·04; 1·05 2·06; 3·07; 2·07; 1·07 1·08; 2·08; 1·08; 1·1; 2·1 1·1; 1·1; 3·1; 1·1; 1·1 1·1; 2·1; 1·1. Sent to convalescent home on Feb. 20th and while there had 7 injections of '1. On his return on March 23rd the treatment was discontinued</p>
19	<p>W. J., æt. 9, male, K. C. H., admitted Dec. 12th, 1890</p> <p><i>Diagnosis.</i>—Disease of knee-joint</p>	<p>No tubercular family history. Five weeks before admission fell on to his right foot off a tree, and felt pain in the right knee, which began to swell at once, and has steadily increased in size and become more painful. Has been treated by rest and splints</p>	<p>Systolic murmur at apex and base of heart; dilatation. Other organs healthy. On admission the right knee-joint was markedly swollen, being <math>1\frac{1}{2}</math> in. larger in circumference than the left over the centre of the patella. No fluid in joint. Tender on pressure. Joint cannot be completely extended, but can be flexed rather beyond a right angle, but flexion is painful. Patient was kept at rest in bed for 19 days, and during that time the swelling of the knee increased <math>\frac{1}{8}</math>th of an inch</p> <p>(Before the Koch period I would have given a further trial in this instance to absolute immobilisation, &amp;c., but I have no doubt that before many weeks had elapsed complete arthrectomy would have been necessary)</p>	<p>·002"; 3·002''; 2·002''' 2·002''; 2·002'; 1·003'' 1·003'; 1·004'; 1·005'' 1·005'; 2·007'; 1·008'' 1·008' (operation, interval of 16 days); 1·002''; 1·003' 1·005'; 2·005'; 1·008' 1·009''; 2·01'; 1·015''; 1·02'' 1·02''; 1·02; 1·03'; 2·04' 1·05''; 2·05'; 1·06'; 1·06 1·06-(·06, ·06)-06-07'; 1·80 1·09'; 2·1. To continue</p>



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Dec. 8th, 1890; discontinued on March 23rd, 1891.</p> <p>Total number of injections = 39.</p> <p>Total amount of fluid used = 2366 grms.</p>	<p>Extension and sand bags. Sent to convalescent home on Feb. 20th, 1891, with the leg in plaster of Paris, and to go on with injections.</p> <p>On March 31st complete arthroctomy was performed. The synovial membrane was much thickened, and the articular cartilage was eroded, especially over the lower part of the inner condyle of the femur and the inner tuberosity of the tibia. Several cheesy foci were found in the tibia at this part. Wound stitched up; no drain.</p> <p><i>Complete arthroctomy after 39 injections.</i></p>	<p>Note on April 8th, 1891.—“Patient is very comfortable. The dressings have not yet been changed. Glands in neck quite small.”</p> <p><i>Result.</i>—Improvement for a time as regards pain, and to some extent as regards swelling. Abscess formation: complete arthroctomy. Glands smaller.</p> <p>(In such a case I would now persevere with expectant treatment, and not employ Koch's method)</p>	<p>Nothing noteworthy as regards the reactions, with the exception of a papular rash in patches on the back and sides after the first injection. The knee swelled and became more painful after the first injection, but this soon subsided, and on Jan. 13th it is noted that there was no pain on jarring or moving joint, and the knee was only <math>\frac{1}{4}</math> inch larger in circumference than the other. The improvement as regards the thickening then seemed to come to a standstill. On Feb. 20th the limb was put up in plaster of Paris, and he was sent to a convalescent home to have 1 injected twice a week. At that time movement of the joint was painless, and it was <math>\frac{1}{4}</math> inch larger than the other, the chief thickening being about the internal condyle.</p> <p>When the patient was readmitted on March 23rd, an abscess was found on the inner side of the knee, and there was considerable pain on movement. On March 31st complete arthroctomy was performed</p>
<p>Commenced Dec. 31st, 1890.</p> <p>Total number of injections up to April 8th = 38.</p> <p>Total amount of fluid used up to that date = 104 grms.</p>	<p>On Feb. 3rd the joint was opened by long vertical incisions on each side of the patella; the synovial membrane was markedly thickened, but there was not nearly so much soft material as in the other cases; portions were clipped away, and as much removed</p>	<p>Note on April 6th.—“The wounds appear to be soundly healed, but there is still much synovial thickening. No pain, and patient can lift leg off the bed without pain.”</p> <p><i>Result.</i>—Slight improvement; partial arthroctomy; healing of wound; disappearance of pain. Thickening of synovial membrane still remaining, but not increasing. (At the present time I would treat such a case as before indicated, reserving the Koch treatment in case the wounds would not heal. At the same time there is little doubt that advantage has been gained by the treatment, for without it I feel sure the wounds would have broken down after the partial arthroctomy. Whether the treatment will have been ultimately of advantage in this case cannot yet be decided.)</p>	<p>The first 2 injections caused pretty severe symptoms, chiefly cough, sickness, and headache. There was also a good deal of pain in the knee after the first 2 injections, and after the first it increased 2 inches in circumference. It, however, very quickly went down to and below its original size, and on Jan. 14th it was <math>\frac{1}{2}</math> inch less than it was originally. It, however, increased again, and before the operation on February 3rd the measurement was the same as the original one. The wounds healed by first intention.</p>

from the surface by washing out, rubbing with sponges, &c., as possible, but much tubercular material was left behind. Stitched: no drain; back splint. *Partial arthroctomy* after 13 injections. The wounds healed by first intention. Two guinea pigs were inoculated with portions of synovial membrane on Feb. 3rd, but have not become tubercular; numerous tubercles were present in the synovial membrane







Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced on Dec. 3rd, 1890. Total number of injections up to April 8th, 1891 = 81. Total amount of fluid used up to that date = 5.81 grms.</p>	<p>Till the operation no retentive apparatus was applied. On Jan. 23rd incisions were made on the inner and outer sides of the joint, and a good deal of soft tissue was removed, but I intentionally did not clear the joint out so thoroughly as I would otherwise have done. The wounds were stitched up; no drain. External splint with shoulder-cap.</p> <p><i>Partial arthrectomy after 19 injections.</i></p> <p>tubercles found in synovial membrane on microscopical examination. Two guinea pigs were inoculated with portions of synovial membrane on Jan. 23rd, and became tubercular</p>	<p>Note on April 5th, 1891.—“There is a granulating patch about the size of a shilling in the middle of each scar, but the granulations are much healthier than they were, and considerable healing has occurred during the past week. General condition of the patient good.”</p> <p><i>Result.</i>—Improvement for a time. Partial arthrectomy. Healing and subsequent healing down of scars. Lately healing occurring</p> <p>(In a similar case I would now persevere with expectant treatment for a time without using Koch's method)</p>	<p>The first reactions were somewhat severe, the chief trouble being cough and sickness, and after the first injection the arm became painful and more swollen, but this did not occur subsequently. The elbow became more moveable and painless, and the swelling diminished somewhat (to about <math>\frac{3}{4}</math> in. more than the other). As, however, matters became stationary, the joint was opened as before described. The wounds healed up, but on Feb. 15th it was found that the scars were beginning to break down in two places, and this continued till about half of each of the scars had broken down. Since that time the condition for a time remained stationary, but quite recently healing has been going on.</p>
<p>Commenced Dec. 4th, 1890. Stopped March 8th, 1891. Continued for 94 days. Total number of injections = 34. Total amount of fluid = 1.439 grms.</p>	<p>No splint was employed in the first instance. On Jan. 16th the abscess over the head of the radius was cut out and found to consist of a mass of cheesy material with very little fluid in it. Wound left open. On March 10th complete arthrectomy was performed. A quantity of cheesy pus was found in the joint, the synovial membrane was much thickened and broken down, the articular cartilages extensively destroyed, and a soft caseating deposit in the lower part of the greater sigmoid cavity, which had evidently been the starting-point of the disease. Wound stitched up; drain inserted on the outer side 3 days later.</p> <p><i>Complete arthrectomy after 34 injections.</i></p> <p>Two guinea pigs were inoculated on Jan. 16th with the wall and contents of the abscess and became tubercular</p>	<p>Note on April 6th.—“The wounds have healed by first intention except on the outer side where the drainage tube was. This was left out to-day. Patient in good health.”</p> <p><i>Result.</i>—No improvement. Complete arthrectomy. Healing of wound</p> <p>(In a similar case I would now perform complete arthrectomy at once, and only use the tuberculine if necessary. I can see no advantage from the treatment in this case)</p>	<p>The constitutional effects of the injections were chiefly the fever, headache, and a little tendency to sickness. After the first injection there was a good deal of pain and swelling in the elbow joint, but this did not recur. It seemed as if a little hemorrhage had occurred into the abscess as the skin over it became black and blue. For a time the movements of the elbow became painless, and slightly increased in range, and the measurement of the elbow became slightly less, but the improvement was very little marked and soon came to a standstill. On Jan. 16th the abscess was removed. The wound healed very slowly but had healed by March 8th. In the beginning of March it was found that the elbow had greatly increased in size and that a quantity of fluid was present in the joint, and on March 10th complete arthrectomy was performed.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
22	<p>F. C., æt. 1½, female, P. G. C. H., admitted Dec. 5th, 1891.</p> <p><i>Diagnosis.</i>— Disease of elbow-joint; subcutaneous tubercular nodule; enlarged glands in neck; corneal ulcer</p>	<p>Phthisical family history. Disease of right elbow began about a month before admission, attributed to fall. No previous treatment. Subcutaneous nodule over outer side of left patella noticed for 14 days. Corneal ulcer on right eye noticed for 7 days</p>	<p>Rickety child. Internal organs healthy. Enlarged glands in neck. Right elbow much swollen, the swelling involving the whole region of the joint. Fluctuation on inner and outer sides. Measurement over olecranon 1¼ inches more than on other side. Arm somewhat extended (angle of 100°). Movement through angle of 15°. Small subcutaneous nodule over outer side of left patella, size of a bean; skin over it red and adherent. Peripheral corneal ulcer on right eye.</p> <p>(In such a case before the Koch period I would have performed complete arthrectomy at once, and have removed the nodule over the knee)</p>	<p>·0015''; 1·0015''; 1·0015''; 1·0015''; 2·002''; 1·003''; 3·003''; 2·004''; 1·005''; 1·005''; 2·007''; 1·008''; 2·009''; 1·01''; 1·01''; 2·012''; 1·012''; 1·012 (operation, interval of 12 days); 1·01''; 1·012''; 2·012''; 1·012''; 2·015''; 1·02''; 1·02''; 1·02''- ·02-·02-·02-·02-·02-·03; 1·03''-·03-·03-·04''-·04''; 1·04''; 1·04''-·05''-·06''-·07''- ·08''; 2·1''-1''-1''-15''-2''-2''; 1·25''; 2·2''; 1·2''; 1·25''; 1·2''-2. Treatment discontinued</p>
23	<p>C. K., æt. 3, male, K. C. H., admitted Dec. 1st, 1890; discharged March 18th, 1891</p> <p><i>Diagnosis.</i>— Strumous daetylitis; enlarged cervical glands; sinus in buttock</p>	<p>Tubercular family history. A year ago patient had an abscess in the left buttock and a sinus has remained ever since. Strumous daetylitis first noticed last August</p>	<p>Internal organs healthy. At the lower part of the left buttock is a septic sinus into which a probe passes for about 2 inches but does not go to bone. There is a typical strumous daetylitis of the left ring finger, affecting the first phalanx. No sign of suppuration but great tenderness on pressure</p> <p>(Before the Koch period I would have cut out the sinus in the buttock; have put the finger at rest and employed the usual remedies)</p>	<p>·002''; 2·002''; 1·002''; 1·003''; 3·003''; 2·003''; 1·004''; 1·005''; 1·005''; 4·006''; 2·007''; 1·007''; 1·007-·008; 1·01''; 3·012''; 2·012''; 5·015''; 1·02''; 1·02''; 2·03''; 1·03''; 1·04''; 2·05''; 1·06''; 1·08''; 2·08''; 1·09''; 1·1''; 2·1''; 1·1; 1·1''; 2·1; 1·1; 1·1. Treatment stopped</p>



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Dec. 9th. Total number of injections = 53. Total amount of fluid used = 2.799 grms. Treatment discontinued on March 24th, 1891</p>	<p>On January 22nd the elbow was opened on the inner and outer sides. No fluid was present, but a mass of caseous material and softened synovial membrane was found and scraped out. The removal of the tubercular</p>	<p>Note on April 6th, 1891.—“The eye is quite well. The sore over the elbow is much smaller and healthier than it was, but still leads into the joint. Glands in <i>status quo</i>. Slight purulent discharge from both ears”</p>	<p>After the first injection the temperature reached 104.6°, and the child was pretty ill; there was local reaction in the elbow and the nodule; nothing special about the eye. The condition of the eye rapidly improved and the ulcer had healed by Dec. 23rd. The nodule over the knee diminished to the size of a pea and then remained stationary. After the operation the incision on the inner side of the elbow healed by first intention, and remains healed. That on the outer side healed by first intention, but began to break down on Feb. 16th. Ultimately the whole scar broke down, but began to heal when the higher doses were reached. On March 16th about 30 seconds after the injection of .25 grms. the child began to scream, became very flushed all over the body, and immediately afterwards became very markedly cyanosed; the pulse became imperceptible. This passed off within 5 minutes and the child seemed well. The temperature quickly rose, and was 104.4° two hours after the injection. Two hours subsequently it fell to 101°, but subsequently rose and reached 104° in the evening. It came down to normal next evening. On the evening of the injection there was a scarlatiniform rash all over body and legs, which faded next day and was not followed by desquamation. The treatment was discontinued on March 24th, because a small abscess formed in the back and the temperature became irregular. On Dec. 18th there was a slight sero-purulent discharge from both ears, which still continues. A small abscess formed at one side of the rectum, burnt on Jan. 19th, and healed in 10 days.</p>
<p>Partial arthrectomy after 18 injections.</p>	<p>issue was not thoroughly carried out. Wounds stitched up. No drain. The nodule over the knee was also cut out and was found to be a thin-walled cyst (tubercular under microscope) containing a drop of pus</p>	<p><i>Result.</i>—No improvement; scars broke down after the arthrectomy</p> <p>(In a similar case I would at the present time perform complete arthrectomy at once, and leave the question of Koch's treatment till I saw whether the wounds healed or not. In this particular case a better result would in all probability have been obtained in that way)</p>	<p>After the first injection the temperature reached 104.6°, and the child was pretty ill; there was local reaction in the elbow and the nodule; nothing special about the eye. The condition of the eye rapidly improved and the ulcer had healed by Dec. 23rd. The nodule over the knee diminished to the size of a pea and then remained stationary. After the operation the incision on the inner side of the elbow healed by first intention, and remains healed. That on the outer side healed by first intention, but began to break down on Feb. 16th. Ultimately the whole scar broke down, but began to heal when the higher doses were reached. On March 16th about 30 seconds after the injection of .25 grms. the child began to scream, became very flushed all over the body, and immediately afterwards became very markedly cyanosed; the pulse became imperceptible. This passed off within 5 minutes and the child seemed well. The temperature quickly rose, and was 104.4° two hours after the injection. Two hours subsequently it fell to 101°, but subsequently rose and reached 104° in the evening. It came down to normal next evening. On the evening of the injection there was a scarlatiniform rash all over body and legs, which faded next day and was not followed by desquamation. The treatment was discontinued on March 24th, because a small abscess formed in the back and the temperature became irregular. On Dec. 18th there was a slight sero-purulent discharge from both ears, which still continues. A small abscess formed at one side of the rectum, burnt on Jan. 19th, and healed in 10 days.</p>
<p>Commenced Dec. 3rd, 1890. Stopped March 1st. Continued for 88 days. Total number of injections = 35. Total amount of fluid used = 1.313 grms.</p>	<p>On Jan. 16th an abscess on the finger was opened and a little cheesy stuff scraped out of bone. Wound left open. This did not heal. On March 3rd the sinus in the finger was laid open and a quantity of cheesy material was removed, and with it portions of bone, including the proximal end of the first phalanx. Wound left open</p>	<p>April 20th.—Quite lately the temperature has become continuously high, and consolidation of the lungs is occurring (? tubercular)</p>	<p>After the first 2 injections the temperature rose to 105°, but the child was not markedly ill. The sinus in the buttock discharged freely and the skin around became red and swollen. The finger also became enlarged and more painful. On Dec. 15th the sinus in the buttock was found healed and has remained well since. For a time the finger improved, it became painless and the swelling diminished somewhat, but at the beginning of Jan. signs of abscess formation appeared, and an incision was made on Jan. 16th. This did not heal but presented the ordinary appearance of a tubercular sinus, and was therefore again operated on on March 3rd, and the injections were discontinued. At that time the sinus in the buttock was healed and the glands in the neck smaller. About the middle of March the sinus in the buttock broke down and the glands on the right side of the neck and above the right elbow began to enlarge.</p>
<p>Two guinea pigs were inoculated with the material removed on Jan. 16th and became tubercular</p>	<p>Two guinea pigs were inoculated with the material removed on Jan. 16th and became tubercular</p>	<p>Note on April 6th, 1891.—“Condition of finger remains about the same; an opening still persists and there is a good deal of swelling around it. The sinus in the buttock is again almost entirely healed, and the glands are decreasing in size. General condition good”</p> <p><i>Result.</i>—Temporary improvement as regards finger; subsequent abscess formation. Healing of sinus and diminution in size of glands; temporary relapse as regards these 2 points after stopping the treatment</p>	<p>(At the present time I would treat such a case as I would have done before and not employ the Koch treatment. The sinus could have been got more quickly and certainly well by dissecting it out, and the treatment was of no apparent advantage as regards the finger)</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
24	<p>P. A. S., æt. 5½, male, P. G. C. H., admitted Dec. 9th, 1890; discharged March 5th, 1891</p> <p><i>Diagnosis.</i>— Strumous dactylitis; phthisis</p>	<p>Tubercular family history. Disease began 3 years ago. Patient has been operated on twice, the interior of the bones being thoroughly scooped out on each occasion. These wounds have healed. Glands in axilla have also been removed.</p>	<p>Signs of consolidation with crepitation at left apex. Other organs healthy. Proximal phalanges of middle and ring fingers of left hand much enlarged. Small unopened abscess on outer side of middle finger. Fingers tender on pressure</p>	<p>·002''; 2·002''; 1·002''; 1·002''; 2·002''; 1·002; 1·004''; 1·004''; 1·004; 2·005; 1·007; 2·01'; 1·012; 2·015; 1·02; 1·025'; 2·03; 1·035; 1·04; 2·05; 1·06; 1·06; 2·06'; 1·06'; 1·07'; 2·07'; 1·07; 1·07'; 2·07; 1·07 (operation, interval of 5 days); 1·07; 2·08; 6·1''; 7·1</p>
25	<p>C. B., æt. 38, female, K. C. H., admitted Feb. 5th, 1891. Discharged April 11th, 1891</p> <p><i>Diagnosis.</i>— Spinal disease</p>	<p>Marked tubercular family history. When 7 years old suffered from right hip-joint disease commencing after a fall, and she did not recover completely from this till she was 20 years of age. (Suppuration did not occur, and no operation was performed.) Since that time she has remained well till 6 months ago, when she fell and hurt her back, and has suffered pain there ever since, but has had no efficient treatment for it</p>	<p>Internal organs healthy. The right leg is adducted (20°), flexed (55°) and 1 inch shorter than the left, the shortening being entirely limited to the femur. The movements at the hip are extremely limited. There are well-marked signs of spinal disease and considerable antero-posterior curvature of the spine at the lower dorsal region, commencing at the 6th dorsal, ending at the 10th dorsal vertebræ, and most marked opposite the 9th dorsal. Great tenderness on pressure on spines and transverse processes. Pain on stooping, and aching when standing or sitting. No sign of abscess</p>	<p>·002-·003; 1·005'; 1·008'; 2·01''; 1·01'; 2·01'-01-01- ·015; 1·015; 2·02, 02)- (02, 02)-(02, 02)-(02, 02)- (02, 02)-(03, 03)-(03, 03)- (04, 04)-(04, 04)-(05, 06)- 06-(06, 06)-06-(07, 07)- (08, 08)-(09, 09)-09-07- 1-(1, 1)-(1, 1)-(1, 1)- (1, 1)-(1, 1)-(1, 1)- (1, 1)-(1, 1)-(1, 1)- (1, 1)-(1, 1)-(1, 1)- (1, 1)-(1, 1)-(1, 1)- (1, 1). To continue</p>

Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
Commenced Dec. 9th, 1890. Treatment stopped on March 9th, 1891. Total number of injections = 34. Total amount of fluid used = 1-283 grms.	On Feb. 16th the small abscess on middle finger scraped out; contained only a little cheesy material. Wound left open. Healed readily	Note on April 6th.—“Fingers in much the same condition as before the treatment except that there is now no abscess. General health good; lungs normal”  <i>Result.</i> —Fingers very much the same. Phthisis much improved	Nothing special to note about the reactions; there was marked swelling of the fingers at first, but this soon subsided and they became less swollen and painless. The abscess, however, persisted, and was therefore scraped out on Feb. 16th. Since then the condition of the fingers has remained stationary.
Commenced Feb. 10th, 1891. Total number of injections up to April 10th, 1891 = 76. Total amount of fluid used up to the same date = 4-888 grms.	Absolute rest on the back, fixed by means of sandbags. Sayre's jacket applied on April 4th	On April 3rd, 1891, there was entire absence of pain or tenderness about the back, and the patient expressed herself as feeling quite well. She was put up in a Sayre's jacket preparatory to her discharge from the hospital  <i>Result.</i> —Complete loss of pain or tenderness in the spine  (How far the same result would have been got without the Koch treatment it is of course impossible to say. I think, however, that it is hardly worth while employing the Koch treatment in these cases unless it is found that absolute rest, &c., fail to arrest the progress of the disease)	The constitutional effects of the injections were slight, but she complained of pain in the spine after each of the early injections. She also had a good deal of diarrhoea after the 4th and 2 subsequent injections, but this passed off completely. She also at this time complained of a little pain in her hip, but this did not recur. The pain in the spine recurred from time to time as the injections were pushed, but there was no general reaction, and for the last few weeks there has been no pain or tenderness.



We had twelve cases of disease of the larger joints with unbroken skin which were treated by Koch's method in the first instance, and of these two (Nos. 11 and 12) have apparently completely recovered; how far this recovery will be permanent time alone will show. The remaining ten required operation; of these seven would have been operated on, at or soon after admission, before the Koch period, leaving three in which the conditions, which determined operation, appeared during treatment. In one of these three cases (No. 13) the determining cause of the operation was the occurrence of dislocation, but I cannot say that operation was absolutely essential in this instance; in another (No. 20) the determining cause was cessation of improvement, and here also the operation at that time was probably not essential, though I have no doubt that it would have ultimately been required (I operated in these cases under the impression conveyed by Koch's paper that the tubercular material would be found broken down and easily removeable, and that in this way operation would expedite the cure); in the third case (No. 18) operation was rendered necessary by the occurrence of suppuration.

Of the operations performed excision was done in one case (No. 14); the scar has here partially broken down. Complete arthrectomy was done in two instances (Nos. 18 and 21), and it is as yet too early to say whether or not there will be recurrence. Partial arthrectomy (*i. e.* partial removal of the affected tissue) was performed in seven cases, and of these three remain healed, and recurrence has taken place in four; of these four cases two are now improving again (Nos. 20 and 22) as regards the local condition, and the other two have broken down quite recently (Nos. 13 and 15); in Nos. 20 and 22 the rapid recurrence was no doubt to some extent my fault, because I did not take pains to remove all the loose tubercular material from the joint, being then under the influence of the view that the tuberculine caused caseation of the tubercular tissue, and that, therefore, it would be readily removed by scraping and irrigation. It is worthy of note that in the



case in which the partial arthrectomy has given the most promising result (No. 16) the operation was performed after six injections had been given, that is to say, the Koch treatment followed rather than preceded the operative interference.

In one case of acute spinal disease all symptoms disappeared in a few weeks, but here absolute rest was also employed.

In the two cases of dactylitis I cannot say that any advantage was derived from the treatment as regards the fingers. In one case, however (No. 23), a sinus which had remained open for a year healed almost at once, and the enlarged glands in the neck diminished in size; and it is very interesting to note that soon after the treatment was stopped recurrence took place in these parts (this recurrence being, however, apparently only temporary), as if the use of the fluid had been keeping the disease in check.



## B. Cases with Aseptic Sinuses, or wit

No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
26	<p>E. C., æt. 15, male, K. C. H., admitted Oct. 2nd, 1890. Discharged Jan. 27th, 1891</p> <p><i>Diagnosis.</i>— Tubercular disease of os calcis and of the sheath of one of the extensor tendons</p>	<p>No tubercular family history. The disease in the ankle began at the end of 1888, after a kick, and an abscess formed on the outer side of his foot and burst. At the end of 1889, he was again kicked, and a fresh abscess formed in the same situation. In 1888 he also had abscesses at the back of the left leg. About 15 months before admission he had a blow on the knuckles of the right hand followed by abscess, which has never healed. Patient was first admitted on Jan. 30th, 1890; the sinuses on the outer side of the os calcis were opened up and a quantity of cheesy material scooped out of the bone. The ulcer on the hand was also scraped. As the latter did not heal it was scraped again on March 21st, and a portion of the thickened sheath of the extensor tendon of the 3rd finger was cut away. The latter wound healed, but the sore at the knuckle did not. The patient was readmitted on Oct. 2nd, 1890, and on Oct. 4th the os calcis was again scraped and gouged out, and a hole was made through and through the bone with an opening below the internal malleolus; the hand was also scraped</p>	<p>Internal organs healthy; 2 sinuses, one on the inner and one on the outer side of the right os calcis. A probe can be passed right through the bone, and a good deal of bare bone can be felt. There is also a small ulcer over the knuckle of the 3rd finger of the right hand, but the scar along the tendon seems quite sound</p>	<p>·01''; 2·01''; 1·01''; 1·01''; 1·01''; 1·01''-015''; 1·015''; 1·015''; 1·015''; 2·02''; 1·025''; 1·03''; 1·04''; 4·05-06''; 1·08''; 1·1''; 4·12''; 3·15''; 2·1''; 3·1''; 2·12''. Treatment discontinued</p>
27	<p>C. N., æt. 5, male, P. G. C. H.; admitted Dec. 4th, 1890</p> <p><i>Diagnosis.</i>— Hip-joint disease with sinus; previous partial arthrectomy</p>	<p>Phthisical family history. Disease of right hip began Oct. 1889; no known cause. Was admitted first in Feb., 1890, and arthrectomy was performed on Feb. 20th. A sequestrum was removed from the neck of the femur. The head was partially dislocated, and was replaced. Acetabulum filled with soft material. Cheesy material in joint, and the synovial membrane had cheesy points in it. As much of the diseased tissues was removed as possible. The wound never healed completely, and part of the scar subsequently broke down. Very little progress had been made up to the date of admission, although he had been in a convalescent home for several months</p>	<p>Internal organs healthy, Hip stiff in good position. Sinus in scar leading to joint with flabby granulations. Very little discharge. Much thickening around joint</p> <p>(Before the Koch period I was several times on the point of excising the child's hip joint, and I have no doubt I should ultimately have done so)</p>	<p>·003''; 2·003''; 1·003''; 1·002''; 2·003''; 1·003''; 1·005''; 1·005''; 2·006''; 1·007''; 2·008''; 2·01''; 1·012''; 2·015''; 1·02''; 2·025''; 1·025''; 1·02''; 2·02''; 2·03''; 2·04''; 1·05''. Injections of ·06 continued twice a week</p>



*Sinuses which have been rendered Aseptic.*

Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Jan. 26th, 1890; discontinued Jan. 21st, 1891. Length of treatment = 56 days. Total number of injections = 23. Total amount of fluid used = 135 grms.</p>	<p>None.</p>	<p>Patient was seen on March 25th, 1891. The sinus in the foot was in the same condition as when he was discharged. There was some increased thickening over the knuckle and a small crust, which has formed within the last few days</p> <p><i>Result.</i>—Sinus in foot remained unhealed, but the bare bone disappeared: apparent disappearance of the tubercular tenosynovitis. Relapse of the latter after cessation of treatment</p> <p>(In this case I do not think that any real advantage was gained by the Koch treatment)</p>	<p>Nothing noteworthy as to the general reactions. There was never any marked reaction about the foot; there was at first a little redness and an increased discharge. The sore over the knuckle, however, reacted markedly, the partially healed cicatrix breaking down, but there was no effect where the tendon sheath had been removed. On Dec. 27th no bare bone could be felt on probing the sinuses in the foot, and the sore over the knuckle had completely healed.</p>
<p>Commenced Jan. 9th, 1890. Total number of injections up to Jan. 8th, 1891 = 42. Total amount of fluid used up to same date = 515 grms.</p>	<p>Sent to convalescent home on Feb 27th, 1891</p>	<p>Note on April 7th, 1891.—“Sinus apparently soundly healed. No thickening. Child in good health”</p> <p><i>Result.</i>—Great improvement. Rapid healing of the sinus, and disappearance of the thickening. (This is the sort of case in which I think that Koch's treatment will be of great value, and I would adopt it again under similar circumstances)</p>	<p>During the first reaction the temperature reached 104° ten hours after the injection, and next day about the same time it again reached 104°: there was a good deal of local reaction. The most severe reaction was after the third injection, but there were no dangerous symptoms. On the 13th of Jan. it is noted that the sinus is soundly healed, and all thickening has disappeared. Since that time the scar has steadily contracted. At the middle of March was allowed to get about in his Thomas's splint.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and causes of injections.
28	<p>S. W., æet. 13, female, K. C. H.; admitted Oct. 6th, 1890; discharged Feb. 20th, 1891, to be treated as out-patient</p> <p><i>Diagnosis.</i>— Spinal dis- ease with aseptic sinuses in the right lumbar and iliac regions</p>	<p>No tubercular family history. About 5 months before admission patient began to feel aching pain in the back and was always wanting to lie down. About a month ago she noticed a swelling in her right side. No known cause. When admitted there was slight curvature involving the 12th dorsal, and the 1st, 2nd, and 3rd lumbar vertebrae, and there was pain on pressure over these spines and transverse processes. There was a large lumbar abscess on the right side, and also a large fluctuating swelling in the right iliac fossa reaching as far as the middle line and as high as the umbilicus. The two abscesses communicated. On Oct. 14th both abscesses were opened, thoroughly scraped and washed out, 2 oz. of a 10 per cent. emulsion of iodoform in glycerine injected, and the wounds stitched up. Both wounds afterwards broke down and sinuses remained. On Nov. 4th drainage-tubes were inserted, and a second opening made behind corresponding to the hole in the fascia through which the pus had made its way. The drainage-tubes were removed at the beginning of December</p>	<p>Internal organs healthy. There are 2 openings in the right lumbar region and one just above Poupart's ligament. A long bullet probe goes in for its full length into all the sinuses. There is not much discharge, but the wounds show no sign of healing. Curvature and pain on pressure over the spine as before mentioned</p> <p>(In this case before the Koch period I would have adopted one of two courses, either to continue to treat the sinuses aseptically, the average duration of the case till healing is complete being on an average 8 months, or to scrape out the sinuses again, wash them out, inject iodoform and glycerine, and stitch them up, hoping in this way to obtain union by first intention. The latter is what I intended to do)</p>	<p>·005"; 1·005"; 2·006 1·005"; 1·005"; 4·006 1·007; 1·008'; 2·01; 1·0 1·012; 2·012; 1·015; 1·0 2·03; 1·04'; 1·06; 2·0 1·12; 1·12'; 2·12; 1·1 1·1; 2·1; 1·1; 1·1; 1·12- Sent to convalescent hos for a month, where 1 w injected twice a week. Sir her return on March 23 1 has been injected thi times a week</p>
29	<p>T. K., æet. 5½, male, P. G. C. H., admitted Feb. 10th, 1891</p> <p><i>Diagnosis.</i>— Hip-joint disease with sinus; previous partial arthrectomy</p>	<p>No phthisical family history. Right hip-joint disease for 14 months; no definite cause. Was admitted first in Feb. 1890, and arthrectomy was performed on Feb. 7th. A sequestrum was removed from the neck of the femur, and as much as possible of the capsule was taken away. The cartilages were intact. Wound healed by first intention except at middle, where a small sinus remained, which healed at the end of April. This remained healed till Sept. 3rd, when a probe could be passed in for a considerable distance</p>	<p>Internal organs healthy. Hip-joint stiff, slightly adducted and everted, completely extended. No shortening. Some thickening felt in front of joint. Sinus leads down to bare bone in neck of femur; very little discharge. A good deal of thickening in front of the joint and enlarged glands in both groins. A few small enlarged glands in neck</p> <p>(Before the Koch period I would in this case have persevered with antiseptic dressings for some months, and had the sinus not closed I might then have operated)</p>	<p>·002"; 3·002"; 1·002 1·002"-002-002-(002, 0 1·002-(003, 003)-005- (005', 005)-008-012; 1·012-013-02-035'-05'- ·07-1'-1'-(1, 1)-1'-1' (1, 1)-(1, 1)-15'-(15, 1 (15, 15)-(15, 15); 1 (2, 2)-(2, 2)-(2, 2)- (25, 25)-(25', 25)-3; (2·3, 3)-(3, 3)-(3, 3)-3 1·3; 2·3. Still under tre ment</p>



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
Commenced Dec. 12th, 1891	Absolute rest in bed. Antiseptic dressings. Subsequently plaster jacket and a month in a convalescent home	<p>Note on April 6th, 1891.—“Patient still wearing the Sayre’s jacket. The sinuses remain soundly healed, and there is no pain in the back. General condition of patient is good”</p> <p><i>Result.</i>—Healing of the sinuses. Disappearance of pain</p> <p>(In a similar case I would now employ Koch’s treatment. There can be no question that it was of great benefit to the patient in this instance)</p>	<p>The patient suffered very little at the commencement of the treatment. After the first injection the only symptoms were headache and pain in the back and general malaise. On Dec. 19th it is noted that the sinus in the back had almost healed, and that in front was looking much more healthy. On Dec. 30th both the posterior wounds were soundly healed, and a probe could not be passed into the anterior wound for more than 1 inch. On Jan. 7th there was a small scab over this wound, and when that was picked off a probe could not be introduced. When the dressing was changed on Feb. 8th this wound was found soundly healed, and she had then no pain or tenderness over the spine. A Sayre’s jacket was applied on Feb. 17th, and she was sent to the convalescent home on Feb. 20th to have 1 injected every 3 days. She returned at the end of March and went back to her school, arranging to attend for injection every other day.</p>
<p>Injections commenced on Feb. 10th.</p> <p>Total number of injections up to April 8th, 1891 = 60.</p> <p>Total amount up to April 8th, 1891 = 7.709 grms.</p>	None	<p>Note on April 4th, 1891.—“Sinus still open, but much retracted and smaller. No thickening in front of joint. Inguinal glands still large on both sides and more distinct. Glands in neck in <i>statu quo</i>”</p> <p><i>Result.</i>—Improvement in so far that the bare bone has become covered and the sinus is become drawn in</p> <p>(This is a case where I now think that this treatment should be of value, and in which I would use it. There seems little reason to doubt that so far advantage has been gained by it)</p>	<p>In the first three reactions the temperature went above 104°, and there was cough, sickness, and headache. After the first injection the hip swelled up and became tender, but this quickly subsided. On March 3rd it is noted that most of the thickening about the hip has disappeared, there is very little discharge; the sinus still persisted, and the orifice was level with the surface of the skin.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
30	<p>J. P., æt. 8, male, K. C. H., admitted Feb. 10th, 1891.</p> <p><i>Diagnosis.</i>— Recurrent disease of knee after arthrectomy; septic sinus rendered aseptic</p>	<p>One brother has spinal disease, no other tubercular family history. Has suffered from disease of his left knee-joint for 5 years; has been in various hospitals, and was admitted into my ward in Oct., 1889. On Oct. 16th of that year I performed a partial arthrectomy, removing all the diseased synovial membrane in front of the joint but not dividing the ligaments to get at the back. The wound healed by first intention, and on Nov. 6th the leg was put up in plaster of Paris and the child sent home. For some months the joint went on very well, but he was readmitted at the end of July, 1890, with recurrence of the disease. Complete arthrectomy was then performed. The wound healed by first intention, and the patient was sent out wearing a plaster of Paris case. In October it was found that a small abscess had formed over the external condyle</p>	<p>Internal organs healthy. Two sinuses on the outer side of the left knee-joint; otherwise the part appears healthy. On Feb. 13th these sinuses were connected, and the cavity which went down to the outer side of the femur thoroughly cleared out, wound left open</p> <p>(The above is the treatment which I would have adopted before the Koch period)</p>	<p>·002; 1·003; 1·005-01'' 1·01''; 1·01''; 2·01''; 1·01''. ·01''-01''-15''-02''-03- ·04''-04''-015''-02; 1·03-04- ·05; 2·06-07-08-09'-1-1- (1, 1)-(1, 1)-(1, 1)- (1, 1)-(1, 1)-(1, 1)- (1, 1)-(1, 1)-(1, 1)- (1, 1)-(1, 1). To continue</p>
31	<p>F. R., æt. 19, female, K. C. H., admitted Feb. 14th, 1891</p> <p><i>Diagnosis.</i>— Disease of wrist-joint with septic sinus rendered aseptic</p>	<p>Tubercular family history. Disease of left wrist began 15 months ago. No known cause. Abscess opened 4 months ago</p>	<p>No lung trouble. Some pus in urine and irritability of bladder. Disease of left wrist-joint. Thickening around joint, especially over lower end of radius. Great pain on the slightest movement, septic sinus towards the inner side of the back of the wrist leading into the joint and to bone. On Feb. 24th the wrist-joint was excised by the long posterior incision, the sinus being enlarged and also utilised. The wound was sponged out with undiluted carbolic acid, the long incision stitched up and a drainage-tube put in where the sinus was. The long incision healed by first intention, and the sepsis had evidently been eradicated. The drainage-tube was still in when the injections were begun</p> <p>(Before the Koch period I would have excised the wrist-joint in this case)</p>	<p>·002''; 2·002'; 1·003'' 1·003''-003''-003-(003, 003 (·004, 003)-(005, 005)- (008, 008)-(01, 01)- (01, 02)-(02, 02)-(02, 03) (03, 03)</p>



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Feb. 20th, 1891. Total number of injections up to April 8th, 1891 = 49. Total amount of fluid used up to the same date = 3.1 grms.</p>	<p>Antiseptic dressings</p>	<p>Note on April 5th.— “Dressing changed to-day after a week’s interval. A point the size of a pin’s head not yet quite healed”</p> <p><i>Result.</i>—Rapid healing of the wound</p> <p>(This is the sort of case in which I think Koch’s treatment is of value)</p> <p>April 20th.—The sinus was found healed at the next dressing</p>	<p>The first 3 injections produced no local or general effect. The subsequent ones caused headache, cough, and pain in the left knee. There is nothing further to note; the wound gradually filled up and at the last note was almost completely healed.</p>
<p>Injections commenced on March 20th, 1891. Number of injections up to April 8th = 24. Amount of fluid used up to the same date = 257 grms.</p>	<p>Usual treatment after excision of wrist</p>	<p>Note on April 8th, 1891.— “Some œdema around wrist, long wound apparently soundly healed, small wound looking healthy and closing rapidly, very little discharge”</p> <p><i>Result.</i>—Still under treatment; improving so far; too early to judge</p> <p>(According to my present views the treatment adopted in this case promises a better result than excision alone)</p> <p>April 20th.—Wounds completely healed; no thickening</p>	<p>The patient was not particularly ill after the injections. There was a good deal of local reaction, which still continues. There was no increase in the pus in the urine. Drainage-tube left out on April 5th.</p>



We had six cases where there were *aseptic* sinuses in connection with disease of bones and joints. Of these, one (No. 32) has only been under treatment for a very short time. Of the remaining five, two (Nos. 27 and 28) have completely and apparently soundly healed, and have so far derived the greatest advantage from the treatment; while one (No. 30) is almost absolutely healed, and I think will be found quite healed when the dressing is next changed. In one case (No. 29) healing is not yet complete, but the condition is steadily improving, and the bare bone which was present in the first instance can no longer be felt. In one case (No. 26), so far as the bone is concerned, no marked benefit has been derived, though bare bone felt at first has now disappeared; in this instance the delay in healing is, I think, due to the conditions of the sinus itself rather than to the presence of tubercular disease. In this patient a tubercular sore on the hand healed under treatment, but has relapsed to some extent since the treatment was discontinued. (Note on April 20th.—Of these six cases only two (Nos. 26 and 29) now remain unhealed.)



C.—CASES WITH SEPTIC SINUSES.



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
32	<p>B. S., æt. 19, female</p> <p><i>Diagnosis.</i>— Disease of spine with septic sinus; disease of elbow with septic sinus; disease of occipital bone</p>	<p>No tubercular family history. In Feb., 1889, abscess formed in leg, and pain in back was complained of. In commencement of 1890 abscess formed in connection with two ribs, and were opened. In March a psoas abscess was opened in the left lumbar region. In July signs of left elbow-joint disease commenced, and an abscess was opened in Oct. In Nov. swelling and pain were noticed over the occipital bone</p>	<p>Patient anæmic and weak. Sinuses in connection with ribs, spine and elbow. Large fluctuating tender swelling over occipital bone. Lungs and other organs healthy. No hectic temperature</p> <p>(Before the Koch period I would have simply provided free escape for discharge in the first instance)</p>	<p>·005''' ; ·007''' ; ·007''' ; 4·007''' ; 4·008''' ; 3·008''' ; 4·008''' ; 4·008''' ; 4·008''' ; 2·008''' Treatment discontinued</p>
33	<p>A. E. K., æt. 22½, male, K. C. H., admitted Nov. 29th, 1890. Discharged March 24th, 1891</p> <p><i>Diagnosis.</i>— Tubercular disease of the right os calcis and the astragalo- calcanean joint with septic sinus</p>	<p>No tubercular family history. When about 9 months old swelling first noticed on outer side of right ankle. Has been treated at various hospitals since. An abscess formed, and broke some months ago</p>	<p>Internal organs healthy. Marked swelling about the right heel and ankle, especially on the outer side. A septic sinus is present below and behind the external malleolus, and leads directly inwards to bare and soft bone, apparently the upper surface of the os calcis and the astragalo-calcanean articulation. No loose bone can be felt</p> <p>(Before the Koch period I would have cleared out the diseased bone)</p>	<p>·0023''' ; 2·0023''' ; 1·003''' ; 2·003''' ; 1·003''' ; 1·003''' ; 2·003''' ; 1·003''' ; 2·004''' ; 1·004''' ; 4·005''' ; 2·005''' ; 1·005''' ; 1·005''' ; 2·006''' ; 1·007''' ; 1·008''' ; 2·008''' ; 1·008''' ; 1·01' ; 2·012''' ; 1·015' ; 1·02' ; 2·03''' ; 1·03' ; 1·04' (operation, interval of 13 days); 1·01' ; 2·02' ; 1·02' ; 1·03' ; 1·03' ; 2·03' ; 1·04' ; 2·05' ; 1·06''' ; 1·07' ; 2·07''' ; 1·07' ; 1·08' ; 2·09''' ; 1·1'''. Treatment stopped on March 20th, 1891</p>



*Septic Sinuses.*

Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Injections commenced on Nov. 28th, 1890; discontinued on Jan. 2nd, 1891. Under treatment for 35 days. Total number of injections = 10. Total amount of fluid used = '074 grms.</p>	<p>None beyond the ordinary dressings, rest in bed, and splint for the arm</p>	<p>Last seen on April 3rd, 1891. Patient much thinner and somewhat weaker than in November. All former sinuses still open, and an additional sinus leading to the occipital bone, which is bare. Tenderness and small fluctuating swelling over upper part of sternum. No hectic temperature; lungs and other organs healthy. Patient's general condition is improving, but has still occasional retching</p> <p><i>Result.</i>—Improvement during treatment as regards the unopened swelling over the occipital bone; spinal condition unaltered; condition of elbow and general state of patient worse</p> <p>(I would not now employ the Koch treatment in such a case. It was a hopeless case from the first)</p>	<p>After the first injections patient suffered much from malaise and sickness. The elbow became more painful, but the swelling over the occipital bone after the initial increase steadily diminished, and almost disappeared before the treatment was stopped. Towards the end of Dec. the retching and incapacity to take food became worse, and the pain in the elbow increased. Cultivations were made from the sinuses in the loin and elbow, and <i>staphylococcus cereus albus</i> was obtained. On Jan. 6th, 1891, the elbow was freely opened, and a quantity of tubercular material scraped out. After the anæsthetic she had continuous sickness for several days, which greatly reduced her. On account of her feeble condition and the possibility that the retching before the operation might have been connected with the treatment and the presence of the pyogenic organisms, it was deemed inadvisable to resume it after the operation. The patient slowly recovered from the operation, and the swelling over the occipital bone re-formed, and was incised on Feb. 12th. At the end of Jan. pain and swelling were observed over the upper part of the sternum on the right side, and some cheesy material was evacuated at the beginning of March.</p>
<p>Commenced Dec. 3rd, 1890. Treatment stopped on March 20th, 1891, lasted for 107 days. Total number of injections = 41. Total amount of fluid used = 1'0146 grms.</p>	<p>On Feb. 3rd the opening was enlarged and a loose sequestrum was found and removed, the cavity from which it was taken being scraped and sponged with undiluted carbolic acid. Wound left open. On March 23rd it was again scraped out</p>	<p>Note on April 6th, 1891.—“Cavity in os calcis with free external opening. No bare bone, wound looks healthy. Less swelling”</p> <p><i>Result.</i>—No apparent effect on the disease</p> <p>(I cannot see that the patient has obtained any advantage from the Koch treatment; in a similar case I should now follow the old lines and only use tuberculine if the wound failed to heal and if I had got it aseptic)</p>	<p>Not seriously ill after the injections, but especially after the 4th, 5th, and 6th much cough. After the 1st injection the heel on the outer side became red and much swollen, and there was greatly increased discharge. The thickening diminished considerably, but as bare bone was still felt, the sinus was opened up on Feb. 3rd. The wound did not heal, and it was again thoroughly scraped out on March 23rd.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
34	<p>H. A., æt. 21, male, K. C. H., admitted Dec. 1st, 1890. Discharged on Feb. 16th, 1891</p> <p><i>Diagnosis.</i>—Disease of elbow-joint with septic sinuses</p>	<p>Tubercular family history. The disease in his left elbow began 14 months ago without apparent cause. At first there was only a feeling of weakness in the elbow, and some swelling. Then 11 months ago, when opening a window, had pain which rapidly increased with increase of swelling. Abscesses soon formed, and were opened from time to time, and the joint was thoroughly cleared out after division of the olecranon last August by Mr. Clutton. The sinuses did not heal</p>	<p>Internal organs healthy. Right elbow-joint much swollen, the swelling being of a soft pulpy character, with numerous septic sinuses leading into the joint and to soft carious bone; the whole appearance of the part is that typical of a bad case of tubercular disease with septic sinuses. No movement is possible. The elbow is held at a little beyond the right angle. The circumference of the joint at the level of the tip of the olecranon is <math>1\frac{1}{4}</math> in. larger than on the left side</p>	<p>·01''; 1·01'; 1·015'; 4·015''; 1·015'; 2·02; 1·025; 3·025''; 4·03''; 2·03'; 1·04'; 1·06'; 2·08''; 3·06; 2·08'; 1·08 (operation interval of 13 days); 1·04; 1·06'; 2·08''; 1·08; 1·1; 2·1; 1·12; 1·1. Discharged, and twice a week had 1. Treatment stopped at the end of March</p>
35	<p>E. P., æt. 3 years, female, P. G. C. H., admitted Dec. 3rd, 1890. Discharged on Mar. 10th, 1891</p> <p><i>Diagnosis.</i>—Disease of radius with septic sinus; enlarged cervical glands</p>	<p>No phthisical family history. The disease of the radius began a year ago after injury. Has been in a general hospital and operated on without benefit</p>	<p>Enlarged glands in neck. Internal organs healthy. Septic sinus at back of lower end of right radius leading upwards to bare bone; no loose fragment felt. End of radius considerably thickened</p> <p>(The treatment in such a case before the Koch treatment would have been operation with the view of removing the affected portions of bone)</p>	<p>·002''; 5·002''; 4·002''; 1·002''; 1·002''; 1·002''; 2·002''; 1·002''; 7·002''; 2·002'; 4·004''; 1·004; 1·005''; 2·005; 1·006'; 1·007'; 2·008; 1·01; 1·006'; 2·012; 1·015; 1·02 (operation 12 days' interval); 1·012'; 1·015-02'-02'-02'-02'-03''; 1·03'-03-04-05-06''; 2·06'; 07; 1·08'-1'-12; 2·15-15; 1·15. Treatment discontinued</p>
36	<p>E. M., æt. 26, female, K. C. H., admitted Dec. 16th, 1890, discharged on Feb. 23rd to be treated at home</p> <p><i>Diagnosis.</i>—Disease of fibula with septic sinuses</p>	<p>Phthisical family history. Six years ago had disease of right thumb, from which bone was removed. This was followed by abscesses in the forearm. Four years ago abscesses formed in connection with the lower end of the fibula, and sinuses have remained since from which small pieces of dead bone have lately come out</p>	<p>Internal organs healthy. Scars on right forearm and thumb, the last phalanx of which has evidently been almost entirely destroyed. About 2 inches above the external malleolus are 2 septic sinuses leading to bare and soft bone about 1 inch in extent. There is thickening of the right tibia towards its upper part, but this is not at all painful</p> <p>(Before the Koch period I would have laid open the sinuses and thoroughly scraped and gouged away the diseased bone, but I think it is not at all improbable that the removal of the affected piece of the fibula would have been ultimately necessary in order to effect a cure</p>	<p>·01''; 4·008'' (interval of 9 days); ·008''; 2·008''; 2·008''; 1·008''; 1·008''; 2·01'; 1·012'; 1·012'; 2·015'; 1·015'; 1·02'; 2·03'; 1·04'-05-05; 1·06'; 1·06'; 1·06; 2·07'; 1·08'; 2·08'; 1·08; 4·09; 1·09; 1·09; 4·1; 1·1'; 3·1; 1·1. 1·1; 2·1; 3·1</p>



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Injections commenced Dec. 3rd, 1890; stopped at end of March. Total number of injections = about 34.</p> <p>Total amount of fluid used = about 2.275 grms.</p>	<p>On Dec. 9th the sinuses were opened up and drainage-tubes inserted; the joint was not scraped out.</p> <p>On Jan. 23rd the sinuses were again opened up and the joint thoroughly scraped out; the tubercular material came away very readily</p>	<p>Note on April 6th, 1891.—“All the sinuses are still open, and there is no very marked improvement in the condition of the joint as compared with its state before treatment was commenced”</p> <p><i>Result.</i>—No noticeable improvement</p> <p>(In such a case I would not now use Koch's treatment)</p>	<p>The first reaction was not very severe, but the elbow swelled up very much, and there was increased discharge from the sinuses. During the course of the treatment several small acute abscesses formed, and were opened from time to time. The tissues around the elbow became much firmer, and the measurements less. The patient was discharged on February 16th to be treated as an out-patient; at that time the wounds were granulating well, and, with the exception of one in front of the elbow, were looking well and healing up rapidly. Bare bone could only be felt at one part.</p>
<p>Commenced Dec. 9th, 1890. Total number of injections = 42. Total amount of fluid used = 1.349 grms.</p>	<p>On Feb. 5th the sinus was enlarged and a loose sequestrum was found and removed, undiluted carbolic acid applied, wound left open.</p>	<p>Still a small short sinus at one part of the scar which does not go to bare bone. General health good. Glands smaller than at first</p> <p><i>Result.</i>—During the treatment the sequestrum became loose: the wound is healing up well. Glands smaller</p>	<p>The first 2 reactions were severe, the chief symptoms being coughing, swelling of glands in neck, pallor, and sickness. There was swelling and increased discharge from the wound. After the operation the wound gradually closed but has not yet quite healed.</p>
<p>Commenced Dec. 28th, 1890. Number of injections up to April 5th, 1891 = 34. Total amount of fluid used up to that date = 1.772 grms.</p>	<p>The sinuses were opened up on Jan. 15th, and a counter opening was made behind. Bare bone was felt. Tubes inserted</p>	<p>Note on April 6th.—“All the sinuses are still open, but are very small and drawn in and there is very little discharge. No bare bone can be felt”</p> <p><i>Result.</i>—Sinuses closing up. Bone no longer bare</p> <p>(In a similar case I would now lay open the sinuses, scrape the bone, try to render the wound aseptic and commence Koch's treatment at once. I think that in this case the treatment was decidedly beneficial in leading to the removal of the carious material at the surface of the bone)</p>	<p>The first reaction was not very severe; there was a good deal of local reaction and the discharge was profuse and very offensive. A small piece of bone came away on Dec. 31st. She suffered from diarrhoea after the first 2 injections and was slightly jaundiced. Nothing further noteworthy as regards reactions. On Feb. 1st no bare bone could be felt, and when she was sent home to be treated by Dr. Brown the sinuses were healing rapidly; the tubes had been left out some days previously.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
37	<p>F. M., et. 10, male, K. C. H., admitted Dec. 29th, 1890, discharged Feb. 5th, 1891, to attend as out-patient</p> <p><i>Diagnosis.</i>—Recurrent disease after excision of elbow-joint; septic sinus</p>	<p>Disease of elbow joint, commenced when 3 years old. After an injury and an abscess formed soon afterwards. Has been operated on twice by Mr. Wood, and a year ago the joint was excised by Mr. Barrow. At Mr. Barrow's request the patient was submitted to the Koch treatment as a sinus still remained unhealed, and as there was a fresh development of tubercular disease in connection with the internal condyle</p>	<p>Internal organs healthy. Sinus in bend of elbow not leading to bone. Over the internal condyle is a soft semifluctuating mass with the skin red over it and a small opening. Movements of joint fair</p> <p>(Before the Koch period I would have thoroughly cleared out the mass over the internal condyle and scraped out the sinus)</p>	<p>·003''; 1·003'; 1·004''; 2·004''; 1·004'; 1·005'—006; 1·008'; 1·01; 1·015; 2·02; 1·03; 1·04; 2·05'; 1·05; 1·05 2·06; 3·07; 2·08; 5·09. Has attended once or twice a week since the 18th of Feb., and had 1. Treatment stopped on April 8th</p>



Total number, amount, &c., of injections.	Advanced treatment.	Condition when last seen.	Notes.
Commenced Dec. 31st, 1890. Total number of injections = about 34 Total amount of fluid used = about 2·002 grms.	None	<p>Note on April 8th.—“The sinuses still exist and show no tendency to heal. The condition being practically the same as before the treatment”</p> <p><i>Result.</i>—No improvement</p> <p>(I would now treat such a case in the same manner as before the Koch treatment, and if it seemed necessary afterwards, that treatment could be employed in addition)</p>	<p>After the first injection a good deal of fluid was discharged from the swelling over the internal condyle. The thickening soon disappeared and only a small sinus was left. After the 2nd injection the patient developed a papulo-vesicular rash in patches on the sides and back exactly in the lines and presenting the superficial appearance of herpes zoster. This gradually died away in about a fortnight. There is nothing further to note.</p>

There were six cases of diseases of bones and joints with *septic* sinuses. Of these four cannot be said to have derived any benefit; one (No. 36) undoubtedly has, and one (No. 37) is healing after operation, and possibly the separation of the sequestrum has been expedited by the treatment. In No. 32 it is interesting to note that the tubercular deposit where the skin was unbroken improved under treatment, but that those with septic sinuses did not; indeed, one, the elbow, became worse. Add here Case No. 1, where there were septic sinuses in connection with a metacarpal bone, and where the condition improved markedly under treatment, having healed in the first instance.



DISEASES OF GLANDS.

No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
38	<p>P. O. F., æet. 30, male, K. C. H., admitted Nov. 30th, 1890. Discharged Jan. 29th, 1891</p> <p><i>Diagnosis.</i>— Tubercular glands in neck and axilla with abscesses</p>	<p>Sister died of phthisis. Glands in neck began to enlarge 6 years ago, and those in axilla 1 year ago. Have been increasing much during the last year. Medical treatment</p>	<p>Internal organs healthy. There is a large mass of enlarged glands matted together and situated in the right anterior triangle at the upper part and beneath the sterno-mastoid; there were two small abscesses on the surface of this mass, a large number of hard but separate glands along border of sterno-mastoid and in posterior triangle, quite visible. On the left side of the neck there were also a number of large glands, especially at the upper part of the anterior triangle, but they were not so large as to cause deformity. In the right axilla there was a large mass of glands matted together and projecting at the anterior and inner border of the axilla. At the back of the left wrist there is a fluctuating swelling evidently connected with the sheaths of the tendons</p> <p>(Before the Koch period I would have recommended excision of the glands)</p>	<p>·01''; 2·006''; 3·008''; 3·006''; 2·006''; 1·006''; 1·007''; 1·008''; 4·008''; 2·008''; 1·008''; 1·008''-01''; 1·015; 1·02'; 1·03'; 2·03'' (operation, interval of 6 days); 1·03''; ·03''; 1·035'; 2·04'. Discharged to go on with treatment at home. (He only had 4 injections at home)</p>
39	<p>L. B., æet. 12, female, P. G. C. H., admitted Dec. 6th, 1890. Discharged to attend as out- patient on Jan. 23rd, 1891</p> <p><i>Diagnosis.</i>— Tubercular cervical glands</p>	<p>Doubtful phthisical family history. Enlarged glands in neck for a year. No evident cause. Corneal nebula on right side</p>	<p>Internal organs healthy. Enlarged glands along posterior border of both sterno-mastoids. On right side opposite middle of sterno-mastoid there is one gland hard and of the size of a Brazil nut; the others are about the size of beans: upper lip swollen and fissured</p> <p>(Before the Koch period I would have left these glands alone, giving a <i>placebo</i> such as cod-liver oil, &amp;c.)</p>	<p>·005''; 1·004''; 1·005''; 1·005''; 2·005''; 1·005''; 1·007''; 1·009''; 2·01''; 1·012''; 1·012; 2·015; 1·02''; 2·025; 3·03; 2·035; 1·04'; 1·04; 2·05; 1·06'; 1·06; 2·06; 3·06; 3·06; 4·06; 2·06; 3·07. Treatment stopped</p>



## GLANDS.

Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Dec. 3rd. 1890. Total number of injections = 25. Total amount of fluid injected = about 489 grms.</p>	<p>On Jan. 16th the abscesses in the neck were scraped out; they were quite superficial, and only contained a small quantity of cheesy material. The mass in the axilla was excised, and found to consist of a number of large, almost completely caseous glands. The wound healed by first intention. The glands were in the main cheesy, but portions were found containing tubercles. Two guinea-pigs were inoculated with portions of the glands on Jan. 16th, and became tubercular</p>	<p>When discharged on Jan. 29th the wounds were completely healed. The mass in the neck was about <math>\frac{1}{4}</math> of its original size, and the individual glands of which it was composed could be readily felt. The glands on the left side were also distinctly smaller. The swelling on the wrist remained the same</p> <p>In a note dated April 7th, 1891, Dr. Garrod Thomas says: "I examined him to-night and find that the glands originally affected (right side) are smaller, but there are several fresh ones considerably involved just above the clavicle on the left side; the wrist and armpit are quite well"</p> <p><i>Result.</i>—Improvement in that the glands became somewhat smaller and much less matted together</p> <p>(In such a case I would still recommend excision, but it is quite a question whether it would not be advantageous to precede the operation by a few injections. Certainly the operation would be very much easier, safer, and more satisfactory if the periadenitis were in this way got rid of)</p>	<p>The first reaction was a severe one, the chief symptoms being headache, vomiting, and rigor. An erythematous rash appeared on his chest about 10 hours after the injection, and faded in a few hours. There was considerable local swelling, and one of the abscesses in the neck burst and discharged a little pus. During the next few reactions the rash and rigors generally recurred, and he had a good deal of nausea. The mass in the neck diminished gradually in size, and the individual glands could be made out a few days after the treatment was commenced.</p>
<p>Commenced Dec. 9th, 1890. Stopped Dec. 16th, 1890. Treatment continued for 69 days. No. of injections = 27. Total amount of fluid injected = 824 grms.</p>	None	<p>When the treatment was stopped the glands were distinctly smaller than they were originally</p> <p>Note on April 6th.— "Glands much smaller than at last note. The lip is well"</p> <p><i>Result.</i>—Distinct diminution in the size of the glands. Apparently no tendency to relapse</p> <p>(I would not now trouble to use the Koch treatment in such a case)</p>	<p>Nothing noteworthy about the reactions except that the upper lip swelled after the first injection. The patient did not suffer from the treatment at all, but after the 4th injection she was noticed to be slightly jaundiced; no other symptoms; this passed off in 2 or 3 days. As the glands were almost stationary and small, and there were no reactions, the treatment was stopped.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
40	<p>G. G., æt. 2, male, K. C. H., admitted June, 1890. Discharged Jan. 26th, 1891</p> <p><i>Diagnosis.</i>— Tubercular disease of inguinal and cervical glands</p>	<p>No phthisical family history nor history of syphilis. Last summer patient was operated on for hydrocele of the cord and afterwards for phymosis. The patient was sent home on the same day that circumcision was performed. When seen some days later the circumcision wound presented the appearance of a tubercular ulcer. The scar from the hydrocele operation broke down shortly afterwards, and presented the same appearance. The testicle became tubercular and was removed in autumn. Glands in both groins became tubercular and broke down. The child rapidly wasted</p>	<p>Large ulcers in both groins, with greyish sloughy surfaces. Enlarged gland on left side of neck. Child much emaciated; abdomen large and tense. No lung symptoms. Hectic temperature. As the parents were extremely anxious that this treatment should be tried, their wish was acceded to</p>	<p>·001'; 3·002''; 1·0023''; 1·003''; 1·004''; 1·005- ·006; 1·007; 1·008'; 1·01'' 8·006''; 4·008; 2·01'; 1·01''; 1·01''; 15·005; 3·005</p>
41	<p>E. C., æt. 5, female, P. G. C. H., admitted Dec. 8th, 1890, discharged Jan. 26th, 1891.</p> <p><i>Diagnosis.</i>— Tubercular glands; sinus leading to diseased bone</p>	<p>Tubercular family history. Six months ago was in Infirmary with disease of left fibula. Some bone was removed by operation. An abscess formed in lumbar region lately and has burst</p>	<p>Internal organs healthy. Scar about 3 inches long adherent to the lower end of the fibula. Bone enlarged at upper end of scar. There is a large mass of enlarged glands in the right iliac fossa, and a sinus joint above the right posterior superior iliac spine leading to bare bone at upper part of crest of ilium. No signs of vertebral or sacroiliac disease</p>	<p>·002''; 1·003''; 1·003'' 1·002''; 2·0025''; 1·003'' 1·004''; 1·004''; 2·004'' 1·005; 1·007; 2·01; 1·015; 2·02'; 1·025'; 1·03'; 2·035; 1·04; 1·04'; 2·05; 1·06; 1·06'. Sent to convalescent home and ·06 given twice a week</p>
42	<p>A. A., æt. 7, female, P. G. C. H., admitted Sept. 22nd, 1890</p> <p><i>Diagnosis.</i>— Tubercular glands with septic sinuses in groins; tubercular glands in neck; slight phthisis</p>	<p>Has attended the hospital for 2½ years with suppurating tubercular glands in both groins, and has been admitted and operated on several times. Sinus opened and scraped on Sept. 25th, and caseous material removed from left iliac fossa. The remains of the glands on the right side were cut out</p>	<p>Enlarged glands in neck. Small area of erepitation at angle of left scapula. Liver enlarged, occasional attacks of diarrhoea. Scars of old sinuses in both groins, and a sinus in each groin discharging pus. On both sides there is thickening in the iliac fossa, most marked on the left; eyes and ears normal. Hectic temperature</p>	<p>·003'' 1·003''; 1·003'' 1·002''; 2·003''; 1·003'' ·003''; 1·004; 2·005; 1·005' Treatment abandoned</p>



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced on Nov. 26th; last injection on Jan. 1. Length of treatment 62 days. Number of injections = 17. Total amount of tuberculin used = 1023 grms.</p>	None	<p>Died at home about the end of February. Parents did not inform us of the death till a fortnight later, and therefore there was no post-mortem examination. One of the glands in the neck had rather increased.</p> <p><i>Result.</i>—No noticeable effect as regards groin; increase in one cervical gland.</p> <p>(I would not now employ the Koch treatment in such a case)</p>	<p>There were no general effects after the injections beyond the elevation of temperature. No distinct local reaction except in the cervical glands. After the first injections the temperature in the intervals became normal instead of hectic, and the child seemed much brighter and took food better. The injections were given up on Jan. 4th, but a fortnight later the hectic temperature returned and the child began to go downhill rapidly; hence the resumption of the injections. As, however, the parents wished to take the child home, they were allowed to do so. When discharged the local condition was very much the same as when the treatment was begun, but the child was thinner and weaker.</p>
<p>Commenced Dec. 9th, 1890. Total number of injections up to April 8th, 1891 = 42. Total amount of tuberculin used up to the same date = 6245 grms.</p>	<p>Sent to convalescent home on Jan. 26th, 1891</p>	<p>Note on April 7th.—“Condition the same as when sent to the convalescent home.”</p> <p><i>Result.</i>—Some diminution of the mass in the iliac fossa; sinus <i>in statu quo</i>.</p> <p>(In such a case I would not now employ the Koch treatment)</p>	<p>No noteworthy general symptoms. At first there was increased swelling in the iliac fossa, and increased discharge from the sinus. The swelling in the iliac fossa soon diminished, and when the child went to the convalescent home on Jan. 26th it was much smaller than it was originally. A small piece of dead bone had come away, but bare bone could still be felt. There was no local reaction in the fibula.</p>
<p>Commenced Dec. 9, 1890. Left hospital on Dec. 30th, 1890. Continued for 21 days. Total number of injections = 10. Total amount of tuberculin used = 034 grms.</p>	<p>Excision of hip after the treatment was stopped. See notes. The joint was much inflamed; there was evidently an acute septic arthritis.</p>	<p>Note on April 6th, 1891.—“Wounds healed, except where drainage-tubes are. A good deal of purulent discharge. Hectic temperature. Child anæmic and losing flesh. Condition of lungs unaltered.”</p> <p><i>Result.</i>—Extension of septic process under treatment. No improvement as regards tubercle.</p> <p>(According to my present views, I would not now employ the treatment in such a case. There seems little reason to doubt that harm was done here by the treatment in that the extension of the septic process (not of the tubercle) was favoured)</p>	<p>After the 1st injection there was much local reaction in left groin. The discharge from the sinuses afterwards diminished, and for a time the condition of the patient was satisfactory. On Dec. 31st symptoms of disease of the left hip-joint commenced, and the discharge from the sinuses was much more profuse. As the temperature remained high after the last injection, the treatment was abandoned. On Jan. 27th the left hip-joint was excised, the sinuses were opened up, and a counter opening made in the left lumbar region. The hectic temperature has continued, though not very marked.</p>



To these we must add thirteen others where enlarged glands were present, but which are mentioned under other headings. In seven of these (Nos. 3, 11, 12, 15, 22, 53, and 54) no perceptible difference can be made out in the size of the glands; in four (Nos. 8, 18, 35, and 45) it is noticed that they were somewhat smaller; in one the glands were looser but not smaller (No. 29); and in one (No. 23) they became smaller under treatment, but one or two of them enlarged after the treatment was stopped. In five cases the enlargement of the glands was the principal or only apparent affection, and in three of these (Nos. 38, 39, and 41) there was no external communication. In all three the glands diminished somewhat in size, and in one (No. 38) where they were at first much matted together the periadenitis disappeared in a very striking manner. Of two cases where there were sinuses in connection with the glands, in one no noticeable effect was produced (No. 43), while in the other (No. 42), whatever may have happened to the glands themselves, the septic suppuration spread in the neighbouring tissues to a very serious extent.



**TUBERCULAR PHTHISIS, ETC.**

## IV.—TUBERCULA

No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
43	W. P., æt. 11, male, P. G. C. H., admitted Dec. 8th, 1890, discharged to attend as out-patient on Feb 14th, 1891  <i>Diagnosis.</i> —Tubercular peritonitis	tubercular family history. Was admitted into hospital under Mr. Boyd in May, 1890, with signs of tubercular peritonitis and a history of wasting of 3 months' duration. On May 31st Mr. Boyd opened the abdomen and found a tubercular mass in the sub-peritoneal tissue, matted intestines studded with miliary tubercles, and 2 pints of turbid fluid in peritoneal cavity. Hard masses were also felt in the pelvis. Cavity washed out with warm water, and 2 drachms of iodoform and glycerine emulsion injected. Wound stitched up and healed by first intention. Patient sent to convalescent home in July much improved. Readmitted in October, the scar having opened at the lower part. A quantity of caseous material was removed from the subperitoneal tissue. This wound healed, but broke down again about the end of November	A few crepitations at right apex in front. No other physical signs. Has occasional attacks of abdominal pain, headache and vomiting. Abdomen not distended, skin not inelastic, and no ascites. Slight dulness over hypogastric and iliac regions. On deep pressure hard masses felt in neighbourhood of umbilicus and scar. In middle of scar is small sinus covered with a scab. Small ulcer on outer side of left buttock. Weight 3st. 8½ lbs.  (Before the Koch period I would simply have continued the antiseptic dressings)	·003''' ; 2·003''' ; 1·003''' ; 1·003''' ; 2·003''' ; 1·003''' 1·003''' ; 1·003''' ; 2·004''' ; 1·005 ; 1·007''' ; 2·009' ; 1·012 4·015 ; 1·02'' ; 2·02' ; 1·02''' 6·015' 1·015 ; 2·02 ; 1·025 1·03 ; 2·03 ; 1·03 ; 1·04' 1·05-05 ; 2·06 ; 2·06 ; 1·06' 1·07 ; 2·07 ; 1·07' ; 1·07 ; 2·07 1·09 ; 1·1 ; and 1 once a week afterwards

## V.—TUBERCULAR IRITIS

44	E. B., æt. 9, female, Moorfields Ophthalmic Hospital, under the care of Mr. Waren Tay  <i>Diagnosis.</i> —Tubercular iritis	No definite tubercular family history. Speck on iris noticed for three weeks. No complaint of pain, but eye inflamed. No evidence or history of syphilis	A few enlarged glands in neck. No disease found in internal organs. "Slight occasional shooting pains in right eye. A good deal of circumcorneal congestion. Aqueous, turbid. Iris, light cocoa brown (left iris bluish grey), many posterior synechiæ. Four small rounded white deposits near lower papillary margin. Marked keratitis punctata. T + (?) Vision is bare perception of bright light"	·001'' ; 1·001' ; 1·002'' 1·002''' ; 1·002''' ; 1·002' 4·002 ; 5·004' ; 2·005 ; 4·007
----	---	--	---	---



## PERITONITIS.

Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Dec. 8th, 1890.</p> <p>Total number of injections up to April 8th, 1891 = 41.</p> <p>Total amount of fluid used up to same date = 1.661 grms.</p>	None	<p>Note on April 6th, 1891.—“Wound healed. Patient apparently in good health. No pain or swelling in the abdomen”</p> <p><i>Result.</i>—Improved; sinus healed; thickening in pelvis subsided</p> <p>(It is probable that this is one of the cases in which advantage will be gained by the Koch treatment)</p>	<p>The first reactions were severe, the chief trouble being sickness. There was also a little temporary albuminuria. On Jan. 17th the reaction after .02 was again severe, there being sickness and diarrhoea, the latter persisting for several days accompanied with abdominal pain; several of the motions contained blood. There was no marked increase of discharge from the sinus which had healed by Dec. 23rd. The weight went down to 3st. 5½ lb. on Dec. 28th, and remained till Jan. 26th. On Feb. 5th it was 3 st. 7 lbs.</p>

## AND CORNEAL ULCERS.

<p>Commenced Dec. 3rd, 1890.</p> <p>Last injection on Dec. 31st.</p> <p>Under treatment for 28 days.</p> <p>Total number of injections = 10.</p> <p>Total amount of fluid used = .028 grms.</p>	<p>Eye excised on Jan. 7th, 1891.</p> <p>On examination numerous tubercles were found in the iris.</p> <p>Two rabbits and one guinea pig were inoculated on Jan. 7th with portions of the iris, and became tubercular</p>	<p>The patient has not been seen since she left the hospital at the end of Jan.</p> <p><i>Result.</i>—No apparent effect. Continued progression of the disease</p>	<p>Although the temperature after the fourth and fifth injections was above 104° the child was not particularly ill. There was never any distinct local reaction. On Dec. 8th it was noted that the “cornea is steamy. More bulging in ciliary region, especially below. The white nodules are becoming confluent, and there is a large swelling at the outer part.” On Dec. 23rd, after an interval of five days, it was evident that fresh tubercles were appearing; indeed the whole iris had become mottled white, and the original tubercles were merged into the swollen iris and hardly distinguishable. As the condition got worse, the eye was excised on Jan. 7th, 1891. On Jan. 12th .009° was injected, and a distinct reaction occurred, the temperature reaching 101.5° eighteen hours after the injection, but no evidence of local reaction could be found anywhere. On Jan. 7th portions of the iris were introduced into the eyes of two rabbits, and into the subcutaneous tissue of the abdomen of a guinea pig. Three weeks later there was distinct tubercular iritis in both rabbits, and in the guinea pig there was a nodule at the seat of inoculation, and markedly enlarged inguinal glands on that side.</p>
---	---	--	---



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
45	L. P., æ. 10, female, P. G. C. H., admitted Dec. 31st, 1890.  <i>Diagnosis.</i> — Corneal ulcers; enlarged glands in neck	Intense photophobia and discharge from both eyes for 8 months. For last 6 months has only opened eyes in the dark. Treatment.— Boracic lotion.	Mr. Jessop's notes.—“ In both eyes fol- licular conjunctivitis. On right eye central corneal nebula, apparently no active ulceration going on. No iritis. On left eye an active ulcer below centre of cornea not very deep.” Intense photophobia. Weight on Jan. 16th 2 st. 11½ lbs. Enlarged glands in neck	·002''; 3·002''; 4·002''; ·002''; 2·002''; 1·002''; 1·003''; 1·003''; 1·0035''; 2·0035''; 1·005''-007''-009''; 1·01-01'-01'-01'-01'- (01', 01'); 015''-(015', 02'); 1(·02, 02)-03''-03'; 1·03'- ·045''-16''-08''-1''-12''; 1·15''-15''-2''-25''-25''-25''; 1·25''; -25''-25''-3''; 1·2''; 1·3''-3'' Treatment discon- tinued on March 25th

In connection with this case see also No. 22, where there was

## VI. TUBERCULAR LARYNGITIS.

46. C. W., æ. 28, tubercular laryngitis without any evident phthisis, under the care of Dr. Greville Macdonald. I regret that as Dr. Macdonald happened to be ill when these notes were being compiled, I cannot give the details of the case. Speaking from memory, however, I may say that the patient had been under treatment for some months with tubercular ulceration of the larynx (bacilli present), and the greater part had healed; a small portion of the ulcer, however, was not easily accessible, and remained stationary. The treatment was begun at the commencement of December, ·001 being given at first with only very slight local or general reaction. Four more doses were given at that time, the last being ·01, but without producing any general febrile reaction, though locally there seemed to be some increased redness and swelling. The treatment was then given up for some weeks, but as no improvement occurred, it was resumed after about 5



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
commenced Jan 15th. Total number of injections = 46. Total amount of fluid used = 3·801 grms.	Cod liver oil. Boracic lotion. Sent to convalescent home on March 25th, 1891	Note on April 7th.—“The local and general condition have continued to improve since the patient left the hospital. There is hardly any photophobia; no congestion; no ulceration. Small nebulae on each cornea. Cervical glands rather smaller” <i>Result.</i> —Healing of the ulcers; gradual cessation of the photophobia; slight diminution in size of glands	During the reactions there was sickness and headache, but no marked increase in the eye symptoms. On Jan. 22nd Mr. Jessop notes that there is active ulceration in the right corneal nebula; photophobia and slight discharge from the eyes. On 29th he notes less congestion on the right side, and ulcer still active on left. On Feb. 5th he notes eyes improved. On Feb. 19th he states, “Left eye, conjunctiva much congested and slight muco-purulent discharge, corneal ulcer healing up, and less photophobia. In right eye conjunctiva congested, no active corneal mischief, nebula as before.” The condition has steadily improved. On Feb. 20th weight 2 st. 12½ lbs. There was no loss of weight during the early treatment.

There was a corneal ulcer which healed quickly under treatment.

weeks, the first dose given then being .01. This was followed by severe general and local reaction. The next dose was .004 without reaction, and in all 10 injections were given without reaction after the first. During this treatment, however, fresh ulceration appeared in the neighbourhood and on the epiglottis, and the treatment was, whether wisely or not I cannot say, given up. I have no doubt, however, that we made a mistake in throwing aside the treatment at first, and in another like case, instead of abandoning the treatment on the second occasion, I should be inclined to reduce the dose and employ the “continuous” method of administration.

To this case may be added 3 other cases which will be found in the list of phthisis cases. In one (No. 48) only a few injections were given, and no change was noticed in the laryngeal condition. In the other two (Nos. 49 and 50) the ulceration healed, and has not, so far as I know, broken down again. The total result, then, is 4 cases, 2 healed, 1 *in statu quo*, and 1 worse.



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
47	Mrs. M., æt 39, under the care of Dr. Waterhouse. <i>Diagnosis.</i> — Phthisis	Tubercular family history. General health good until 4 years ago when she was nursing her sister who was dying of phthisis at Mentone, and was much exposed during the earthquake. She came home with cough and numerous tubercle bacilli in sputum. Since then she has wintered abroad, and the disease has only progressed slowly till last summer, when it began to extend more rapidly	Patient rapidly losing flesh; profuse night sweats. Hectic temperature (evening temperatures 102° and 103°). Going down hill very rapidly and not expected to live more than a couple of months. As the patient and her friends begged to have a trial of the treatment it was agreed to give her a few injections to see if any good was likely to be done. There was a large cavity at the left apex with dulness and crepitation involving the upper half of the lung. Dulness and crepitation at the right apex but no definite signs of a cavity	·002''; ·1·002''; ·1·003''; 2·0035''; ·1·004''; ·1·005''; 1·006''; ·1·008''; ·1·008''; 2·008''. Treatment stopped. (Most of these reactions are marked moderate, but as a matter of fact the evening temperatures before the treatment was commenced ranged about 103°, and in a considerable number of instances after the injections the highest temperature was 102°, and the other symptoms of reaction were for the most part absent)
48	Dr. B., æt 27, medical man,, under the care of Dr. G. A. Sutherland  <i>Diagnosis.</i> — Phthisis and tubercular laryngitis	Tubercular family history. Six months ago symptoms of lung disease began, and have been getting rapidly worse since September, when slight hectic fever set in, loss of appetite, wasting and weakness. His voice first became husky in August	Suffers from frequent cough with expectoration (about 5 oz. daily), nummular, bacilli abundant. At right apex consolidation, with bronchial breathing, and below the clavicle impaired resonance and occasional crepitations. Cavity (?) immediately below clavicle. Dulness with weak breathing and crepitations at right base posteriorly. Left lung apparently normal. Larynx examined by Dr. Greville Macdonald, who found slight ulceration on posterior wall of larynx, with congestion and swelling of both cords. Other organs healthy. Weight 10 st. 3 lbs. Patient complains of complete loss of appetite and great weakness	·002''; ·1·002''-·003''-·003''; 1·004''; ·1·004''-·005''-·007''- ·007''; ·1·01''; ·1·012''; ·1·015''; 1·015''; ·1·02''-·02''; ·1·02''; 1·025''; 2·03''; ·1·035''; 1·05''; 2·05''; 1·06''; ·1·08''; 2·1''; 2·1''; 3·1; 2·12; 3·15''; 2·1; 3·1; 2·1; 3·1; 2·1; 1·1; 1·1; 1·1; 2·1; 1·1; 1·1; 1·1; 1·1; 1·1; 1·1; 1·1; 1·1. Left for New Zealand on March 11th. To continue ·1 every day or every second day according to circumstances
49	Mrs. H., æt 40, under the care of Dr. G. A. Sutherland  <i>Diagnosis.</i> — Phthisis and tubercular laryngitis.	No tubercular family history. The commencement of the disease dates from July, 1889, and the symptoms lately have been cough, profuse expectoration, increasing weakness and loss of flesh, huskiness, diarrhœa alternating with constipation, fever, and profuse night sweats. No hæmoptysis	Advanced disease of both lungs, right chiefly affected with a large cavity below the clavicle; no cavity on left side. Ulceration affecting the posterior part of the right vocal cord and the posterior wall of the larynx. Hectic temperature; evening temperature about 102°; profuse nummular expectoration with numerous bacilli	·0015; ·1·002; ·1·003-·003; 1·004; ·1·005-·007; 2·007; 1·007; 1·008



PHTHISIS.

Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Nov. 27th, 1890. Last injection on Dec. 16th, 1890. Under treatment for 19 days. Number of injections = 10. Total amount of fluid used = 0.495 grms.</p>	None	<p>Died on Feb. 10th, 1891. No post-mortem examination permitted</p> <p><i>Result.—In statu quo</i></p>	<p>The chief symptoms during the reactions were increase of cough and difficulty of breathing. The treatment was stopped because it did not seem to be doing any good and the patient was getting weaker. There was no evidence that the treatment had done any harm. When it was stopped on Dec. 16th there was no alteration in the physical signs, the night sweats had stopped and the temperature at night was lower than before the treatment, and continued so for some weeks; the patient however was becoming progressively weaker. After the first injection a patch of herpes appeared on the right trochanter and afterwards developed into a bed sore, as she lay constantly on that side.</p>
<p>Commenced Nov. 28th, 1890. Number of injections up to March 9th = 45. Total amount of fluid used up to that date = 2.749 grms.</p>	None	<p>Note on March 9th.—“Occasional cough in the morning. About <math>\frac{1}{2}</math> an ounce of mucus dotted with pus expectorated during the 24 hours. Extremely few bacilli. The only physical signs are consolidation at right apex with slight bronchial breathing and no crepitations nor signs of cavity. Over the rest of right lung there is slightly impaired resonance; breathing rather faint, vesicular. Left lung apparently normal. Larynx normal. Weight 10 st. <math>7\frac{1}{2}</math> lbs. (Patient states that 10 st. 7 lbs. is his normal weight.) General condition excellent”</p> <p><i>Result.—Great improvement</i></p>	<p>After the first injection some moist sounds were also noticed at the left apex behind, otherwise no marked increase in the lung symptoms. Improvement was noted on Dec. 3rd, and steadily progressed with the exception of slight hæmoptysis on Feb. 9th, which did not recur. After the first injection the voice was huskier and there was acute œdema of the posterior wall of the larynx. On Jan. 6th Dr. Macdonald reported that the ulceration had quite healed, and it has remained well since. The bacilli became much fewer, but have not yet entirely disappeared. His general condition rapidly improved; he regained his appetite and strength, fever disappeared, and he was able to walk long distances without fatigue. Patient lost 2 lbs. during the first few weeks, but has lately been gaining weight. He left England on March 11th as surgeon to a steamer sailing to New Zealand</p>
<p>Commenced Nov. 28th, 1890; discontinued Dec. 14th, 1890. Under treatment 16 days. Number of injections = 10 Total amount of fluid = 0.475 grms.</p>	None	<p>Died of hæmoptysis about a month after the treatment was discontinued. No post-mortem examination, as the patient had left London</p> <p><i>Result.—In statu quo</i></p>	<p>As regards the reactions, the only sign was slight increase over the normal hectic temperature. There was no alteration in the lung or laryngeal symptoms. The treatment was only commenced at the very earnest request of the patient and her relatives, and as it had no apparent effect on her condition, it was discontinued on Dec. 14th.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
50	<p>W. R. S., æt. 27, medical man under the care of Dr. Guthrie</p> <p><i>Diagnosis.</i>— Phthisis and tubercular laryngitis</p>	<p>Family history. One brother had necrosis of tarsus. Patient had influenza in Feb., 1890, followed by general bronchitis. Eustachian catarrh, and otitis media, with perforation of both tympana. Cough severe. Night sweats and wasting. Severe attacks of hæmoptysis in August and November, 1890, and acute laryngitis. Signs of early consolidation at left apex, noted after hæmoptysis</p>	<p>Anæmic. Weight 11 st. 4 lbs.; has been gaining lately. No hectic or night sweats. Constant paroxysmal cough with much expectoration. 3v-3x daily of frothy mucus containing little solid matter (bacilli found a few days later). Very deaf. Both tympanic membranes gone. Voice weak and hoarse. Cords much congested; do not meet on phonation. Superficial ulceration of posterior part of left vocal cord (Dr. Macdonald). At left apex dulness in Sup. Sc. F. and resonance diminished to 3rd rib in front and mid-scapula behind. Expansion deficient. Breath sounds weak. Inspiration clogged; expiration prolonged. Faintly bronchial in Sup. Sc. F. Faint moist râles over this area. Breath sounds somewhat harsh and expiration prolonged over right lung, but no accompaniments</p>	<p>·001; ·002'-003'-004''; 1·005'; 1·006'-008'-01''; 1·01'; 1·012; 1·015'; 1·02'; 1·02''; 1·02'; 1·02'; 1·025'; 1·03'; 2·04'; 1·05; 1·07'; 2·1'; 1·12; 1·15; 2·2''; 2·15'; 3·15'; 2·15'; 3·11'; 2·1'; 3·11'; 2·11; 4·12'; 1·1; 2·12; 3·12; 3·14'; 2·14; 3·12; 1·1; 4·1. Left as sur- geon on board a steamer to continue injections every 3 days or oftener if possible</p>
51	<p>Mrs. F., æt. 29, under the care of Dr. Guthrie, went home on Jan. 29th, 1891</p> <p><i>Diagnosis.</i>— Phthisis</p>	<p>Symptoms of phthisis for 2 years. Tuberculosis on mother's side. 4½ years ago, laryngitis (aphonia) congestion of vocal cords). 3 years ago, abscess in great toe; right metatarso-phalangeal joint. 16 months ago, dry pleurisy left apex. 12 months ago, wasting, and cough. Yellow lumpy phlegm. Never hæmoptysis. Profuse night sweats 9 months ago, cavity at left apex formed</p>	<p>Complains only of cough. Expectoration 3j-3ij daily, purulent nummulated. Contains bacilli about 5 to the field. No night sweats for last 6 months. No hectic. Spare and delicate looking. Finger tips clubbed. Slight œdema over shins. Weight 8 st. 4 lbs.; used to weigh 9 st. At left apex cavity size of Tangerine orange. Deficient expansion. Dulness from lower border of 2nd left rib in front to middle line of scapula. Tympanic resonance in first left space. "Cracked pot" sound. Amphoric breath sounds with moist râles at end of inspiration but not abundant. Loud whispering pectoriloquy all over dull area, and increased vocal resonance. Right chest. Harsh breath sounds at inner part of 2nd space, no accompaniments. Larynx.—Showed congestion (slight) of vocal cords. No ulceration. Heart.—Normal. Urine.—Normal</p>	<p>·002''; 1·002'-003'-004''; 1·005''-006'-008'; 1·01'; 1·01'; 1·01'-012'; ·015''- ·015''; 3·015''; 3·02''; 1·03'; 2·05'; 4·05''; 1·05'-065'; 1·08'; 2·1''; 5·08''; 3·08'; 1·08'; 1·1'. Went home on Jan. 29th to continue in- jections of ·1 twice a week. At the end of March she was advised to continue the in- jections and increase their frequency</p>



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Treatment commenced on Nov. 28th. Total number of injections up to March 9th = 40. Total amount of fluid used up to that date = 2·881 grms.</p>	<p>Cod-liver oil and hypophosphites</p>	<p>Note on February 6th.—“Considerable improvement. Weight fell from 11 st. 4 lbs. to 10 st. 11½ lbs. during first fortnight of injections. Present weight 11 st. 2 lbs. Much more colour in cheeks; general health good; a few bacilli still present in sputum. Amount of sputum varies from 1½ to 3 oz., and is very watery. <i>Chest</i>.—Resonance distinctly better below left clavicle; still impaired, but not absolutely dull in left Sup. Sc. F. Air entry good; expiration prolonged; a few crackling râles above clavicle and in Sup. Sc. F. <i>Larynx</i>.—Slight congestion. Ulcer on vocal cord not quite cicatrised”                      In the middle of March he wrote: “I feel perfectly strong, and except for a very occasional cough, hoarseness, and tendency to cold feet, am all right. No bacilli in sputum last week. Two examinations, and no dulness anywhere in the chest or back”  <i>Result</i>.—Improved, and improvement progressing</p>	<p>Reactions never severe, attended usually by increase of cough, and on two occasions by headache, gastric pain, and vomiting. Pain and tenderness over left side of larynx was complained of on December 22nd, and lasted a few days. Signs of slight dilatation of right bronchus were noted on Dec. 11th, with tenderness on percussion, and a few pleural frictions on 2nd right space. Pleurisy soon subsided. Neither voice nor hearing improved. Went home to continue injections at home on Feb 7th, 1891. Left in the middle of March as surgeon on board a vessel bound for the West Coast of Africa.</p>
<p>Commenced, Nov. 28th, 1890. Total number of injections up to end of March = about 44. Total amount of fluid used up to same date = about 2·707 grms.</p>	<p>Cod-liver oil and hypophosphites</p>	<p>On April 6th Dr. G. E. Williamson reports, “I examined Mrs. F. a week ago. Her general condition is much improved, she looks much stronger, eats and sleeps well. Her breathing on going uphill is also improved. The expectoration is about ½ oz. in the 24 hours, nummular and yellow. The chief local improvement in the lungs is the almost complete absence of moist sounds”  <i>Result</i>.—Improved, and improvement progressing</p>	<p>Reactions severe only on 2 occasions, after ‘015 and ‘1 respectively. Similar doses repeated caused no malaise. Signs of right apical catarrh and patch of consolidation under right scapula size of shilling appeared during 3rd week of inoculation and persisted. Signs of slight right apical pleurisy noted about same time, which soon disappeared. On Jan. 28th Dr. Guthrie reports, “Dulness slightly less at left apex below clavicle. Very few moist râles. No apparent change in size of cavity. Still a few moist crepitations at right apex, and small patch of consolidation beneath right scapula persisted. General condition highly satisfactory; gained 2 lbs. during inoculation period. Can walk 8 to 9 miles without fatigue. Expectoration less, 3j—3iiss per diem, still purulent and nummulated, and a few bacilli present.” On March 18th she wrote that the cough was very distinctly better.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
52	F. W. F., æt. 29, male, medical man, under the care of Dr. Frederick Taylor	No tubercular family history. In Oct., 1881, had an attack of hæmoptysis, lasting 3 days, but not profuse; no previous symptoms and no physical signs. Since then has had 6 attacks; the last 8 months ago. No physical signs discovered till last July, when patient developed somewhat acutely physical signs of tubercle at the left apex associated with much pyrexia. Was ill for 2 or 3 weeks, and then till November was pretty well, but had cough and expectoration. This became much worse in Nov., accompanied with loss of appetite, loss of flesh, had night sweats and much increased cough and expectoration	Nov. 29.—Pale and thin with much cough, and with tremor on exertion; expectoration of mucopus; night sweats; weight, 10 st. 12 oz. Examination of chest (with Dr. Goodhart). Slightly impaired movement under left clavicle; very slight impairment of resonance above clavicle, on clavicle and in first space; slightly deficient vesicular murmur, and increased expiratory murmur above clavicle. Crackling râles above clavicle, and below down to level of nipple. Behind the same râles from apex over scapula to midway between spine and lower angle (7 in. from 7th cervical spine). Slightly increased vocal resonance at left apex. Right side, apex healthy. Occasional sibilus below clavicle	·002''; 2·002''-002''-003''-004''-004'; 1·005''; 1·005''; 1·005''; 1·006'; 1·007''; 1·007''; 1·006'; 1·005''; 1·006'; 1·007''; 4·008''; 1·008'; 1·01'; 2·012'; 2·012'; 1(?)''; 4·01'; 1·012'; 1·014''; 3·012''; 3·012'; 1·015'; 3·02'; 2·025'; 1·035''; 1·035'; 3·04'; 5·03'; 1·04''; 1·04'; 2·04'; 1·045'; 2·05'; 1·045-05'-05''; 2·04'; 1·04; 1·04. To go on with injections every day or every second day, gradually raising the dose
53	E. R., æt. 9, female, P. G. C. H., admitted Dec. 5th, 1890, under the care of Dr. Herringham. Discharged to attend as out-patient on Jan. 24th, 1891	Tubercular family history. Wasting and cough for nearly 2 years. When first seen in Jan., 1890, she complained of cough and sweating at night, and there were signs of consolidation and breaking-down at right apex. This condition continued much the same till admission, her weight being 2 lbs. less than when first seen	A few enlarged glands in sub-submaxillary region. Slightly impaired resonance at both apices, with some crepitation on the left side. No sputum could be obtained for examination. No night sweats or diarrhœa. Other organs normal. Weight 3 st.	·002''; 1·002''; 1·003''; 1·004''; 2·004'; 1·005'; 1·007''; ·009''; 2·01; 1·015''; 1·02'; 2·03''; 1·03'; 2·04'; 1·05'; 1·05; 2·05'; 1·06'; 1·06; 2·06'; 1·06; 1·06; 2·06; 3·07; 2·07; 3·07; 2·07; 3·07; 2·07; 3·07; 1·07; 2·07; 1·07 (6 days' interval ·09 and ·1 once a week (4 subsequently)
54	E. M., æt. 8½, female, P. G. C. H., admitted Dec. 8th, 1890, under Dr. Sidney Phillips. Discharged Jan. 26th, 1891. Readmitted Mar. 11th	No phthisical family history. Subject to winter cough. Four months before admission, severe cough commenced with expectoration; loss of weight and night sweats	Enlarged glands in neck, various organs except lung healthy. Consolidation at base of right lung reaching as high as angle of scapula posteriorly, and 3rd rib anteriorly, with bronchial breathing and fine and coarse crepitations. No sputum could be got for examination. Night sweats not marked. Weight 2 st. 8 lbs. Temperature normal	·001''; 1·001'; 1·002''; 4·002''; 1·002; 1·004''; 1·004'; 1·005''; 1·005; 1·006; 2·008; 1·01; 2·015; 1·02; 1·025; 2·03'; 1·035'; 1·04; 2·05'; 1·06; 1·6. Sent to convalescent home, and had ·06 twice a week. After readmission of March 11th (·06, ·07)-1''-1'-15; 1·2/-25''; 1·3'; 1·3'-3'-35; (1·3, 3)-3; (2·3, 3)-3'-3'-3'; 3; 3



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Dec. 1st, 1891. Total number of injections up to March 21st, 1891 = 46. Total amount of fluid used up to that date = about 9 grms.</p>	<p>None</p>	<p>March 21, 1891 (interval of 16 weeks). Feels and looks much better than in November. Has very little cough, practically no expectoration. Sleeps fairly well and rarely sweats at night (did so on 15th, but only slightly). Appetite good. Weight, 10st. 3½lb. Examination of chest:—Left side, impairment of resonance scarcely to be noticed; breath sounds deficient; crackling râles above clavicle, and less marked down to nipple level, but as compared with state on Nov. 29th have cleared up over costal cartilages (inner half of area); whisper audible above clavicle. Behind left side, râles from apex down to nearly same point as on Nov. 29th, i.e., 6in. from 7th spine, but confined to inner half. Right side, breathing supplementary above and below clavicle; no râles. Increased vocal resonance and audible whisper above cavicle</p>	<p>The first reactions were somewhat severe, but there was no evident increase in the pulmonary signs. On Jan. 16th I injected by mistake a decigramme instead of a centigramme which I had intended. I at once incised the swelling and also injected some absolute alcohol to precipitate the tuberculine, and thus no doubt a good deal of the fluid was got rid of; the subsequent reaction was about as severe as the first reaction. On March 13th, after a second dose of '05, the patient had also a pretty severe reaction, apparently a cumulative effect; the only instance of the kind which I have observed at such a late period in a case. This patient also went on reacting much longer than any other that I have had, as shown by the fact that after 46 injections I had only got up to 4 centigrammes. He left on March 23rd as surgeon on board a vessel bound for the Cape of Good Hope to continue the treatment for some months.</p>
<p>Commenced Dec. 9th, 1890. Number of injections up to April 8th, 1891 = 38. Total amount of fluid used up to that date = 1'881</p>	<p>None</p>	<p>On April 6th Dr. Herringham notes: "The local condition is, I think, exactly the same as when the treatment was begun; the general health is rather improved." Condition of glands about the same</p>	<p>No noticeable increase in the lung symptoms occurred after the first injections. Improvement noticed at the end of December, and when sent home the improvement was very marked, the percussion note at left apex being normal and no crepitations present. At right apex a few râles were occasionally heard on deep inspiration, and there also the percussion note was normal.</p>
<p>Commenced December 9th. Total number of injections up to April 8th = 54. Total amount of fluid used up to same date = 6'459 grms.</p>	<p>Sent to convalescent home on Jan. 26th</p>	<p>Note on April 6th.—"Her present condition is the same as on Jan. 26th. No general symptoms, and patient is apparently in good health. Glands <i>in statu quo</i>"</p>	<p>Nothing to note about the reactions. During the course of the treatment the crepitations diminished considerably, and the consolidation became much less marked with the exception of the base of the lung anteriorly. When sent to the convalescent home on Jan. 26th the condition was as above, there being left only a small area of dulness around and below the right nipple with occasional crepitations. Very slight cough. No night sweats when in hospital. At the home the disease seemed to relapse somewhat, and she was therefore readmitted and the treatment pushed. Since that was done improvement has again taken place. The weights were on Feb. 8th, 2 st. 8 lbs.; Feb. 16th, 2 st. 11½ lbs.; Feb. 28th, 2 st. 11 lbs.; Jan. 9th, 2 st. 11½ lbs.; Jan. 17th, 2 st. 11½ lbs.; Jan. 26th, 2 st. 12½ lbs.; March 22nd, 2 st. 13 lbs.</p>



No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
55	J. H. S., æt. 30, medical man, under the care of Dr. Leslie Ogilvie  <i>Diagnosis,—</i> Phthisis	No history of phthisis in the family. Been active and well till about the beginning of December, when he felt tired and overworked. Had hæmoptysis on Dec 30th, which continued for about a week. Bacilli tuberculosis found in sputum about Jan 4th in large numbers	<i>Personal appearance.</i> —General nutrition and muscular development deficient. Thin face; high cheek bones. Clear delicate complexion with slight hectic flush. <i>Symptoms.</i> —Debility. Short cough with mucous expectoration, though not abundant, and containing numerous tubercle bacilli. <i>Physical signs.</i> —Flat chest, deficient expansion of right apex. Percussion note fairly resonant. Inspiratory murmur feeble. No crepitations heard. Vocal resonance and fremitus normal. Fauces congested. Larynx normal. Pulse 80, regular and full. Evening elevation of temperature (about 100° F.) Weight on Jan 12th = 8 st. 9 lbs.	.002"; 2.002'-.003"; 1.003"; 1.003"; 1.003'; 1.004'; 1.005'; 1.007'; 1.008'; 1.01"; 1.01; 1.015'; .02"; 1.025'; 1.04'; 2.05'; 1.06'; 1.07'; 1.08; 1.09; 1.1; 1.1. Went home, 1 to be injected every other day for a time, and then every day

Thus there were nine cases of phthisis, of which two were hopeless from the first (Nos. 47 and 49), and in which no change was noted in the lungs during the short injection period. Of the remaining seven cases all improved in general condition, some of them very markedly so; as



Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Injections commenced on Jan. 14th, 1891. Total number of injections up to April 8th = about 38. Total amount of fluid used up to that date = about 2.21 grms.</p>	<p>None.</p>	<p>At the commencement of March it is noted.—                      “General appearance improved. No cough or expectoration. No crepitations heard. Respiratory sounds normal. A gland on the left side of the neck, which became prominent during the treatment, is smaller, but is still enlarged slightly. No bacilli when sputum last obtained for examination. Pains which were felt after each injection in the left knee and elbow are no longer noticed. Weight on 28th of Feb. = 8 st. 13 lbs.”                      In a note on March 14th he says that expectoration has now entirely ceased, and that his weight was 9 st.; and on March 30th he writes that his lungs were examined 2 days previously and that nothing abnormal could be detected. His weight was then 9 st. 1½ lbs., and he felt better able to bear fatigue                      Result.—Improved, and improvement continuing</p>	<p>Nothing special to note about the reactions. After two injections, auscultation disclosed crepitation and harsh inspiration over an area between 2nd and 4th ribs in front towards axillary border on right side. This continued for about 10 days. Complained a good deal of pain in left knee and elbow after the early injections. Patient went home at the beginning of March and resumed his practice.</p>

regards local condition in one (No. 53), it is said to be the same as at first, while in the others there has been improvement, varying from “slight” to “very remarkable.” To these we must add No. 24 (improved) and No. 42 (*in statu quo*).



## VIII.—INJECTIONS IN NON-TUBERCULAR OR DOUBTFUL interesting, and may

No.	Name, age, sex, &c.	History.	Condition before injection.	Frequency and amount of injections.
56	S. M., æt. 54, female, K. C. H., admitted Dec. 9th, 1890  <i>Diagnosis.</i> — Anæsthetic leprosy	Born in Germany. Was a nurse in Calcutta for 27 years, and had cases of leprosy under her care. Came to England 10 years ago. The disease began in 1880 with pain and stiffness in joints and a macular rash over abdomen; shooting pains in limbs. Shortly afterwards the body was covered with dark red raised painless blotches, first noticed about the head, each lasting for a year to a year and a half. In 1881 hands and feet swelled, pieces of bone came from ends of fingers and toes, and nails dropped off. At the same time she complained of numbness and feeling of weight in limbs. Deformity of the fingers has come on since, but for the last 7 years the disease has been practically quiescent. In September last first complained of photophobia, lachrymation and pain in the right eye	Internal organs apparently healthy. Anæsthesia not complete anywhere, but sensation is very imperfect as high as the middle of the legs and forearms, and somewhat impaired higher up. Pain on pressure on calves especially on right side, no definite enlargement of nerves; possibly the right ulnar behind the internal condyle is a little thicker than the left. Fingers flexed into palm; cannot be extended; cannot oppose thumb. No anæsthetic patches over body	·01''' ; ·01'' ; 2·01'''' ; 3·005''' ; 2·002' ; 3·004' ; 5·004' ; 1·005' ; 1·006 ; 2·008-01 ; 3·012 ; 1·015 ; 1·015 ; 2·02 ; 3·03 ; 2·05 ; 1·06 ; 1·08 ; 2·1 ; 1·1-1 ; 2·1 ; 1·1 ; 2·1. In- jections discontinued

57. E. S., æt. 23, female, was admitted on account of a little pain in her knee. This disappeared in a few days with massage. A centigramme was injected, and to our surprise there was considerable general reaction, the temperature reaching  $103\cdot4^{\circ}$  27 hours after the injection. There was no reaction in the knee at all, but the patient showed us 2 scars on the right arm which had resulted from chronic abscesses and which had reacted. She told us that they were not quite well before the injection, but they gave her no trouble, and she had forgotten to mention them.

58. A student at the hospital with a sinus on trochanter, not supposed to be tubercular. 1 centigramme produced no effect.

59. A. F., a woman with an undoubted rheumatic knee, did not react to 1 centigramme.

60. J. D., æt. 31. A case of typical lupus erythematosus, did not react after 1 centigramme.

61. W. S., æt. 5. Post-nasal growths, did not react after 2, 4, and 6 milligrammes.

62. H. R., æt. 6. Post-nasal growths, did not react after 2 and 4 milligrammes.

63. J. F., æt. 15 months. Syphilitic epiphysitis of lower end of tibia, did not react after 2 milligrammes.

64. E. P., æt. 7. Inflammation of hip after acute rheumatism, did not react after 2, 4, and 8 milligrammes.

65. A case of syphilitic disease of the nose, palate, pharynx, &c., in a boy, did not react after 2 milligrammes, but after 1 centigramme there was a



CASES. (The first, a case of leprosy, is very  
 e given in detail.)

Total number, amount, &c., of injections.	Additional treatment.	Condition when last seen.	Notes.
<p>Commenced Dec. 10th, 1890. Discontinued on Feb. 18th, 1891. Length of treatment = 70 days. Total number of injections = 27. Total amount of fluid used = 1.156 grms.</p>	<p>None</p> <p>Union Infirmary, dated April 4th, 1891.—“She states that before she was injected she suffered with pains in the extremities every month, lasting from 4 to 5 days. These pains have not since reappeared. The anæsthesia of the arms existed up to the junction of the middle and upper third of the radius whereas it now does not reach higher than about the middle of the metacarpal bones; about the same may be said of the lower extremities. She has increased in weight and this cannot be attributed to any extra diet. She complains that she has not been able to get her breath so well since the injections; she has had one or two slight fainting fits. On the whole I am of opinion that she has greatly improved, and the patient herself attaches great importance to the relief of the periodic pains”</p> <p><i>Result.</i>—Improvement in some respects</p>	<p>Report from Dr. Walter C. S. Burney, Superintendent of the Greenwich Union Infirmary, dated April 4th, 1891.—“She states that before she was injected she suffered with pains in the extremities every month, lasting from 4 to 5 days. These pains have not since reappeared. The anæsthesia of the arms existed up to the junction of the middle and upper third of the radius whereas it now does not reach higher than about the middle of the metacarpal bones; about the same may be said of the lower extremities. She has increased in weight and this cannot be attributed to any extra diet. She complains that she has not been able to get her breath so well since the injections; she has had one or two slight fainting fits. On the whole I am of opinion that she has greatly improved, and the patient herself attaches great importance to the relief of the periodic pains”</p>	<p>The first reaction was severe, the chief symptoms being rigor, vomiting and oppression of breathing. There were shooting pains in arms and legs, a large vesicle formed on the inner side of the left great toe, and there was swelling of the left fore and middle finger. Next day a macular rash in the form of a line was seen on the lower folds of the mammæ meeting in the centre. Another line across the upper part of the abdomen and a semi-circular patch below and on the right of the ensiform cartilage. There was also another line at the posterior edge of the right buttock. After the 3rd injection the patient was collapsed in the evening, when the temperature 6 hours after the injection was 97°, pulse 44 and respirations 40 and very shallow. The symptoms subsided as the temperature rose; the highest temperature was 103°. Fresh bullæ appeared on the left leg and on the right heel and ankle. There was no further trouble, the rash faded between each injection and came out again during the reactions; it had not entirely disappeared when she left the hospital. After the 16th injection patient asserted that she could open her hand better than before the treatment and that she herself felt better; the anæsthesia was somewhat less marked. When she left the hospital she still asserted that she was better in these respects.</p>

general febrile reaction (temperature above 102°) but no local reaction whatever.

66. A. B., female, æt. 49, was admitted with a scar at the left angle of the mouth with several ulcerating patches on it. Patient had suffered from ulceration here for 23 years, and a great variety of diagnoses have been made, among others that of lupus. It seemed most probably a case of rodent ulcer, but a series of injections were given commencing with .002 grammes. She had general febrile reactions, not severe, after the first six injections, but we never could satisfy ourselves as to any local reaction. Not the slightest alteration occurred in the disease during treatment.

67. Mrs. W., a nurse under the care of Dr. Greville MacDonald with masses of soft tissue in both nostrils, as to the nature of which many diverse opinions have been expressed by those who have made clinical or microscopical examinations, some thinking that it must be some form of tubercular disease. In her case a number of injections were given, beginning with .002 and going as high as .3, and towards the end of the treatment the part was scraped from time to time. There were distinct febrile reactions from the first, and the patient said that there was increase in the nasal discharge, but the local reaction was never very definite. Whether the improvement which followed the treatment was entirely due to the scraping, or to it and the tuberculine combined, and whether the disease was tubercular or not, are points which are not yet clear. For my own part I have always been sceptical of its tubercular nature, and I cannot find any evidence of tubercle in the portions which I have examined microscopically.

---

PRINTED BY ADLARD AND SON, BARTHOLOMEW CLOSE.

---