Thesis.

The History and Medical and Surgical Treatment of a Case of Actinomycosis
Commencing in the Appendix Verminiformis

By

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As evidence wherever in Clinical History or post-mortem Examination that the disease began or was related to the vermiform appendix see pp. 1-23, and specimen sent with thesis.
I have selected the above subject for a thesis, both on account of the rarity of reported cases in the Hemipodium Appendice, in regard to many points of interest in the progress and treatment of the disease, and also, by reason of certain exceptional conditions revealed by the Post Mortem Examination.

The patient, a publisher, aged thirty, medium height, and wiry, was seized with an attack of Appendicitis on February 20th, 1894.

His family history was good. His previous history is important, as showing how extremely insidious and silent, during a long period, the symptoms of the disease may be; till, in fact, the malady may attain an advanced stage before it gives any demonstrable evidence of its existence. Nor, is it always an easy matter, to find the Acinomyotic Fracture Case above.

About the beginning of 1893, the patient suffered from a seizure of twisting pain over the abdomen.
generally, accompanied by sickness, and causing him to roll on the floor in agony. As the attack went off, the pain became localized in the right iliac region, and its direction was straight through to the back. It lasted about an hour, and disappeared under the effects of Chlorodyne and hot applications. His breath had a very offensive smell. He resumed business as usual, after the attack subsided.

There was a similar seizure, four or five months later, which lasted for a somewhat longer time.

About the end of September 1893, he had a still more definite attack, and the pain was localized in the right iliac region, from the commencement.

This was the first time he consulted me, and, on examination, there was no evidence to prove disease in or about the Appendix. The seizure lasted about three hours, and, after it had ceased, there remained no tenderness on pressure. His breath had the same offensive smell. His temperature was normal. The pulse was tested on two or three occasions, and no sign of disease
was present.

The definite attack of Appendicitis which commenced with sickness, vomiting, and some diarrhea, on February 20th, 1894, was preceded by a short illness during which the patient could not put his right foot flat on the ground, without pain, and throughout the previous year, he had lost flesh slowly, and had become more and more irritable, and apathetic. There was considerable tenderness in the right iliac region (i.e., on February 20th) and the right leg was drawn up, but he could straighten it, although it was painful. There was no swelling to be detected by palpation, and no dulness on percussion. The disease ran a usual course, and, apparently, lyed, satisfactorily, for a little while, he went to Bournemouth, and appeared to be quite convalescent. He was able to take long walks, without limping, and he gained flesh.

The next attack was preceded by a return of the limping, and inability to put the right foot flat on the ground; he felt ill, and his presence had the same offensive smell as before mentioned.
On May 3rd, symptoms, similar to those detailed in existing on Feb 20th, developed, but they were much more aggravated. There was great tenderness in the right iliac region, especially over the vermiform appendix. The right leg was drawn up, and he could not straighten it. His temperature ranged about 103°F at night, and 102°F in the morning, as a rule. There was a distinct hard mass to be felt in the right iliac region, and it extended up as far as the antero-inferior extremity of the eleventh rib, and down, in a somewhat promiscuous line, to about the middle of the iliacus ligament. He had pyrexia and profuse perspiration at night, and there was a feeling of throbbing in the lump. Those in attendance were directed to watch for matter in the stools, as the case seemed to be one of appendicitis and inflammatory deposit, going on to suppuration.

One night, the patient felt something give way, and next day, there was a quantity of pus and fibrin strings hanging in the motion, but I did not see any purulent lodges. The abscess filled and dis-charged several times, and he got thinner, the temperature remaining high, and profuse...
On June 4th, I discovered a swelling, posteriorly over the lumbar annules. It was hard but acquired a more "baggy" feeling in a few days. It did not fluctuate distinctly.

On June 7th, Mr. A. J. Godlee saw the patient, and decided to open the swelling and establish free drainage, so on June 8th this was done. A great quantity of pus and brain-like matter was evacuated, and the cavity of the abscess after being dressed, was drained by a large tyde. There was very little bleeding. The wound was dressed with Andermatt gauze and wool. It was septic.

The kidney was examined, through the wound and a careful search was made for any foreign body. Mr. Godlee remarked that, on the previous day, he had removed a stone from an abscess cavity, with external appearances very similar to this one.

When Mr. Godlee visited the patient on June 11th, a number of granular bodies were seen in the discharge, and they corresponded in appearance to what he had seen in a case of actinomyces.
treated by him, and Dr. Douglas Ponselli. 1868. Microscopically examined, the
fungus exhibited all the characters of the Ray fungus. Sent some piece to
Dr. James Gallon, for examination.
As there was extensive burrowing
amongst the borders muscles, and also in
front, and the deposit was very large, a
complete eradication of the disease, by
operation, could not be carried out.
The wound was rinsed with a solution
of Tincture of Iodine in water (1 in 50), and
dressed as often as was necessary.
Sir Wm. MacLarenae, also saw the patient
about this time, and it was arranged
that five grain doses of Iodide of Potassium
should be given three times a day, well
diluted. After food, the doses to be
increased as circumstances permitted.
The swelling in front, gradually bulged
more, and began to assume a feeling of
elasticity, and indistinct fluctuation.
It was decided that it should be opened
and the plan proposed was to establish
a free communication between the two
abscesses, and to carry on a more or less
continuous irrigation right through. By
this means, we hoped to get applications
directly in contact with as large a surface of the diseased as possible. Abcesses were threatening in the last week of July, 1840, and ordered to be opened and its effect was admirable.

On August 1st, an incision was made by Mr. Padlee, about an inch and a half above, and parallel to Pons parts' ligament, and two inches in length. A great quantity of pus and very fetid material was evacuated. When the attempt was made, by the finger, to establish a communication between the anterior and posterior abscess cavities, blood welled out of the anterior wound to such an extent that the part of the operation had to be abandoned at once. The patient was very livid and collapsed. The haemorrhage came from the very vascular inflammatory deposit, and as it was impossible to detect any vessel, the cavity was plugged with strips of hornie lint, the ends being left outside the wound. Pads of the same material were placed over the plugs, and a tight bandage over these completely stopped the bleeding. It was decided, also, to increase the doses of the iodide of potassium, as soon as the patient had
palpable sufficiently, from the severe collapse.

The following is a more detailed description
of the case in its clinical aspects and
some especially bearing on the action of
the iodides, and the local applications.

Pulse thread, 120 per minute, but getting
stronger. Much less discharge from the
posterior wound. A small quantity of
injectin trickles through the anterior
wound, after brushing through the posterior
opening, for twice and, especially on the
domestic healing raised. Two plies relieved.

Strength gaining. Pulse 115 per minute, takes
food well. Plugs all removed from the
abscess cavity in front, without hemorrhage
occurring. A considerable amount of solid
fungus washed out by the Iodin Solution
Iodoform emulsion poured into the cavity
in front.

Pulse 115, and week. Less matter from
both wounds, and very little smell.
Granules still in number. No evidence of
implantation of any other organs. Iodoform
Emulsion again poured into the cavity in front.

Pulse 115. Discharge much the same, but
true pus a large quantity of granules of
various sizes, showing the character of
the fungus very well, under the microscope.
The pus has acquired a peculiar, old, infected smell, the previous fetid odor having entirely disappeared. There is a pain of strength, but the loss of flesh goes on slowly and steadily.

Pulse 110. Tendency to leaching of matter over the upper part of the pectoral right. Sweats continue. Patient is restless and irritable. No delirium. A good deal of discharge. A small quantity of blood came from the posterior wound.

Pulse 110. The first dose of Jodide of Potassium (20%) given at 8:30 AM, after breakfast, and well diluted. Temperature at midnight normal, and pulse stronger. No inotropic symptoms; medicine repeated twice during the day. In the evening, the discharge became profuse and acrid; I soaked through the dressing over the posterior wound, especially. The granular bodies when examined microscopically could be more easily scattered, by pressure on the cover glass. Cells well seen, but more hyaline in appearance.

Pulse about 115. Patient complains of some throbbing in the forehead, right arm, occasional accessory flow of caliche, loss of appetite. Still very marked thinning of discharge.
Granules disintegrated in numbers. They are smaller and more pale, but there are still some, so large as the first observed. The wounds have to be dressed several times during the day and night.

Aug. 12th.

Pulse 110. Appetite good & symptoms of 'Indian' gone. Serum discharge is less, but still abundant. The disintegration, diminished number of the granules is marked. There are fewer clots, those present being clearer in appearance.

Aug. 13th.
Pulse 105 - weaker, and of little power. Still less discharge; few granules; few clots. Mr. Judlee visited the patient, and noted an improvement in his general condition, and also the diminished number and size of the granules, their disintegration, the thin discharge, and the small number of clots.

Pulse plumper, and strength gained. Much less discharge, still serous. Wound dressed once a day. It now, fluctuating swelling to the felt, a little in front of the posterior wound. Some pus again, part to Dr. Stallonay.

Aug. 16th. - 17th.
Less heated fever & less sweating at night. A drop of iodide of potassium solution had a definite effect, in assisting...
Away the few clubs that were seen.
Dr. Galloway wrote: "This specimen shows very few club-shaped bodies, whereas the club-shaped forms were characteristics of the first specimen. Dr. Hewlett made cultivation inagar, at the Bacteriological Laboratory at Knip College, but without result, the rapidly growing Strepto cocci present, smothering the more slowly growing Actinomycetes."

Aug. 17th: Strength maintained; few granules. Being temperature rose to 102° F. He had excitement during the day.

Aug. 18th: Temperature 99° F. The swelling noticed on the 15th has communicated with the posterior wound. There is much more green discharge.

Aug. 19th: Appetite good; severe gastrointestinal symptoms (dizziness, vomiting). Period of Potassium stopped, 3 for the time being.

Aug. 23rd: Less gastrointestinal irritation. Discharge much thicker but less in amount.

Aug. 22nd: General condition improved. There are some granulations at the posterior wound, but they are soft and pale.

Aug. 24th - 29th: Pulse better; granules more numerous and show less and less signs of disintegration. They are more gelatinous and exhibit a very
Characteristic appearance, under the micro-

pepe.

Gastrointestinal symptoms have ceased. It seems improved. Some matter bagging is a line between the anterior & posterior wounds, down the ileum crest, and the skin is getting red over the swelling.

Isodide of Potassium prepared in the same does as before; no gastric irritation: discharge quite free; at night.

Isodide leaves well; granules becoming disintegrated.

Sept. 2nd.

Appetite not so good: patient appears thinner. A considerable amount of matter that was discovered bagging, on Aug. 31st., is escaping through the posterior wound. There are few granules: patient becomes livid at times.

Sept. 5th-10th.

Slightly weaker. Extensive fluctuation exists over the upper part of the sacrum, on its right side, and the skin is red at points. The granules discharged are small, may be broken up, they are more pale, yellow few clots. The Isodide is leaving well.

Sept. 11th.

Cocaine was painted over the fluctuating area, above mentioned, and I made an incision into the swelling. A large quantity of pus was evacuated, which, on
Standing, solidified into a mass of soft, brownish-like material. The patient bore this operation better, than when an anaesthetic was given, and there was little pain. There was some bleeding which was readily controlled by pinching with forceps bluntly. Very little discharge from the abscess found yesterday. The water-bid by its equal and constant pressure keeping the cavity open at its walls opposed. A lump appears in Stenon's triangle, over the portion of the right Pecos muscle.

Sept. 13th-14th.

Small area of fluctuation exists in the swelling in Stenon's triangle. Gripping pains in the throat and lumps occur. These are relieved by powders of Salol in four grain doses.

Granules few and small, and peculiarly clubbed seen.

Sept. 15th.

Sir Wm. Macfarlance notes an improvement in the patient's condition, and remarks upon the alteration in the quantity, and consistence of the granules, the thinness of the discharge, the paler colour of the granules (due to diminished density of the "granules") and the disappearance of the clubs. By this time, there is considerable diminution in the inflammatory deposit round the anterior abscess.
Spasms, and severe sickness, & diarrhoea set in, at night, and the soda of Potassium had to be left off. A mixture of salicylic acid & hydroquinone was given, every four hours.

Sickness, diarrhoea, & spasmodic pain relieved. Granules gradually, resuming their characteristic appearance.

Sept. 25th: Pulse has lately been about ninety per minute, & is of better power now.

Sept. 26th: Called on Dr. Murray in Edinburgh. The granules, on examination, show the characters of the fungus, very well. The colonies are all young.

From this date to November 6th, I was absent.

On my return, Dr. J. J. Hemming, who had charge of the case, and watched its progress carefully, gave me full particulars of his observations, and the treatment decided on, from time to time, by Mr. Forbes, Sir John Wedderburn, and myself.

The disease pursued a monotonous course. The patient became intolerant of the soda of Potassium, so the soda of Soda was substituted; but on account of increased irritability of the gastro-intestinal tract, he could never take more than 36 grains per day. Sometimes when he could not take the drug, three times a day, a dose
and a half was given twice a day. Retained,
but it was, always, preferred to give three
doses, 'par diem', so as to keep the trozos, one
continually, saturated with the

drug.

Mr. Heming remarked changes similar
to those I have mentioned, both in the
discharge and in the morphology of the fungus.
About the beginning of November, there
were two fresh, fluctuating swellings, post-
eriorly, on the right side and higher than
the first wound, but they disappeared
in a few days. The Post Mortem examination
showed that the contents had been
reduced into the large abscess cavity in
front of the spinal column, and from
this there was free exit by the posterior
wound. There was no suppuration, nor con-
traction found any of the abscesses except
the first two and the one in Sempauer triangle
and this latter, for some time, very much re-
sembled a discharging pneumonous abscess.
All the collections of matter throughout, were
found to be in communication with the
abscess in front of the spinal column.
In November, first, through the eighth, he
suffered from a convulsive seizure, follow-
ed by a short period of unconsciousness.
He had no recollection of the attack. The symptoms were general. They began in the legs and gradually spread upwards, and affected the muscles generally in the body, limbs, and face. His eyes were fixed.

When I saw the patient, on November 7th, I noticed that he had jaundiced somewhat, in strength. His pulse was better, and there was not much discharge from any of the wounds. His appetite was good. The homoeopaths were cheerful and hopeful. There was no evidence of impaction of other organs.

Sir Wm. Forbes & Dr. Potter came to see the patient, three times, during the previous six weeks.

The case from this time to the finish showed a slow progress to a fatal issue, with the exception of a marked time of remission.

There was a certain pain in the flesh and in the strength, which made us hopeful that the disease might be gradually checked and that then, the patient would be able to fight, successfully, with the abscesses and general debility that remained.

The period I refer to, during which his temperature remained about normal, and during which there was little discharge, and no fresh abscesses, of the granulæ...
That existed were small and few in number, was from about the middle of November to the eighth of December.

His condition on Dec. 5th was, briefly, as follows:
The inflammation depot from the anterior wound was appreciably less, softer, and it pitted on pressure. There was little discharge and the wounds had closed up to a considerable extent. The abscess over the iliac crest had closed, and so had the one in Sanger's triangle but some induration and deep琦 reduces persisted round it. The wound over the upper part of the pannus had nearly closed. The granulations about the anterior and posterior wounds had almost disappeared. There was no sign of fresh abscesses or of further complications. His pulse was right, soft, and good.

He was able to straighten his right leg better. There was an absence of discomfort and pain.
The iodide of silver, before the middle of November, by reason of gastrointestinal irritation. We resolved to use iodide of starch, next time, as it is known to be tolerated at times, when the other drops cannot be borne.

On December fifth, two dramum doses of iodide of starch were commenced. The first dose was given in the morning after breakfast, and the second, in the evening,
Dec. 10-11th.

in their arrowroot. The greater part of the mixture was kept down; but in a day or two, it had to be spitted up, as he could not retain it. He had convulsive seizures about once a week, similar to the one described above. On Dec. 10th, Belcher, there was a succession of spasmodic attacks. Morphine was injected, hypodermically, and he became very violent, but fifteen grains of Chloroform stopped the spasm very quickly, and induced sleep.

On December fifteenth, the twitching had abated, and there was no sickness. The glands, again, showed a characteristic appearance as recommenced the intake of sodium mixture. It was retained.

Also, for the first time, injected Spirits of wine and water (one in three) through the posterior wound which he was under the influence of Chloroform. By raising the double the spirit was first forced into the large abscess cavity in front of the spinal column, and, after filling it, the injection trickled out of the other openings.

Discharge was purgative, serum at first; but became more spinal, rapidly. Granules disintegrated, and much paler in colour. Few stools. Bowels loose.
The inflammatory deposit, anteriorly, is appreciably lessening. Spots near feet, and water (one in three) injected daily, the patient being under the influence of Chloral, and insensible to pain. Soda of Sodium continued.

Dec. 20th-31st.

Some muscular spasm. He eats well. Fragments clear. Small, very rapidly dispersed on pressure. Very few clots. Scarcely any yellows tint in the fragments. He wanders, at times, and has become very thin, discharge becoming more thickly, purulent, and profuse.

For sleeplessness the pains of Chloral is insufficient. Spirit injection continued.

Jan. 2nd 1845.

艰难 and sickness so severe that the Iodide of Sodium mixture has to be left off. The discharge is in the form of thick matter, and in lumps. It has a brown colour, and a Jason odour. The margin of the deposit is front, is now, hardly to be felt. The granules are few, and small, and exhibit very few clots.

Jan. 3rd 8th.

The discharge is very factitious, and in great quantity. The abscesses, and open lumina, can be freely washed out, being effectively cleaned by the Spirit, and water. The convulsion seizures are very slight and infrequent, and Chloral is given, only occasionally, for sleeplessness.
Jan 10th

He gets very weak. The spirit injection has to be stopped, as he cannot bear it without the Chloral. It has been used since Dec 15th.

Inject of Juntas and water commence.

Still a great amount of foetid. brown discharge. The dressing have to be changed frequently, and the wounds washed out as often as he can stand it. There is no deposit to be felt in front. He has no sense of sleep, at times, especially if the head is raised a little. When he attempts to hold anything for a short time, his hand shakes. If he takes his food, his jaws soon get tired, and his teeth clatter. These symptoms continue for a few minutes, till the muscles repair power. This has been noticed for sometime.

Some move matter leaving over the faeces, but it discharged into the large abscess cavity. There are several, very connate, convulsive sympoms. Intellect clear. Ophthalmoscopic examination of the eye revealed nothing abnormal, excepting an anaemic condition of the fundus.

Severe hiccough and nausea present.

Ice sucked relieved the hiccough and nausea. Aphthous patches appear over the throat and one part of the roof of the mouth. Eoceneine & boric applied
Locally, and Salol in fine grain doses, given three times a day. The dose of Sodium is discontinued, still.

Discharge much less and not so purulent. There are a few red points to be seen in a line between the anterior & posterior wounds, and one or two near the nasal wound. They are in the exact line of the siiuses.

February 1st-2nd

Appetite better; throat, & mouth clear. He is very irritable and argumentative. A portion of the cicatrix by which the posterior wound is partly closed, has sloughed out. The sinus is smooth and glazed and there are no protrulations at any of the openings.

We are in a state of semi-shock. No twitching. A little pus with characteristic granules in it, can be squeezed out of the anterior wound: a pad of cotton wool soaked in spirit is applied over the opening. Very little discharge. Pulse better. He eats well. There is little diarhoea or pictures since the dose of Sodium was left off. Spirit applied, as yesterday.

No pus, nor granules can be squeezed out of the anterior wound. His disposition is changed, and he is carving his
temperature has been nearly normal, for several days, sometimes subnormal. He takes ten grains of Chloral for sleeplessness. There is little discharge. It has a fecal odor. No twitchings. He is very feeble in body and mind. He has delusions. Complains of great irritation in the feet. Feels siddy. The temperature at times is still subnormal. These conditions are probably due, in a great measure, to the continued use of the Chloral, but he has become as extremely emaciated and weak that the symptoms may result from sheer want of power.

Feb. 17th

Oedema of the feet appears. The urine is normal. Pulsed very feeble.

The condition of excessive feebleness continued till February 23rd, when the end came. During the last few days of life, the discharge had almost stopped. He was in an insensibly recidable state, the day before his death. He passed away, quietly, in a state of stupor.
The following notes I took at the examination of the body, made fifty hours after death. The section was made by Dr. James Gallaway, Pathologist to the First Union Hospital, and Director of the Clinical Research Association, &c.

Body extremely emaciated. Decomposition considerably advanced. Both knees flexed; the right leg more firmly fixed. No fluid in the peritoneal cavity. The bowel only and matter had been entirely extraperitoneal.

In the region of the Cæcum, there is a mass of adhesion behind, stretching up and descending behind the ascending colon. The left side of the abdomen is free of disease.

The opening of the Appendix沟通into the Cæcum is completely sealed up by old inflammatory material. Beyond this, there is distension of the Appendix, so as to form a cyst, about the size of a small cherry, bent rather longer, than broad. Beyond this cyst, which is found to contain only a small amount of fluid, mucous in character, is another part of the Appendix quite obliterated by inflammatory material. No casomas, nor peculiar material is to
lie seen, anywhere, suggestive of reticuamoysis.

The right pleural cavity is free from adhesion, except one small point, at the middle of the posterior margin of the lower lobe. About four ounces of decomposed serum is found in the pleural cavity.

The lung contains no abnormal structure.

The left pleural cavity is entirely free from adhesion, and abnormality, and so is the left lung.

The pectoral and other muscles are extremely attenuated.

The heart is washed; the pericardium normal.

Muscular structure anaemic: no sign of fatty degeneration to the naked eye.

Aortic valves: normal.

Mitral Value: normal.

Left Cavities: free of blood; and there is no sign of fatty degeneration to the naked eye.

Right Cavities: slightly bloodstained in their walls.

Palmar Values, and arteries normal.

Fingernails: normal.

Right Auricle: empty.

Weight of the heart much reduced.

Liver: free from adhesions on all sides.

Normal in size: there is no sign of fatty or washy change, or of secondary deposits.
Behind the Cæcum is a mass of adhesion, including the vermiform appendix, which is firm. The area of disease behind the Cæcum is quite free of peps huscens material. Thus remain only the softened walls of what had been an abscess cavity. Nothing can be found to demonstrate the Ray fungus.

Thus are two pinnae in the anterior abdominal wall, commencing with the abscess behind the Cæcum.

Large inflammatory area extends beneath the peritoneum, along the right borders of the umbilical vertebrae, up to the diaphragm. The bodies of the vertebrae are not affected.

The pelvic organs are free from disease.

From the degenerated, softened tissue behind the Cæcum, several pinnae lead to the wound, possibly there is slight superficial erosion of the periosteum horny about the right psoas line articulation.

The ilium otherwise, is not affected.

The Pubis is not affected.

The Right Psoas muscle is the seat of the abscess, and is devitipated. A narrow channel extends from it, down to the opening of the abscess in Scalps triangle.

An examination of the wound was not permitted. An account of explanation of the Courtaud's figures, is in the Appendix of the Case.
Wounds.

A. Anterior.

1. Incised by Dr. Godlee, a little above it toward the outer third of the posterior ligament, Cicatricex depressed. No granulation. Closed, entirely except a small opening, at its anterior end.

2. A little distance above 1. A small round opening discharging a few drops of thin fluid, in which there are no granules.

3. The wound in Scapula's triangle has been closed for some time.

B. Lateral.

Five distinct points indicating the previous position of a similar number of openings. They are in a direct line between the anterior and posterior wounds (A. W.).

C. Posterior.

The opening of the first abscess situated at the junction of the upper third, with the lower two-thirds of a line drawn from the highest part of the crest of the spine and the twelfth rib posteriorly, between the latissimus dorsi and spinal oblique muscles, piercing the lumbar fascia. The wound was closed all but a narrow channel, with a depressed opening leading into the large abscess cavity in front of the spine. Cicatricex closed the other part of the wound originally made.

b. A cicatricex situated over the upper spinal region (right side).

c. A cicatricex situated between A. and b.

d. A round opening above a. There was no discharge from it.
The history of the case is compiled from notes which were taken at the bedside, day by day, and represent the chief points of interest that were observed. The disease dragged out its weary course, which was at times set up by fitful streams of hope, yet these were never so strong or lasting, as to justify the belief that, although we had helped him to clear his course to a harbour, from which we had excluded the fire, if, where perchance he might recover the forces which had been destroyed in the fierce battle he had fought.

The morbid process, consisting in the formation of inflammatory patches and abscesses, as a result of the growth of the Actinomyces, a form of Malignant, in this instance (as is generally the case) passed through a long period, in which there was absence of prominent symptoms; in fact, extrachromy did it belie her its victim that it was present was disclosed, and external aid could be brought to the beleaguered, so many centres of attack had been formed, too many mines laid, that it was not possible to circumvent the invader.

The probable explanation of the repeated spasmodic attacks mentioned in the beginning of the paper is as follows: the patient was a strong, healthy man, and, at first, the disease was of very limited extent, and, although the inflammatory tissue formed
through the growth of the fungus presented a tolerable efficient lodging, it did not exterminate the malady. The centres then increased, and, the power of resistance in the host becoming impaired, the disease set full wing, and gave rise to continuous and progressive symptoms. Still, it is strange that, after the definite attack of Appendicitis in February, the patient felt well, gained flesh, and did a great deal of walking and travelling about, when at Bournemouth. But this seems to be the history of attacks in other cases. The Appendix vermiformis, being a hollow tube with a poor vascular supply, its less vitality is a place where the fungus would suffer little disturbance, when once it had landed. The Sigmoidic attack at the lee- jining, would, most probably, be caused by a temporary blocking of the opening of the tube, and the sudden stoppage of the viscous pain would be occasioned by the clearing of the channel, through the mechanical action of the sickness. Vomiting at this early stage, it was not possible to diagnose Appendicitis, but, in the absence of any sign of kidney affection, etc., it will be well to bear in mind, that such pulse spasmatic rigours may be the only
early warning of the disease is this pite.
Therefore, the discharges from the bowels ought,
always, if possible, to be examined. After
such symptoms, because, if the disease is di-
covered whilst it is limited to the vomitum
appendicitis, if removed will be, most probably,
safely accomplished.
The following points are worthy of due notice:
1. Sex: the disease occurs in males about three times more frequently.
2. Age: this (about 30) is a very usual period of life for the disease
to occur.
3. Habits and occupation: the patient, occupation, in one way,
drought him into contact with any animals, usually,
affected by the disease, but he had a constant habit
of chewing bits of straw, hay, or cereals, whenever
the opportunity arose. Although we were unable to
see any of these substances at the post mortem exam-
ination (and they were carefully looked for) I think
it probable that the fungus reached its first
point of attack by some such vehicle. The numerous
cases of Beger, and the results of Kaser's ob-
ervations point to this conclusion.
I may add that I wrote to my
friend, Dr. E. H. Jones, of Bournemouth
about this matter, and he told me that he
had heard of no case of Actinomyces
in his neighborhood.
Moreover, the chances are that, just protected
and supported, in some way, the fungus would have perished through the action of the sapric juice, and it is not surprising that we have possibly found any trace of a foreign body in the Septa, as the long continued discharge would, very probably, wash any such thing away.

There is no proof of direct injection occurring although the disease has been successfully inoculated by Professor Gooch's method. Neither is it proved that the infected flesh, or milks of animals suffering from the malady, can cause Atiomyces. Although Dr. Leitch, in his excellent paper, mentions a case of the disease in the udder of a cow, he comments that the site of the disease: D. J. D. Acland, who has just written the Article on Atiomyces in the "New Zealand Medicine," tells me that the affection occurs in the course of the Dephiotic track more frequently than in all other parts put together, and that he can call to mind several cases commencing in, or round the Vermiform Appendix.

As to the naked eye, and microscopic appearances of the fungus, my observations coincide, to a very great extent, with a most accurate and elaborate description of the Organism, in a paper by Prof. Sir T. F. Jenner, Student, and Dr. R. Muir, a copy of which Sir Muir kindly, gave me.
An abundant and characteristic arrangement of the clubs, during the periods when the Idiote were not given, was the chief point of difference. The first forms were very much larger than those found a month or two later, and latterly the heads were like small specks of sago. They were always brown, but seen by the naked eye, when the pea was spread on a slide, held against the light. The largest forms I saw, would be about the size of a number four host, and their color was sulphur-yellow. The smaller ones were more pale, some looked quite white and silvery. They adhered very closely, to the dressing, and to the edges of the wounds. They, too, could be picked off easily. Placed on a slide, in a drop of water of fixing, and the under a low cover glass, carefully pressed down, they exhibit a fine, granular, birefringent appearance, with a clouded border. With a moderately high power, the prosettes of clubs were seen, and also loose ones, of different sizes, and some, at times, with a number of transverse markings. There was numerous color, for within filaments. The mycelium was in single threads, or dichotomously divided, and there were knobs at the ends of the filaments here and there. Round the colonies sometimes...
Closeup, sometimes at a small interval, were pus corpuscles, blood corpuscles, and bacteria. There were some detached clubs and pieces of mycelium. Gram's method of staining was found to demonstrate the condition best.

Cultivation of the fungus was tried by several experts at various times, but I did not hear that any of the attempts were successful.

Dr. Gallows and Dr. Hewlett, of the Bacteriological Laboratory at King College, tried cultivation in Yeast, Blood Serum, and gelatine, and attempts to separate the organism were made by plate cultures, but all were unsuccessful.

Treatment. The objects aimed at were:

1. To keep up the strength and resisting power of the patient by the best of nourishment and by suitable surroundings. Accordingly he was placed in a large, well ventilated room, commanding the view of a good garden, in which he took much interest. This assisted greatly, in distracting his attention from pain, depression, through many a weary day.

Except at the time he was treated for Syphilis, or when fast intestinal symptoms were prominent, he got all easily digested foods.
of it as could be reached, by incision, scraping, and also, by the local effects of various stimulants, and substances acting in the resolution of the deposit.

3. To attack the mallegra by internal remedies. In this we were encouraged by the fact that, being an organism of a high order, the actinomyces would be correspondingly more susceptible to the influence of drugs, and, on account of the credible testimony of reliable witnesses as to its efficiency, as also from the high diffusible power of the drug, the lodine of Iodin.

I found that free pain doses, three times aday, made no appreciable difference, but the following effects followed the doses of twenty grains, twice times aday, at successive times:

a. A marked, rapid thinning of the discharge.

b. It became quite peroxide to profuse.

6. A decrease in the size and number of the prominences, and an alteration of their color, from a yellow to a paler tint. With this, there
was found to be a decrease in the density of the circumference or 'mantle' of the colonies.

c. A disintegration of the granules, loss of consistency, as evidenced by their more easy dispersal, by pressure on the culture plate.

d. A gradual clearing and disappearance of the clubbed elements.

These phenomena, as have previously, mentioned were noted by several observers. It was unable to preserve any specimens showing the clubs, whilst the bodies of bacteria in solution were withheld. The were very easily dissolved away.

To this may be added the fact, that never appeared the profuse red granulations made characteristic of the disease when it reaches the surface. A condition somewhat resembling an aggravated form of tuberculous of the integument (lived Annas Stewart).

The granulations that did exist were confined to two openings (viz. the two first incisions). They were pale, fleshy, and of small extent, and eventually disappeared after being prieded by the finger. When the fleshes had the left off the discharge, soon became thicker, and the granules more numerous, they gained in consistency, were more yellow, their circumference being denser, and the clubs, gradually
appeared in greater number, and in characteristic arrangement. In many cases in many there are very few clubs to be seen and in some colonies none, but the use always a prominent feature in this case, excepting after the 20th had been used for a time. Generally in two or three days after the 20th were left off the clubs were well shown. This is an interesting and important result as it points to a diminution in the vitality of the frogs, the clubs being from showing a degenerative change.

The following is a record of the doses of Jodoce of Potassium which proved sufficient to cure the disease in a number of cases: but first we may mention the remarkable results published in the treatment of cattle. In "The Bureau of Animal Industry, New York" (Annals 1873 p. 210) it is said that thirty per cent.

of the animals treated were cured, and that more than the symptoms of diabetes, most prominently, were the ones most benefited. Again Prof. Thomaasson of Utrecht, cured eighty cases in cattle without a failure, and his method was to pour one or two pints of the Jodoce of Potassium twice a day, to cross the tumours, and touch of Jodoce lifetime. It is significant that Jodoce of Jodoce has
The following Composition: Spirit = 1 pint.

From the results obtained by the Spirit in my patients' cases, one might fairly ask the question: was not the Spirit in the Tincture of Iodine, sufficient for the cure? However, Prof. Prouit adds that he afterward discontinued the use of the Tincture of Iodine, and obtained remarkable success with the Salts of Potassium alone.

Prouit also in his paper, gives the results of four successful cases in man, the doses of the drug varying between fifteen and forty grains per diem. Dr. Prouit's patient declined under doses of sixty grains per diem. The cure of the disease was the prostate gland, and about the peritonum.

Bragi & Valerio some thirty grains daily, for three months, with a successful result.

Dr. J.J. Prouit says that the patient he belonged to the Medical and Chirurgical Society, in Nov. 1874, is much better, and that fifteen grain doses of Salts of Potassium three times a day had a marvellous effect. However, he adds that last time he examined, he found the Ray fever again, in abundance. Mr. Sedle, tells me that he has a patient in University College Hospital who has received good benefit from large doses of the Salts of Potassium: in fact, that, at present, there is nothing to demonstrate the existence of Actinomycosis. It will be interesting to hear the future
of this case. The disease commenced in a about
the caecum or appendix and exhibited symptoms
very similar to those shown by my patient.
Netter's case proceeded under doses of iodide
of potassium averaging sixty grains per day.
As regards the action of other remedies we may
add Lieber's case, in which a favourable re-
pul was obtained by the injection (25 times)
of bacterial protein.
Prof. Biltbee had a patient who improved under
Tuberculin injections.
Prof. von Moltke worked on tuberculosis,
injecting 30 mm of the fluid extract deep into the palpebral anum
ous near the disease, with antiseptic precautions.
Great judgment seems to be necessary both in the dose,
and in the number of applications of the remedy.
There have also been failures, of course,
and there may have been more failures, and
successes than we know of as the puzzling nostrum
have been treated with large doses of iodides
of potassium, for tuberculous affections.
F. Samuel West mentions a case in point.
In reviewing the action of the Iodides,
the consensus of opinion as to their curative
effects in Actinomyces is con-
nrsonated by this case.
At one time it looked as if the
backbone of the disease had been broken,
And it is probable in view of the results in other cases, if the stomach could have held the drugs for some longer time, that the fungus would have been killed out. Even after this it would have been no small matter for the patient to battle with the effects of the abscesses and debility left, and it must be remembered that he had already gone through two serious operations.

The doses he took were greater than those given in some successful cases and less than in others, and they were continued through a much more prolonged period than ordinary. However, slowly, the drug could not be given sufficiently often, to keep the tissues saturated.

Considering the fact that Actinomyces is left to itself, works its way slowly, surely, to a fatal end, and that the only internal remedies we know that affect it, are the Iodides of Potassium & Sodum, I invoked the drug to the utmost, as the only hope left to us.

In reference to the comparative actions of the Potassium & Sodum compounds, the following points are important:

1. The Iodide of Potassium is more quickly absorbed and more rapidly eliminated than the Iodide of Sodum.
2. The Potassium compound is more irritating.
of the gastro-intestinal tract and had more de-
pressing effects than the Sodium Compound.
It has also a more poisonous effect on protoplasm.

At the same
time the Potassium salt, in its efficiency, is the
one of which we have a record in the treatment
of Actinomyces and, it should be tried first.

If it can be taken by some, for an almost indef-
inite time without the occurrence of dizziness.

In this case the Sodium salt could not be
given in such large doses as the Potassium
Compound, because by the time the patient
felt the dizziness of Sodium, he could not tolerate
the dizziness of Potassium by reason of extreme ir-
ruptability of the gastro-intestinal tract.

The more diffusible Dioxide of Potassium caused
a more profuse discharge (watery) than the
Dioxide of Sodium, and this, I think, an import-
ant point, in reference to the disintegration
of the granules. The thinning in the discharge
though always evident, on the occasion of
the Dioxide, during the first two periods of
trial.

When we bear in mind the extreme diffusi-
ability of the potassium powder, the
permeability of the deposit, and the thin-
ness of the wall of the vessels in it, we can,
readily see how the profuse discharge occurred.
and as the abscesses are probably, often found in all the fluids that bathe the tissues, or even in the cavities, we may be assured of their getting into close contact with the inflammatory deposits and everything in it. The abscesses, being bathed in the former discharges, were disintegrated, and the fungus was, also, attacked by the drug, as were the abscesses.

The abscesses of Potassium and Sodium, also, from their power of resisting inflammatory deposits, robbed the fungus of its food, and by interfering with its nutrition, and arresting its development, they most probably limited its spread, both direct (it generally goes straight forward) and by metastasis. This effect may also, to a certain extent, explain the failure of attempts at cultivation.

Nevertheless it is necessary to bear in mind that the compounds of Potassium and Sodium besides being strong irritants to thejastric intestinal tract are also powerful protoplasmic poisons to nerve centres of muscle, when they are given for a prolonged time. Therefore, great care must be taken in the application of the remedies, and in this instance, more especially, where the disease had already caused extensive waste of tissue, and anaemia, and where the locus of the malady was abdominal, and
accompanied by severe postmortem symp-
toms from the beginning.
Judging from the post mortem appearances,
in this case, I think the spirit applications
deserve high consideration. By its dehydrating
and coagulating effect on all necrotic subst-
cances, the spirit had a most definite ef-
fect in resolving the inflammatory deposit,
and in extinguishing the disease. By raising
the donkey, we could get the solution to
traverse all the lumens, but in spite of
all these forces brought to bear against the
organism and its effects, both from within
and from without, the prolonged and fierce
struggle between the invader and the
besieged, ended in the destruction of both.
They died, as it were, locked in each other's
arms and fighting to the bitter end.
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**Disease:** Acute typhoid fever

**Name:** Mr. X

**Age:** 36

**Result:**

**Note:** +1st Operation

**Reference:** Dr. Saville Clinical Chart Copyright.

**Stamp:** UNIVERSITY EDINBURGH
Name: [Redacted]
Age: 30
Disease: Actinomycosis

Date:
Day of Incub.: 1-29

Time: MEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEMEME

Temperature (Fahrenheit): 106°, 104°, 105°, 103°, 101°, 100°, 99°, 98°

Temperature (Celsius): 42°, 41°, 40°, 39°, 38°, 37°, 36°, 35°

Pulse, Resp., Bowels: [Redacted]
As a rule the bowels were very loose. After this date sometimes many
4-lb. stools in 24 hours; and, at times, he had no control over them. He had control over the bladder,
Plot showing temperature variations over time. The graph indicates fluctuations in temperature, with peaks and troughs. The chart includes a timeline with dates and corresponding temperature values. The chart also includes notes and annotations such as 'Result' and 'Pulse, Resp, Bowels.'
<table>
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Appendix.
Oct. 12th, 1868

A brief summary of Dr. Ransom's Case:-

Patient, bent, indefinite abdominal pain. Patient continued to get about till Oct. 21st, 1868.

Oct. 21st, 1868

Suddenly seized with internal pain in the right iliac fossa. An hour after the onset, Dr. Ransom found a firm, moveable, solid mass, tender on pressure, in the right anterior region. Gastro-intestinal movements seemed little altered. No. 17th or 18th, when he could walk a little, in the room without discomfort.

Nov. 18th

Temperature now somewhat raised. Swelling increased. In a few days involved all the right iliac fossa. extended upward along iliac crest. There was great tenderness on palpation. Temperature raised considerably, sometimes rising to 103°F. pulse 84-87 per minute.

Dec. 5th, 1868.

A pain, a dull, constant pain in the right iliac region, extending down the right leg, on firm pressure, the entire limb was swollen, tender, painful, and the veins of the right iliac region reared.

Dec. 9th, 1868.

Aspirating needle introduced: no pus obtained.

Dec. 14th, 1868.

A definite tenderness almost gone: distinct indentation from the anterior edge of the ilium, ridge down as far as one and a half inches below Poupart's ligament.

Swelling has increased in the right iliac region; in the right loin and buttock.

Jan. 4th, 1869.

Note: There was no swelling in the right leg, but there was pain in it at times.

Jan. 10th, 1869.

Swelling has increased in the right iliac region; in the right loin and buttock.
Feb. 14, 1869.
And the upper part of the thigh was much swollen.
Abscess pointd to mast not by, yielding
lemon smell, thick, offensive pus?

Feb. 17, 1869.
Opening of abscess enlarged. Thick pus escaped
with fecal odor.

Feb. 18, 1869.
Intrins made in the area, abscess cavity
fully explored, free drainage established.
Temperature fell after this, and remained so
for nearly a month.

Mar. 20th.
More fluid pus liberated.

Apr. 13th.
After exploration the discharge was found to
contain spherical, like minute old pellets
were grown the Actinomyces colonies. The patient
gradually got worse, and died on June 21st, 1869.

Post mortem.
Internal inspection revealed that the stomach
was found to be distended, and almost lost to sight, covered by
adhesions, thickening of the peritoneum.

Appendix from the inpatient.
Appendix in fact dilated, its walls irregular,
and having several tortuous canals, communicating
with a very large, large abscess cavity behind the cecum.

The cecum had no erosion and did not com-

muicate with the abscess cavity.

Coma contained a large suppuring focus, in which col-
one of Actinomyces were found.

Examination of the walls of the peritoneal abscess,

Not present in my
Case: The only path
of the thigh swollen, was where the abscess
in Staphylococcus
pointed, this was
small & circumscibed

Remarked in my case.
And vermiform appendix failed to reveal any trace was now in my case.
No evidence of the remains of grass or cereal found in the drained parts: but Dr. Ransome thought it probable that some such thing had lodged in the vermiform appendix.
1. It often occurs, very profuse haemorrhage in these cases, produced in readiness for the bursting of loose abscess. It is
bleeding comes from the vascular inflammatory tissue and the vessels cannot be caught up.

This point is very important, as shown when the left abscess was opened, on August 1st (Plowden p. 7).


Ammoniæ Carbonatœ
Acetæi Chlorii
Alcoholæ destillatæ ad 371

Caput Cashlesee nigrum, ter, s. dec.,
Agua, post cibos.

It is impossible to imagine a greater state of emaciation than that exhibited by the body yet the patient had no weakness,
throughout the disease. The effect of the equal
fluence of the water and also tended to keep
the abscess posteriorly under the skin, empty.
It also kept the walls approximated, and
interfered, to a certain extent, with the growth
of the fungus, by causing absorption.
5. This peculiar, old, mouldy smell continued for about two months.
6. Prescription: the same as before, except that the dosage of the extract of 
   rhubarb was increased.

7. By
   Acid. carbol. pur. m. \text{777}
   Fruct. Launf. co. \text{377}
   Auct. Chlor. \text{37p}
   Aq. ad \text{37v}
   Capiat. 

8. By
   Sol. lodii \text{\frac{1}{2} gr.} 144.
   Fruct. Angelicae co. \text{3 itt}
   Auct. Chlor. \text{37p}
   Aq. aq. destillatam ad \text{37f}
   m. \text{7.5.}
   Capiat. 
   Magnum Cachette, \text{te in die, evap.,}
   post cibum.
The following causes are, I think, sufficient to explain the convulsive seizures:

1. The intense and prolonged anaemia.
2. The more or less continued gastro-intestinal irritation: a prominent cause of fits.
3. The prolonged and excessive lactation.
4. Probably partly, the toxic effects of the Compound of Chloroform, Sodium, though long continued use. There was an absence of Aura, fixed pain in the head, eye symptoms, and paralytic effects. The pupils were equal, normal. The convulsions were general, sometimes when they occurred in any set of muscles that had been used for a time and became over-tired (e.g. the muscles of the jaw as mentioned before) the spasm was controlled by fifteen grains of Chloral, afterwards by the same doses. There were no twitchings for the last few weeks of life.

Very different and progressive are the symptoms of a case, recorded by Dr. Delépine in which there were convulsive attacks. After death, there were abscesses found in the brain and achromyces in them. There was a lesion of the pituitary, and softening of the ascending frontal and parietal convolutions.

These are Dr. Fere's notes (page 440):

1. Four weeks before death, loss of power in right arm, indig.
2) Seven days before death: a) Paralysis (paresis) of right arm, and leg. b) No anaesthesia propiciating degeneration. c) Jacksonian epilepsy lasting five minutes. The right leg was affected less than the right arm. The convulsions began in the deltoides and extended downward. There was no knee jerk. No ankle clonus.

3) Six days before death: a) Jacksonian epilepsy. b) Arm very absolutely paralyzed. c) No affection of the face. d) Perfect retention of sensibility, tactile and muscular.

4) Three days before death: Convulsions.

5) One day before death: right pupil dilated.

6) Last day of life: Ataraxia.

Dr. Delpeuch found thread growing out of some of the linings of the abdomen in the above case.

12. Beiträge zur Pathologischen Anatomic und zur Allgemeinen Pathologie 1830. Eleven cases in which parts of pain, or other disease, are disguised. By Martin.
14. In the above paper Dr. L. thinks that some consideration must be given to milk, as a possible source of infection.
The solutions used at different times were:

- Solution of stannic acid in water (one in five).
- Sarsaparilla and water (1 in 4).
- Boracic and carbolic acids (1 in 40): a solution of stannic of potassium (which had no appreciable effect).
- And spirits of wine in water (1 in 3).

In the British Medical Journal, Nov. 17th, 1874, p. 1109, Dr. Samuel_bb mentions a fatal case of Ataxomyces which was treated for syphilis with large doses of stannic of potassium. This was an absence of skin affection.

Dr. Donegay (Medical-Chirurgical Transactions, 1849, Vol. 78, p. 347) "The skin lesions have markedly improved, almost all having withered "flattened down to the skin level."

Dr. Ballou mentions his case (Pathological Society, Proceedings, 1889), in which "the tumours considerably diminished under stannic of potassium. Therefore, an absence or disappearance of these granulomatous masses a by-product in the elimination of large doses of stannic of potassium.

Thomasson, Journal of Comparative Pathology, 1892.

Vale, Edinburgh Royal Infirmary Reports Vol. II. The second case mentioned was diagnosed as a pyorrhoeic abscess.

Ref. Journal of Comparative Pathology and Therapeutics Vol. 5, 1893.

The first case got 20-30 grams daily.
18. In recent case 3rd 15-20 pro. pedium.
The third took 30-40 pros daily.
The fourth 8th 30 from doses.

19. Dr. Ransome's case in the Postlethwaite Pl.
There was no surgical treatment. Two years had
elapsed when the report was made to the Royal
Medical Psychological Society, and then had been no
return of the disease.

In Feb '69, ophrymous were discovered in the stool,
irritation relieved by Argentum Nitricum,
& B. nosalgica, i. two months. The urine, however,
still contained ophrymna, which, lately, came
from a focus in the prostate.

In July and August, he took double of Potassium

20. Bugzi & Salli-Veic: A case of a severe disease
of the face, where neither had failed: Reform.
21. Neumann of the deceased in Cheek Wall, closed
Bracth Medical Journal 1: 82, p. 942.
In reference to the relative value of the Compounds of Potassium & Sodium in the treatment of Actinomycosis. I think the following rule may be adopted, with advantage. As hitherto, the curative effects of the Salicylates in Actinomycosis have been proved by the exhibition of the Potassium Compound. It should be given first, in large doses, and continued till there is evidence of waste of muscle, or new tissue, or postinfectious paresis or intolerance of the drug. If these symptoms are pronounced at the beginning, or if the exhibition of the remedy has to be continued for a prolonged time, the Sodaide of Sodium should be preferred. In this case, it must be borne in mind that the patient's most definite periodic well-being was during the times he was taking the Sodium Compound, and we must also recollect that before he commenced the Sodaide of Sodium, he had taken the Potassium salt during two periods, which were long enough to be sufficient to cure some of the cases mentioned in Nocard's Paper. Therefore, in this instance, the Sodaide of Sodium had the advantage of attacking the fungus when it had lost vitality. It is worthy of note that the Sodaide of Sodium seems to be as efficient in the treatment of syphilitic lesions, as the Potassium salt, and it is the preferred, especially where a prolonged exhibition of the remedies is required.

I do not know whether the action in Actinomycosis is in the form of a direct poison to the fungus, whether
The drugs act through causing the profuse perspiration, draining the inflammatory deposit, clearing the lungs of its load. Most probably the effects are in all these directions, but, most especially, the last two mentioned, are Dr. Pringle points out, that the fumigating fluid, (such as salt dissolved one per cent. of Iodide of Potassium.)

Experiments on the Ventricles of the frog's heart have indicated that the Potassium compounds are fourteen, or fifteen times more poisonous than the Sodium salts, and clinical experience also goes to prove that, given for a prolonged time, the Potassium Iodide is more poisonous than the Iodide of Sodium.

Alcohol is also, a most powerful jenicide,
  p. 93.