contracted the abdominal muscles the prominence became much less distinct, warranting the belief that the mass lay beneath the superficial layer of muscles at any rate. On palpation, a hard mass with somewhat irregular outline could be felt; it appeared to be slightly movable laterally but not in any other direction, and it could not be separated from the deeper parts. The skin over the swelling was normal in colour and freely movable; there was not the slightest tenderness of the swelling or abdomen. The patient had first noticed that there was anything wrong six months earlier, when he had discovered a small lump in the side, which had been slowly increasing in size since then. It had never given him the slightest pain; he had had no trouble with the bowels, which had acted regularly every day, and he had never suffered from indigestion. There was no history of syphilis or, indeed, of any ill-health. The family history was also good. The pulse-rate was 74 and the temperature 99.2° at night.

I was unable to come to any satisfactory conclusion as to the nature of the disease. From the slightly raised temperature at night I was inclined to think that it was inflammatory, and hazarded the suggestion that it might be tubercle, very chronic inflammation around the caecum or appendix, or actinomycosis. I did not feel justified in excluding syphilis or malignant disease. If the diagnosis was in doubt, the course of treatment to be pursued was not, and I decided to attempt to remove the mass.

Operation.

Operation revealed the fact that the mass involved the transversalis muscle and peritoneum, and slightly the internal oblique muscle, and was closely attached everywhere to the ascending colon. This attachment was, however, easily separated without cutting the coats of the bowel except at one spot where the adhesion was firmer and the peritoneal coat was nicked. The tumour was completely removed with a margin of surrounding muscle and the wound closed in layers in the usual manner. Convalescence was uneventful.

Description of Tumour.

The tumour on section cut like hard fibrous tissue and the cut surface had that appearance, but the outer part was harder and denser than the inner. The centre consisted of similar tissue containing numerous small areas of yellow softening of various sizes; the contents of some were liquid and pus like. One of these spaces was much larger than its fellows, and contained a small spearhead-like body like a piece of straw.

From the naked-eye appearance there was little doubt that the disease was actinomycosis, and microscopical examination, which was kindly undertaken for me by Dr. Charles Porter, of the Bacteriological Department of Sheffield University, confirmed this, typical filaments of the ray fungus being found in plenty, the small spearhead-like body being made out to be part of the husk of an ear of wheat. Such pieces of straw have been found in actinomycotic deposits both in man and in animals, especially when the jaws have been the seat of the disease (Bostrom, Soltmann), and are believed to be the means by which the infection is introduced.

The course of events in this case was probably this: A piece of infected straw bearing spores of the ray fungus was swallowed by the patient; the small particle found perforated the colon and entered the abdominal wall, setting up the disease there, leaving as evidence of its passage the adhesions between the bowel and abdominal wall. Bearing on this view is the interesting paper by Mr. Bland-Sutton, drawing attention to the ease and frequency with which small foreign bodies, pieces of straw, metal, etc., perforate the large bowel and produce tumour-like inflammatory swellings and abscesses in the abdomen, their more or less firm attachment to the bowel wall pointing to the mode of origin; he cited a case in which a lump about the size of a bantam's egg in the left iliac fossa was shown at operation to be inflammatory, adherent to the bowel, and to contain in its interior a piece of straw.

The following further information obtained from my patient subsequent to the operation throws further light on the above views. For at least eighteen months previous to the discovery of the abdominal condition he had had a very decayed molar tooth which he was accustomed to pick with a piece of straw. He was hardly ever without a piece of straw in his mouth when at work. Three months before he noticed the lump the tooth broke off, and he did not put a piece of straw in his mouth again.

REFERENCE.

1 *Lancet*, October 24th, 1903.

THE late Mr. William Chapman, of Warminster, whose will has now been proved, left £100 to the Warminster Cottage Hospital.

THE VALUE OF CALCIUM IODIDE IN THE TREATMENT OF ULCERS.

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LAST April, in a short memorandum, I published some good results I obtained from calcium chloride in the treatment of chilblains. Sir A. E. Wright had about nine years previously published the result of his work on the same subject with an elaboration of detail that I did not attempt.

I was particularly impressed by the remarkable readiness with which the broken chilblains responded to the treatment. A broken chilblain is an acute ulcer, so that the administration of calcium chloride had the good effect of causing acute ulcers to heal. One of the broken chilblains that came under my notice had been very much neglected and as a consequence had become very offensive, and almost gangrenous if smell were the sole criterion. After two days' treatment with calcium chloride the smell from this foul ulcer had almost disappeared. Soon afterwards I had occasion to see in adult or elderly people some offensive chronic ulcers of the leg, having a characteristic and objectionable odour not easily removed by the usual methods of nursing them. I use the word "nursing" as it better describes the mental attitude of the average medical man with regard to these sores. The usual experience is to find that the ulcer may after a lengthy period close up, only to break down on the least provocation. Even after the ulcer has closed, the scar and the surrounding skin often appear weak and unhealthy. The consequence is that medical men give up all hope of getting any good results, and pay little attention to this common but chronic ailment.

The good effect produced by calcium chloride in removing the offensive smell from an acute ulcer suggested to me the possibility of an equally good result in chronic ulcers. With this object I ordered two patients—each of whom had, in spite of cleanly and careful nursing, a very foul ulcer—to take 15 gr. of calcium chloride three times a day. The result was beyond expectation, and in a few days the two ulcers were practically free from smell. In addition to this improvement I was very pleased to notice that the edges of both ulcers had begun to take on a typically healing appearance.

I afterwards placed several other patients under the same treatment, and in nearly all cases the response was ready and good. Instead of the usual *statu quo ante*, I found a series of healthy-looking ulcers from day to day. In addition to the improvement in the edges of the ulcers, the surrounding skin to the extent of 2 to 3 in. began to take on a healthy appearance not usually associated with even a healed ulcer. In some of the cases, however, after a period of healthy activity, the healing process became slower, and in two or three cases ceased altogether.

For a few days calcium chloride increases the coagulability of the blood, then this effect ceases; and remembering this I hesitated to proceed with the treatment in the cases of chronic ulcer. Feeling, however, that I was on the right track, and that possibly a slight modification of the treatment would be attended by beneficial results, I decided to try calcium iodide—a very deliquescent crystalline salt, which on exposure to air readily gives off iodine. The only reference to it that I came across was in Hare's *Therapeutics*, where the one fact stated is that the dose is 2 to 4 gr.

The benefit derived from the calcium iodide was more than could be expected, for its effect in reducing thick, callous edges into thin, healing ones was little less than miraculous. This may appear a rather extravagant phrase, but I know that some who have seen this marked effect will bear me out in every particular, and that others who try the drug will find their results equally encouraging.

CASE I (aged 47).

April 5th: Ulcer on left leg $3\frac{1}{4} \times \frac{3}{4}$ in. Placed on calcium chloride; 15 grams three times a day.

April 10th: Ulcer diminished all round. A band of skin has grown across the centre, dividing the original ulcers into two smaller ones $\frac{1}{2}$ in. and 1 in. long respectively.

April 17th: These two ulcers reduced to $\frac{1}{4}$ in. and $\frac{1}{2}$ in. long.

April 21st: Both ulcers healed.

CASE II (aged 60).

April 5th: Ulcer on left leg $7 \times 2\frac{1}{4}$ in., right leg $2 \times 1\frac{1}{2}$ in. Placed on 15 gr. of calcium chloride thrice daily.
 April 10th: Edges have become healthy and thinner.
 April 21st: Ulcers smaller and shallower; healthy granulations.
 April 30th: Left ulcer $5 \times 1\frac{1}{2}$ in., right $1\frac{1}{2} \times 1$ in.
 May 5th: Not much further improvement. Patient placed on calcium iodide—2 gr. thrice daily.
 May 14th: Both much smaller; right nearly healed.
 May 21st: Right ulcer healed, and left reduced to $2 \times \frac{1}{2}$ in.
 May 29th: Left ulcer healed.

CASE III (aged 56).

April 5th: Oval ulcer on left leg; length $\frac{3}{4}$ in.; placed on calcium chloride.
 April 10th: Granulations very healthy.
 April 21st: Ulcer healed. This ulcer has been in existence for the last two years.

CASE IV (aged 72).

April 5th: Ulcer on right leg $1 \times \frac{3}{4}$ in. Calcium chloride ordered.
 April 10th: Edges very healthy.
 April 21st: Ulcer healed.

CASE V (aged 42).

April 12th: Two ulcers on each leg, each about $2 \times 1\frac{1}{2}$ in. Skin looks unhealthy all over lower half of legs; ulcers not very deep. Calcium chloride ordered.
 April 30th: Left leg, both ulcers healed; right leg, ulcers nearly healed.
 May 4th: The right ulcers both healed.

CASE VI (aged 23).

No history of syphilis; the patient had an injury to the leg three years ago, which caused a big surface wound, leaving a large amount of scarred surface. This surface broke down as the result of a blow, and as the result of neglect the ulcers became very offensive.

April 12th: Two ulcers on left leg, one $4\frac{1}{2} \times 2$ in., and the smaller crescentic in shape, length 2 in. Placed on calcium chloride.
 April 20th: Both ulcers clean, healing edges, and without any smell.
 April 30th: Smaller ulcer healed, the larger reduced to $2 \times \frac{1}{2}$ in.
 May 5th: Both ulcers healed.

CASE VII (aged 66).

April 5th: Foul smelling, thick-edged ulcer, 4×3 in. wide, of 10 years' standing, during which time I understand it has nearly healed several times, but never got quite well. It is situated on old scar tissue, the result of an old injury. The patient was ordered 15 gr. of calcium chloride.

April 10th: Ulcer looks dull, and smell less offensive; edges look somewhat healthier.

April 12th: No further improvement; calcium iodide (2 gr.) ordered.

April 14th: Smell much less offensive; all except 4 in. of edge looks very healthy and much thinner.

April 23rd: No smell. The thickened part of edge reduced to 2 in., the rest looking very healthy.

April 30th: Thickened edge only $\frac{3}{4}$ in. in length, ulcer closing in all round, and an island of skin, 1 in. long, in centre.

May 4th: Edge healthy and thin all round. Ulcer, 3×2 in.

May 10th: Island of skin has joined edges at both ends, forming two small ulcers.

May 20th: Both ulcers markedly reduced in size.

May 28th: Ulcer healed over completely.

CASE VIII (aged 36; history of syphilis).

April 5th: Ulcer, 2×1 in. on left leg. The patient had been treated with potassium iodide, but the ulcer had not improved. There was a very objectionable odour. I ordered him calcium chloride.

April 10th: Ulcer healed up, all except a small area $\frac{1}{2}$ in. long; no smell.

April 15th: No improvement. Calcium iodide (2 gr.) ordered.

April 20th: The whole ulcer broke down, but the granulation surface and edges now look very healthy.

April 25th: Ulcer slightly smaller, but looking very healthy.

This patient was not seen after this date as he had removed from the district. The remarkable way in which the whole ulcer broke down after he was placed on calcium iodide was very striking.

CASE IX (aged 54).

April 15th: Deep ulcer, thickened edges, offensive smell; has been in existence over four years, 3×2 in. Placed on calcium iodide.

April 20th: Smell quite gone, edges reduced in thickness, and looking healthy all round.

April 25th: Ulcer reduced to $2\frac{1}{2} \times 1\frac{1}{2}$ in.

April 30th: Still further reduced.

May 10th: Quite healed up.

In addition to these patients, I have placed others with small syphilitic ulcerations about the mouth under treatment with calcium iodide. One or two had found great difficulty in taking potassium iodide, but the calcium iodide agreed excellently, and the result has invariably been good.

Two cases of malignant ulcers, which were very painful and foul-smelling, have been for a short time under calcium iodide with a good result as regards smell, discharge and pain. The number of cases of this class at my disposal at present is very limited, but a few other medical men have at my request promised to give the drug a trial, and I hope they will soon be in a position to publish their results.

Such valuable results obtained by using the salts of calcium are very interesting when we consider the large amount of calcium present in the body. The skeleton consists of over 60 per cent. of calcium salts. From fetal life, when we find the early deposition of the spicules, to the period of old age, when the bones become altered in shape and also more brittle, calcium plays an important part. In infancy when the bones are growing, and at puberty when growth ceases, calcium is always exercising a great influence.

The proportion between animal and earthy matter in bone is constantly varying from infancy onwards, and disease attacking the bone at an early stage produces quite different effects from those produced at a later period.

The first and second dentitions only serve to emphasize still further the value of calcium salts, and the deposition of calcium in the repairing callus is of immense importance. A comparison of the composition of healthy and rickety bones is very interesting:

	Healthy.		Rickets.
Calcium phosphate ...	57.54 per cent.	...	26.94 per cent.
Magnesium phosphate ...	1.05 "	...	0.81 "
Calcium carbonate ...	6.02 "	...	4.88 "

The chemical products resulting from any disease occurring in a child with rickets where the calcium salts are depleted to such an amount, must be very different from those produced by the same disease in an otherwise healthy child.

In general diseases, such as syphilis, mollities ostium and acromegaly, the calcium salts of bone are considerably affected, while in pernicious anaemia and leukaemia the bone marrow is altered to a great extent. The close relationship between bone and its marrow is of extreme importance, and as a large percentage of bone is composed of calcium, the marrow must have much to do with calcium salts.

Some experiments performed by Dr. Ringer a few years ago served to show how necessary calcium salts were for the beating of the frog's heart. The development of frog's ova was also found to be dependent on the presence of calcium salts in a proper percentage, and red corpuscles during their embryonic stage are found in parts well supplied by calcium salts. If ova (which are the beginnings of life) and red corpuscles (which are for the maintenance of life) are so dependant on the presence of calcium salts, it is a logical conclusion that the growth of all cells is dependent on the proper proportion of the same salts. If the normal growth of cells is so dependent, any abnormal growth of cells must depend on some abnormal percentage of calcium.

We find both bones and teeth affected in syphilis, so evidently this disease interferes with the normal percentage of calcium salts; and the exhibition of symptoms of congenital syphilis at puberty—a period that is closely associated with a rearrangement of the calcifying process—certainly seems to emphasize the connexion between disease and an abnormal percentage of calcium.

The valuable results obtained in urticaria and purpura by using calcium chloride, together with the above-mentioned facts, tend to emphasize the important part played by calcium in health and disease.

THE late Sir William Huffington Findlater, of Dublin, whose will has now been proved, left £100 each to the Coombe Lying-in Hospital, the Hospital of Sir Patrick Dun, the Stewart Institution for Idiotic and Imbecile Children, the National Hospital and Molyneux Institution for the Female Blind, the Mater Misericordiae Hospital, and the Charitable Infirmary.