Faecal retention, especially as it affects the caecum / by John Harley.

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FÆCAL RETENTION, ESPECIALLY AS IT AFFECTS THE CÆCUM.

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Constipation is often the forerunner of enteric fever, and so far may be regarded as a factor of that disease.

I believe I may go even further and state that constipation is occasionally the sole cause of enteric fever.

Those who regard this disease as specific will not, of course, assent to this proposition, but they are compelled to admit that simple enteritis, more or less general, may be a consequence of constipation, and the question is thus resolved into the identity of simple and so-called specific enteritis. I have long ago[1] admitted, if not proved, the identity, and therefore must needs call attention to this point in the present communication.

There is of course no morbid condition more frequently witnessed than constipation. A retention of the contents of the colon for forty-eight hours is sufficient, in some persons, to render the fæces hard and lumpy; and there are hosts of people who think they pay proper attention to the wants of nature if they unload their bowels once in two or three days. Nor is the number of those who habitually go a week very small. While constipation is the commonest ailment that comes under our notice, how rarely do we seem to trace it to a fatal issue,

[1] "Enteric Fever," 'Reynolds' System of Medicine.'

and to study its effects after death? "seem," I say, for I am convinced that many a fatal attack of enteric fever has its origin in constipation.

Nor is death from simple idiopathic constipation a very common event. I can myself adduce two instances from my own practice, and show from a number of others how soon matters assume a grave aspect when the bowels are allowed to become slowly impacted with fæces.

In order to trace the effects, both local and constitutional, of constipation, I will briefly give the history of three cases which will serve to illustrate the condition.

Case 1 is that of an elderly lady who had resided for many years in India; she came under my care during the last thirteen years of her life, and died at the age of seventy-nine of an attack of constipation. Throughout life she was satisfied if her bowels acted twice or thrice a week, but when away from home, or if there was the slightest risk of her privacy being disturbed, she would allow a week or longer to elapse before she got relief of her bowels. She led an active life, walking a good portion of each day, and as often as she felt bilious took a colocynth pill and so got what she regarded as sufficient relief. As she grew older and less capable of exercise, the bilious attacks became more frequent and violent, and then it was that my aid was sought, and I learned from her maid the real state of affairs, namely, that her mistress usually went to the closet only once a week, that her motions were always scybalous, and that when matters came to a climax and strong purgatives were used, a vast quantity of lumpy fæces were discharged. "Do, sir, get mistress to pay more attention to her bowels, for these attacks make her dreadfully ill; and I am sure she will do herself harm by neglecting herself in the way she does," was an appeal which her intelligent maid made to me more than once. The patient herself, however, thought but lightly of the matter. She as good as told me that once a week was often enough to attend to such a disagreeable duty; and when I suggested the occasional use of an enema; "Don't mention such a thing again," she said, "I would rather die than use it. Give me any medicine excepting castor you like, and I will take it."

Such was my patient. Whenever a repetition of the usual pill failed to remove the obstruction, she was attacked with bilious vomiting, and from the quantity discharged it was evident that the amount of unused bile retained was somewhat commensurate with that of the retained fæces. The vomiting of bile usually continued uncontrolled for twenty-four hours, and was, of course, attended with great prostration. The usual remedies were five to ten grains of calomel with half a grain of opium, and an effervescing draught of citrate of soda and hydrocyanic acid, at intervals. A little iced brandy and water was the only sustenance that could be retained, and this was as often rejected as not. As soon as the bowels were relieved the attack subsided.

The attacks recurred pretty regularly at intervals of three or six months, and on one occasion calomel, and subsequently a large dose of compound colocynth pill, failing to open the bowels, I said "My only safe resource is the enema." I explained its simple, direct action, and the danger of forcing a passage from above. She shook her head, smiled, and said, "Give me a good dose of Croton oil, that I know will be effectual." I was obliged to yield, and fortunately the result was satisfactory.

I now provided the maid with an india-rubber enema apparatus, showed her the use of it, and urged her to get her mistress to use it. But the lady's conservatism and abhorrence of everything that savoured of French customs got the better of her own sound judgment and of our entreaties; and it was only in her last attack, and a few hours before her death, that I disregarded her scruples, and for the first time washed a few large scybala coated with fluffy mucus from the rectum. But this time the vomiting caused rapid prostration, and she was "*in extremis*" and died unrelieved of her constipation about ten hours after the commencement of the attack.

Case 2 will serve to illustrate a passive variety of the same condition. The subject was an old servant of my own, a little spare woman, nearly seventy years of age. I was once asked to see her, and found her in bed, prostrate, with a dry brown tongue and a pulse of 80. She could give me no

further account of herself than that she had completely lost her appetite, and was too weak to go about her work. She looked, indeed, as if she were going to have typhus fever, but the skin was cool and free from rash. On examining the thin abdomen I could distinctly feel nodular fæces, and then I discovered that she was habitually constipated, and that the bowels had not acted for seven or eight days. A clyster of soap and water followed by a dose of castor oil brought away a large quantity of scybalous matter, and she was well again in the course of a few days, but continued weak for several more. During the time she was in my service she had three such attacks, exactly similar, the dry brown tongue being very characteristic. I prescribed an aperient pill, giving her warning not to neglect the action of the bowels, and she has followed my directions and experienced no more attacks. She is still living near the age of eighty.

These two cases illustrate the difference in the symptoms which attend the same condition in different individuals. The one (Case 1) was an excitable, highly emotional person; the other was of a placid disposition, and had no tendency to vomiting.

Such an individual it appears was the subject of Case 3, who actually died of constipation without any indication of obstruction.

Case 3. *Fatal constipation without prominent symptoms.*—Charles C—, æt. 17, was admitted moribund into the London Fever Hospital, 13th November, 1866. No history could be obtained of him, except that he had been very weak and "out of sorts." His body was spare almost to emaciation, the skin supple, free from rash, and cold, the hands and feet dusky, the eyes sunken, the pulse thready, the tongue moist and dirty; the abdomen was not enlarged, and it had a doughy, inelastic feel. He was free from pain or distress—apathetic, indeed—and took drinks with difficulty. He did not rally, and died next day.

After death.—The small intestine was found void of fæcal matter, the mucous membrane everywhere injected and covered over with a layer of purulent-looking mucus, the sur-

face beneath was red, vascular, bare, and in patches considerably inflamed. The whole of the large intestine, from the opening of the vermiform appendix to within two inches of the anus, was impacted with fæces; in the colon formed into tripartite masses, each lying in a separate cell, and only attached to the mass above and below at the centre, where it was three quarters of an inch thick. The colon was contracted on these scybala so as to have a very regular nodular appearance. The cæcum was filled with one large mass of very stiff, dark-greenish fæces, weighing about a pound. On raising the scybala from the mucous surface, this was found to be vascular and covered over with a thick layer of yellow opaque mucus, and at some parts, in the cæcum especially, the mucous membrane was much inflamed. All the other viscera were healthy.

Here is a case in which constipation set in gradually, attained its fullest development, was, as far as could be ascertained, wholly uninterfered with, and was thus allowed to run its fatal course. Let us consider the effects, both local and general, which are consequent upon such a condition.

The earliest effect of constipation is the absorption of moisture, and the conversion of the soft fæces into lumps or nodules. A considerable amount of mucus is secreted and incorporated with the fæces as a normal process, and it would appear that there is no diminution of the amount of mucus thrown out when the fæces are retained, for one of the most obvious effects of constipation is the formation of a thick layer of opaque mucus upon the surface of the scybala, filling up the interstices between the nodules, and when placed in water seen as a thick fluffy coating. Such a layer of mucus no doubt acts as a protective covering, and at the same time, by obstructing osmosis, prevents the absorption of fæcal matter. But retained mucus is itself liable to putrescent change. Ozæna, for example, is commonly produced by the decomposition of retained mucus; it becomes opaque and purulent, and then very soon disorder arises in the germinating layer, the blood-vessels become congested, growth ceases, the mucous membrane softens, and the unhealthy surface easily bleeds and soon presents patches of erosion. If this state of unhealthy congestion of the mucous membrane be not relieved by the expulsion of

the unhealthy contents of the bowel, irritation and pain sooner or later ensue, as the immediate forerunners of inflammatory action. It is but reasonable to expect that lymphatic irritation would arise very soon in such a condition as this, and thus the solitary and agminated glands would be involved, when the symptoms would be indistinguishable from those of developed enteric fever. I could adduce several instances of this transition, but I will content myself with the following case, which will easily be recognised as a link in the chain:

Case 4. *Fæcal accumulation in the cæcum inducing some of the symptoms of enteric fever.*—James R—, æt. 40, a large, rather fat man, a policeman, was admitted into the London Fever Hospital, 8th June, 1871, on the fourteenth day of his illness. He gave the following account of himself:—The day before his illness commenced he accommodated a colleague, who had just left the Fever Hospital convalescent from an attack of relapsing fever, with a bed, and was disgusted by a bad smell arising from his clothes. Next day, when on duty, he felt an icy chilliness and pain in the legs. On the second day he had pain in the abdomen, and he applied to a medical man who gave him pills "to work it off." The pills acted, and he continued on duty until the ninth day, and then took to his bed, where he remained until the day (fourteenth of the illness) of his admission. At this time there had been no action of the bowels for ten or eleven days. The mind was clear, tongue moist with an even coating of white fur, the skin coldish and free from rash, pulse 100 and weak. There were pain, tenderness, and fulness in the right iliac fossa; the rest of the abdomen was rather doughy to the feel. There was anorexia, but he took fluids. Hot fomentations were applied and stimulants administered. Excepting a pain in the right gluteal region, extending to the knee, and very free perspiration with beads of sweat on the forehead, he continued in the same state.

On the sixteenth day half an ounce of castor oil was given; it acted once moderately. On the eighteenth day the pulse was 120, the temperature only slightly elevated, the skin free from rash and still perspiring, the tongue still moist with a dirty-white fur. A simple enema produced two loose stools, the first containing scybala. The next day (nineteenth) a

defined, hard, tender tumour, in which the patient experienced some throbbing, could be felt in the cæcal region, the fulness and solid feeling passing upwards to the hepatic region. A light loose stool was discharged spontaneously to-day. He was now ordered daily enemata of castor oil and the continued application of linseed and mustard poultices to the right iliac region. The first enema produced a loose yellow stool with a few hard scybala as big as filberts.

On the twentieth day the throbbing had ceased, the abdomen was less full, and now the tumour in the cæcal region was appreciable to the eye, lying in the iliac region; it was firm and not very tender, and reached, on the left side to within two inches of the mesial line upwards; to the hepatic region, and downwards two inches below the level of the anterior superior spine of the ileum. The breath had a disagreeable sweet odour.

During the next two days there were eight or nine loose stools—a very copious relief. These evacuations consisted of disintegrated fæces, being thin and yellow without scybala.

On the twenty-second day a great diminution of the fæcal tumour was noticed, and manipulation gave very little pain.

On the twenty-third day there was a marked improvement in the general condition, and the tumour was no more perceptible than the sigmoid flexure before a natural evacuation. The tongue was still covered with a thick white fur, the skin was cool and occasionally perspiring very freely; the patient was comfortable but feeling weak.

During the next few days the enemata continued to bring away large quantities of fæcal matter, and this part of the treatment was now finally omitted.

On the twenty-eighth and thirtieth days a very copious semisolid stool was discharged each day, the tongue began to clean, and the appetite to reappear. Fish was allowed, but it appeared to provoke diarrhœa and was discontinued next day. Perspiration was still profuse, the abdomen retracted, and the cæcal tumour quite gone. The bowels continued loose for the next seven days, two or three stools in the twenty-four hours, the motions being watery and light yellow.

This outbreak of diarrhœa was preceded by the appearance of a few rose spots upon the trunk on the thirty-second day.

At the end of a week the motions acquired a natural consistence, and there was no further development of rash after the thirty-second day. Perspiration still continued profuse at times, and the pulse declined to 84. The patient was very weak, and there was considerable emaciation. It was the forty-seventh day before the appetite returned and he was able to take solid food. He regained his strength slowly, and was discharged on the sixty-fourth day.

In this history we see some things which resemble enteric fever and some that do not. As resemblances I may point to:—1. The onset—disgust of a bad odour. 2. The long continuance of the symptoms (two months and more), and the prostration and emaciation attending them. 3. The development of a rose rash.

The differences appear at first sight even more positive: 1. There is a large fæcal accumulation with constipation. 2. An absence of fever, the temperature never rising beyond 99°, except on the day after his admission when it was 101°. 3. A moist skin frequently bathed in sensible and distressing perspiration. 4. A continuously moist tongue. 5, and lastly, the need of a purgative treatment.

Those who are fond of classification—artificial distinctions, I would rather call it—will perhaps be quite satisfied that the case I have narrated in brief above is not one of enteric fever. But when we come to analyse these resemblances and differences we find that they have no real worth. Thus a squeamish stomach is surely to be expected when the bowels are blocked and the appetite gone. Prostration with emaciation is an invariable attendant on enteric fever, and must be regarded as the direct result of arrest of nutrition. But such arrest of nutrition would equally happen in a case of grave constipation such as the present or Case 3, which is even more to the point.

A successive crop of rose papules appearing daily for three or four days occurs in considerably less than half the cases of enteric fever, and it must be granted that in many cases the rash when present does not amount to more than was noted in the case recorded above. For my part I cannot regard this as very important evidence of the existence of enteric

fever, but I would say of this symptom as of the rest, "*valeat quantum valet.*"

As to the differences. A reference to the history of the case will show that constipation persisted, or that enemata and purgatives were required, up to the thirty-second day; then a few rose spots appeared, and the bowels became loose—two or three light yellow stools in the twenty-four hours—and continued so for a week. But constipation—I will not say to the extent of a large palpable fæcal mass—is a very common event in enteric fever. Indeed, if I look back to the cases which have occurred in my practice during the last three or four years, I find several cases in which enemata have been required throughout the attack, and in the majority they have been needed in the early as well as in the convalescent stage of the disease. Constipation, therefore, affords no distinction. In the case narrated the pain produced by pressure of the lumbar plexus is significant of the amount of the accumulation.

Perspiration, excepting as a crisis, is certainly not common in enteric fever; but to mention only one instance, I have this winter treated a severe case in Arthur Ward in which frequent and severe sweats were for three weeks a distressing symptom.

The only real distinction which remains is in respect of the temperature. Normal temperatures have indeed been noticed in attacks of enteric fever, but like continuous perspiration they are the exception.

Thus between two groups of symptoms, the one produced by fæcal accumulation and obstruction and the other by the cause of enteric fever, we fail to find any essential distinction.

The connection between the two morbid conditions may be shown to be still closer. In the case of constipation while the cæcum was full there was anorexia. As soon as the obstruction was removed the appetite returned, but the fish that was then taken provoked diarrhœa. The mucous membrane was still thin, bare, irritable, congested, not to say excoriated, and ready to resent any annoyance.

If the fæcal matter had been allowed to remain undisturbed in the intestine for some days longer, severe febrile symptoms would no doubt have been developed, and then probably the case would have been regarded by all who saw it as one of enteric fever.

I pass now to make a few remarks *on the treatment of fæcal retention involving the cæcum.* The subjects of it are numerous. The condition itself is very often regarded as typhlitis and perityphlitis.

I have at the present time two patients in St. Thomas's suffering from this affection, and a brief account of these will serve to illustrate the treatment.

In these, which may be taken as typical cases, the accumulation in the cæcum was but a part of the general constipation. The first object of treatment was to unload the colon by the use of saponaceous and oleaginous enemata, given at intervals of six or twelve hours according to urgency. After the evacuation of a fair amount of fæcal matter has been thus elicited, I give half an ounce of castor oil with two teaspoonfuls of brandy, and eight or ten minims of tincture of opium, and repeat the dose after every evacuation produced by the enemata. By these means we may succeed in producing two or three fæcal motions in the twenty-four hours to the great relief of the patient. The fæcal tumour will be found to decrease and become less tender from day to day, and in cases of ordinary severity the cæcum will be emptied in the course of a week, and the patient restored to convalescence. Where there is much pain, a hot linseed and mustard poultice should be kept applied to the abdomen.

The subsequent treatment should be that of enteric fever, and for a week at least after all pain and febrile disturbance have ceased, no solid food should be given.

If the case have been a severe one and the symptoms of long continuance, as in No. 4, there is commonly a tendency to reaccumulation in the cæcum. To avoid this, an occasional dose of castor oil should be given, a compress worn with a flannel bandage over the region of the cæcum, and frictions occasionally used over the part; strychnia in some tonic infusion may be given to promote tone in the weakened intestinal wall.

Inveterate paralysis of the large intestine sometimes follows an attack of constipation, the colon becomes distended with air to an enormous size, its flexions can be traced by the eye, and there is much difficulty in securing the evacuations, which are formed into clay-like balls often as large as

the patient's fist. Two such cases have come under my notice.

But to return to the ordinary cases :

Case 5. *Gradual constipation followed by the sudden appearance of symptoms of obstruction in the cæcum.*—Louisa B—, æt. 19, a stout, healthy domestic servant, was admitted into Christian Ward, 18th March, 1882. She had never had illness until eight days before, when she was taken with vomiting and pain in the right side of the abdomen; there was complete anorexia, frequent chilly sensations followed by heat. These symptoms, including the vomiting of green bilious fluid, continued up to the time of admission. The bowels she said had acted regularly up to the first day of her illness, and she was obliged to take to her bed on the fifth day.

On admission on the eighth day the cheeks were flushed, temp. 102·2°, pulse 104, tongue coated with white fur, red at edges, inclined to become dry, much pain and tenderness in the right iliac fossa, and resistance of the rectus. The bowels had not acted for a week.

A simple enema brought away a very copious natural evacuation. A grain of opium was given by the mouth and a linseed and mustard poultice applied to the abdomen.

Ninth day.—A diaphoretic mixture, every four hours, and five grains of Dover's powder with two grains of mercury and chalk, night and morning, were prescribed.

Tenth day.—Improved, temperature declined to 100°, pulse 84, pain and tenderness much less, and she bore palpation fairly well. A well defined solid rounded tumour was felt lying in the iliac fossa and extending vertically to the liver and towards the left to about two inches from the mesial line. A simple enema was now given every day and followed by half an ounce of castor oil with eight minims of tincture of opium, and continued until the seventeenth day, when the bowels acted spontaneously and freely this and the following day.

On the nineteenth day another dose of oil and laudanum was given; two days afterwards the previous medicines were omitted and quinine mixture prescribed.

On the twenty-third day she was convalescent and left her bed.

On admission the patient had the aspect and general symptoms of enteric fever, but the accumulation in the cæcum was evident. Her statement that the bowels had been acting regularly up to the time of her admission was no doubt correct, for a gradual accumulation of fæces in the cæcum is quite consistent with a daily action of the bowels. Young people are not usually particular in ascertaining the quality and amount of their evacuations, and if they have a movement of the bowels every day they regard that as satisfactory whether large or small.

As to the progress of the case, this was uniformly satisfactory, the temperature declined and was normal after the sixteenth day. The evacuations were copious and consisted of normal broken down fæces without scybala. The cæcum was still full and tender on the fourteenth day. On the sixteenth day tenderness was absent, and on the eighteenth day it was wholly relieved of its contents, and felt like a movable cord beneath the now lax abdominal wall. Desire for food returned on the sixteenth day, and she was allowed fish on the seventeenth day, and left her bed on the twenty-third day.

Case 6. *Constipation, acute pain in the right iliac region, and vomiting after a hearty meal of whelks; fæcal tumour of the cæcum; convalescence after twelve days.*—Henry B—, æt. 25, a strong, healthy, well-nourished man. He never had any illness like the present, and admitted that he had paid little attention to the action of his bowels.

On the 18th of March he ate heartily of whelks, and some hours afterwards was suddenly taken with severe pain in the abdomen and vomiting of a green fluid. He was admitted into Arthur Ward early next morning. The temperature was 101·4°, he lay on his back with the legs drawn up, and had much pain and tenderness in the right iliac fossa, which appeared a little fuller than the left. The rectus was very resistant, and the part was too painful to bear handling. The bowels had not been open for several days. Hot poultices were applied, simple enemata given every three hours, and a grain of opium by the mouth. In the afternoon the temperature rose to 102·2°. Four or five dark fluid motions without scybala were elicited by the enemata. In

the evening half an ounce of castor oil with eight minims of tincture of opium was given by the mouth. Bilious vomiting however recurred, and as this dose was probably rejected, another was given, which was followed in the course of a few hours by a very copious evacuation of a somewhat pasty consistence and dark yellowish-green colour.

Third day.—There was a little relief of the abdominal symptoms, but he still lay on the back with the legs drawn up; the loaded cæcum, still very tender, could now be distinguished; temperature 101°, pulse 100, tongue moist, with a thin white fur. A simple enema, followed by a dose of castor oil (℥ss) and laudanum (♏viij), was given daily for the next week. The evacuations were free, composed of light yellow disintegrated fæces with a few hard lumps the size of nuts.

On the sixth day the cæcum was much less tender, it was still full, and distinctly nodular to the feel. After this date the improvement was rapid, and by the twelfth day the accumulation was completely removed, the bowel could be handled freely, and it was contracted to a soft rope-like band. Between the third and ninth days the temperature was usually about 1° above normal, being 100° on only one occasion. Afterwards it declined and remained normal.

He was allowed fish on fourteenth day. Convalescence was uninterrupted, and he left the hospital on the 21st day.

In this case there was pre-existing constipation, and the ingestion of a hearty meal of indigestible food developed the symptoms of the latent obstruction by causing the descent of more fæcal matter into the cæcum when already over-charged. The symptoms arose soon after a meal, the usual provocative of peristaltic action in the digestive tube.

So far I have only spoken of constipation as it affects the mucous membrane, and I exclude the foregoing cases from the condition which is commonly designated typhlitis.

Inflammation of the whole of the coats of the cæcum must result as a matter of course whenever retention remains long unrelieved. To make my paper more complete I will therefore add two more cases, one in which incipient inflammation probably involved the cæcum, and another in which inflammation passed into ulceration and perforation.

Case 7. *General constipation; retention of fæcal matter in the cæcum, fever, local pain and constipation.*—Eliza S—, æt. 19, a healthy, well-developed girl, had been poorly, and attending Queen Charlotte's Dispensary for headache for some weeks. The bowels had been acting every other day, and she was doing her ordinary work, when on 17th September, 1871 (first day of her illness), she was taken with a sudden pain in the right side of the abdomen with vomiting. The symptoms continuing, she was admitted into the London Fever Hospital, Sept. 21st. When I saw her the bowels had not acted for eight days. She complained of much pain in the iliac and lumbar regions of the right side, the cæcal region was full and very tender, and occupied by a smooth rounded mass lying between the anterior superior spine of the ileum and the costal arch. Pulse 120, temperature 104°. The skin injected and dry, the cheeks flushed, tongue moist, furred with red edges. A few hard nodules (scybala) could be felt in the left iliac region. A simple enema, and half an ounce of castor oil by mouth were given immediately, and these were followed in the course of a few hours by two very large motions, composed in part of healthy soft fæcal matter and in part of rounded scybala the size of walnuts, and of the consistence of moderately soft cheese. Hot fomentations were applied. This was followed by relief of pain and sickness.

On the eighth day of the illness (the eleventh since the primary constipation) an enema of castor oil and turpentine (of each an ounce) was given. This returned without effect.

Twelfth day.—Pulse 106, temperature 102°, tongue as before moist, the dorsum with a thick dirty yellow fur, the margin red; the abdomen a little full, everywhere soft, resonant, free from tenderness, excepting on the right side, which is still occupied by a vertical tumour, whose rounded border lies two and a half inches to the right of the median line. She could not bear the slightest pressure. Six leeches were applied over the cæcum, and half an ounce of castor oil given by mouth. The bowels were freely relieved of much firm, healthy fæcal matter, and were subsequently loose for twenty-four hours. Next day the tumour was considerably less and the general condition improved.

On the fifteenth day the flush was gone, pulse 72, temperature normal, abdominal fulness and local tenderness also gone, and the belly was now soft and flat. Only a little thickening could be felt in the place of the former tumour. No action of the bowels for two days. Tongue clean and wet, rather purplish; the appetite returned, and in the course of a few days she was able to leave her bed. The subsequent treatment consisted of an occasional small dose of castor oil and a simple enema.

Case 8. *Constipation, followed by fever and stercoraceous vomiting: perforation of the cæcum and stomach.*—Richard H—, æt. 43, well nourished, had been ill thirteen days before admission into the London Fever Hospital with constipation, anorexia, and latterly, continued fever. I first saw him on 12th April, 1870, on the fourteenth day of his illness; the pulse was 100, temp. 99·6°, tongue whitish and moist, the bowels open, and he was hungry. Very little change was experienced until the eighteenth day, when he had a slight rigor with loss of appetite. On the twenty-second and twenty-third days the bowels were loose, the motions pale and watery, and there was profuse perspiration, the skin being cool, and the pulse as yet had exceeded 116 on one day only, now it was 106. A little sordes still remained on the teeth.

On the twenty-fifth day, the abdomen became tense and tympanitic. There was no tenderness on making slight pressure, but he has suffered a good deal of pain in the epigastrium; tongue dry and wrinkled, the cutaneous veins of the abdomen large, the pulse 100.

On the twenty-sixth day the abdomen was less tense, and there were two abundant watery stools during the night, of the colour of burnt umber; the breath had a distinct pyæmic odour; the patient was apathetic and apparently comfortable. He continued in the same state, and on the twenty-ninth day he vomited for the first time about twelve ounces of brown bilious fluid. Next morning about an ounce and a half of grumous fluid, resembling pea-soup, was rejected. In the afternoon of this day the vomit had a distinctly stercoraceous odour, and consisted of pale, ochre-coloured, opaque matter, floating on and marbling a light yellowish-brown mucous

fluid. The bowels acted at intervals, the motions having the characters last described. The abdomen was smaller and softer, the veins less distinct, and free from pain and tenderness. The prostration, however, was increased.

On the thirty-first day he lay in a half-recumbent position, sunken, cold, clammy and apathetic with a strong post-mortem odour of the breath. He vomited frequently, rejecting in all as much as four quarts of bright gamboge-coloured matter of the consistence of thick gruel, and with a powerful fæcal odour; a similar fluid ran from the rectum every few minutes. The next day the symptoms were unchanged, save that the abdomen had become soft and doughy to the feel, with a central area of dull percussion; the previously thready radial pulse was now imperceptible, and he died tranquilly, retaining consciousness to the last.

After death.—The abdomen was retracted and dusky, the recti and other muscles of the abdominal wall almost black. The median incision below opened a sac corresponding to, and coextensive with, the pelvic cavity; it extended three inches upward from the symphysis pubis, and extended laterally from one iliac crest to the other; it was limited above by a straight wall formed by the coherent coils of the small intestine; below, by the bladder, which contained half a pint of urine; behind, by the sacrum and rectum; in front, by the abdominal wall. A strong membrane, apparently of not recent formation, was reflected from the edge of the adherent coils of the intestine to the peritoneal covering of the hypogastric region.

The sac was everywhere closed except where it communicated with the cæcum; its inner surface was covered with a granular villous growth of a light brown colour, stained, indeed, by the contents of the sac, its large cavity being full of bright yellow grumous fluid, a little thicker than that which had been vomited but otherwise exactly resembling it. The cæcum and ascending colon, which formed the boundary of the sac on the extreme right, presented four rounded perforations, the lowest at the bottom of the cæcum by the side of the vermiform appendix, the second just above, the third (which was the largest, and about three quarters of an inch wide) two inches higher up, and the fourth an inch and a half above this. These openings into the sac had thick,

almost villous lips, as if formed of everted mucous membrane The coils of intestine were flaccid, of a leaden hue, and adherent by organised membrane. The opening of the vermiform appendix was small and healthy, and the organ itself lay compressed against the walls of the fæcal sac. The colon, sigmoid flexure and rectum were quite healthy and empty; neither the jejenum nor the ileum showed any signs of ulceration, but were full of fluid like that in the sac. On dissecting out the adherent coils of the intestines numerous small isolated abscesses were discovered here and there.

A second fæcal sac, apparently quite distinct from the former, and only communicating with it through the bowel, lay deep in the right hypochondrium between the abdominal wall and matted coil of intestine, and limited above by the gall bladder and the under surface of the liver. The contents were identical with those of the largest sac. On opening the stomach the mucous membrane showed patches of slight congestion; in the posterior wall was a round aperture, with smooth edges, nearly large enough to admit the tip of the index finger; it communicated with an enlarging passage, which seemed to end in a *cul-de-sac* above the head of the pancreas, but which probably communicated with the sac of the small omentum, in which there was also a collection of fæculent fluid.

Excepting the stomach complication and its results, an almost identical case was admitted under my care very soon afterwards, and this was equally unsatisfactory in reference to the previous history. In neither case could I assign the date of perforation with any degree of certainty, but my impression was that it had occurred in both cases before admission. The perforation of the stomach in the case narrated here, appeared to have happened subsequently to those of the cæcum—on the 25th day? This was probably the cause of the vomiting, for the fæcal sac, into which the pelvic cavity was converted, formed a diverticulum to the cæcum, and communicated so freely with it that there did not seem the least liability to obstruction.