

M

1862

Maenair

Amwasting

A few cases of Sarcina Ventriculi
by

John T. Malcolm. 1862.

1.
Professor Gooden was the first to detect
Sarcina Ventriculi in a case of chronic
vomiting which came under his observation
in 1842. At first it was supposed that
these curious forms were inhabitants of the
human stomach only, a short time ~~only~~
was sufficient to show the fallacy of this
supposition, for as the attention of observers
became aroused, we find in quick suc-
cession of their being found in the
urine by Haller. Mackay. Johnson. Reale,
and Regnier; in the feces frequently by
Bennett and Hassel; in an abscess of the
lung by Krichow, and once by Jenner in
the fluid of the ventricles of the brain.
Professor Gooden's classification is

Sarcina - Plants coriaceous, transparent,
consisting of 16 or 64 four celled pustules,
arranged parallel to one another in a
square transparent medium.

Species I *Sarcina Ventriculi*. Frustules 16.
colour light brown, transparent matrix
very perceptible between the pustules,
less so between the edges, size 800 to 1000
of an inch. Habitat ^{at} ~~in~~ the human stomach -

2

The generation is fissiparous each individual dividing into four. A perfect sarcina consists of sixty four ultimate cells. Neither mouth, oral appendages or visceral cells can be detected, and its cells are clear transparent as if empty and have that consistency of cell walls characteristic of vegetable structures. It approaches nearest to the *Zonium Hyalinum*. M. Robin has placed it under the genus *Merismopodia* and calls it *Merismopodia Ventriculi*. With reference to Professor Goodwin's case of sarcinous vomiting it appears to me to have been one of those anomalous ones which I have several times met with, where we find sarcinae in the ejected matters without any well marked symptoms of disease. These remarks I offer because in comparing the case above alluded to, with the one I append, there appears to be a great disparity of symptoms. I may add that these cases of mine were written out before I ever read Professor Goodwin's paper on the subject.

Prof. Goodwin's caseMc Swan

Attacks came on night and morning without reference as to whether it was before, or after food, had been taken.

Has pain before meals which is relieved as soon as food has been taken.

No pain on pressure.

Pain increased on pressure.

Bowels regular.

Bowels very constipated.

Appetite not affected.

Appetite impaired.

Usual articles of diet agreed.

Food such as porridge and broth cause great pain and distension of the stomach; whereas beef and more solid kinds of food cause little uneasiness.

No distension of the abdomen.

Distension of the abdomen, at times causing the superficial veins to swell out to a great extent.

Darg.

Hunter.

Felt uneasiness after taking food.

Pain augmented after taking food, has sensation of weight in stomach

Tenderness and pain increased on pressure.

Pain not increase on pressure.

Bowels very constipated.

Bowels constipated.

Appetite diminished.

Appetite impaired.

Stomach rejects all kinds of food, cold water even being ejected.

Abdomen sometimes swells.

Involuntary contractions of the abdominal muscles.

Tongue clean.

Tongue somewhat furred.

If Sarcinae were found in the stomach only, and if when found, there was always a fermented state of the Maltus in that organ, then we might reasonably conclude, that they were either the cause of that fermentation or its result - That they most frequently occur when such is the case cannot for a moment be denied, such however is not invariably the rule. We ourselves have seen them often present in vomit which gave no indication either by its odour or appearance of being, or having been in a fermented condition - When moreover we know that these forms have been detected in the urine, faeces, lung, and the fluid contained in the ventricles of the brain, places where no such fermenting process could ever take place, we must conclude that such a process is not essential for their ~~form~~ production -

Dr Strigoshin directs attention to the fact that this (i.e. Sarcinae) in common with all phycochromatous, so called unicellular algae are neither a true species nor genus, but only a stage in the development of

some poly cellular, filamentous alga,
 probably an oscillatoria: that the sarcinae
 are, in fact, the perisporous gonidia or spores
 of some such alga. Their independent growth
 is no barrier to this view, as they have that
 in common with many other spores as those
 of various lichens, which often form large
 pulverulent masses on stones, wood etc - and
 also with those of many other algae. He adds,
 also, that these gonidia are so minute as to
 be easily taken up by the absorbents and
 carried by the blood vessels to the bladder,
 bronchi etc in a dry state, they may even be
 inhaled ^{with} the air and subsequently grow.

D^r Strigsohm's theory appears a rational
 solution of this problem, namely what
 sarcinae are, and how developed, and I shall
 for want of a better one adopt, in conclusion
 giving a case which came under my own
 observation as somewhat supporting his views.

The case I allude to was one where in a ward
 containing a dozen patients (one of them at
 the time being affected with sarcinous vomiting)
 five of these suddenly and without any known
 cause began to vomit matters which when

27.
X

examined were found to contain Sarcinae. How this state of matters came about remains still a mystery, that they could have got a hold of the one patient vomiting and mixed it with ^{their own} is a probability slight at the very most, but possible no doubt. In every case however the appearances of the rejected matters differed from one another to such a degree, that ^{any} such a supposition could not for a moment be entertained. In every case the vomiting ceased after one or two days, How Sarcinae came to be present in their vomiting can only be explained I think by Dr Strigsson's theory, that living in the same room, and their diet consisting of the same or ^{nearly the same} food they must have inhaled the floating spores of some algae which subsequently became developed into Sarcinae. There being almost invariably constriction of the pylorus thereby causing the food to be retained in the stomach for a longer period than is necessary for the accomplishment of the digestive process is strongly in favour of the fermentation theory.

Dr George Wilsons Analysis of the vomited matter in Prof Goodens Case. Gave a copious precipitate with AgO, No_3 . When acted upon by a red heat till the liquid was driven off an ash containing a large quantity of NaCl remained behind. Litmus paper was strongly reddened and powerful effervescence took place when the alkaline carbonates were added.

A portion of the diluted fluid was evaporated to dryness in a porcelain capsule and strongly heated: distilled H_2O was poured upon the residue, it then precipitated AgO, No_3 shewing the presence of some fixed metallic chloride. To remove this the liquid was filtered from the animal matter it held in solution, and slowly distilled a second time in a capacious retort. The product of this distillation was colourless and transparent and possessed a strong acid reaction, but gave not the slightest haze with AgO, No_3 . It retained the vomit smell and along with it a faint acid odour. To ascertain the nature of this acid 6 ounces of the twice distilled fluid were neutralized with lime water & vapor

ated to dryness. The lime salt was then transferred to a tube retort and dilute SO_2 added, a colourless liquid collected in the receiver, which was at once recognised as acetic acid by its odour. When the acid was digested in the cold on recently precipitated oxide of lead, it formed a soluble salt, having a sweet sugary taste, and possessing an alkaline reaction. The acquisition of the latter property, depending on the formation of a subsalt of lead, has been shown by Liebig to be distinctive of acetic acid.

1.

John M^e Swan aged 39

Was admitted on February 4th 1862.

He has been employed for the last 8 or 9 years in a dredging machine at Leith and has been very much exposed to cold and wet. He was in excellent health till about 12 months ago when he felt an gnawing or burning pain in Epigastric region confined to one spot at first, his appetite however continuing good. In September last he had an attack of diarrhoea for a month. Two months ago the pain in his Epigastrium (which is increased on pressure) became much more severe, and his breath had a very foetid odour for about a month, after that his stomach became distended after taking food, causing severe pain to relieve which he produced vomiting to relieve by tickling his fauces with his finger. The rejected matter had a very sour taste, occasionally he has been annoyed by mouthfuls of hot sour water coming up. His diet consisted of tea or coffee and bread in the morning, bread

and milk and sometimes beef at noon, and tea at night. Food such as porridge causes distension of stomach and great pain, whereas beef and more solid kinds of food cause little uneasiness. His tongue is foul, and appetite much impaired, the pain in Epigastrium is worst when the stomach is empty, and is relieved when food has been taken. He has a pale, anaemic appearance and an anxious expression. He was ordered a dose of Castor oil.

Febry 5th Patient vomited last night a quantity of dark thick matter resembling yeast in a state of fermentation, mixed with a large quantity of water, which on standing sinks and supports the yeasty looking mass. On Microscopic examination Leucinae in very great abundance are found, also blood cells and haematin.

6th Last night he had a very severe paroxysm of pain in the abdomen, which is very much distended as far down as the symphysis pubis and

quite hard and tense. He was ordered
an Enema foetidum, and Turpentine
stupes to be applied to his abdomen,
also a powder consisting of

R. Calamelanos gr ν

Pulvis Jalapae gr ss

The powder was vomited soon after being
taken; about midnight he had an enema
containing castor oil, and turpentine,
his bowels were only slightly moved by these
means but the abdominal pain was con-
siderably relieved. Today the abdominal
pain continues to come on in severe
paroxysms, and turpentine stupes are
ordered to be constantly applied, also to
have two compound colicijith pills, and
another purgative enema similar to
that of last night - Vomited again today.
7th Patients bowels have not yet been well
opened, ordered two ounces of Castor oil -
The abdominal pain continues but not
so severe as before

8th Bowels well opened by Castor oil -
Abdominal pain considerably abated
and tenseness of abdominal muscles

Much less marked.

10th Continues in much the same state and has had no return of vomiting

11th Tenderness of abdominal muscles and pain on pressure over Epigastrium

13th Was given an enema which opened his bowels freely.

14th Vomited this afternoon a considerable quantity of brownish matter which in about an hour had fermented to about twice its size, resembling yeast exactly in colour and odour, ordered Sulphate of Soda and Infusion of Quassia in half drachm doses, and the turpentine stupes to be continued

15th Pain still severe across the whole stomach, most so immediately before meals.

His diet consisted yesterday of tea and bread morning and evening, beef-tea and bread for dinner. Still has attacks of pyrosis occasionally, ordered

R. Bismuthi Albi
Magnesiae Carb a.a gr̄ss
Pulv. Aromatici gr̄v

Fiat pulvis mitte in

Sig. One three times a day -

The tenderness of the abdominal muscles much less today.

16th Vomited this morning a quantity of pasty looking black matter, Sarcinae of large size were seen under the microscope.

19th Tenderness of abdominal muscles has disappeared, swelling of Epigastrium continues, but is diminished below the umbilicus. He has vomited every night since last date, the pain in abdomen is most severe during the night. Bowels are very constipated & dried

R₁ Olei Ricini ʒi
Olei Castorei mʒ

21st. Patient has continued the same as reported at last date till after supper tonight when he had a severe pain in his Epigastrium, which was considerably relieved about 8 o'clock by the vomiting of a quantity of black semi-fluid matter: when seen about an hour after being rejected the fermentation process was not so well marked in it as in most of his previous vomits. His supper

Consisted of tea and a biscuit

22nd Swelling not so well marked and pain considerably relieved.

24th Does not complain of much pain today and there is no abdominal swelling.

ordered an *Emplastrum Lyttar* to *Epigastrium*

25th Had a severe paroxysm of pain in the middle of the night, and vomited a quantity of greyish fermenting matter and mucus, the grey mass floating on the top. He was not much relieved by vomiting, and complains of great pain in *Epigastrium* today, the superficial veins of the abdomen are greatly distended.

He has been taking a teaspoonful of pepsine wine since the 18th

26th Patient had another paroxysm of pain about 2 o'clock this morning, but felt easier after vomiting a large quantity of brown spongy looking material which floats on the surface. Pain not so severe today, ordered to stop the Bismuth and Magnesia mixture and to take the following

R. Pulv. kino. Comp gr x
Tales VI - To take one twice a day.

27th Patient vomits every morsel of food he takes. He has tried all sorts of solid food, as well as beef tea, chicken soup, milk, meat juice, coffee & and all with a like result - their speedy rejection -

Nothing seems to relieve the interminable pain in the belly, which is always most severe during the night. Extreme constipation continues and great abdominal distension.

Evening Little change, the same abdominal pain as before. Has just vomited some tea and biscuit which he had taken shortly before. He is evidently growing much weaker; face is acquiring a pinched and anxious expression, often distorted owing to severe pains. Brandy increased to six ounces.

28th Continues as before, but the severity of the pain is now almost unbroken. All food is now instantly rejected from the stomach. Great abdominal fullness and distension of the cutaneous veins. The upper part of the abdomen, epigastrium, and left hypochondrium feel hard and

resistant on palpation; below this the distension is due apparently to flatus alone.

March 1st Called to see patient at 5.30 A.M. and found him in a state of severe pain.

His pain at this time was complained of chiefly at the lower part of the abdomen, although it extended all over also. He fancied that his severe pain in the hypogastrium was owing to inability to make water. On percussion of hypogastrium no humoral sound at all could be detected, the bladder appeared to be empty; but owing to the flatulent distension of the abdomen palpation and percussion alone were not relied on but a catheter was passed fairly into the bladder, when not a drop of urine escaped. A turpentine enema was also administered. While sitting on the night stool shortly after the enema he suddenly became faint. Said he saw the lights grow dim, made a motion as if clearing something from before his eyes and then fell over. He was placed in bed and rapidly

recovered, and had a glass of hot brandy and water which seemed to revive him. 9. A. M. Is in the same condition but the lower pain is less severe, he is evidently weaker however. He continued in much the same state, gradually sank and died at 11. A. M.

Appearances presented at the Post Mortem
 Simple ulcers of the stomach producing
 stricture of the Pylorus - Limited Peritonitis.
 On opening the body the transverse colon
 was seen to be a good deal distended;
 no part of the stomach was at first
 visible. The transverse colon was adherent
 to the anterior surface of the left lobe of
 the liver at one point moderately recent by
 pretty tough lymph. A coil of small intestine
 (about three feet below the duodenum) was
 also adherent to the liver. The posterior
 of the stomach to the left of the cardiac
 surface was somewhat distended and was in
 contact with the spleen. On raising the
 liver its posterior surface was found to be
 adherent to the stomach near the pylorus

by pretty firm lymph. The omentum
 much thickened was also adherent to
 the anterior surface of the pylorus.
 When the finger was introduced into
 the stomach the pylorus was found
 to be thickened and contracted so that
 only the point of the finger could be
 passed through it. When the stomach
 was laid open two simple ulcers situated
 opposite each other were found in the
 pylorus. One of these of a rounded form
 nearly as large as a half crown was on
 the anterior wall of the pylorus: its surface
 was pale and smooth; and was perfectly
 cicatrized and quite inactive. The other
 was of an oval form and of rather larger
 size. Some matter resembling coffee grounds
 was found adherent to its surface.
 The base of this ulcer was somewhat
 irregular, slight projections arising
 from its base, and giving it what appeared
 at first to be an almost fungating
 appearance. At the end of two of these
 projections the open mouth of a dilated
 vessel was found. The submucous and

Muscular coat was increased to nearly half an inch in thickness, it was examined microscopically but the thickening was of quite a simple character. There was a dilatation of the stomach just beyond the pylorus in the situation of the great curvature. The lesser curvature was somewhat puckered up: the distance between the nearest ulcer and the cardiac orifice was only $2\frac{1}{2}$ inches. The fundus of the stomach was dilated. The stomach contained some yellow coloured partially digested aliment of a very sour smell. No other lesion was found.

1.

Joseph Darg aged 34.

Admitted January 23rd 1862.

Patient was in good health till about 7 years ago, when he began to have bilious attacks about once in six weeks attended with more or less vomiting and sickness. Each attack generally lasted about three days at first, but they have been gradually increasing in severity till September last, when he had to give up work on account of pain in Epigastric region, and vomiting after every meal.

For the last 5 months he has vomited at least three times every day, except for about three weeks in the end of last November and beginning of December when he felt somewhat better and resumed work, but the vomiting returned with increased severity, his stomach since that time rejecting all kinds of food, and even cold water being ~~rejecting~~^{rejected}. During the former part of his illness his diet consisted of tea with bread every morning and evening, but for the last three weeks a biscuit, tea and a little

same daily have been all he dared to take, the wine always afforded him temporary relief. He had a feeling as if the food was moving about in the stomach and causing annoyance until vomited.

The vomited matters in their passage upwards produced a hot feeling in the oesophagus and throat. Tongue clean, his appetite diminished - Has tenderness and pain in Epigastrium, increased on pressure, more especially at the junction of the epigastric and left hypochondriac regions. Bowels are very constipated.

Skin is dry, has been losing flesh and is thin and somewhat emaciated.

24 Vomited once since admission, the rejected matters being thick like powdered chalk, with a good deal of fluid, the whole being of a pinkish hue.

On Microscopical examination nothing of importance was seen. Has taken scarcely any food since admission, as his stomach will not retain it.

Ordered

R. Bicamathi Albi ʒʒ
Magnesia ʒʒ
Sol. Mur. Maph ʒʒ
Aquea ad ʒʒ

sig Two table spoonfuls every three hours.

February 3^o. The pain and tenderness in epigastrium is less severe on pressure. Patient is now able to sit up nearly all day without feeling much fatigued. His appetite has vastly improved, takes beef tea, rice pudding and bread without feeling much increase of pain or uneasiness in the stomach - Sleeps well at night; and his skin has lost the dry character it had on admission. He vomited last night and on examination the rejected matters were found to contain Sarcinae in considerable quantity. No blood cells could be seen - 6^o Patient has continued in almost the same state as last reported, he vomited twice in the interval and Sarcinae were again detected; he has had repeated attacks of pyrosis, ordered

R/.

Sodae sulphuris ℥iv
Infusi Quassiae ℥xii

Sig Two tablespoonfuls to be taken three times a day.

Also to have lime water along with his food -

8th The pain over Epigastric region rather more severe today. Ordered to take the Bismuth mixture, and to have a fly blister applied over the stomach.

13th Patient has continued pretty well since last date, and has not vomited any food or other matters till today. The rejected matters have still the peculiar sour smell, and were in a state of fermentation. Sarcinae were as before detected but appeared less in size.

15th Does not feel any pain today. Slept well during the night. There are occasionally attacks of pyrosis. Bowels have opened without medicine for the last two days. Continues to take the Sulphate of Soda mixture.

17th Patient is now perfectly free from any pain. The vomiting and pyrosis have entirely ceased. Slept well last night. Bowels opened naturally. Dismissed cured.

1.

Ellen Hunter. Aged 55

Was admitted into Ward 14 on December 20th.
So far as can be ascertained patient was in
good health till within the last two years
during which time she has had repeated
attacks of vomiting which were however
relieved by an aperient pill. Previous
to August and September last when
the vomiting became more frequent
and in October she had a sensation of
weight at her stomach after taking
food as if it were prevented passing
downwards by some obstruction. About
six weeks ago she felt a gnawing pain
in the Epigastrium which has continued
since; it is augmented after eating but
is not increased by pressure. She has
vomited constantly after every meal for
two weeks previous to admission, and
has had various medicines administered
without any good result. Croton oil has
been freely applied over the surface of
the abdomen, which is still covered with
the pustular eruption but has afforded
no relief. Patient has been of late losing flesh

and now presents a very emaciated appearance. Tongue somewhat furred. Appetite impaired. Bowels constipated. On Palpation over Epigastric region an undefined tumour is felt on the left side at the junction of the Epigastric and Hypochondriac regions, somewhat indistinctly owing to the involuntary contractions of the Abdominal muscles.

Percussion over the tumour is dull. Ordered a dose of Castor oil and the following mixture

R. Med. Naphtha ʒi
ʒr. Carbon. Co ʒi
Aq. ad ʒvi

Sig. A tablespoonful when necessary.

Also R. Sodae Sulphatis ʒp
Infusi Quercinae ʒvi

Sig. A wine glassful three a day.

Dec 25

The pain in Epigastric region is less severe today. She has vomited twice since admission after taking food. Her Appetite has rather improved. Tongue clean and sleeps pretty well at night. The Epigastric pain is always relieved by a turpentine stuke.

Dec^r 31^r Pain over epigastric region rather worse today. The vomiting has entirely ceased, she still however continues her medicines

Jan^y 9^r Appetite is now very good, and the food she takes does not increase the pain in the Epigastrium, nor does it induce vomiting as formerly

Jan^y 13^r Patient is able now to sit up several hours a day without feeling fatigued. Appetite continues to improve

Jan^y 18^r Has been troubled with a severe cough for some days past which increases her pain, she vomited today after a fit of coughing. Complains of fullness and sense of weight in Epigastrium after taking food. Ordered

R. Pulvis Specae ʒi
Pulvis Rhei ʒi iv
Sodae Bicarb. ʒi viii

Sig. Dose three times a day before meals

Also R. Spr. Ammon Aromat ʒss
Aether Chlorici ʒi
Tr. Opii Camph ʒi
Mist. Acaciae ʒviii

Sig. A tablespoonful every three hours

February 7th Patient though still weak is gradually improving in her general health, she is now able to sit up for some time each day without feeling tired. Her food causes very slight annoyance and she has not vomited since last date, till yesterday evening when she brought up a quantity of matter resembling pea soup in consistence but brownish in colour.

Patient felt the Epigastric pain much more severe immediately before vomiting, but it has again subsided.

February 12th Patient vomited last night without feeling any unusual uneasiness beforehand, and does not complain of any new symptom today.

February 13th Pain rather more severe today especially after food, does not sleep well at night.

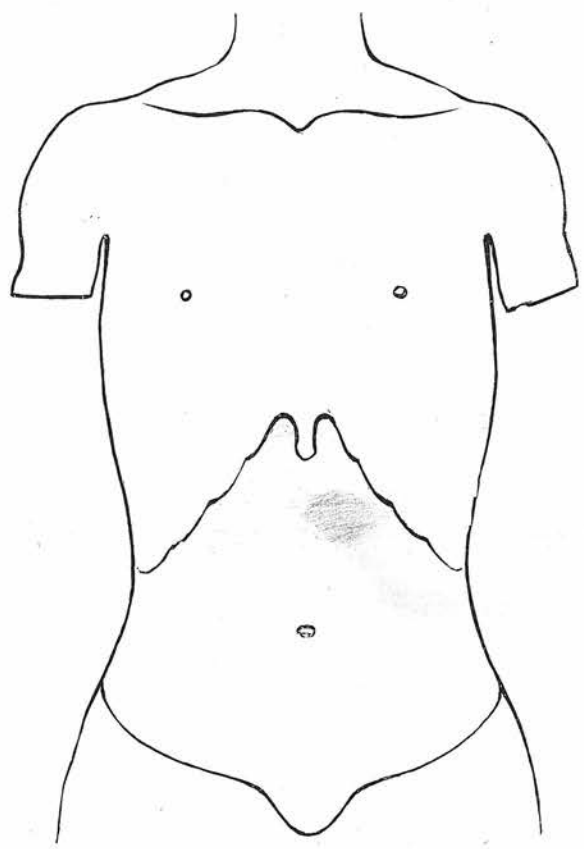
February 20th Patient has had no return of vomiting since last date.

February 25th Pain in Epigastrium more severe last night, has a feeling of heaviness at her stomach. Ordered an Opiate.

March 21st The vomiting has entirely ceased. She takes food much better. Has no pain in Epigastrium. There is still some fullness

and hardness in the left Epigastric region, which is somewhat dull on percussion, but no distinct tumour can be felt. The patient leaves today, her health and appearance are much improved.

Epigastric tumour in E. Hunt's case.



The vomit of December 22nd was examined microscopically and found to contain bundles of sarcinae in great abundance, very distinctly marked, starch granules very perfect and numerous, striated muscular fibre, scaly epithelium, tubules and fat cells innumerable, some dark brown crystals and coarse hairs. Examined the same after it had been carefully bottled on the 30th of March. It is perfectly fluid of a brown colour, and the yeasty looking substance which floated on the top has entirely melted down. No sarcinae can be detected after careful search nothing but multitudes of oval fungi some nucleated but others quite transparent. Threads of muscular fibre, viciuous and starch granules some perfect, but others shrivelled and without contents. The vomit resembled old cheese in odour. Iodine gave its characteristic colour to the starch granules.

Some which I bottled on 12th February presented the following appearances. at the bottom of the bottle there was a light brown gummy sediment, on the top there floated a spongy looking mass of the same

colour, and between the two a transparent stratum of clear fluid. The whole has a peculiar sweet musty odour. Examined a portion of the sediment but could detect no sarcinae even after adding acetic acid, however upon the addition of a drop of H_2O_2 numerous bundles were seen. The field of the microscope being filled with fasciculi of striated muscular fibre, large irregular masses of reddish brown granular matter, black pigment, epithelium, little oval cells often single, but sometimes in little strings of 3 or 4 or even more attached by their extremities, starch cells, many of them burst and partially shuddered up. The spongy looking floating mass presented much the same characters as the sediment, sarcinae being present, and some unusually dark in colour, some dark crystalline masses, some muscular fibre evidently in a state of disintegration, oil glob globules, and many large starch cells, some long transparent tapering tubes of different sizes evidently vegetable having in their interior clear cells of various sizes were observed, besides granular masses of a deep blue purple colour.

Margaret Dixon aged 28"

Was admitted on November 13th 1861 labouring under pulmonary disease, on February 6th 1862. she had a feeling of uneasiness in her stomach, which was relieved by the vomiting of a quantity of bilious looking fluid, mixed with a small portion of solid matter which on Microscopical examination is found to contain large bundles of Sarcinae in considerable numbers - On March 24th she died from her pulmonary disease, and on post mortem examination there was found considerable dilatation of the stomach, with slight constriction and thickening of the Pyloric orifice, its Mucous Membrane found to be quite healthy, No ulceration of the coats either of the stomach ~~or~~ intestines.