

Diseases of the stomach / by Evans Reeves.

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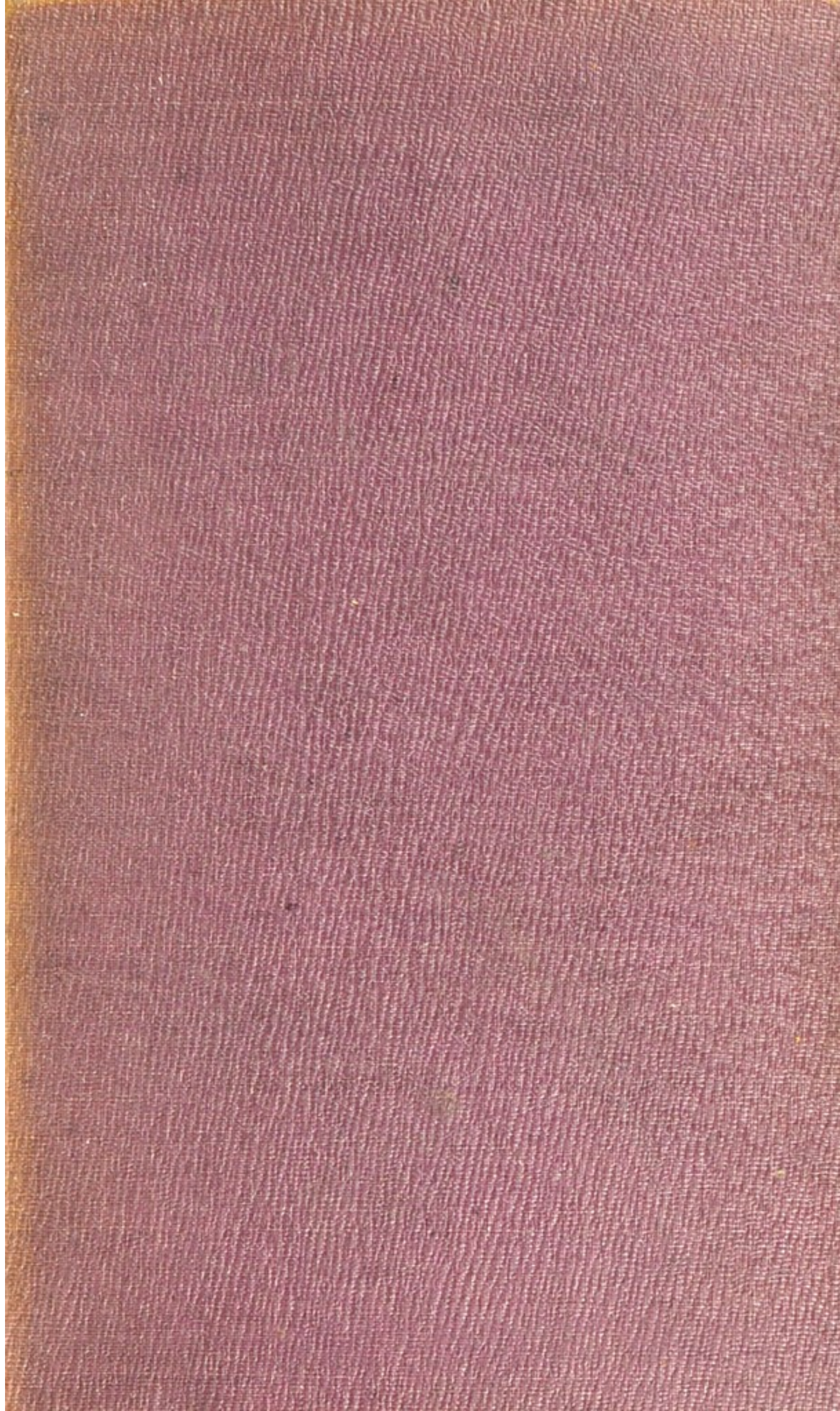
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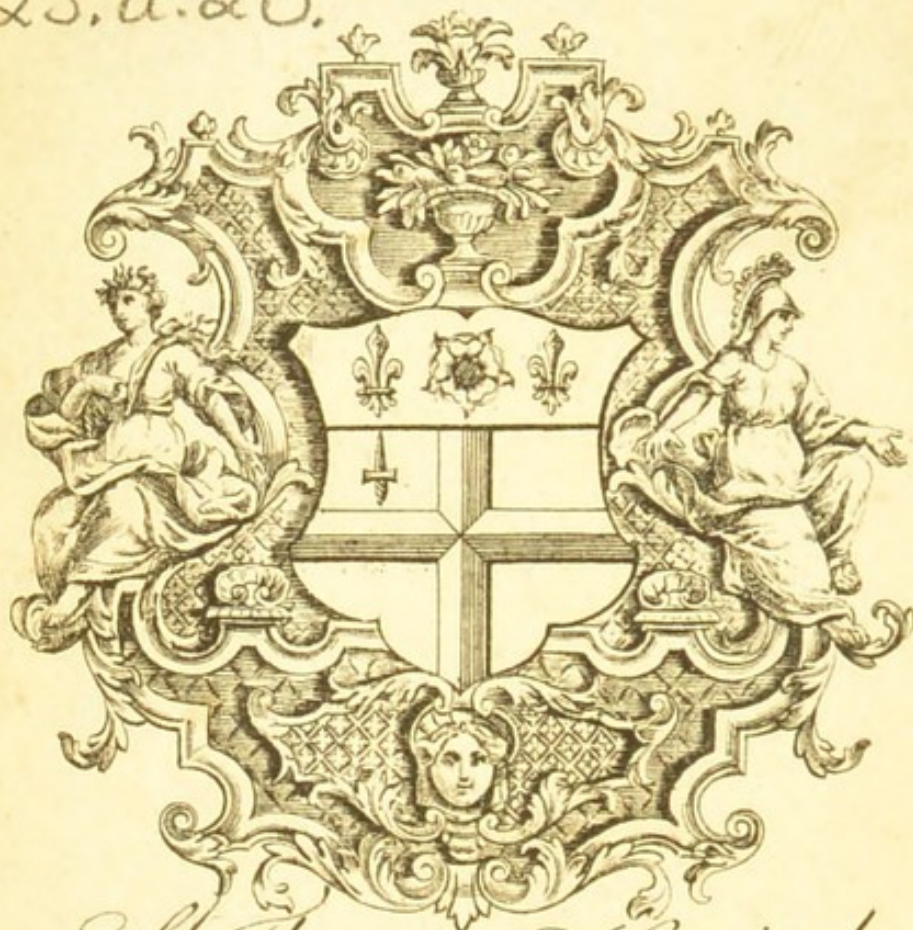
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DISEASES

OF THE

STOMACH.

BY

EVANS REEVES, B.A., M.D.

"Nulla est alia pro certo noscendi via nisi quam plurimas et morborum
et dissectionum historias, tum aliorum, tum proprias, collectas habere
et inter se comparare"

MORGAGNI. *De Sed et, Caus. morb.*, lib. iv., præm.

LONDON:

S. HIGHLEY, AND SON,

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1510662

2000



P R E F A C E.

The contents of the few following pages, form the result of several years' observations made in this country and on the continent.

I had flattered myself, before committing the knowledge which I had gleaned to paper, that I possessed all that could be possibly wanting to place before the world an accurate history of the causes, symptoms, pathological changes, and treatment of the different diseases, to which the stomach is liable. But I regret to say, that cases, the histories of, which I thought at the time, when they were taken to contain all the information that could be desired, now often turn out to be nearly devoid of interest,—memory, in many instances, failing to supply the loss of the facts which I had neglected to record.

Having finished my task, I feel that it might have been better done:—much that should have been said, has been left out.

To any charge of carelessness, I have but this apology to make: that the man who has to work from nine in the morning until ten at night, for bread, has—when once his facts are brought together—little disposition to study style or arrangement.

In the treatment advocated,—I have placed medicine in the second rank; while I have given regimen the first. In doing so, I feel that I am acting the part which every one should, who has the true welfare of those who entrust the care of their health in his hands; and I do it, *not on theoretical but on practical grounds*,

Anxious to collect additional materials for a second edition—should it be so fortunate as to reach one—I shall be most thankful for carefully observed cases.

To sufferers in humble circumstances, my services, will be at all times, freely and most gladly given.

4½, *Edward Street,*

Portman Square.

January 1, 1854.

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*The following Work, by Dr. EVANS REEVES,
is in the Press, and will appear in March :*

A PRACTICAL TREATISE ON DISEASES
OF THE SPINAL CORD AND
ITS MEMBRANES.

SECTION I.

SIMPLE DYSPEPSIA.

The terms simple dyspepsia, fit of indigestion, gastric derangement, disordered stomach, biliousness or bilious attack, are used synonymously to designate a suspension of the functions of the stomach, from its becoming overloaded with food, either through too much being taken, or from an accumulation in the colon, which by pressing on the duodenum at the point where it ends in the jejunum, interferes with the passage of its contents along the intestinal canal. The results of this accumulation being that the stomach, to rid itself of its burden, refuses food, and the appetite for a time declines, or vomiting or diarrhœa is induced.

There is probably no morbid affection so common as this. It is one to which all are liable;—from which almost every one suffers more or less at one time or another; some, however, only occasionally, either through irregularity in diet or in the due performance of the functions of the bowels. It is from this last cause that some persons are so liable to periodical attacks of this affection, and the reason why the frugal suffers equally with the sumptuous liver.

Persons from twelve to twenty-five years seem

to evince a greater tendency to this affection than those at more advanced periods of life. Females, from their confined and sedentary modes of living, accompanied by an habitual state of constipation, are more susceptible than the opposite sex, unless where the latter from following confined employments, are rendered liable to defective action of the bowels, more especially in youth, when the rapid growth of the body renders a large amount of ingesta necessary to supply the demand of materials for building it up.

The Causes. In connection with the predisposing causes, it will be found that in the majority of instances, the sufferers are needle-women, shopmen, and shop-women, servants, or single and married females of inactive habits. Those of a lax habit of body, melancholy temperament, passive disposition, and of little excitability, present a greater tendency than persons firmer-built and more active and energetic in temperament.

The immediate or exciting causes; are damp warm weather, (particularly in low confined or marshy districts,) interfering with the due elimination of carbon from the skin, irregularity in the meals, excesses, or taking food to which the stomach is unaccustomed, or the opposite extreme, too long fasting with or without bodily or mental fatigue, followed by a hasty meal—though not unusually large. Where the predisposition is very great, the slightest cause will often bring on attack,

—for example, taking an ice, a glass of cold water or any food or condiment, which, at another time, might be done with impunity; mental irritation is another frequently exciting cause. It is owing to the first of these causes; viz. damp warm weather in marshy districts, that the complaint is so prevalent on some parts of the sea coast, where it attacks equally habitual residents and visitors from other districts, the latter, in many instances, never suffering but when they go to some particular place.

If the state of the bowels be carefully observed before the attack comes on, it will be invariably found, unless where it has been brought on by over-indulgence, that they have become excessively costive, not having been moved, perhaps for four, seven or ten days, or if they act with apparent regularity, the evacuations are scant, often light-coloured and offensive.

Symptoms. The bowels being in the state just described;—a state easily recognised by a person conversant with the course of the colon, and the sounds it elicits on percussion when distended and empty. The affection may commence with a sense of lassitude, often little noticeable if the person is in a state of quiet, but which becomes immediately apparent on any exertion; the appetite fails, or if it continues, it is depraved, or the food is taken without any relish; the mouth becomes clammy, nauseous or bitter, sometimes inundated with saliva; the tongue is more or less thickly coated

with white or yellow fur, either wholly, or at least on its back part. In some instances, however, the tongue is quite clean; often of a deep venous hue.

The breath is in general slightly fœtid or saburral, and when acid eructations exists, sour; the existence of the latter symptom indicates that there is some irritation of the mucous membrane of the stomach, in which case the tongue presents a redness more or less marked, according to its severity, of its sides and point. Eructations of an insipid niderous or bitter taste are the most frequent. Headache is a constant and prominent symptom, sometimes, however, so slight as scarcely to deserve the name of headache, amounting only to a slight sensation of dulness and weight; but generally it is severe, fixed to one spot over the brow, or affecting the whole forehead, at times dull and heavy, at others sharp and lancinating.

These symptoms are much aggravated by exertion, as are also the mist before the eyes, and the vertigo or swimming of the head, which invariably accompany them.

The affection of the head may commence the first thing in the morning, the person rising with it, or with feelings of predisposition to it; but he may feel, on getting up, in better health and spirits than usual; yet in a few hours be in a helpless condition.

The expression of the face will be found to undergo considerable change; in every instance it becomes dull and heavy, with some it is pallid in

the extreme, while with others it is yellow; the white of the eye-balls participating. It is from this tinge, arising from the reabsorption of bile into the system, that the name bilious attack has been given to this disorder; when this is absent it is commonly called disorder of the stomach, or dyspeptic attack.

The urine will undergo some change; in those cases where the bilious tinge of the skin is much marked, it will become, either when the attack is at its height or when it has passed, of a more or less deep brown hue, and deposit, on cooling, a considerable sediment; but when no bile exists, it will be pale, and the deposit of a buff or pinkish aspect. The pulse during an attack seldom undergoes any great modification;—generally, it is somewhat slower and more contracted than in health, but when febrile symptoms exist, it becomes quick and sharp.

Termination. This may take place in either of the following modes:—1st, by subsidence,—2ndly, by vomiting or diarrhœa,—and 3rdly, in fever.

When it takes the first course, that of subsidence it will be found that the disinclination for food excited by the overloaded state of the stomach and duodenum, renders abstinence or the taking of food of the lightest kind and in small quantities, necessary.

This lull gives the bowels time to act and remove

the obstruction at the lower part of the duodenum, and enables both it and the overloaded stomach to free themselves ; the constant demand for nourishment, to supply the loss by the wear of the body, assists materially in lessening the amount of the accumulation. It is in this manner that nature, ever kind and beneficent, points out the mode in which a cure should be affected ; but the warnings which she gives are constantly neglected. Persons when their appetite flags, from a fear, that if one or two meals are omitted they may sink from starvation, continue to tempt the stomach—if it refuses one kind of food,—with another, until it, at last, rebels, or chronic inflammation is excited.

It is true that people, at present do not have recourse to the same measures which the Greeks and Romans adopted to enable them to enjoy days of feasting ; namely :—as soon as they felt their stomachs oppressed by the food they were eating, have recourse to vomitives, but they do that which is quite, if not more reprehensible, in the daily use of cathartic pills or potions to keep the stomach free, to enable them to enjoy the daily luxury of a good dinner. A torpid state of the colon is induced which can only be overcome by the constant use of the most powerful drastic purgatives. Nature, it is quite certain, no more intended that people should be constantly taking medicine to regulate their bowels, than, that because she has furnished them with hands, they should walk on all fours.

When the attack terminates in the second manner; viz., by vomiting or diarrhœa, it is generally by the first of these that it takes place. It may be induced by the introduction of some article of food or drink into the stomach, or the headache may continue to increase in severity until at last it becomes so intense, as to excite, from the intimate relation which exists between the brain and the stomach, contractions in the latter.

In a case which I had an opportunity of carefully watching, the following was the course of each attack. The person was, without any previous warning, seized with a sensation of mist before the eyes and giddiness of the head, followed at the end of ten or fifteen minutes by headache, which gradually increased in severity and obliged him to go to bed. In the course of an hour, a sensation of numbness was felt in the little finger of the right hand, which travelled slowly up the arm to the arm-pit, whence it passed immediately to the upper lip, which, for the space of half a minute felt benumbed, and slight twitchings were at the same time observed to take place in it. The sensation then passed to the point of the tongue, and gradually extended over the whole of this organ. Immediately this had taken place, without any premonitory warning, vomiting set in, and in a short time he was as well as usual.

In another case, that of a girl of fifteen, which I had an opportunity of watching; immediately before the vomiting came on, for about two

minutes, the eyes were fixed and staring, the muscles of the face alternately rigid and relaxed, the hands clenched, and the speech indistinct. The ejection of the contents of the stomach was followed by the immediate subsidence of these symptoms.

When the attack terminates by diarrhœa, it is generally in the following manner:—the symptoms already noted viz. ; headache, nausea, loss of appetite, &c., having existed for a shorter or longer period, distension and uneasiness, accompanied by attacks of spasmodic pain are experienced in the bowels,—diarrhœa then sets in, and motions, first of a dark colour and offensive smell are passed, followed by those of a watery character. The latter continue for a day or two, when they subside and the person is restored to the enjoyment of his usual state of health.

The use of improper food or remedies, or checking the action of the skin, may, however, cause the disease to last much longer. When this is the case, some tenderness, on pressure, will be generally found to be present in some parts of the abdomen, with pain of a dull and constant nature ; when these symptoms are severe, the skin will become hot, the pulse quick, and the tongue dry, with thirst.

When there has been considerable accumulation of hardened fœces in the colon, the purging instead of being watery and copious, is apt to become scanty,

that which is passed, consisting of slimy mucus, more or less tinged with blood, and mixed with small pieces of hardened fœces. An incessant desire to go to stool exists ; the motions are voided with great pain and straining, and tenderness and pain will be found to exist on the left side of the abdomen, in a situation corresponding with the course of the descending portion of the colon.

When the attack terminates in fever, the following is the course it generally pursues :—the symptoms of a disordered state of the functions of digestion, &c., having existed for some time, after exposure to cold or wet, cold chills set in, followed by hot dry skin, thirst, dry tongue coated with white or yellow fur, yellow tinge of the eyes and face. Where this yellow tinge is strongly marked, the liver will be found enlarged, with fulness and tenderness along the borders of the right false ribs, which can be traced to exist in the duodenum, and following it downwards, and to the left, to behind the arch of the colon, where it ends in the jejunum.

If cases of this kind are left to nature, diarrhœa or vomiting sets in, in some instances, during the first week ; in others not until some days later, or it subsides either by perspiration or the occurrence of copious white or buff-coloured sediment in the urine.

This disease sometimes terminates in chronic inflammation of the duodenum,—but this never occurs in recent cases. In ten cases where this was the

termination which I have had an opportunity of observing, in one only had the attacks of simple dyspepsia existed five years before the duodenum became implicated—while in the others they had existed for periods, varying from ten to twenty and twenty-five years; the youngest of the patients was twenty-seven years of age, while the others were from thirty-five to fifty-five.

CASE I.

CHRONIC SIMPLE DYSPEPSIA, ENDING IN, AND COMPLICATED WITH, CHRONIC INFLAMMATION OF THE DUODENUM.—CURE.

A medical man aged forty, of moderate height and build, with brown hair and eyes, irritable disposition, subject to much mental anxiety, habits regular, but takes very little exercise. His skin naturally harsh and dry, is frequently covered with psoriasis which materially influences his sufferings; for, he always experiences much relief when it is copious; the vessels of his conjunctivæ prominent, giving a muddy appearance to the white of his eyes. Since childhood he has suffered from attacks of simple dyspepsia, and they have continued to occur up to the present time, every ten, fifteen, twenty, or thirty days, according as the action of the bowels has been interfered with. For the last seven or eight years he has been the subject of indigestion, which has presented the following symptoms:

food, although taken with appetite, is followed in from half-hour to two hours' time by a sense of pain and fulness with tenderness, on pressure, at a spot corresponding to the cartilages of the seventh and eighth ribs of the right side, accompanied by much flatulence. These symptoms, after lasting two or three hours, subside; but if constipation exists or mental anxiety has occurred, headache sets in, relief only being obtained by the evacuation by purgatives, of clay-coloured motions mixed with slime and dark-coloured bile.

His liver is small, and even during the attacks, it is not sensibly increased in size, but the gall-bladder can often be felt distended. When the attacks are prolonged beyond twenty-four hours, the skin and eyes become of a yellow tinge and the urine, which is generally scant and high-coloured, depositing, on cooling, uric acid, becomes loaded with bile. To keep the bowels in a regular state he is under the necessity of having constant recourse to drastic purgatives. So sensitive are the duodenum and gall-ducts, that the taking of even a small dose of blue pill or calomel is always followed by motions showing a deficiency of bile.

During the attacks I found nothing act so beneficially as the following draught:—sulphate of magnesia, six drams; compound infusion of sennæ, two ounces; tartarized antimony, quarter of a grain; tincture of aconite, (Ph. L.,) five minims—mix. It generally excited slight nausea, but it

was invariably followed in three or four hours by copious evacuations. He ultimately got quite well by the use of the hot-air bath once a week, frictions over the whole body with the wet flesh-brush every morning to restore the action of the skin,—strict diet and active exercise.

C A S E II.

SIMPLE CHRONIC DYSPEPSIA,—ACCOMPANIED WITH SPASMS OF DUODENUM,—TERMINATING IN CHRONIC INFLAMMATION OF DUODENUM. DEATH.

M. aged forty-two, a clerk, of moderate stature, with dark hair and eyes, regular habits, taking from one to two pints of beer daily. For some years he has been subject to attacks of simple dyspepsia, whenever the bowels became constipated accompanied by attacks of pain of a spasmodic nature in the duodenum. The attacks were never attended by vomiting. For some years he has suffered from indigestion, the chief symptoms of which were dull pain, and fulness along the edges of the false ribs on the right side, with tenderness on pressure. These symptoms were generally aggravated some time after eating; relief only following when the duodenum ceased to be burdened with food. The attacks of spasm have of late become more severe and always followed by increased tenderness and pain, continuing for several days.

The extreme liability which existed to these attacks, if the action of the bowels was interfered

with, has compelled him to solicit an evacuation regularly twice or thrice a day. He fell under my notice on the twenty-fifth of April as a patient at the Bedford Dispensary, suffering from very severe pain on the right side of the epigastrium, which he attributed to eating a heavy beef-steak supper, and partaking of some brandy and water three nights before. There was considerable tenderness on pressure opposite the cartilages of the seventh and eight ribs, which could be traced downwards to the left, following the course of the duodenum to behind the tranverse arch of the colon. The bowels, although two doses of castor oil had been taken, had not been freely opened, and on percussing the lower part of the descending colon, indications of fœcal accumulation were found; his pulse was quick and sharp, skin hot and dry, tongue parched and coated with yellow fur, thirst considerable, urine scant, high-coloured and loaded with urates. His skin had a slight yellow tinge, and the conjunctivæ were congested. By repeating the castor oil with the use of glysters, free evacuations were obtained from the bowels. These measures, with leeches to the seat of pain.—repeated warm baths,—with strict diet and saline demulcent medicines, he, at the end of a fortnight, quite recovered from the attack, and felt as well as usual. I lost sight of him for nearly three months, when he again applied for relief suffering from jaundice. He stated that after ceasing to

attend, he had felt the pain and tenderness much better up to a month back, when from no known cause it increased, and the slight yellow hue of the skin before noticed, gradually became deepened, it had now assumed an almost olive tinge. His urine, tears, perspiration and saliva were of a yellow colour. His motions had gradually become pale, and they now presented but very slight indications of bile, and he had also lost flesh and strength. There was no very material increase of the pain and tenderness along the course of the duodenum, but he complained much of weight in the right hypochondrium and across the back. The liver had increased considerably in size, and the gall-bladder could be felt much distended, and his mouth was inundated with saliva; pulse rather quick, and skin particularly towards night, hot. It was evident that some obstruction existed to the entrance of the bile and pancreatic fluid into the duodenum, probably, due to the closure of the opening of the common duct.

Leeches were applied and repeated every five or six days over the seat of pain, with the use of the hot-air bath for twenty minutes, once a week to increase the action of the skin, at the same time five grains of nitrate of potash was given three times a day; with a diet consisting chiefly of milk, beef-tea and mutton-broth.

Under this treatment he seemed to improve, there was less tenderness and pain, and he ceased

to lose flesh. But at the end of a fortnight, thinking that something more might be done, he applied to a medical man, who recommended him to take an emetic of ipecacuanha. This was followed, after the ejection of the contents of the stomach, by severe reaching and great increase of pain in the duodenum with symptoms of fever. By the use of opiates and hydrocyanic acid, with leeches, some relief was obtained. The motions were now observed to lose all traces of bile, and become quite like clay. On the evening of the sixth day he experienced a sensation of faintness, followed by nausea and vomiting, and brought up some thick dark fluid to the amount of three-fourths of a pint, and several motions of the same character were passed. The vomiting never recurred, and the motions after the second day assumed a nearly natural tinge, but blood was frequently voided, and in considerable quantities. The flow of saliva from the mouth ceased, but the tinge of the skin underwent no change. He sank ten days after the vomiting, set in, from exhaustion.

When the matter which had been vomited, and the stools were examined, the first was found to consist of bile, mixed with blood, with some butter-like fat, and white pieces of a hard substance resembling tallow, floating on its surface; and the last presented the same appearance, with the admixture of some portions of clay-coloured fæces.

The butter-like fat ceased to appear after the

second day, but the small masses continued in the fœces up to the time of death. The quantity of fluid fat passed altogether was estimated at about half a pound, the small pieces at four ounces.

Post Mortem. The liver was of a deep olive green, large and flabby, and when cut into, the ducts were found large, and had evidently been much distended, although now they were quite empty, save near the surface of the liver, where some particles of fat, like those passed, during life, were found.

The duodenum was thick and fleshy, and of a deep venous hue, and when cut into, its coats were found very much thickened, its valvular appearance had quite disappeared. The thickening was most apparent in its second or descending portion, and its mucous membrane here presented a kind of honey combed appearance from the existence of a number of ulcers, varying in size from a split pea to a silver penny-piece. Some of these ulcers had penetrated to the peritoneal coat. The common duct opened in the centre of one of these ulcers.

The pancreas was large, and its ducts were distended with calculi, but the pancreatic duct itself was pervious to fluid. The glands in the vicinity of the duodenum were enlarged, but the organs of the chest and abdomen beyond being deeply tinged with bile, presented no morbid change.

In a case which I have had for some weeks under my care, the patient a man fifty-five

years of age, has been subject for some years to attacks of simple dyspepsia, whenever the bowels become constipated. During one of these attacks, five years ago, he was seized with severe vomiting which lasted for some days. Since this time he has constantly suffered from pain some time after eating, in the duodenum, and whenever two days pass without an evacuation from the bowels, pain of a spasmodic nature is excited in this portion of the intestine. Relief is only obtained by free evacuation from the bowels of large quantities of hardened fœces.

Treatment of Simple Dyspepsia.—This must be directed during an attack to the removal of the cause, namely, the accumulation in the colon and the rest of the intestinal canal, which has produced it. After this has been effected, to prevent, by strict attention to the state of the bowels, &c., a return. The measures which act most effectually in the first, are, either emetics or purgatives, singly or combined.

In the choice of these remedies, from vomiting being attended by greater straining in the adult, to what it is in the child, from the position of the stomach being different; the preference when the patient is an adult should be given to purgatives; nevertheless when the nausea is severe, it is always advisable to get rid of the accumulation in the stomach by the assistance of large draughts of tepid water, to which salt in the proportion of two tea spoonsful

to each half-pint has been added, at the same time tickling the throat with a feather. When this has been effected, if the bowels have not in the interim been moved, then a purgative should be administered—but even in those cases where the bowels have been opened, if the evacuations are dark-coloured and offensive it should be had recourse to.

In my own practice I order for this purpose a dose of castor oil or a common black draught, giving however the preference, when it can be taken, to the first. I never give either calomel or blue pill; for, from the careful observation of a considerable number of cases, I feel assured that the repeated dosing with these drugs, so much in use, is most injurious. The headache is always much benefitted by a draught containing prussic acid, tincture of aconite, and carbonate of soda, or calcined magnesia. A draught of this kind seldom fails, if taken at the commencement of the attack, to cut it short or mitigate it materially.

When the attack terminates in fever, an emetic of ipecacuanha, [will be found the most effectual remedy, its action being assisted by copious draughts of tepid salt and water, followed by an active purgative to remove any accumulation in the colon.

When the attack terminates in dysentery, a dose of castor oil, assisted by glysters of water-gruel, with from two to three table-spoonsful of olive oil in each, to remove the hardened fœces, will, unless there is much tenderness in the descending colon

be the most effectual treatment ; but when the last exists, leeches should precede the castor oil ; and opium or extract of henbane, will, if severe, be advisable, either alone or combined with calomel.

After the bowels have been freely evacuated, a dose of opium or extract of henbane will be advisable to allay irritation.

The diet after an attack of simple dyspepsia should be confined for a day or two to broths, soups, gruel and arrowroot, with toast and water, barley-water or soda-water for drink.

The remedial measures to be had recourse to after an attack, if the strength has been reduced, are the sulphate of quinine, or one or the other of the preparations of iron in some bitter infusion.

Preventive Treatment.—The plan which I am in the habit of recommending to persons suffering from this affection, and with the most satisfactory results, is the following :—

First—every morning immediately after getting out of bed, to sponge the body with cold water ; in the winter or when first commenced with, it may be used tepid ; then dry the body, and rub it well for a few minutes with a coarse towel, until a feeling of warmth is produced.

When the skin is rather harsh, or the *glow* not easily excited, friction with a wet flesh-brush instead of the sponging may be used ;—the body being

afterwards dried with a towel, without any subsequent friction.—This last plan presents considerable advantages over the first; inasmuch as it is more speedily performed and stimulates the skin more effectually. All danger of cold is entirely obviated by the induction of the *glow*.

Secondly—to drink from half to a tumbler of cold water night and morning; in some instance, it is apt at first to induce nausea, but it soon ceases to have that effect.

Thirdly—for breakfast: milk, or milk and water porridge, with bran bread.

Fourthly—for dinner: to eat less meat, making up the deficiency with vegetables.

Fifthly—for tea: milk and water or two small cupsful of black tea, with bran bread.

Sixthly—for supper, a biscuit, or a slice of bread and butter, with a glass of water.

Seventhly—Exercise must be also taken in as regular a manner as possible. A daily walk of from one to two or three miles, should never be omitted.

Eighthly—a habit of going once a day to the water-closet should be acquired; immediately after breakfast is the best time. If this plan is persevered in, for a few weeks, the bowels will respond to the solicitations, and act without medicine.

SECTION II.

CHRONIC DYSPEPSIA ;—(*Chronic Gastritis*,)

Characteristics.—*Pain and fulness in the epigastrium either constant, or excited after taking food, (some kinds more than others,) accompanied by acid eructations, flatulence, appetite sometimes absent, at others ravenous; thirst often very severe, an intense desire for cold fluids existing; nausea; vomiting, &c.*

Females present in early life, namely from fourteen to twenty-five, a much greater predisposition than males to this disease; but after this time, the disease is more frequent in the latter.

Causes. When the sufferers are females, it will be found in the majority of cases, that they are needlewomen, housemaids, servants of all work, or if belonging to the middle or upper classes of society, that their habits are inactive. In the last-named, the disease can often be traced to having eaten some indigestible article of food; while in the first, where the sufferers are needlewomen, habitual constipation, obstructed, irregular or scanty menstruation, induced by sitting a great number of hours, often in a close room, while in housemaids, or servants of all work, the same state of the uterine functions is induced by the badly ventilated underground offices which they inhabit. In the last named persons, running about immediately after eating seems to be a very frequent cause.

The habitual use of spirits induces this disease in a great number of females.

Amongst men we find drapers and those who follow similar occupations; as also those who walk some distance before and immediately after their meals, very susceptible to this disease. From the rapidity with which the meals are eaten by the first, the stomach is called upon to do the work of the teeth, while the exertion which the latter make immediately after eating, interferes with the action of the stomach on the food and the due secretion of the gastric juice.

In merchants, solicitors, and others who follow occupations which render the taking of food at proper intervals difficult, overloading the stomach with rich and indigestible substances, while in a debilitated state from having been empty for several hours, is a constant cause of this disease.

There exists another class of men, such as publicans, butlers, &c., in whom this disease is excited by quite an opposite plan; they, instead of allowing the stomach to become weakened by long fasting, keep it in a state of constant excitement by repeated draughts of wine or spirits and highly-seasoned food. To this last class, we must perhaps refer men who, from a life of activity sink into one of ease, but who, unconscious that the system has much less demand for food than before, continue to eat and drink in the same proportion.

It frequently happens that persons of the most

regular habits, become subject to gastric derangement, from the disappearance of eruptions on the skin, either spontaneously or by the use of medicine; healing of long-standing ulcers; cessation of long-standing diarrhœas; perspirations of the hands and feet or from defective action of the kidneys; blows or falls on the pit of the stomach, &c.

Symptoms. These will be best considered in connection with the sex, the situation of the disease, and the nature of the morbid changes induced.

In females, as I have before observed, a greater predisposition exists in early life, than at any other period—perhaps, from their being more exposed to the causes which induce this disease then, than at a later time. Hence it may be considered a disease of single rather than of married life, although those in the latter state, (particularly if they be sterile,) will be found equally liable if exposed to the same exciting causes. In twenty-nine cases of this disease which I have observed, the majority were single; or if married they had not had children.

The cases which I have collected from various sources, where this disease has terminated fatally, show, that the unmarried present a tendency of nearly eighty per cent over the married.

The following, table comprises I believe, all the fatal cases of this disease which have been published; and it shows how much greater the predisposition is in the female than in the male sex, and the greater tendency which they present, up to the

twenty-fifth year. The cases, one hundred and ninety-three in number, of which one hundred and twenty-seven were females, and sixty-six males :

	FEMALES.	MALES.
Before 15 years	- 10	- 1
15 to 20 „	- 34	- 4
20 to 25 „	- 24	- 8
25 to 30 „	- 14	- 8
30 to 35 „	- 6	- 4
35 to 40 „	- 4	- 6
40 to 45 „	- 8	- 4
45 to 50 „	- 14	- 4
50 to 60 „	- 6	- 10
60 to 70 „	—	- 3
70 to 80 „	—	- 2

In the cases published by Rokitansky, in the *Österrich, Med. Jahrb.*, 1839: thirty-three were males and forty-six females.

The cases which fell under his notice, occurred at a more advanced age than those which form my table. This difference may be accounted for, from the fact that in early life they are very rarely met with in the hospital.

In connection with the situation of the disease we find that the symptoms are somewhat modified if the lesser curvature, the cardiac, or the pyloric, portion of the stomach is the part affected.

When the lesser curvature is affected, it is common to find that the symptoms of gastric derangement, are either absent or they are so slight as to escape the attention of the patient, a fatal termination from hæmorrhage or more frequently

from perforation, revealing that disease had existed.

It is difficult to assign a reason, why the symptoms of gastric derangement should either be absent or only slight when this part of the stomach is affected; unless, the stomach possesses the power of shielding one part of itself more than another from the contact of irritants, and that it can exert this power better on this part than on any other.

It is probable, that to some action of this kind, persons suffering from chronic gastritis, are enabled to take a certain quantity of food, without inconvenience, but if they exceed it, then pain, and other symptoms follow.

This shielding power of the stomach seemed particularly exemplified, in the case of an elderly man, who was subject to periodical vomiting of mucous. The attacks occurred at intervals of seven or ten days. Each one being preceded for some days, before the vomiting took place, by gradually increasing fulness in the epigastrium, accompanied by more and more difficulty in taking the food. As soon as the vomiting had taken place the tension of the epigastrium subsided, and he was enabled to eat a hearty meal without inconvenience.

After death, which took place from apoplexy, the villi were found prominent, and the mucus

follicles more developed than usual in the great extremity of the stomach.

When the disease is situated in the right or cardiac half of the stomach, the pain is sometimes constant, sometimes, it is only excited when food is taken into the stomach, its severity being greatly influenced by the kind and the quantity taken.

In some cases the pain is dull, while in others it is burning, aggravated by taking food, and often accompanied by an insatiable thirst. When the food is very indigestible or the sensitiveness of the stomach much increased, the pain will often assume a spasmodic character; relief being obtained only by the ejection of the irritating substance by vomiting, or after hours, sometimes days of pain, by its becoming digested and passing out of the stomach into the intestines. The removal of the offending cause does not always succeed in restoring the stomach to the same state of quietude, which existed before the attack. Pain with tenderness on pressure, generally continues for some days, and in some cases the irritation is so severe, that food and some kinds of fluids, such as soups, or what are termed slops, are immediately rejected.

Flatulence, acid eructations, and heartburn are constant attendants; sometimes, there is very severe thirst, less, very often, from the dry state of the mouth, than from a craving for cooling drinks, to allay the heat of the stomach.

Nausea is nearly always present, vomiting less frequently, but it is very apt to occur on taking food or drink, and often continues for some time, after the substance which has excited it has been got rid of.

A most distressing symptom and one very common when this part of the stomach is affected, is a sense of weight and pain in the lower part of the chest, arising from spasm of the cardiac opening: sometimes this spasm is communicated to the diaphragm, or the lungs, and great difficulty of breathing is induced, or it affects the heart and excites palpitation, irregularity, or unusual slowness of action in this organ.

The tongue presents different appearances: when the stomach is quiet, it is white and flabby fissured, streaked, or partially coated with white or yellow fur, the papilla sometimes prominent; but when it is in a state of irritation, its point and edges are apt to become red; sometimes this colour extends all over it; and, in some cases, it assumes a mahogany or a raw beef appearance.

When the disease is situated on the anterior wall of the stomach its seat can be easily distinguished, but when the posterior wall is affected, this will, from the absence of tenderness on pressure, unless the disease is extensive, be difficult. When this last part is its seat, a fixed pain in the spine is generally present, sometimes passing up along the œsophagus, and, in some cases, exciting

a feeling of constriction in the throat, similar to that experienced by hysterical females.

When the disease is situated in the pylorus, or in the pyloric half of the stomach, so as to be capable of exerting an influence on this opening, in addition to the pain which will be situated to the right of the pit of the stomach, near the edges of the cartilages of the seventh or eighth false ribs, distention, acidity, flatulence, nausea, and vomiting, pyrosis will also be present. The presence of this last symptom is most valuable as diagnosing the part of the stomach affected. Its existence seems due to the influence, which irritation affecting the pylorus, or the upper part of the duodenum, exerts on the pancreas, causing it to pour fourth its fluid in the same manner that the contact of food with the tongue causes the salivary glands in the mouth to pour forth their secretion.

The influence of chronic inflammation on the pylorus, from its connection with cancer, will be again referred to.

The state of the secretions in this disease, must not be passed over, for it often happens, that it is only by attention to them, that a cure can be effected. All remedial measures directed to the disease itself being followed with but transient relief.

The saliva is generally acid to test paper; the intensity of its action being greatly influenced by the severity of the gastric symptoms.

The urine, when the symptoms are not severe, is, generally, somewhat paler than in health, and copious in quantity, when they are severe, its colour deepens and its quantity diminishes, and its action on test paper, which is always acid, then becomes more marked. Urates are frequently observed when febrile symptoms become developed. Its density, and consequently its depth of colour is greatly influenced by the quantity of water or fluids of a less specific gravity than that of the serum of the blood, being always greatly diminished when they are taken copiously.

The secretion from the skin is generally diminished; the skin itself dry and harsh, in cases of some standing, where emaciation had set in, this was particularly observable. In some cases, where the emaciation was extreme, night sweats were observed.

In some cases, the skin was the seat of psoriasis or other chronic eruptions; their absence or presence always materially influencing the gastric symptoms.

The surface of the body was generally cold, and one of the most troublesome symptoms observed, was cold feet, often keeping the sufferers awake half the night.

The weather from the influence which it exerts on the secretion from the skin; and consequently, on that from the kidneys, and also of the lungs,

often modify the symptoms in a very marked manner.

Some persons, therefore, suffer less in summer than in winter; in clear than in dull or misty weather, but occasionally the reverse is met with.

Perhaps none of the secretions (those from the bowels excepted), produce and receive such an influence as the menstrual discharge. When this discharge has been established (frequently it will be found not to have taken place, although the period for its being so, has passed over), it will be irregular in its appearance; sometimes scant, in quantity or wanting in colour. These states are particularly observable in those who follow sedentary occupations, and precede or accompany the gastric symptoms. But where the occupation has nothing to do with exciting the disease; its origin being due to some constitutional taint, or to some irregularity in diet, &c., the discharge will become interfered with, in its quantity, colour, &c., only in proportion as the nutrition of the body is affected.

The bowels are generally confined, most frequently from a torpid state of the colon; but occasionally from thickening and narrowing of its transverse or sigmoid portion. Sometimes a state of relaxation exists alternating with constipation, and which when copious is always followed by much relief to the gastric symptoms. Blood is sometimes voided from internal piles, while at others,

mucous in considerable quantities; generally with relief.

The due regulation of the action of the bowels, is often one of the most troublesome features of this disease; sometimes no action can be obtained from them, without the use of the most powerful drastic purgatives.

In some cases, particularly in men, it is to their action, being either checked or interfered with, that the gastric disorder can be traced.

A man, aged sixty, now under my care, of highly nervous habits, had up to sixteen months before coming under my notice, suffered for some years from watery diarrhœa. It gave him no inconvenience, and was unattended by any pain. A sense of weight and constriction being alone experienced in the epigastrium, for a short time before the desire to evacuate the contents of the bowels came on. His habits had always been very regular, and his occupation, although a confined one, not laborious. The relaxation stopped, from no known reason, and his digestion became immediately interfered with.

A cook, aged sixty-one,* for some years addicted to brandy-drinking, from which he had become very feeble. He was seized with diarrhœa, which after troubling him for six months, stopped of its own accord and was replaced by obstinate vomiting which resisted every remedy. At the end of three months, he entered the Hospital Cochin, in

* Chardel Sur les Squir; de l'Estomac,—Paris, 1808.

a state of extreme emaciation. No pain or tenderness existed in the epigastrium; the tongue clean, but very red.

He died one month after his admission.

If we consider this disease as it is met with, in men, no matter in what class of society it occurs, or from whatever source it may spring, unless it is from the abuse of drink, the symptoms are the same as those already enumerated when speaking of the disease as it is met with in females; save that from their not being subject to any influence so powerful as that which the menstrual discharge exerts in the latter, its progress is therefore generally gradual. At first, flatulence and distension with eructations are experienced; then, as the disease advances, acidity, pain, and tenderness on pressure, increasing in severity, with nausea and vomiting. The bowels, at the same time, gradually become more and more constipated. But when the disease arises from the use of spirits, the symptoms are more rapidly developed, and they are accompanied by the other symptoms, which chronic poisoning with alcohol excites on the nervous system. The bowels in these cases seldom become confined until the symptoms have acquired considerable intensity. In some cases I have, however, observed that on the bowels becoming constipated, from some cause or other, the gastric symptoms, before very slight, then became severe,

A marked peculiarity in this disease, as it occurs in this class of persons, is frequently observed; and this is, that the stomach will reject everything but stimulants. In this country table-beer or porter; on the continent *vin ordinare* or some other wine, will remain on the stomach when everything else whether liquid or solid is rejected. The vomiting in drunkards is generally most troublesome in the morning, particularly at the onset; the matter brought up generally consisting of mucous or watery fluid tinged with bile. This is generally due to the over-night indulgence.

Terminations. First, in ulceration; secondly, alteration or transformation of the tissues; thirdly, in recovery.

Death may result in the first, from the walls of the stomach becoming perforated; the food escaping into the cavity of the abdomen, and inducing peritonitis; or from the ulcer opening a blood vessel of the stomach, or of one of the adjoining viscera, and thereby producing hæmorrhage. In both this and the second termination, death may ensue from exhaustion, or from disease of some other organ, particularly the lungs, supervening.

The termination in ulceration has not been recognised (by those who have written on the subject,) as a result of chronic *gastritis*; but, rather, as a distinct disease.

Becker of Berlin, in a paper published in *Horns*

Archives, for 1824, has divided ulceration of the stomach, into acute and chronic; while Cruvielhier, in a paper in the *Revue Médécalle*, for 1826, considers it under the name of simple chronic ulcer, though in his *Anatomie Pathologique*, he inclines to the division adopted by Becker: for, he considers a case, in which the gastric symptoms had been noticed only a few days before death, as acute; while in another, were they had been of some standing as chronic.

This divison, however rational it may appear, cannot be exemplified in practice; for cases are constantly met with, where the symptoms of gastric disorder, which precede the perforation, have been of but very slight duration; yet the ulcers have presented every appearance of having existed some time: while, on the other hand, the gastric disorder has been very severe, though after death to all appearance the ulcers have seemed of recent formation.

The slightness of the symptoms in the first, can be explained by the influence which, as before observed, the position of the ulcer exerts on the symptoms; while in the last, the rapidity with which ulcers on the surface of the body are changed by increased vascular excitement, may, perhaps, explain the alteration met with.

The following table comprises one hundred and twenty-seven cases of ulceration, which occurred

in females, and in which death resulted either from peritonitis, consequent on perforation, hæmorrhage or exhaustion :—

AGES.	No. Of Cases.	DEATHS.
Before 15	10 -	in all from peritonitis.
15 to 20	84 -	32, peritonitis ; 2, hæmorrhage.
20 „ 25	24 -	23, peritonitis ; 1, hæmorrhage.
25 „ 30	14 -	all from peritonitis.
30 „ 36	4 -	2, peritonitis ; 2, hæmorrhage.
35 „ 40	4 -	2, peritonitis ; 2, hæmorrhage.
40 „ 45	8 -	6, peritonitis ; 2, hæmorrhage.
45 „ 50	18 -	12, peritonitis ; 2, exhaustion.
50 „ 60	4 -	3, peritonitis ; 1, hæmorrhage.

Amongst the ten cases where death resulted from hæmorrhage, in eight the ulcers were situated on the posterior wall ; in the other two, on the lesser curvature. In the two cases where death occurred, from exhaustion, the ulcers were seated on the posterior wall.

The following table contains the analysis of sixty-six fatal cases, which occurred to males :—

AGES.	No. of Cases.	DEATHS.
Before 15	1 -	exhaustion
15 to 20	4 -	all from peritonitis.
20 „ 25	8 -	6, peritonitis ; 2, hæmorrhage.
25 „ 30	8 -	{ 6, peritonitis ; 1, hæmorrhage ; 1, exhaustion.
30 „ 35	14 -	12, peritonitis ; 2, hæmorrhage.
35 „ 40	6 -	{ 4, peritonitis ; 1, hæmorrhage ; 1, exhaustion.

AGES,	No. Of Cases.	DEATHS,
40 to 45	6 -	2, peritonitis ; 2, hæmorrhage.
45 „ 50	4 -	{ 1, peritonitis ; 2, hæmorrhage ; 1, exhaustion.
50 „ 60	10 -	{ 7, peritonitis ; 1, hæmorrhage ; 2, exhaustion.
60 „ 70	3 -	
70 „ 80	2 -	1, hæmorrhage.

Of the twelve cases, where death resulted from hæmorrhage,—in seven the ulcers were situated on the posterior wall; in four on the lesser curvature, and in one, on the anterior wall. In the cases where death resulted from exhaustion, the ulcers were situated on the posterior wall, and more than one was generally found to exist.

In the cases, four in number, where perforation of the transverse arch of the colon ensued, death from exhaustion took place in every case.

The following table shows the position of the ulcers in one hundred and four cases.

CASES.

In 22, the posterior wall was the seat of the ulceration.

In 32, the anterior wall.

In 28, the lesser curvature.

In 6, the great curvature.

In 16, both the anterior and posterior wall.

In one case, where perforation of the great extremity had taken place, it communicated with an abscess in the spleen ; in another, a peritoneal ab-

scuss had formed around this organ, and it floated in *pus*. In two of the cases where the ulcers were situated on the anterior wall, perforation of the diaphragm had taken place,—death being caused by pleuritis.

In four cases where the great curvature was perforated, the transverse arch of the colon was also perforated.

When the lesser curvature or the parts of the stomach near it was affected, the liver was nearly always implicated. In some instances, very fine cellular bands, varying in length from one-eighth to one-quarter of an inch passed between the two organs, while in others they were closely connected by peritoneal adhesions; in these last cases, the ulceration had, in some of them penetrated into the substance of the liver. In two of the cases small circumscribed abscesses existed in this organ.

When the ulceration was seated on the posterior wall, the pancreas was often implicated. Sometimes this organ assisted to form the posterior wall of the stomach: varying in extent from the size of a florin to that of a seven shilling piece.

When hæmorrhage took place, it arose from the ulcer opening the splenic artery, or one of the gastric branches of the hepatic. In one instance the portal vein was penetrated; while in another it was the gastric.

Appearances of the Ulcers. They varied in size from that of a split pea to a florin. The majority

being of the size of sixpence or a shilling. In shape they were either oval or round; their edges smooth as if punched out, larger on their stomachial than on their peritoneal surface. Sometimes, though rarely, the peritoneal membrane formed a kind of pouch, not unlike the finger of a glove.

Sometimes the coats of the stomach surrounding the ulcers were thickened to an extent, which varied from a line or two to several inches. The thickening, when not great, was confined to the mucus membrane and the sub-mucus cellular tissue. But when it was extensive, the muscular coat was affected, and the parts assumed an appearance resembling white or buff leather after having been soaked some time in water. In a great number of instances, the edges of the ulcers were of a livid colour: sometimes only to the extent of line; but in other cases it was more extensive. In these last cases there was no thickening of the surrounding parts; but the veins, particularly in the immediate vicinity of the ulcers were enlarged.

In one instance, this was very strongly marked, the veins being nearly of the size of the little finger. Sometimes the edges of the ulcers were emphysematous.

When more than one ulcer existed (particularly if the number did not exceed two), they both very frequently presented the same amount of loss of substance; but perforation was never found

to have taken place in more than one; and it was common to find, in these cases, that the ulcers were situated opposite each other. When more than two were met with they varied both in size and in the extent of the changes they had induced on the coats of the stomach. This want of uniformity did not exist when the ulcers were very numerous. In these latter instances they were small and seldom penetrated beyond the sub-mucus cellular tissue.

The coats of the stomach were variously affected: sometimes, only the mucus membrane was destroyed, the sub-mucus cellular exposed and somewhat thickened;—at others, the latter was also removed, and the muscular coat exposed, sometimes destroyed, and laying bare the peritoneal one.

Before this last coat was exposed, it was generally found, that it had formed adhesions with an adjacent organ. Sometimes by very intimate adhesions; while at others, as has just been observed, where the motion of the body did not admit of their constant apposition, the adhesions were by long, delicate cellular bands.

When the mucus membrane alone was destroyed it seemed to be restored, without difficulty; but where the sub-mucus cellular tissue was also removed, its restoration seemed less practicable; at least for some time, and then not by the same kind of tissue. Neither was the muscular coat when destroyed ever replaced by the same tissue.

Reparation, when the muscular tissue is destroyed, seems as far as I have been able to discover, to take place in the following manner. A very delicate membrane easily separable in the early stages from the adjacent parts by maceration, is first formed on the surface of the ulcer, much thicker at the edges of the ulcer than in its centre. This membrane gradually increases in thickness and density, and at last assumes an almost cartilaginous hardness, without ever seeming to rise to the level of the surrounding mucus membrane. In every case it has presented the same appearance as at the first; namely, thicker at its sides than centre. When obliteration of the remains of the ulcer does take place, it seems to be effected by gradual contraction of the cicatrix. When the ulcers had been small, their cicatrices presented an appearance resembling that seen on the healing of small-pox pustules.

It is impossible I think to assign a period, when the cicatrices disappear from the stomach, as much will depend on the age of the person; the reparative power being more active at an early, than at an advanced period of life. Much will also depend on the activity of the circulation.

In the case of a female, of a scrofulous habit of body, who had, for some years suffered from disease of the stomach, (which however had ceased to trouble her for six years before her death,) a small cicatrix, three-fourths of an inch long, and

one eighth of an inch broad was found, in the centre of a transverse ridge by which the cavity of the stomach was divided into two portions or sacs.

It is, I suspect to some change of this kind that the division of the stomach into two portions when not congenital is due, and not as Sömmerring supposed, to the pressure of the busk of the stays.

In three cases, (females,) where this division of the stomach, fell under my notice; the septum sprang from the lesser curvature and the posterior wall: parts quite protected from any pressure that could be made to bear upon them.

They were all of three advanced in years: two of them, from the shape of their ribs, bearing a close resemblance to the opposite sex, had mayhap never worn stays, or if they had, no undue pressure had been exerted by them, while in the third, the effects of tight-lacing were particularly evident. The antecedents of these women could not be obtained.

The healing of two or three ulcers, will always, from the puckering of the coats of the stomach, which they induce, materially alter its shape.

In some cases a false membrane has been found more or less organized in its structure. In a case which fell under my notice, where it was met with, its source could not be distinctly traced, owing to the adhesions which existed between the stomach and the other organs in its vicinity, rendering the free use of the scalpel, necessary to remove

the stomach. It did not, however, appear to have any connection with the ulcers, of which there were two, both being surrounded by considerable thickening of the coats of the stomach. Probably it was a pseudo-membraneous formation, in a more highly organised state, than is usually met with.

Andral, (*Repert; d'Anatomie, tome i.*), speaks of a case where the mucus membrane of the stomach, presented a patch of a milk-white colour; it was evidently thickened and indurated. The mucus membrane was covered by a membraneous couch of a milk-white colour; which consisted of a kind of exudation nearly solidified.

Perforation. This termination to ulceration, by which some portion of the contents of the stomach, finds its way into the cavity of the abdomen, is one of the most dreadful afflictions that can possibly befall a human being.

It may occur from the ulceration, after destroying the other coats implicating the peritoneal membrane, or from the muscular coat being so far destroyed that the remaining part, and the peritoneal membrane gives way from the distension and motion which take place on the introduction of food into the stomach;—from some slight exertion such as drawing on the boots, lifting a rather heavy weight, attempting to reach some object beyond the grasp, or ascending a long flight of stairs rather rapidly: even coughing or sneezing has induced it. In some cases, the peritoneal

membrane has been already destroyed, the ulcer having previously formed adhesions by its edges, with an adjoining organ, such as the pancreas or liver, and from these adhesions not being sufficiently organised, they give way at some point, from one or the other of the causes just named.

It does not, however, always occur during the exertion, but soon after; in some instances, not for an hour or two, but these are rather exceptions.

Again, it sometimes occurs from none of these causes named. Persons have gone to bed after a very frugal supper, and at the end of two or three hours awoke in the most distressing agony. In such cases the perforation can generally be traced to some unusual determination of blood to the stomach, most frequently in consequence of the flow of the menstrual discharge being retarded; sometimes from severe constipation or from obstruction to the flow of blood through the liver or spleen.

A case lately fell under my notice, in which the influence of the menstrual discharge was very strongly marked. The patient, a young lady, nineteen years of age, had for some months suffered from severe spasmodic pains in the stomach for a day or two before each menstrual period. From getting her feet wet, the appearance of the discharge was retarded a day or two, and the spasmodic pains became unusually severe. Suddenly during one of the attacks of pain, she uttered a piercing shriek:—perforation had taken place.

The determination of blood to the stomach, seems to favour perforation, by extending the ulceration in much the same manner, that varicose ulcers of the legs sometimes suddenly extend under the influence of increased venous congestion.

In other cases, it seems to result from the progressive increase of the inflammatory action.

A man forty-five years of age, who had suffered for some time from chronic gastritis, was compelled to make a long journey by coach in cold wet weather; during the same he committed considerable irregularities in diet. The result was that his symptoms were much aggravated, and he suffered from considerable pain in the right hypochondrium for a fortnight. After passing a day with much greater freedom from pain than usual, perforation suddenly took place while coughing.

SYMPTOMS OF PERFORATION.

These may be divided into two stages, that of depression and that of inflammation.

First, that of depression. The patient suddenly utters a piercing cry and exclaims, that something has given way in the abdomen and that boiling water or melted lead is dropping amidst the bowels. In some cases the pain is so intense, that the sufferer faints, while in others, a state of extreme collapse is induced, indicated by deadly pallor of the face, with an expression of the most

intense agony, cold, clammy, perspiration, and imperceptible pulse. This state of collapse is also always met with, on recovering from the fainting which the sudden and severe pain has induced.

Vomiting also generally takes place; sometimes a little food or fluid is brought up; while at others, it consists of efforts alone, which the patient is irresistibly driven to make; although, each effort, from its causing more food to escape from the stomach, and diffusing that already effused, adds greatly to the sufferings. The abdomen is greatly drawn in; and the muscles knotty to the feel, strong pressure on it gives some relief to the sufferings; and, sometimes, the only position in which any can be obtained, is by lying across some object or with both hands firmly pressed on it. This last position is the most frequent, the knees being drawn up.

Death very seldom occurs in this stage, unless the patients have been much reduced by previous ill health, or the quantity of food which has escaped, being very considerable.

Mr. Probert mentioned some years ago, at a meeting of one of the medical societies in London, the case of a lady advanced in years, who had been suffering for some time from disease of the stomach, who suddenly expired.

Mr. Mayo, "*Outlines of Pathology*," records a case which occurred to Mr. North. The patient, a female, while attempting to rise into a sitting

position in bed, fell back and expired. It was found after death, that it was in consequence of perforation having taken place.

In a case, the history of which was read before the Surgical Society of Ireland, in 1851, (*vide Dublin Medical Journal*,) by Dr. Adams, death took place in an hour-and-a-half after the perforation had taken place.

A female between fifty and sixty years of age, entered the Hotel Dieu, under Blandin, for the purpose of having a small tumor removed from arm. She was weak and feeble, but this was attributed to the tumor which was very painful. While on the *garde robe*, she was suddenly seized with severe pain in the abdomen, became collapsed and died in an hour.

Inflammatory Stage. The period when this stage sets, varies, it may occur in an hour after the perforation has taken place; but it seldom exceeds two or three, unless the fainting or collapse has been unusually long. Sometimes this stage occurs without any previous fainting or collapse; but when this is the case, the perforation is small and the quantity of food which escapes is also small and it takes place slowly.

It is invariably hastened by the exhibition of brandy, ginger, or other stimulants, often given by the friends under the idea, that it is an attack of spasms. In this, they are favoured by the sufferer having been subject to spasms.

The following is the course which it takes when fainting or collapse has pre-existed; the heat of the skin returns, and, at last, becomes hot and dry; the pulse becomes perceptible, but small and rapid, varying from one hundred to one hundred and thirty or one hundred and forty, according to the intensity and rapidity with which the inflammation is developed. When this is rapid, it will rise from the first to the last in the course of two or three hours.

When the quantity of ingesta effused is small, the heat of the skin is seldom so intense, and the pulse rarely rises above one hundred and twenty. In both instances thirst exists, dry tongue, the surface in the early periods coated with white fur; but if life is prolonged for some days, and, particularly, if typhoid symptoms are developed, it becomes dry and brown.

The abdomen, at the same time, gradually becomes distended, from the fluid which has escaped from the stomach; and from that which the peritoneal membrane pours out, and from the formation of gas. Hence, the sides of the abdomen, if gently percussed, will yield a dull sound; while its superior part will yield a tympanitic one.

It is also extremely tender to the touch, and the patient complains of an intense burning pain; this becomes somewhat modified in its character, after some time, and in some instances it ceases;

but immediately returns on moving the body, coughing or speaking.

The taking of any fluid, particularly of a stimulating nature, will often suddenly extend the pain.

I am acquainted with an instance where the exhibition of some brandy and water, by the nurse, was followed with this result; the patient sank into a state of collapse, and died in about three hours. A similar result is recorded by Dr. Lees,* to have occurred in a case, where a dose of turpentine was given. This sudden sinking seems very liable to occur, when the patient has been suffering for some hours, if an extension of the pain takes place.

Mr. Watson, in his work on *Homicide*, mentions an instance where a monthly nurse was seized one evening with severe pain in the pit of the stomach. She was relieved by warm fomentations and was able to attend to her duties. The following evening she was suddenly taken with pain and sickness became faint and died in a few minutes. A small perforation was found in the stomach, and some patches of recent coagulated lymph on the bowels.

The pain of the abdomen, at first, perhaps, confined to one spot gradually extends all over it, and at last excites a most distressing symptom, and one, which when it occurs, is always a certain indication of a fatal result,—this is, an incessant desire to

* "Dublin Medical Journal," 1851.

pass water, none being voided—and the bladder, if the catheter be introduced, will be found empty.

This symptom seems to arise from the peritoneal covering of the bladder becoming inflamed, the inflammation either extending to the muscular coat of the organ, or exciting it to contraction.

Sometimes, though much less frequently, than the bladder; the rectum becomes similarly affected, and distressing tenesmus is induced.

The bowels are generally obstinately confined, no medicine however powerful, producing any action upon them. In one case, fifteen minims of croton oil were given, but without effect. The exhibition of purgatives cannot be too strongly reprobated, for in the majority of cases, they are either rejected, or pass into the peritoneal cavity; and if they are irritant purgatives, increase the sufferers agony, and add very much to the hopelessness of the case.

Incessant or frequent vomiting occasionally exists and is an unfavorable symptom, whether it has occurred spontaneously, or after the exhibition of stimulants or emetics.

A servant-girl, nineteen years of age, of scrofulous aspect, for some months the subject of disordered digestion, accompanied by deficient menstruation. One sunday, about one o'clock, after a slight repast of bread and cheese, with a glass of beer, she walked some distance to a friends' house. A few minutes after her arrival, she complained



suddenly of severe pain in the abdomen: in the course of half an hour it subsided somewhat, and she was able to ride home in a cab. But the motion of the vehicle increased her sufferings very much, and she was taken out of it in a fainting condition. She was laid on a sofa, her face sprinkled with cold water, and she soon revived; but the pain continued unmitigated: a glass of strong brandy and water was then given to her. This increased the pain, and was almost immediately vomited up; and she continued to vomit up to one o'clock on monday morning, when after a severer attack than usual, she lay back and expired. A perforation, somewhat smaller in diameter than a threepenny piece, was found in the centre of an old ulcer on the lesser curvature of the stomach, about two inches from the cardiac opening. The mucus membrane of the stomach was free from congestion, but the peritoneal membrane around the perforation was highly congested. The uterus was small, as also were the ovaries but they were otherwise normal.

A young man, twenty-four years of age, had suffered for some time from chronic dyspepsia; when suddenly one evening, after eating a light supper, he was seized with severe pain in the pit of the stomach, accompanied with faintness, cold clammy perspiration, and anxious expression of face. The pain soon extended over the whole of the abdomen.

Under the idea that the pain arose from what he

had taken for supper, his mother gave him half an ounce of antimonial wine ; this induced vomiting, but without giving him relief. He was seen soon afterwards by a medical man, who ordered him to drink a pint of tepid water to assist the action of the emetic. He felt somewhat relieved after the water had been rejected. As his bowels were confined, a dose of castor oil was ordered, with hot fomentations to the abdomen. At the end of half an hour, the vomiting returned and continued to recur every five or ten minutes, a little water and mucus being brought up. The pain in the abdomen, in the mean time, became very severe, thirst intense, and the abdomen gradually enlarged. As the castor oil had not acted on the bowels, three drops of croton oil were given and an enema administered, but without effect. The vomiting after continuing for four or five hours ceased, and he expressed himself as feeling in less pain. He continued in this state for three hours, when he vomited up some dark, watery fluid, and immediately afterwards expired.

A small opening, of the size of a sixpence existed on the anterior wall of the stomach. The mucus membrane of the stomach, presented irregular patches of congestion, varying in size from a seven shilling piece to that of the palm of the hand. The stomach was empty.

In this case, the tartar emetic had excited irritation of the mucus membrane of the stomach ; while

in the first, the spirit had produced the same effect on the peritoneal coat. In both cases the results were the same; the irritation seemed to have been propagated to the muscular coat, and vomiting excited.

The pain, in some cases, instead of extending over the abdomen, remains confined to one part, and this seems most apt to occur, when the posterior part of the stomach is the point where the perforation has taken place; (but it may occur at any other,) when the aperture is small, or at least, when the quantity of ingesta which escapes is not great and not repeated;—no motion of the body or any other cause which could extend or add to it taking place.

The effused food in these cases, rapidly becomes bound in by adhesions. The time which it takes for these to form, seems to be from nine to twelve hours.

When perforation has taken place, at the posterior part of the stomach, and the quantity of food which escapes is small, and not diffused, deep-seated pain in the pit of the stomach will be experienced; shooting to the sides and up to between the shoulders. If the surface of the liver becomes inflamed, then pain either of the right shoulder or under the scapula of that side will be excited. Implication of the diaphragm will be marked by difficulty in breathing, and hiccough; this last symptom does not generally occur for some hours.

The first effect of the effused food, is to excite within the parts in which it is confined, increased secretion of serous fluid, in this, in from twenty-four to thirty-six hours, flakes of purulent lymph will be seen floating, or it will assume a sero-purulent aspect, and in from thirty-six to forty-eight hours it will become entirely purulent.

A female, aged twenty-three,* entered St. George's Hospital, on January 16th, 1843. Two days before she had been suddenly seized with severe pain in the epigastrium, and left side, from whence it had extended over the whole of the abdomen. It was accompanied by vomiting, but this had subsided, when she was admitted: features contracted, and the abdomen large and very tender. By bleeding, and the exhibition of calomel and opium, she was better on the 18th.

On the 19th she was suddenly seized with acute pain in the epigastrium and left side. This was somewhat relieved by a blister, and returning to the calomel and opium, which had been discontinued. She could bear pressure on the abdomen, but the pain continued in the left side, extending up to the chest. She had attacks of syncope and great difficulty of breathing with the left lung. Aphæ appeared in the mouth, and the calomel and opium were again discontinued. The symptoms seemed somewhat relieved, but she died almost suddenly on the 27th.

* Dr. Seymour, "Lancet," 1842—1.

After death, the left part of the transverse arch of the colon and the margin of the left lobe of the liver adhered to the anterior wall of the stomach, forming a closed sac, which was filled with fœtid pus. An opening existed one inch below the lesser curvature of the stomach, which communicated with the abscess.

A middle-aged man,* had for four years, suffered from gnawing pain in the stomach, with pyrosis and pain in the upper part of the abdomen.

When seen he was lying in bed ;—face anxious, and complaining of general uneasiness in the abdomen, which was distended. The pain could not be referred to any particular part ; bowels constipated. He became very much worse in the night ; great pain in the abdomen, and lower part of the left side set in ; pulse feeble ; he was bled, but the blood drawn was not buffed. A warm bath gave him considerable relief.

The next day, the abdomen was swollen and divided into two distinct parts, one above the other by a sulcus. These symptoms continued for the next fourteen days ;—he had, however, some intermissions to the pain. The urine continued natural, and the appetite good. A few days before death, the tongue became dry and brown.

After death, the diaphragm looked as if doubled, this was due to chronic adhesions, almost ligamentous of the omentum, forming a dissepiment, be-

* Dr. Stokes, in " Dublin Medical Journal," 1846.

tween which and the diaphragm, the stomach, and the liver were included with fluid mixed with ingesta and gas. The lesser curvature of the stomach was perforated, and the pylorus contracted.

In the case of the female, who was tapped for an abscess in the left side, by Velpeau, the following was the history which she gave of her case:—
 “She had been subject for some time to attacks of spasm in the stomach; her digestion was also bad, and she suffered from pain and tenderness in the region of the stomach,—sometimes, more than others. After an attack of spasms, of more than usual severity, she had more pain than usual, and it extended to the sides and was attended by great difficulty in taking a full breath. She continued in this state for several days, the pain undergoing but little change. One night, while getting out of bed, the pain increased greatly in intensity, and she fainted, but soon recovered. She continued in great pain, during the remainder of the night, and her abdomen became swollen and very tender, particularly in its upper part: her skin also became hot, and she suffered much from thirst. She was seen in the morning by a medical man, and was bled, both from the arm, and from the seat of pain by leeches, and placed on low diet.

Under this treatment, the pain subsided, but the tenderness and tumefaction continued. She did not, however, gain strength; and for some time before her admittance, marked symptoms of

hectic fever existed. The tumefaction had extended and reached the margins of the false ribs of the left side on her admission.

Another class of cases are occasionally met with, bearing some resemblance to the last, but the quantity of ingesta which escapes is very small, and the pain and other symptoms of peritonitis are consequently much less marked.

A female, aged fifty-seven,* of feeble constitution, had six months before she entered the hospital, been seized from no known cause with severe pain in the left side accompanied by loss of appetite, nausea, and vomiting of an insipid and filamentous liquid; and, occasionally, though rarely with food mixed with it: the pain, nausea, and vomiting were much increased by a purgative given her by a medical man.

On examining her, a tumor was found to exist in the left side, very tender to the touch, the abdomen was also tender. She was much emaciated, and had suffered from hectic fever for some time. The vomiting was frequent, the skin hot and dry, tongue coated with white fur, thirst was considerable, and the pulse irregular. She had slight cough with mucous expectoration, and her legs and feet were cedematous. The symptoms increased in severity, and she sank fifteen days after admission.

A quantity of serum was found in the cavity of the abdomen. The spleen adhered to the great

* Leroux, — Cours sur les Généralités de la Méd., tome ii, 283.

extremity of the stomach, and formed with some cellular tissue, and the peritoneal membrane a mass of the size of the two fists. In the stomach, at the point where the adhesions existed; a perforation ten lines long, and four broad, was found; this communicated with a cavity in the centre of the mass, which was in a putrilaginous state. The cavity contained some broth; the spleen was healthy, save at its superior part.

Mr. Shaw* mentions an instance, where he found at a post-mortem examination of a person, an opening in the anterior wall of the stomach, which communicated with a sac, formed by adhesions between the omentum and the anterior wall of the stomach. It was capable of holding three ounces of fluid,—some mucus like that found in the empty stomach was contained in it.

A man† had suffered for two or three years from dyspepsia, which had gradually increased in intensity, and at last was attended by constant sickness; all food taken, being immediately rejected.

A short time before death, fulness and hardness were detected in the epigastrium:—leeches and blisters were applied.

He began to vomit blood with the other matters, and the tumour assumed the appearance of a suppurating one. He died suddenly from vomiting of blood.

*"Lancet," 1843—4. †Mr. Lloyd, "Lancet," 1843—4.

After death, a perforation was found in the anterior wall of the stomach; this from adhesions having been formed between this part of the stomach and the abdominal wall, had penetrated to the rectus muscle, and had excited suppuration in the cellular tissue surrounding it.

This last case presents some points of great interest, in connection with the formation of fistulous communications between the stomach and the surface of the abdomen, a result which would have probably taken place, had the patient not died from vomiting of blood.

It is to a process similar to the one, which took place in this case, namely, ulceration of the anterior wall of the stomach, followed by adhesion to the wall of the abdomen and subsequent perforation, that some cases of gastric fistula can be traced; while in others, from some injury, adhesion between the stomach and abdominal wall has been excited from inflammation, abscess subsequently forming which has opened into the stomach and on the surface of the abdomen.

In those cases of perforation where the inflammatory symptoms have run high, and where the pulse has varied from one hundred and twenty to one hundred and forty, at the end of a few hours, it will become irregular, and at last nearly imperceptible; the tension of the abdomen very great from the collection of gas. This last symptom is often very distressing, while the pain may have either ceased

or become very much modified in its intensity. The features, at the same time, become pinched up;—the eyes sink deep into the sockets; their pupils contracted, and conjunctivæ flaccid, and the feet cold. The body at last assumes a cadaverous hue, and exhales an odour of the same character.

The periods in which the disease runs its course, when the successive stages of fainting or collapse, followed by inflammation are observed varies from twelve, to eighteen, or twenty-four hours; the last being the most frequent.

But the treatment adopted exerts a powerful influence in prolonging life. None seems of so much benefit in doing this by keeping the inflammation under, as opium judiciously given in large doses.

Cases are sometimes met with, where the collapsed and inflammatory stages are blended together throughout. It will be generally found that the following is the course which these cases pursue. The collapse induced when the perforation takes place, marked by the imperceptible, or small irregular pulse, coldness of the surface of the body, irregular heat, or when general, not rising above the natural temperature continues, but the pain and tenderness in the abdomen is however very severe, and it gradually becomes distended.

The features, at the same time, gradually contract, and the body gives forth a cadaveric odour. The blood drawn in these cases, very seldom exhibits any buffy coat, or if it does, it is but a very

slight one. If the pulse is more than one hundred, and possessing power it will be formed, but not otherwise.

Appearances met with after death from perforation. These will depend upon the time which the sufferers have lived after perforation has taken place. Where death has ensued within twenty-four hours, a considerable quantity of gas, with serous fluid, exhaling a peculiar sour odour,* and varying in quantity, from one to three quarts, in which particles of food will be found floating. Sometimes however, where the perforation has not immediately

* This peculiar odour was noticed by Camerarius, in a case published in *Acad. Cæs. Leopold. Natur. Curios. Emphemerides* cent. v. *Obs.*, 43.

The case has generally been described as one of rupture of the stomach, and as such I considered it, until I examined it. It is one of extreme interest, and is the most complete of the cases, recorded by Bonetus, Bahin, Vander-Wiel, and others.

"A female, fifteen years of age, healthy, but thin and pallid.—She had not menstruated, although her sisters had at an earlier period. The digestion of food was attended with some difficulty. In the morning of the 17th of September, 1714, she eat largely of plums. At ten at night, soon after getting into bed, she complained of pain in the abdomen, which rapidly increased in severity, followed by enlargement of it. A surgeon was called to see her, who ordered an enema to be administered, and some gruel with treacle to be given, but without any further effect than to open her bowels and cause some phlegm to be vomited up. She died between seven and eight o'clock on the 18th. The abdomen was very much distended, and when incised, gas and some brown fluid escaped of an acid odour. In the fluid small pieces of plum skins were observed. A perforation existed in the stomach capable of admitting the little finger. The stomach contained some fluid like that observed in the abdomen with some pieces of plum skins."

followed a meal, no food will be seen. When this is the case, the inflammation seems to have been excited by the mucus and other fluids in the stomach. In one case, which fell under my notice, these fluids seemed to have been highly irritating; for their passage down the wall of the stomach and where they had come in contact with the walls of the intestines, was marked by patches of redness of unusual intensity.

The medicines, which have been given during life, are constantly found, sometimes tinging the fluid, or when castor oil has been given, globules of it will be seen floating in it.

The intestines are distended with gas and adherent to each other: their capillaries injected, giving them a greyish red hue. The same colour will be found on the peritoneum of the abdominal wall. Both will feel somewhat rough to the touch and sometimes patches of a deep red, of variable size will be met with. Where death has not taken place until more than twenty-four hours have elapsed, lymph in flakes will be generally met with; or the fluid will assume a more or less sero-purulent appearance.

But where it has not occurred until after thirty-six hours, then pus will be met with:—sometimes in considerable quantities, diffused over or amidst the intestines; sometimes, collected in the pelvis, or near the spinal column, from gravitation.

Diagnoses of perforation of the stomach, from perforation of the duodenum, and rupture of the

stomach. It may appear somewhat futile to attempt to draw a distinction between diseases, which are all nearly equally fatal. Perforation of the duodenum invariably proves fatal, from the continual escape through the opening into the peritoneal cavity, of the secretions from the pancreas and liver, and the chyle, in its passage along the intestine, by which the inflammation is extended over the whole of the abdomen: while in perforation of the stomach, if the quantity of ingesta, which escapes is not great, care being taken that no additions are made to it, by the injudicious administration of food or stimulants, strict quiet, and the use of proper remedies, a chance of recovery exists. Perforation of the duodenum is of very much less frequency than that of the stomach, and the medical literature of the whole world, scarcely contains twelve cases.

I have once only had an opportunity of seeing a case of this disease. The sufferer was a publican, and had been much addicted to drink, but of late he had been more moderate, in consequence of suffering from symptoms, referable to the liver; but which, in fact, arose from the duodenum being affected. These symptoms were pain and tenderness on pressure along the margins of the false ribs of the right side, accompanied by puffiness.

The pain was constant and dull in character, but some time after eating it increased in severity, lasting for some time, and then gradually subsiding

or giving way to an opiate. He was also subject to attacks of severe pain in the morning, coming on soon after getting out of bed, particularly if he had indulged in drink over night. These attacks generally ended by his vomiting up of some green coloured water, amounting to one or two pints.

One day about two hours after a hearty dinner, during which he drank several glasses of wine, he was seized with severe pain in the usual spot, but deeper seated and more intense. He had recourse to his usual opiate draught, containing twenty minims of sedative solution of opium, but without relief. The pain continued to increase in severity, and a second opiate draught having failed to give him any relief, medical assistance was sought. This was three hours after the pain had set in. He presented the following state: pulse, quick and weak; skin, rather moist and cool; face, very anxious and pale; abdomen, very tender to the touch, but not enlarged. Both hands were pressed firmly on the pit of the stomach, and he laid on his right side, with the knees drawn up. Any attempt to turn on his back was followed by a great increase of pain.

He continued in this state for the next thirteen hours, all remedies, such as leeches to the abdomen, followed by hot fomentations; with calomel and opium internally, gave him no relief. At the end of this time the pulse was observed to be-

come irregular; the breathing difficult, and the face to change. Two hours later he became insensible, and died in two hours: twenty-two hours from being first taken.

The body was examined about twelve hours after death; the abdomen alone being allowed to be opened. Some gas escaped when the incision was made, and some greenish fluid, of which the abdomen contained two quarts. The visceral and parietal peritoneum had a greyish-red appearance—but there were no adhesions.

On the posterior wall of the duodenum, about two fingers breadth below its first turn, a perforation, somewhat less in diameter than a sixpence, was found. The walls of the duodenum were thickened, the mucus membrane softened and irregular, but not ulcerated, save at the point where the perforation had taken place. The liver was in a state of cirrhosis.

The case of the late Mr. *Somes*,* bears a close resemblance to the above. He was seized with severe pain in the abdomen at a quarter-past one o'clock, rode home in a cab, a distance of six miles. When seen one hour after reaching home, he was sitting on the edge of the bed, with one hand pressing on the epigastrium, to which part and along the course of the ascending colon he referred the pain. Later it extended itself to the left side of the umbilicus. Pressure greatly increased the

* Dr. Little, "Lancet," 1845.

pain. His face was pale; features, contracted; surface of body, cold; pulse, sixty. In the evening the pulse became rather more full and quicker, and the skin warm.

If he took brandy and water, it seemed, he said, to burn him alive; and he referred the pain to one part of the epigastrium. Opium seemed to blunt the pain; but without easing it. He passed a restless night. At day-break the pulse was small and quick, and the features cold. Death took place twenty four hours from the commencement of the attack. He had suffered of late from frequent attacks of pain in the epigastrium.

The morning of the day of seizure he had eaten a hearty breakfast.

A perforation was found on the anterior wall of the duodenum below the pylorus; oval in shape, and about one-third of an inch in its longitudinal diameter. The ulcer before giving way had formed a cul-de-sac, which would admit the extremity of the finger.

The next case presents some anomalies.* The patient, a young female, entered the workhouse suffering from dyspnœa; short cough, with scanty frothy expectoration; face, anxious. She was obliged to be propped up in bed; the slightest change in position inducing suffocation. Her illness had commenced a few evenings before, with a sense of suffocation and uneasiness in the

* Dr. Mayne, "Dublin Quarterly Journal," 1851.

epigastrium, but she had had neither nausea or vomiting. Had never had any marked affection of the stomach. She had the appearance of a person suffering from pericarditis; but her pulse was quiet, and no signs of thoracic disease could be discovered.

She continued in this state five days, when one evening she was seized with severe pain in the epigastrium, which spread all over the abdomen. She retched frequently, but did not vomit. The abdomen became rapidly tympanitic and very tender. Opium had no influence on the pain. Death ensued in twenty four hours.

A dark ragged edged oval opening of the size of a sixpence, was found in the duodenum.

In all the recorded cases of perforation of the duodenum, death ensued in about twenty-four hours.

The indications which would lead the practitioner to suspect that this had taken place, would be the previous existence of symptoms, showing that the duodenum was the seat of disease; namely, pain and tenderness on pressure along the margins of the right false ribs, the pain being increased *some time* after eating, and accompanied by flatulence and distension, of variable duration; and when perforation has taken place, pain of a burning character, commencing at the part just named, gradually extending downwards on the right side. In addition to these the other symptoms which

mark the occurrence of some severe shock to the system; namely, small pulse, sometimes irregular; coldness of the skin, and anxious expression of the face.

Diagnosis of rupture of the stomach from perforation. Rupture of the stomach is of very rare occurrence, those cases usually considered as such being either cases of simple perforation or openings formed in the attempts made to remove the stomach, when death has been caused by softening.

Even in those cases which can strictly be termed rupture, softening is sometimes met with; but whether it occurs before or after death it is impossible to say.

1. A female* had suffered for five or six months from difficult digestion. Under very strict diet, she became much better. One day, to make up for her previous forced abstinence, she eat very largely. She soon experienced severe weight in the stomach, with nausea and retching, but without ejecting anything. In the midst of this, she was seized with sudden pain in the abdomen, with a sensation as if something had ruptured—uttered several piercing cries, became unconscious and died in the night.

The abdomen was filled with fluid and half digested food. The anterior and middle part of the stomach was torn obliquely to the extent of five

* "Lallemand Dict. Des. Sc, Méd," Tome xliv.

inches; the borders of the rent were thin and irregular, but presented no traces of any anterior disease. The pylorus was contracted.

2. A man aged thirty-four,* had suffered for two years from frequent paroxysms of pain in the stomach, lasting several hours; and terminating by vomiting.

Last christmas he vomited up blood, which reduced him very much. Since this time the attacks have been more frequent. On the thirteenth of April, he entered St Bartholomew's Hospital, suffering from severe pain, extending from the epigastrium, over the whole of the abdomen, but without tenderness or distension. Nausea but no vomiting; pulse, frequent; tongue, clean. He attributed his present attack to some spirit and water which he had drank.

He had a similar attack a week ago, after drinking some spirits and water.

He was much better the next day; the pain had disappeared; no nausea; pulse, weak; tongue, clean. At eleven o'clock p. m., he was taken with severe pain. When seen one hour later, the muscles of the abdomen were hard and contracted; no tenderness; pulse, small and feeble; face, expressing great anxiety, Sixty drops of laudanum were given and repeated, but without relief. After suffering for two hours from acute pain, violent vomiting came on. After this the

*" Mr. Weeks's Medico-Chirurgical Transact." Vol. xiv.

pain subsided somewhat, and the vomiting did not return, but he sank at four a. m.

The abdominal cavity contained some dark brown fluid. The stomach was flacid, and on its anterior surface a rupture four inches in length existed, extending upwards from below the lesser curvature, to near the cardia. The peritoneal coat was more torn than the muscular and mucus. On the posterior wall of the stomach a rupture, three inches in length, existed with several smaller ones near the great curvature. These extended only through the peritoneal coat, the muscular and mucus remaining sound.

The mucus membrane of the stomach was covered with a dark coloured secretion. The membrane itself was of a deep red colour, softened and partly emphysematous. The stomach in other respects was healthy.

3. A man aged twenty-two years,* was seized at eight p. m. with severe pain in the region of the stomach ; had had similar attacks before, but less severe. Some whiskey was given which was followed with slight relief, but only for a few minutes. At two o'clock a. m. his agony became extreme from violent wringing pain. He fainted and soon afterwards vomited some dark brown fluid. He was bled, and some anti-spasmodic and cathartic medicine given, but without relief. When seen by me at three o'clock a. m., his

* Dr. McFarlane "Glasgow Medical Journal." Vol. ii.

pulse was one hundred and forty ; legs, drawn up ; face, very anxious. Pain still severe but not so excruciating as it had been. Died at eight o'clock a. m.

The abdomen contained several pints of dark-coloured fluid. On the anterior wall of the stomach a rent three inches in length existed, its edges rugged. Some echymosed patches were observed under the peritoneal membrane.

Hæmorrhage. By referring to the first table given a page thirty-five, it will be seen, that of eight of the ten cases which proved fatal from hæmorrhage ; the ulcers were situated on the posterior wall of the stomach, and in the other two on the lesser curvature.

In the second table out of the twelve fatal cases, in seven the ulcers were seated on the posterior wall ; in four on the lesser curvature, and in one on the anterior wall. In some instances the blood was vomited up soon after it was poured out ; while in others, it was retained, and the stomach was found after death distended with coagula.

When blood is poured out slowly or retained for some time its character is changed by the action of the gastric juice, and it is then often discharged in a state resembling coffee grounds.

This appearance is usually considered as a certain indication of cancer. This is not the case. It does, it is true, occur in the ulcerative stage of

cancer; but it also occurs in simple ulceration under the circumstances just named.

In some cases, the hæmorrhage occurs without any previous marked symptoms of gastric derangement, the patient often complaining only of a deep-seated pain of the stomach, constant in its character; sometimes dull, while at others, boring or gnawing.

In one case which has fallen under my observation, the patient, a man fifty years of age, after suffering from pain of this description for three months, was suddenly seized one night after getting into bed with faintness, followed by vomiting of a large quantity of blood, which recurred several times in the night: the next day he died.

After death, an opening was found in the splenic artery. Cruveilhier (*Anatomie Pathologique*), reports several nearly similar cases; Abercrombie (*Diseases of the Stomach*), also mentions an instance.

In the majority of the cases, the symptoms of chronic gastritis were strongly marked, and of some duration before the hæmorrhage occurred. The quantity lost at a time was very variable; sometimes very considerable, while at others small, but occurring again and again.

The recovery from the effects of the hæmorrhage, when the patient's powers had not been previously greatly reduced, was often very rapid. But where it had been much reduced, if the pa-

tients did not sink from the immediate effects of the loss of blood, a state of such extreme debility was often induced, that they never rallied. This was particularly observed if the appetite failed, or if the digestion was so laboured as to interfere with the due preparation of food, so as to render it fit for the nourishment of the body. Hæmorrhage sometimes proves fatal, yet after death its source cannot be discovered. This may, however, generally be done, if the stomach is soaked in water for some time, so as to remove the colouring matter of the blood, then by carefully examining its surface, the clots of fibrine, closing the opening in the vessel, can be discovered.

In a case of this kind which fell under my notice. The patient, a young man aged nineteen had come to London for the purpose of spending a few weeks. He was induced to drink largely: the consequences were, that his appetite failed: he had pain in the stomach with tenderness on pressure, nausea and vomiting, thirst and headache. In addition to these, he had symptoms threatening *delirium tremens*. Under treatment he became much better. He was induced to attend a supper one evening, at which he drank largely of wine and whiskey and water. The next day and night he also drank largely. The following morning he was seized with vomiting of blood, which returned several times in the course of the day and next night, when he sank. The stomach con-

tained about a quart of blood—partly fluid, and partly coagulated. The coats of the stomach were deeply tinged by it. The source of the blood could not be discovered, but by soaking the stomach in water, for twenty-four hours, the colouring matter was removed, and then the surface of the mucus membrane was seen studded with small ulcers. Three of the largest, contained small clots which were found to close openings in small arteries.

The second termination of chronic gastritis; transformation or alteration of the tissues of the stomach. These alterations are numerous; sometimes, the mucus membrane presents a state of increased vascularity; sometimes, it is thickened, generally or partially, white or yellowish white, in colour and more resistant than in the healthy state; while at others, it is soft, easily separated from the submucus membrane, or reduced to a pulp; its colour varying from a pale blue to a deep red; sometimes, more or less removed, laying bare the tissue beneath.

“In one instance, the mucus membrane presented a patch of a milk white colour, with evident thickening of the membrane, with here and there red spots. The mucus membrane was covered by a membranous couch of a white colour: a kind of exudation nearly solidified.”*

Guersent, Rullier, Billard, and others have also observed this membranous exudation.

* “Andral Réport d'Anatomie.” Tome i. 37.

Sometimes, the mucus membrane is alone affected, or it presents none or but very slight alteration; the submucus cellular tissue alone, or with the muscular coat being then changed.

In some cases, the villi have been observed greatly increased in magnitude; sometimes, they have formed excrescence like projections. This state seems due rather to increased nourishment than to an inflammatory condition. In others, the mucus follicles, have been found enlarged and distended with their secretion; their edges thickened; in one instance, several of the follicles were surrounded by a ring of ulceration.

It is probable from the observation of a case of this description, that Cloquet was led to think, that ulceration of the stomach commenced in this manner.

From the observation of several cases of ulceration, I feel assured, that this is not the manner in which they are generally formed; save in the instance just named, the ulcerations had evidently commenced from a centre, extending from it outwards; and not as Cloquet considered from without, inwards.

“The mucus membrane,” observes Andral, *Clinique Médicale*, “to be found in a healthy state in chronic gastritis is extremely rare, some alteration either in colour, consistence, or thickness being present.” These remarks coincide with what I have myself observed. Cases do occur,

where no appreciable lesion can be discovered after death. Yet the patients have presented symptoms during life, which have led the practitioner to expect very great ones.

To what is this anomaly due? Is it to some alteration in the gastric juice or mucous, either in quantity or quality, or in the nerves, or from increased vascularity of the mucus membrane, in consequence of some obstruction to the flow of blood through the liver; from the accumulation of the fæces in the colon interfering with the passage of the contents of the duodenum into the jejunum, or along the colon itself?

That the last may induce symptoms resembling chronic gastritis, I have frequently had occasion to observe. Chardel mentions the following case which proved fatal :

“ A cook, aged sixty-one ; for some years addicted to brandy drinking, from which he became greatly enfeebled. He was taken with the diarrhœa, which after continuing for six months, ceased ; and was replaced by obstinate vomiting which resisted every thing employed. Three months after the vomiting had set in, he entered the *Cochin Hospital* in a state of extreme emaciation. He lived a month in a state of apathy. A short time before death a tumor was felt, which was supposed to be in the pylorus. The mucus membrane of the stomach was found injected, more in the cardiac than in the pyloric part. The arch of the colon contained some hardened fæces. This was what had been taken for the tumor during life.”—*Sur les Squirrhes de l'Estomac*.

In cases of the kind which have just been named,

the tongue is generally clean, and moist, often of a deep venous colour. The urine often contains oxalates. The patient generally complains of pain in the epigastrium if it is gently touched; but if firm pressure is made, relief rather than aggravation is the result.

Lastly* the mucus membrane instead of being thickened is atrophied. "This is most frequently observed towards the great extremity, the part where softening is also most frequently observed."

Sometimes, however, I have found it exists near the pylorus; the membrane being extremely thin, any attempt to raise it, converting it into a reddish-white pulp. Should this state be considered as a result of inflammation? It appears to be a form of softening, and generally exists with the other anatomical signs of chronic gastritis. A female, aged fifty-six, died in *la Charité*; during the last three months of life she vomited frequently. The stomach presented in different points several red patches, particularly in the splenic portion. The mucus membrane was softened, either in the patches or in their intervals, and, at the same time, it was very thin."

The alterations met with in the cellular tissue in chronic inflammation are nearly as various as those observed in the mucus membrane; it may be alone affected, or the mucous and the muscular (one or both) participating

* "Andral Clinique Médicale," Edit. 1834. Tome ii., 61.

It may be hypertrophied, either generally or confined to the cardiac or pyloric extremity, most generally the latter. Sometimes, the cellular tissue interposed between the fibres of the muscular coat, participates. "When hypertrophy* is very recent, it is commonly not traversed by white lines, but presents a homogenous appearance, like lard, jelly, or size; the reason of which is, that the white lines are filaments of the original cellular tissue, between which the adventitious transparent matter is deposited, and the filament become *cæteris paribus*, more apparent in proportion, as they become older and of a more fibrous nature."

I have seen the submucus cellular tissue, in a case of sub-acute inflammation, containing serous fluid; and in another instance, some parts, serum and coagulable lymph.

The mucus membrane was the seat of vascular patches, varying in size from a seven shilling piece, to the palm of the hand, and easily separated from the tissue below. The effusion, in both of the cases, was situated below these patches, the muscular coat at these points was also thickened.

"In the case of a man, addicted to drink† for years, subject to attacks of pain in the stomach, and vomiting of uncertain occurrence, lasting

* "Hope, Morbid Anatomy." 205.

† "Howship on Indigestion." 174.

from two to three days ; then better, then worse again ; stomach at times, tender ; bowels, generally confined. For the last two years, the attacks were much more frequent and severe, and attended with feverish symptoms. He was always relieved by change of air, and after spending three months in Scotland, he had no attack for six months."

"He was taken one day with pain, and in the course of a few hours felt sick. When seen, his pulse was one hundred and twenty, small and weak ; skin, hot ; tongue, white ; and complained of great pain and tenderness at the stomach. Salines and a blister ordered. Next morning, he had sank into a state of insensibility, alternating with slight convulsions, and died in the evening. On laying the stomach open along the lesser curvature, it was found very thick ; and between the mucus and the peritoneal coat, pus with lymph in a coagulated state and serum. In some parts pus alone ; in others, lymph."

The changes resulting from inflammation in the cellular tissue are generally best observed in the pylorus, where it is met with under that form, to which Dr. Bennett, of Edinburgh, has given the name of *cancroid*, "from its physical characters being those which are usually considered to constitute scirrhus or hard cancer." At first sight, as met with here, it bears a close resemblance to a small cancerous tumor, very seldom larger than a

Spanish chestnut, and when cut, it is very like the intervertebral fibro-cartilage, dense and glistening: it yields no cancerous juice when scraped, and a thin slice placed under the microscope, shows it to consist of cellular tissue with fibro-plastic elements.

Do each of these changes which have just been considered present such symptoms during life, that their existence can be recognised? To a certain extent they do, but some much better than others.

Softening of the mucus membrane. This change, as a termination of chronic inflammation, is somewhat rare; most frequently it is met with, holding a kind of mid-position between acute and chronic inflammation; but bearing a greater resemblance to the first than to the last.

"I have often found," observes Louis, (*Arch. Générale de Médecine*, Tome v., 1824,) in those who have died from chronic diseases, severe lesion of the stomach, consisting of softening with thickening; sometimes destruction in parts of the mucus membrane. It may occur either *primarily*, *secondarily* or *complicated*."

In its primary form, it will be best considered when speaking of acute gastritis.

As a secondary disease or rather as a termination of chronic gastritis, it presents itself under the following form. From some cause, such as exposure to wet or cold; sudden suppression of

some discharge ; but sometimes, from no appreciable reason, the symptoms referable to the stomach, undergo a change ; the pain before slight, perhaps, only felt after eating, now becomes more constant ; and burning accompanied by extreme tenderness on pressure, which is not confined to the epigastrium, but exists in both hypochondriums, particularly the left : at the same time, the nausea and vomiting before slight, increase. Every thing taken, save a little water even this is rejected, if taken in the full extent which the intense craving for it to allay the burning heat and thirst seems to demand. The matter vomited consists of mucous ; sometimes, mixed with little black specks, or in an advanced period of the debris of false membrane : sometimes, of yellow bile ; or when the efforts to vomit are severe, of green ; sometimes, in small quantities ; while at others, from the admixture of fluid from the pancreas, it is considerable. The tongue presents itself under different aspects in some cases ; at the onset, it is coated with thick white or yellow fur ; the papillæ, protruding through it, large, and red ; the point, and, sometimes, the sides, red ; while in others, it is clean, but redder than usual, and dry. As the disease progresses, the white or yellow fur is more or less removed ; or becomes of a deep brown, the rest of the organ also changes to the same colour. When the tongue is clean at the onset, it becomes dry and resembles a piece of unpolished

mahogany, or bright red, and as if raw, but smooth and glistening.

Sometimes, apthæ appear towards the tenth or fifteenth day. Their appearance is always an unfavourable indication.

The bowels are obstinately confined, the little passed from them, by the aid of medicine, is scanty, and dark-coloured; the abdomen is flat, and the muscles, contracted; the skin, harsh and dry; its heat, in some instances, not greatly raised above the natural temperature; pulse, small, ranging from ninety to one hundred or one hundred and twenty.

As the disease advances, the colour of the skin undergoes a change; it becomes of a fusty colour, and that around the eyes of a still deeper hue; contrasting strongly with the circular flush of red on the cheeks, the deep sunk eyes; and pearl like conjunctivæ. The body wastes rapidly, and in the course of a few days the bones seem covered by skin alone; the weakness is extreme throughout; this is a marked feature of this disease. The mind seldom fails, a state of apathetic indifference is frequently observed; and, sometimes, towards the close, slight delirium. The patient often sinks very suddenly, and when least expected by the practitioner, who is often at a loss as to the real nature of the disease.

My own attention was first drawn to it ten years ago by the following case:—

I. A female, twenty-nine years of age, by occupation a needle-woman, had been for some time under treatment for chronic gastritis. She married, and became pregnant; but about the eighth or ninth week miscarried. She got about in the course of a few days, and went to the person who employed her for work, a distance of a mile. The uterine discharge had ceased, but this caused it to reappear. The morning after her walk, she felt very unwell, complained of pain in the epigastrium; vomited several times; and felt very thirsty; the uterine discharge again ceased.

Medical assistance was not sought until the next day. Then she was suffering from burning pain in the epigastrium; great tenderness on pressure; intense thirst; nausea; and vomited every thing taken; pulse, ninety-six, and it continued throughout the disease nearly the same, becoming somewhat quicker towards night. She had no acidity or flatulence; bowels, confined; abdomen, flat; the temperature of the skin was not much elevated, but it was dry and harsh. For the ensuing twenty days, when she died, there was little change in the symptoms; she gradually became more and more emaciated and feeble; the tongue which was at first, clean, and red; dry, and like a piece of mahogany; the skin naturally pale, of a brownish hue; the eyes surrounded by livid coloured areolæ. The treatment, which consisted of leeches to the seat of pain; mercurial inunction during the last five days, but the system was not brought under its influence; warm baths, had not the slightest influence on its progress, further than yielding (the leeches and warm baths) temporary relief. All medicines given by the mouth were rejected immediately they reached the stomach, water,

weak mutton or beef tea, a few spoonsfull at a time were alone tolerated. The matters vomited consisted of bile, or fluid tinged with it and mucus. She sank quite unexpectedly. The stomach was found very much contracted, scarcely exceeding six inches in length and two inches in breadth, empty; its mucus membrane, covered with mucous, tinged with bile. The mucus membrane itself was generally of a dark brownish red hue: on its anterior wall, it was easily separated as a flakey kind of slough; but in the great extremity and posterior wall, it was pulpy. The pylorus seemed thickened, its opening was so contracted as to admit with difficulty the little finger. But this last did not seem the result of disease, but the general contraction which the organ had undergone. The submucus cellular tissue presented no change; but the muscular coat was redder than usual, and easily torn.

2. "A female, aged forty,* entered the hospital where she died on the third day. Her habits were regular, but her appetite had diminished, and she was unable to digest any but the very lightest food, and in small quantities, for the last seven months. She had lost flesh and had suffered for a year from pain at the epigastrium; but during the last month it had diminished. She vomited occasionally, but had no nausea; bowels constipated. For a month she has had a cough."

"The stomach was rather large, its anterior surface in its superior three-fourth, of a bluish white colour, traversed throughout by very large vessels, but empty. The mucus membrane had disappeared on this aspect; but near the

* "Louis Archiv. Gén. de Méd." 1824. Tome vi.

pylorus it existed to the extent of three inches surrounding the opening, but thin towards the borders. The submucus cellular tissue corresponding to the destroyed membrane was natural, but the muscular coat was thin and perhaps soft. The apex of the left lung contained some granulations no other lesion existed."

Andral* has also reported an instance of removal of the mucus membrane.

"A man aged thirty-six, died of phthisis in *la Charité*. During the time he was under observation, (three months,) he complained of loss of appetite; constant sense of weight in the epigastrium which was changed into pain, when any solid, sometimes, even, when simple drinks were taken into the stomach. He never vomited, and wine alone induced nausea, and a sensation of burning, extending from the cardia up along the œsophagus to the pharynx.

"After death, the mucus membrane of the stomach was found under the form of debris. The submucus cellular was laid bare from the cardia to the pylorus; it had preserved its accustomed whiteness, and appeared only somewhat thickened. Some remains of the mucus membrane existed in some parts.

3. "A female aged forty, was thrown down in the street, and very much frightened, and the menstrual discharge, which was just about to appear, was checked."

"On the third day after the occurrence, she complained of weight in the epigastrium; but it did not prevent her from eating a hearty supper. Soon after getting into bed, she was seized with severe cramp-like pain in the

* "Réport, d'Anatomie." Tome i.

stomach; efforts were made by tickling the throat, and drinking warm water, to get rid of what she had eaten, but to no purpose. A medical man was sent for, who gave her a draught which relieved her. For some days, afterwards she had slight pain and tenderness in the epigastrium.

“The spasmodic pain again occurred at the next menstrual period; relief being only obtained from an opiate draught. During the next two days it returned, several times—each time relief only being obtained by a strong opiate.”

She now became subject to hæmorrhage from the bowels, and her health under this and the spasmodic attacks, began to suffer. Each attack left a sense of soreness in the epigastrium. If she while this existed, was not very careful in her diet, or if she took any stimulant, an attack was very apt to be brought on. She never vomited or had nausea.

“Bowels generally confined but after the attacks she usually had diarrhœa; the more copious this was, the greater the relief to the soreness at the epigastrium. Still she dared not have recourse to purgatives, for they were very apt to bring on an attack. This was her history, extending over a period of two years and-a-half.

At this time, she was seized with diarrhœa, which continued for nine or ten days, when it was checked by opiates and astringents.

Her strength was much reduced; appetite, bad; pulse, weak; tongue, clean, but white and flabby; skin, pale; muscles, soft; towards night, her feet had a tendency to swell; there was slight tenderness on pressure in the

epigastrium. The decoction of cinchona was given her, and a blister applied to the point where tenderness existed, with some slight relief. She continued in this state for nine or ten days, when one morning, two hours after a breakfast of tea and toast, she vomited up first some food, and then some bilious fluid. From this time, she complained of pain in the epigastrium, with nausea and vomiting of nearly every thing taken. There was tenderness, on pressure, the tongue assumed a somewhat red tinge, particularly at its apex, and marked thirst existed: but the skin was cool; the pulse, weak, pupils, large, and countenance, apathetic. She sank twelve days after these symptoms set in. The liver was quite friable, on the under surface of the left lobe, a large dark patch, extending half an inch into its substance was observed—this was found to be concrete bile.

The gall bladder contained some gall, and a stone of the size of pigeon's egg. The mucus membrane of the stomach was of a stone colour, with a very slight tinge of blue, it was easily raised as a kind of slough, but near the pylorus, although, of the same colour, it was nearly intact. On the posterior wall, a patch of thickening existed in the cellular membrane of the size of a seven shilling piece, the muscular coat was gone, the thickening being in contact with the peritoneal membrane. In the lower part of the ileum, the mucus membrane for three feet was of a dark red colour, and rather soft.

Chronic gastritis terminating in thickening of the tissues. Considering these changes as they take place in the pylorus or its immediate vicinity, where they are of the greatest importance in

a practical point, from the resemblance which they bear to cancer of this organ ; a disease from which it is most essential that they should be separated ; and the difference which exists between them recognised during life.

These changes termed *cancroid*, by Dr. Bennett, of Edinburgh ; and *stenose*, by Dr. Bruch, (*Zeitschrift fuer Ration, Medizin.* Bd. viii. 253,) are due to the deposit of the elements of inflammation, in the cellular tissue of the stomach : its growth takes place by the deposit of fresh materials, the fibres which form the cellular tissue, at the same time increase in size. Cancer, on the contrary, is a specific formation, and differs very materially from any other element met with in the body, whether of a healthy or diseased character. It is formed of cells, each of which contains a number of germs, which germs, by growth, become cells, and contain the germs of others, and draw their means of growth from one or other of the components of the blood.

Cancroid disease as met with in the pylorus, seldom attains a larger size than that of a walnut or a large chestnut ; while cancer acquires that of a large orange or a small cocoa-nut.

The distinctive features which exist between the two diseases during life will be considered in the article on cancer.

Cancroid disease of the pylorus may occur in the pylorus itself, or in conjunction with the same

disease of the pyloric end of the stomach. It is generally complicated with dilatation of the stomach, with hypertrophy of the muscular coat; this is constantly met with, when vomiting has been severe; sometimes, though very rarely, the muscular coat is atrophied; in these cases, vomiting has been absent or very rare.

It is sometimes complicated with ulceration of the stomach, towards the close of life, or of that of the duodenum. Sometimes the disease itself ulcerates; but seldom to any great extent. In a few instances, the healing of an ulcer in the pyloric opening, has induced narrowing of it; subsequently deposit has taken place around it; particularly when vomiting has set in, and been very troublesome, inducing thickening.

It may prove fatal, either from exhaustion, and extreme emaciation; the patient becoming worn out by incessant vomiting, and inanition; from blood being poured out either by exhalation, or from the opening of a vessel when ulceration exists: sometimes from ulceration of the duodenum. When the disease has been of some standing, particularly, if extreme emaciation exists, the loss of a very small quantity of blood is sufficient to cause the patient to sink.

The body of the stomach has been known to fall from the epigastrium. A case of this kind occurred to Dr. Yeats, who published it in 1817, in one of the English medical journals.

"A female, aged fifty-seven, was seen one month before death. She had suffered for some time from affection of the stomach: irregularity and hardness could be felt in the right side of the epigastrium, here pain and great tenderness on pressure existed. She suffered much from vomiting from two to three hours after food; solids could be retained much better than liquids; appetite, good. The food was often rejected unchanged, often mixed with dark-coloured fluid; it often took place quite suddenly, and thrown with great force to the other end of the room.

"Pulse, one hundred and eight, soft; tongue, coated; no thirst; urine, natural; bowels, constipated; legs, œdematous."

"Three or four days before death, she experienced a sensation, as if something had dropped down into the lower part of the belly. Enlargement of this part of the abdomen immediately followed."

"After death the body of the stomach was found to have fallen from the epigastrium to the lower part of the abdomen, and its great arch rested on the pubis. It was large and contained much flatulence, with about two quarts of dark brown fluid. The pylorus was enlarged and hard, and adhered to the liver. The uterus was small, and the right ovary contained an hydatid."

1. "A man aged fifty-four, fell under my notice in the month of December, 1853, in a state of great emaciation, face extremely pallid, eyes sunken, feet and lower part of the legs œdematous. Skin of a slight yellow tinge, which always deepened just before the vomiting set in; diminishing afterwards. The disease commenced two years be-

fore with symptoms of chronic gastritis ; the chief indications of which being pain in the pit of the stomach ; acid eructations ; occasionally vomiting sometimes of food ; at others of watery or bilious fluid. In the course of the ensuing months, the pain gradually extended itself into the right hypochondrium : the vomiting became more frequent, and has increased ; the other symptoms have continued in much the same state. The nature of the food taken exerts no perceptible influence on the vomiting. If the vomiting does not occur spontaneously in from two to three hours after food has been taken, a feeling of distension is experienced, which increases in intensity, accompanied by pain, to get rid of which, he is obliged to irritate the fauces with his finger, and as soon as the contents of the stomach are got rid of, it subsides. But an intense craving for food immediately follows.

“ A small tumor could be felt in the immediate vicinity of the pylorus. On placing the hand on the abdomen, soon after he had vomited, fluid could be felt, but the sound which it gave by moving the hand was somewhat different to that yielded by fluid in dropsy : it splashed as water in a jar not quite full, would when shaken. By gentle percussion, a tympanitic sound could be distinctly traced in a half-circular kind of form, from the tenth false rib on the left side downwards to about a hand's breadth below the umbilicus ; then upwards to the eighth rib of the right side, where the tumor was situated. By placing him in succession, in an erect position, and then on each side, a line of dulness could be traced to exist from the gravitation of the little fluid in the stomach to these parts. It was interesting to trace the effects produced by taking food. He swallowed a meal consist-

ing of about a pint-and-a-half basonful of meat stewed with potatoes and turnips. For about ten minutes the stomach remained in a quiescent state, then it could be distinctly felt moving under the fingers. A glass of cold water taken at this time checked its action for five minutes. At the end of an hour, the abdomen had become distended, and in form bore some resemblance to that of a woman seven months pregnant. At the end of another hour the tension had become extreme, and the breathing difficult. He now introduced his finger into his mouth, and the contents of the stomach were ejected with great force. When the vomiting occurred spontaneously, it often took place without notice, and the contents of the stomach would be ejected six or seven feet. He had not the power to resist the craving for food which followed.

“The vomited matter consisted of food in part digested, of an acid smell, and on standing for a short time, a yeast-like froth formed on its surface. He had a large healthy motion every seven or nine days.

“Strong beeftea injection were had recourse to, for the purpose of nourishing him but he could not resist the intense demand for food, therefore but little benefit was derived from their use.

“The vomited matters soon became tinged of a dark brown as if from the admixture of blood. He sank five weeks from the time of being seen. His mind had for some time failed, he was incapable of counting or recollecting what had been said a few minutes before, and for the last five days of life, he was slightly delirious.

“After death, the stomach was found greatly enlarged, and flesh-like; the mucus membrane of the colour of wine lees; but no ulcer could be found, all the coats were

thickened; the muscular particularly so, from hypertrophy. The pylorus was the seat of a tumor of the size of a large chestnut. When incised, it was found to be dense, glistening and pearl-like, consisting of fibres in the interstices of which a soft cartilaginous-like substance existed. Under the microscope, it was found to consist of fibro-cellular tissue, with plastic elements."

2. "A female, aged thirty-five, of middle stature, with dark hair and eyes; extremely emaciated and exsanguine; face, with a slight yellow tinge. This is not constant, but disappears if free from vomiting for a day or two, but it always appears or increases in intensity just before vomiting sets in. Her gastric symptoms date back as far as twelve years. During one of her pregnancies, she suffered more than usual from sickness, which did not leave after she was confined, and she continued very weak for some time. The symptoms which then troubled her, were nausea, acid eructations, flatulence and distension after food, which unless very light, was vomited up in an hour or two after it had been taken. These symptoms would disappear for months and then return. The menstrual discharge exerted no influence on them, but the occurrence of a miscarriage brought them on in all their former intensity. The occurrence of several miscarriages in succession tended to keep her very weak. She last miscarried fourteen months ago, and since this time, the menstrual discharge has ceased to appear. The symptoms have continued, with but very slight intermission: food has remained down, from half to one, two, or three hours; but of late, so much flatulence and distension follows it, that she is often obliged to induce vomiting, by passing her finger into the throat, long before she feels that it would take place spontaneously. The

food brought up consists of two portions, digested and undigested, with a considerable quantity of watery fluid. She has never vomited blood. Throughout she has suffered from pyrosis, and at times, severely from gastrodynia. She is never free from acid eructations. Before the vomiting sets in, her mouth is affected with convulsive twitchings. Her mind, of late, has failed—she cannot give utterance to her thoughts for some time, and when she speaks, she is obliged to do so very rapidly, otherwise, the subject on which she is speaking escapes her: she is nearly incapable of adding a few figures together.

Tongue, clean and pale; the papillæ on its posterior part unusually prominent, and of a deep red colour; thirst, severe; appetite, craving; the breath of an acid odour. The matters vomited are generally acid to the taste; but, occasionally, when the vomiting is very troublesome, they become bitter. A large solid motion is passed about every six or seven days. Urine scanty when the vomiting is very troublesome, and deposits on cooling, slight sediment; as she lays in bed, her abdomen is rather flat, the recti muscles prominent, and on placing the hand on it, fluid is felt, and when the hand is moved it can be heard to splash: this existed all over the abdomen. By placing her in the erect position, and percussing the abdomen, a dull sound existed from just below the umbilicus to the pubis; but above this, as high as the epigastrium, a tympanitic one. By changing her position the fluid passed readily from one side to the other.

“A draught containing half a dram of carbonate of soda was given her, this caused a large quantity of gas to be

evolved, which distended the stomach, and then the whole of the abdomen enlarged and yielded a tympanitic sound.

“ A tumor could be easily felt in the right of the epigastrium of the size and shape of a small orange, hard to the feel and without much tenderness. During the next twelve months, she gained under careful diet considerably in flesh.

“ I saw her again on the seventh of February and then learnt, that for some weeks the vomited matters had been occasionally of a dark colour, and her motions of the same hue.

On the fifth, she vomited up some dark coloured matter and passed a large motion of the same colour. On the morning of the sixth, she had a kind of convulsive fit ; but it was impossible to learn from the servant, who was with her, its real nature.

“ When seen, her face was slightly flushed, left pupil more dilated than the right ; pulse ninety, rather weak ; she lay on her back with eyes half closed ; answered questions, but in monosyllables : protruded her tongue when requested to do so, no deviation was observed in it. Both hands were flexed on the forearms, and these again were flexed on the arms : it was rather more pronounced in the left than in the right. They were easily extended and without pain ; but as soon as the hand was removed, they returned to their state of flexion. Fluids were swallowed with great difficulty, but it was doubtful whether this did not depend, in some measure, on soreness of the throat, under which she had been labouring for some days. She died rather suddenly at six p. m. A layer of fat a third of an inch thick existed on the abdominal wall.

"On cutting into the abdomen, the stomach was seen closely resembling an enormous newly distended pig's bladder, the muscular fibres widely separated, filling the whole of the abdominal cavity.

"The whole of the colon, save the sigmoid flexure was in immediate contact with its lower border, and not larger than the thumb, and quite smooth. The small intestines were somewhat smaller than usual; they were situated deep in the pelvis. The uterus was small; the ovaries of the size of hazel nuts. The left kidney had been pushed down to the sacrum. The gall bladder was distended with dark bile. Liver and spleen healthy. The duodenum was soft and thickened, its mucus membrane, irregular, and in its lower half, small spots of ulceration existed, in which lay clots of venous blood of the size of split peas. The opening of the pylorus was so narrowed as to scarcely admit the point of the blow-pipe; thickening of the walls existed, forming a small tumor of the size of a small walnut. Immediately within the stomach, a fibro-cellular tumor existed of the size of a broad bean, the villi of the mucus membrane covering it, were very much hypertrophied.

"The stomach, after the gas had escaped, contained a quantity of gruel-like fluid; the muscular and cellular coats were much hypertrophied. In this state it measured from the cardia to the pylorus, along the great curvature, thirty-six inches; along the lesser curvature, eight inches; and between the two curvatures, ten inches. No other part of the body was allowed to be examined."

Treatment of chronic gastritis. Diet and exercise with strict attention to the functions of the

skin, kidneys and bowels stand in the first rank in the treatment of this disease ; medicine holds but a secondary one ; for, although, it may relieve for a time, yet it cannot produce a permanent cure.

The worst enemy which a person labouring under this disease has to contend with is his appetite, it is an incessant conflict between it and his stomach. The first craves for food, rich and highly seasoned, often in considerable quantities, while the other, rebels against it. I feel very well between meals, patients constantly exclaim ! I never suffer but after my dinner, is another expression constantly heard.

Why is this ? Simply, because, they eat more than their systems require, and of unsuitable food.

Ah ; if one had the power of ordering, medically, fourteen days on the treadmill, with bread and water, what cures he could often perform.

Diet. Every case presents some peculiarity, either from idiosyncrasy or habits ; so that no rule will apply to every case, further than that which is taken should be of the blandest kind, and in such quantities as not to induce the slightest feeling of distension in the stomach.

The following list contains the articles of diet and the plan I am in the habit of recommending for persons suffering from this disease.

1. On getting out of bed, sponge the body regularly with tepid or cold water, followed by friction with a coarse

towel or flesh-brush for some minutes until redness and warmth is induced. When these are not easily brought on, instead of sponging, the body should be rubbed with a wet flesh brush, and then dried with a soft towel. The last is a much better derivative than the first, and when the skin will bear it, it should be used in preference.

2. Then drink from half to a tumbler of cold water. When the water is hard, it should be boiled, if this does not entirely free it from the earthy salts, it must be distilled.

3. A short walk should, if possible, be taken before breakfast. Those unaccustomed to do so, should commence by walking for ten minutes, then increasing it to fifteen, twenty, thirty, or forty minutes.

4. *Breakfast.* Cocoa, prepared from the nut; milk or milk and water, according to which is found to agree best, with wheat meal (bran) bread,* if the stomach will bear it, if not white bread, as dry toast with fresh butter.

5. *Dinner.* This should be taken from four to five hours after breakfast; and should be, always if possible, preceded by a walk or some out of door occupation, of a longer or shorter duration, according to the strength.

Beef, mutton, or lamb, kept for some time, so as to insure tenderness, boiled or roasted.

Tripe.	Roasted Plovers.
Fowls (young) boiled.	Whiting.
Roasted Partridge.	Soles.
„ Larks.	Smelts.
„ Woodcocks.	Trout (small.)
„ Snipes.	

* See Foot Note at Page 167.

Heart of Brocoli.	Puddings of Rice.
„ Cauliflower.	„ Bread.
Well boiled Spinach	„ Arrowroot.
„ Carrots.	„ Tapioca.
„ Cabbage.	Strawberries.
„ Vegetable Mar-	Peaches.
row.	Baked Apples.
Roasted Potatoes	„ Pears.
Puddings of Sago.	Juice of Oranges.

For drink, plain water or toast and water. Sauces, spices, melted butter must be excluded, for the plainer the food, the easier it is digested. Sometimes the stomach is so irritable, that meat, game or fish cannot be retained. When this is the case, no fever being present, the meat should be made into essence or gravy, and eaten with the central part of brocoli or cauliflower.

The food should be thoroughly masticated, and great care should be observed not to take as much as the appetite prompts the person to take. A valuable rule, and one which cannot be too strongly impressed on the dyspeptic, is to rise from the table with a feeling that the stomach would hold one-third more food than what has been taken.

It is advisable to remain quiet for some time after dinner; sometimes, three-quarters of an hour is sufficient, while at others, when digestion is slow, two hours are requisite.

6. *Tea.* From three to four hours after dinner, cocoa prepared from the nuts or milk and water. Bread as at breakfast.

7. *Supper.* A glass of water with a baked apple or pear or a few stewed prunes and piece of bread and butter.

8. *Bed.* It is advisable to go to bed early, and rise early. The time spent in bed should not exceed eight hours. The patient complaining of being unable to sleep, is no reason for remaining longer in bed. When this complaint is made, we must always suspect that sleep is obtained during the day. This should be avoided.

The room slept in should be large and well ventilated, the bed without curtains. During warm weather, the patient should sleep on a mattress, resorting to a feather bed in the winter, if he suffers much from cold.

9. The bowels should be regularly relieved, once a day. To effect this, a habit should be acquired of going to the water-closet immediately after breakfast. If they do not readily act, a pint of tepid water, with two teaspoonsful of salt should be throwu up daily. Purgatives should never, if it can possibly be avoided, be had recourse to.

13. As much time as possible should be passed out of doors, over fatigue being guarded against.

When the state of the weather does not admit of out door amusement, recourse should be had to playing at ball, or shuttlecock, and battledoor, for an hour, if the strength permits, twice a-day. Skipping, fencing, bowls, or billiards are excellent indoor exercise. But of all occupations, for the dyspeptic, gardening, when possible, is one of the most valuable; it occupies the mind and exercises the body. If the person is occupied in an office and lives in the country, he should walk to and from business, instead of riding.

The remedial measures to be employed in chronic gastritis are few. If there is much pain and tenderness, a few leeches, from four to six,

according to the patient's strength may, perhaps, be advisable.

The oxide of bismuth, in doses of from five to seven grains, with one-twelfth of a grain of powdered opium; three to five grains of nitrate of potash; and from two to four minims of tincture of aconite, (Pharmacopœiæ strength,) three times a day, given in jam or suspended in thin gum-water is one of the most valuable.

The spasms, which sometimes occur in this disease, a draught, with ten minims of sedative solution of opium; four of tincture of aconite, (Ph. strength); with half-a-grain of extract of belladonna, in a little plain water, seldom fails to give immediate relief: should this not be complete, it may be repeated in half-an-hour.

Treatment of perforation. Opium is the medicine on which reliance should be placed. The sedative solution or the tincture should be given, in doses of from forty to sixty or one hundred minims, every twenty minutes, until relief is obtained: subsequently, it should be given in smaller doses and at longer intervals, to keep the system under its influence, but without inducing severe narcotism.

Of this, the careful practitioner will be the best judge, it may be given freely, and without fear of any ill effects, until relief is obtained: afterwards, it requires to be regulated.

If there is very great tenderness of the abdomen,

leeches may be applied freely, and blood taken from the arm.

I do not think calomel advisable : the aim sought is to close the opening in the stomach, by getting its edges to unite with an adjoining organ ; this can only take place by lymph being thrown out. Now it is well-known that lymph is rapidly absorbed, under the influence of mercury.

The time taken for adhesions to form, varies from sixteen to thirty-six hours ; much, however, depends with what organ or part it is to take place. It does not occur so readily with the liver or the diaphragm, as with the pancreas and omentum, from the reason that the motion which the two first undergo during inspiration and expiration interfere with their being kept in close approximation. To remedy this, as much as possible, the stomach must be kept empty as long as possible—the thirst being allayed by sucking a piece of wet rag—repeatedly sponging the body and limbs with cold water : at the same time, one position must be strictly enjoined. The practitioner may feel, that if his patient lives beyond thirty-six hours, that there is a chance of recovery ;—the chance will be still greater, if life is prolonged beyond a week,—particularly, if no hectic symptoms, (indicating the formation of peritoneal abscess,) set in.

If the patient's state demands the introduction of nourishment, it should be done by throwing up

glisters of strong beef or mutton tea, with or without wine, as the practitioner sees fit, every six or ten hours; the quantity thrown up should not be very great, otherwise it is apt to be rejected, a teacupful will generally be retained.

When it becomes really imperative to move the patient, it should be done in the following manner:—a person takes hold of each corner of the sheet, and the person is carefully raised and laid on another bed. But it should not be attempted until after the seventh or eighth day, and not even then if it can be avoided; for it must be remembered that any sudden motion, may, if the adhesions are not very strong, cause them to give way.

It is also advisable to defer giving food by mouth until after this period, and then only a few teaspoonsful at a time of weak beef or mutton tea.

The strictest diet must be observed for some months after recovery: one, consisting of milk and bread, with beef or mutton tea, in small quantities at a time, so as not to induce distension of the stomach.

Treatment of hæmorrhage. Iced water or small pieces of ice swallowed, will with bladders filled with ice, applied to the epigastrium most effectually contribute to arrest the bleeding, by inducing contraction of the stomach.

One of the best medicinal agents is powdered

alum in scruple doses, given mixed with wet sugar or jam, every two or three hours, and continued for some time, but at longer intervals after the hæmorrhage has been checked. Another is, the gallic acid, given in doses of from three to five grains in the same manner.

When the hæmorrhage has been copious and arterial, the stomach should be kept as quiet as possible ; nourishment being introduced by glisters, that taken by the mouth being confined to plain water.

These measures should be continued for eight or ten days. At the same time, strict confinement to bed should be enforced.

Treatment of cancrroid disease of the pylorus. In this disease, the great object is to introduce nourishment into the system ; for that which is taken up by the vessels of the stomach, from the food introduced into it, is insufficient for the nourishment of the body.

The intestines being the great medium by which nourishment is absorbed ; glisters of strong beef or mutton tea, or essence of meat should be thrown up twice or thrice, or even four times in the twenty-four hours. It is not advisable at first to throw up more than a tea-cup full each time.

The nourishment taken by the mouth should be confined to strained *weak* beef tea, mutton, veal, or chicken broth. They should be taken as drink, cold or warm, no thickening should be

added, for if the specific gravity of the fluid be not less than that of the serum of the blood it is not absorbed, the quantity taken must be also regulated, for the vessels can only go on absorbing, while the serum of the blood is of less specific gravity than that of the fluid in the stomach.

The juices of succulent fruits, particularly of oranges and lemons, (the last occasionally,) may be taken.

The mind should be amused, and as a much time as possible spent out of doors, but as little exertion as possible should be made, while there is much emaciation.

SECTION III.

ACUTE GASTRITIS.

Ballie and after him Abercrombie has observed, that acute gastritis is extremely rare. "It is," observes the latter, "from the action of the acrid poisons that we chiefly find inflammation of the stomach."

But Broussais and his followers considered acute gastritis as a very common disease, and referred a great number of affections, quite distinct from each other, to it. But later and more rigorous observations have separated congestion and cadaveric stase from changes due to inflammation.

In speaking of its frequency, Louis observes, "five or six cases only occur yearly out of one hundred beds in *la Pitié*."

Under the general term, acute gastritis, we shall include an alteration usually considered as a special disease, namely softening.

If we consider the changes which acute inflammation induces in the different coats of the stomach, under the forms usually described by systematic writers, as *phlegmonous* and *erysepelalous*, terms strictly arbitrary and to be distinguished during life, by no signs as Frank observes, "further than the occurrence of gastritis during the existence of erisepelas." We find, that when the inflammation is confined to the mucus membrane, it will be of a red colour, more or less intense ;

sometimes, affecting the whole of the mucus membrane: while at others, a part of it alone, the vessels ramifying in the adjacent tissue being more prominent than usual. Sometimes the mucus follicles are found enlarged and distended with mucus; their borders thickened. This must be looked upon as the *first form* of inflammation, and the most common, it very seldom proves fatal.

In the *second form* the membrane presents either general patches, or striæ, of redness approaching almost to black, accompanied by dark patches of echymosed blood in the submucus cellular tissue. Sometimes this tissue contains serum or lymph, rarely pus, at others the mucus membrane is covered with ulcers, varying in size from a split pea to a sixpenny piece, from which a turbid serum exudes. Sometimes one ulcer alone is found, as in a case reported by Gluge, (*Atlas der Pathol. Anatomie, Sechszente Lief., Tafel iv.*) and in another by Andral, (*Clinique Méd. Tome ii, obs. 6.,*)* the mucus membrane is found thickened; sometimes softened. In some cases, the whole of the other tissues are found softened, while at others, the muscular tissue alone is softer than in health.

“Inflammation of the submucus cellular tissue, observes Rokitansky,† “passing into suppuration is

* In one of the cases which occurred to Haller, (“Lieutaud Hist. Anatomico, Med.” Paris, 1767,) a large ulcer existed; black spots were also observed, and the stomach contained some brown foetid matter.

† “Handbuch der Pathol. Anatomie”—Band ii.

extremely rare ; it is sometimes met with as a secondary process, analogous to the metastasis of specific acute dyscrasiæ. The walls of the stomach are thickened ; this membrane is distended with pus, the mucus membrane above tense. After a time this membrane gives way, cribriform openings are formed through which pus exudes into the cavity of the stomach." The walls of the stomach, sometimes, become the seat of collections of matter. I have already mentioned an instance reported by Howship, (*vide page 77.*) where pus was mixed with lymph, in some parts, while in others, they occurred distinct. The cases where this was observed are few, and in most of them symptoms referable to the stomach were either absent or very slight. The works of Borrel, Lieutaud, Bauhin, Riolan, Piso, Guy-Paten, contain examples ; but they are too briefly reported to be of value. In Borrell's case, the patient a gold beater, had slow fever, frequent cough, and expectoration. That of Bauhin is more complete.

"A girl was taken with severe pain in the region of the stomach, which troubled her for several months, with frequent attacks of fever, when she died. After death, an abscess was found in the pylorus, and also in the duodenum. The surrounding parts appeared thickened."

"The Philosophical Transactions," for 1749 and 1750," contains the following case by Dr. Layard.

"A female aged seventeen, was taken in November, 1745, with profuse sweats, which, at last, yielded to the elixir of vitriol.

“Obstruction of the menses followed, with short breath, dry cough, and acute pain in the left hypochondrium, rigors, &c. When seen by him in February, a large prominent tumor was felt in the left side, extending to the left one, and filling the epigastrium, where she had constant acute pain; pulse, quick; thirst; difficulty of breathing. Liquids were returned with great pain, from an obstruction at the lower part of the œsophagus. She was supported by glisters. On the eighteenth of March, the pain in the stomach became suddenly severe, and she fainted; on recovering, she uttered a piercing cry, and immediately afterwards vomited up two pounds of matter, and passed four quarts of pus from the bowels. The discharge gradually diminished and she got well.”

A soldier,* aged twenty-two., reported himself as sick on the morning of the third of April, suffering from constant vomiting with violent pain in the epigastrium; pulse, small and hard; tongue, livid and dry; surface of body, cold; bowels, constipated. He discharged nearly a pint of pus in my presence. Soon after this the pain shifted to the umbilicus and remained fixed there. During the next twenty-four hours he was bled to one hundred ounces; cathartics were given, and several motions containing pus were passed.

On the afternoon of the second day, there appeared considerable amendment, but he suddenly expired during a violent fit of vomiting.

The intestines were found covered with pus

* Mr. Callow, “Medical and Physical Journal.” Vol. lii., 1824.

which was seen to ooze from under the stomach from a lacerated opening on its posterior wall near the lesser curvature. A considerable part of the walls of the stomach surrounding the pylorus, and about the lesser curvature were disorganised. He had made no complaint, further than that of late he had lost his strength, until the morning he entered the hospital.

A man, *aged fifty, of delicate health, since a youth addicted to wine; subject for the last ten years to attacks of painter's colic and cutaneous disease.

When seen, his face was pale and covered with cold sweat, the tongue appeared as if it had been cauterized with some caustic fluid; frequent cough; difficult respiration; severe pain under the ensiform cartilage and in the left side; pulse, small and quick; frequent vomiting of mucus matter, with constant hiccough.

He continued in the same state for the next six days. Then violent cough set in with a sense of suffocation, followed by vomiting of foetid pus. The same was passed from the bowels. Next day in the same state, then for the ensuing seven days, better. On this day, the fourteenth from the commencement of the disease, burning heat was experienced, extending from the pharynx to the stomach, accompanied by a sense of pain in the epigastrium, hiccough, nausea, and vomiting. A large portion of membrane was brought up with a

* Dr. Lefaucheaux, "Journal Gén de Médecine," 1805.

considerable quantity of blood. On the following day more membrane was discharged resembling three-fourths of the stomach in shape.

It was examined by several medical men. Longitudinal and transverse muscular fibres, were observed with cellular tissue attached. He seemed to improve somewhat, but on the ninth day from the discharge of the membrane, he sank.

The stomach was found to contain clots of black blood; its great extremity of a deep red, and its walls thin: it contained a small quantity of pus; the peritoneal membrane was not changed. The pus was found to come from an abscess surrounding the spleen.

Softening. I have already alluded to softening of the mucus membrane as one of the terminations of chronic gastritis, in case one, page eighty two, the symptoms were of an acute character; but in the two succeeding cases they were chronic; but in the third they were of a low type.

There is another form of softening affecting the whole of the tissues of the stomach, termed *gelatinous*. It has received but little attention from the practitioners of this country; but on the continent its importance has been fully recognised. It is less a disease of adults than of infants, among whom it often rages epidemically at some periods of the year; particularly during damp muggy weather in autumn.

Dr. Gairdner, of Edinburgh is the only English

practitioner who has published any thing concerning this disease, as observed in children.*

In France, Cruveilhier; while in Germany, Jæger, Romberg, Blassius, Guthnecht, Richter, Wisemann, and several others have devoted their attention to it.

It is also met with quite unconnected with any morbid change, in those who have died suddenly, or after a few hours' illness, while the process of digestion was going on. It can be easily induced in an animal, by pithing it while digestion is going on, and suspending it for a few hours, when the most dependant part of the stomach will be found to have undergone this change. I will quote the description given by

Rokitansky, (*Hunbuch der Pathol. Anatomie.* Band. ii. 195.) Softening is met with under two forms differing from each other in several points. In one, a disease of infants, it appears as a change (*umwandlung*)—softening of the mucus membrane of the great extremity of the stomach, from this it extends to the muscular, and lastly, to the peritoneal coat, together with the intervening structures—converts them into a greyish or greyish red when cut into a yellowish glutinous mass, through which sometimes, can be observed single blackish brown striæ as of softened blood vessels. From the softened inner layer sometimes being removed, nothing of the great cul-de-sac, will be found but a thin gauze-like very friable membrane. The softened parts yield to the slightest touch, sometimes they separate spontaneously, not probably during life, but frequently after death.

* "Edin. Medico Chir. Transact." 1824 and 1826.

It has mostly a subacute course, and is met with in conjunction with disease of the brain, especially hypertrophy and hydrocephalus.

In the second form it is met with as more or less saturated, blackish brown pap.

It occurs under two different circumstances, in both the colour is due to the alteration of blood from the action of an acid. In one from pulmonary paralysis, probably caused by a reflex action of the œsophageal and gastric branches of the pneumogastric nerve. In the other as a sequel to certain diseases which are either originally acute or become so under certain influences; viz., as the exanthematous, the croupy, the typhoid in the widest sense, pyæmia, acute tuberculosis, acute cancerous dyscrasia, and shews itself as a fatal lesion.

It develops itself as a state of congestion of the capillary vessels of the membranes of the great extremity, accompanied by more or less congestion of the spleen. It probably springs from the blood itself, from an over acid state of the vessels of the great extremity of the stomach and of the spleen. In this, is the most probable cause of its rapid course—the dark hue of the softened tissues and perforation of the softened parts. It first shows itself as a dark discolouration of the mucus membrane of the great extremity, which is soon converted into a black pulp, easily separated. If this takes place spontaneously, the sub-mucus cellular tissue is seen of a pale bluish-white hue, the vessels which ramify in it, are disorganized, and contain a black (coal-like) grain-like blood. The subjacent muscular coat is pallid and altered—and the peritoneal one of a dirty grey hue.

The alteration extends from the mucus to the other

tissues—they are converted into a black pap, which gives way, and an aperture with ragged edges is the result.

The stomach is found to contain a fluid like coffee-grounds or ink, often during life the same are vomited up, mixed with portions of the softened tissues and of fat, which is seen in it, in the form of oil globules. In some instances the process takes place in circumscribed spots ; then its progress seems slow. The mucus membrane nearly disappears at these spots : a thin gauze-like discoloured layer is observed surrounded by a few jagged remains of the membrane. The great extremity is the seat of the softening in every instance, from thence it extends to the large curvature or upwards to the lower part of the œsophagus."

Symptoms of acute gastritis. The disease is sometimes ushered in by a sense of lassitude, slight pains in the limbs and slight loss of appetite. These precursory symptoms were observed in seven out of ten cases collected by Valliex, from Louis and Andral. "In only one case," he observes "did the disease declare itself suddenly. In this instance, in the midst of good health, the person was seized a few hours after a meal with chills, followed by heats, vague pain in the epigastric region, followed immediately afterwards by severe pain, with vomiting."

In the *first form* the skin is hot ; the pulse quick, —generally hard and contracted ; —thirst, severe ; skin, dry, and its temperature increased ; tongue, coated with white fur ; urine, scanty, and high-

coloured. Headache, sometimes severe—while at others, slight or altogether absent; pain at epigastrium, sometimes obtuse, while at others, intense, contracting, lancinating or burning. It may present all these varieties. I have often observed the pain, when the stomach was empty, to be obtuse, but when any stimulant or food was taken, it became burning; sometimes tense and lancinating; nausea, more or less severe; vomiting frequent: when the stomach is empty of thin and watery mucous, acid to the taste: sometimes tinged with bile, then it also becomes bitter: more or less flatulence; acid or bitter eructations. Bowels, obstinately confined.

It is very seldom that this form ever passes into the second; unless from improper food and exposure to cold or wet. Its duration will greatly depend on the treatment adopted, by the repeated application of leeches, to the epigastrium; frequent warm baths; demucelent saline medicines; purgative glisters; strict diet, the symptoms will subside in a few days; but treated on the expectant plan, from fourteen to twenty-eight days.

The *second form* of acute gastritis—unless the first passes into it—is generally preceded by severe chills, followed by heat of the skin; sometimes intense; while at others, it does not rise above the natural temperature: it may even be below it.

This last,—if the other symptoms are severe,—is always an unfavourable indication. Burning heat at the epigastrium; greatly increased by the

ingestion of anything—particularly if at all stimulating; intense longing for the coldest possible drinks; great tenderness at the epigastrium, and left hypochondrium. The slightest motion of the body; coughing; a deep inspiration greatly increases the pain: Vomiting is severe; everything taken, save a few spoonfuls of cold water, is immediately returned, mixed with acid mucous, sometimes tinged with bile; or streaked with blood: when the retching is severe, a small quantity of green bile only is brought up. Great insomnia, agitation, and sometimes oppression at the chest. In some instances, severe cramps of the extremities exist. In one case,* the patient became a short time before death, quite rigid. Delirium sometimes shows itself, from the membranes of the brain becoming affected. As the disease advances hiccough sets in; the face, in some cases, assumes a livid hue; becomes puffed: the features appearing as if flattened, and covered with cold clammy perspiration; while at others, it becomes pale, the features pinched and the eyes sunken. In the first, death generally ensues in the midst of convulsions, which are sometimes preceded by a semi-apoplectic state; while in the last, the patient expresses himself much better often as quite free from pain, complaining only of slight weakness—death ensues suddenly while attempting to sit up, or while speaking or drinking. Towards the

* Auvert, "Select Praxi Medico-Chir."—Tab. xcvi.

close of life, in the first, fætid brown or black fluid often gurgitates up into the mouth; and the pulse becomes slow and laboured; while in the last irregular and thread-like.

Symptoms of softening. The symptoms of softening as it affects the mucus membrane as a termination of chronic gastritis, have already been given, (*see* page 79.). General softening of all the coats of the stomach is an extremely rare disease; doubts have been thrown upon its being even a disease, but rather a *post mortem* change. If softening is not strictly a change induced by a diseased action, it is one which a diseased action, by favoring an undue secretion of gastric juice, renders very liable to occur. This fluid is invariably poured out in gastritis, in some forms in larger quantities than others. It is always secreted during digestion in considerable quantities; and hence, if sudden death ensues during it, softening is generally found. It has been frequently observed that the fluid from a softened stomach induces rapid softening in an healthy one. I have observed the change ensue from the introduction of gastric juice into the stomach of a dead animal, but never in that of a living one. Instances have been recorded where softening has taken place during life; but the tissues must have first lost their vitality, for it is well-known, that the gastric juice has no power on those which retain it. This opinion is, I think, favoured by the fact, that in

those cases where perforation took place during life, the inflammatory symptom were very severe. Two cases have been recorded, but I regret that I can only find the notes of one, recorded by Chaussier.

“A female was confined with her first child. The labour was an easy one, and she did well up to the second day, when chills were experienced, which returned. On the third day pain in the left hypochondrium which was combated by the application of thirty leeches. The fourth day, the pain returned accompanied with intense fever—more leeches were applied. She continued in a varying state, up to the 16th day, when the pain returned with great severity:—she had also severe pain in the epigastrium, with great tenderness, and nausea. She died suddenly on the 19th day, after three hours of great agony, during which she constantly uttered piercing cries.

The stomach was pale and shrivelled up: in the left extremity it offered a large opening, two inches in length with thin pulpy brown borders. A small portion of the diaphragm corresponding to the opening; was grey and soft. The abdominal cavity contained some lactescent fluid, in which floated some albuminous flakes. Nearly all the viscera where of an intense red. Red serum, mixed with albuminous flakes, existed in the right pleura. In the left a small quantity of puriform matter, with intense redness of the thoracic walls.

In the following cases, it is probable that softening of the mucus membrane occurred during life.

1. A medical man,* for six months subject to gastroydria, was taken, after a hearty dinner, with cold

* Burgraeve, *Bul de la Soc. de Med. de Gand*, 1845.

sweats, small pulse, suppressed voice, anxious respiration. While attempting to evacuate the bowels emphysema appeared, affecting the neck, and giving rise to alarming symptoms of suffocation. The action of the lungs, at length, became suspended, and death ensued. From the first, a burning sensation was experienced at the epigastrium.

The stomach was seen enormously distended, on drawing it forward a large rupture ensued. The stomach at this point was found in a state of pultaceous softening. The mucus membrane near the opening was thinned and highly injected.

A sailor,* aged twenty, of temperate habits, soon after a hearty meal of coffee and bread and butter, was taken at six p. m. with severe pain in the abdomen, which was contracted : not much tenderness ; collapse, retching ; but no vomiting. Various remedies were employed without benefit. He died at nine a. m., the next day. At the moment of death, extensive emphysema of the neck and chest took place.

The body was examined a few hours after death. Dark green fluid was found in the abdomen ; and an opening in the stomach capable of admitting three or four fingers ; the mucus membrane of the stomach was of a deep red and softened ; no indication of peritonitis.

A case is cited, in "Haller's Disputat. Anatomica." Lib. vi., 741, from Heister.

"A young man presented an emphysematous swelling of the neck ; for some days before death, he complained of difficulty of breathing, and inability to swallow ; no fever. The stomach was found in its left extremity black

Carson, "Edinburgh Monthly Medical Journal," 1848.

and livid. The diaphragm in contact with it was, as if semiputrid; the liver and lungs in contact with the diaphragm had undergone the same change. The larynx and pharynx were healthy."

I have met with but one case of this disease with any claim to be termed idiopathic.

1. female aged thirty was delivered, after being in labour with her first child, thirty-six hours, by perforating its head. Pain and tenderness of the lower part of the abdomen ensued, this was combatted by leeches, and the exhibition of calomel and opium; but her mouth was only slightly affected. On the fourteenth day she was convalescent; on the seventeenth she was able to be carried to a sofa for three or four hours; and for the ensuing three days she continued to improve.

On the twenty-first day she was taken with severe pain in the epigastrium; great tenderness on pressure: prostration; intense thirst; headache; tongue, bright red and as if glazed; pulse, quick and weak; vomiting of every thing taken; skin harsh and dry, but the temperature not increased. Blisters were applied, with demucelents and sedatives internally, but without benefit, she sank on the fourth day.

After death an opening was found in the left posterior part of the stomach; the edges were softened and of a brownish red hue; the mucus membrane was of a deep red, and softened. The walls of the stomach for two inches around the opening were softened.

Cruveilhier has published the following case in his *Anatomie Pathologique*:

2. A man aged twenty-two, seen April twenty-

seventh, suffering from headache with bleeding from the nose, and slight stupor. He was bled and leeches, and on the thirtieth was better. On the first of May, his face had a sorrowful expression, agitation; extremities, rigid; put out tongue when requested, but left it there; answered rationally; pulse, natural.

On the second, he was tranquil; respiration, slow; drowsiness.

On the third, the agitation returned; walked about incessantly; demanded food; thirst, for the first time, insatiable; no pain or tenderness. Same state up to the seventh, then his extremities became rigid; pulse, small and rapid; respiration quick; hears but cannot answer questions. Died on the ninth.

The anterior wall of the stomach was, near the great extremity, soft and transparent, and on the point of opening. A small ulcer existed in the small intestines near their lower part, with some red and thickened patches.

SECTION IV.

CANCER OF THE STOMACH.

This disease, as it has fallen under my notice, seems to stand in the frequency with which it is met with, next to cancer of the mammæ.

It is a disease to which men are more liable than females. In eighty-four cases which I have collected from various sources, added to those which have fallen under my own notice; of this number fifty-six were males, and twenty-eight females.

The observations of Valliex, (*Guide du Med. Practicien*,) also show that males are more susceptible than females.

But both Lebert and d'Espine arrived at an opposite conclusion;—the first, in forty-two cases found, that nineteen were males, and twenty-three females; while the last, in one hundred and eleven found, that fifty-four were males, and sixty-two females.

It is difficult to assign a reason for this difference in the observations; unless, they have included in their tables, cases of cancrroid disease of the pylorus. If they did this, then the results would be similar to those which they have given, and the number of females would preponderate over that of males. But in connection with cancer they are, as Valliex remarks, “contrary to the general opinion.”

Louis considers, from his researches, that cancer of the uterus is twice as frequent as that of the stomach. This is, I think, the case in females; that of the mammæ being five times as frequent as that of the uterus; but in men, cancer of the stomach, may, I think, be considered to hold the first place in the frequency of its occurrence.

This greater tendency in males may be, perhaps, considered to arise from a greater predisposition on their part to disease of the stomach; but in another cancerous diseases, namely, that of the œsophagus, men present a much greater susceptibility than females. In thirty-three cases, twenty-three were males, while only nine were females.*

From the history of this disease, as it is usually given in books, nothing would appear easier than to distinguish it from every other disease of the stomach. But every practical man must have felt how difficult it often is to distinguish it from chronic gastritis, ulceration, particularly when met with at a late period of life. It is still more difficult to distinguish it from cancrioid disease of the pylorus, with which it is constantly confounded; although essentially different in its progress, duration, and microscopic characters.

The position of the disease, in the organ, its stage, and its character, whether encephaloid or

* "Clinical Illustrations of Diseases of the Œsophagus," by the author. Article, "Cancer." *Association Medical Journal*, 1858.

squirrroid, all tend to modify the symptoms which cancer of the stomach excites; and has given rise to the remark, which Lebert (*Maladies Cancér-enses*) has so justly made; "that the difficulties thrown in the way of arriving at a just diagnosis have been so great, that many authors of the first order have stated, that there existed no certain pathognomic signs of this disease."

The remarks are true, if we look only for the few salient points, generally considered to indicate the existence of this disease; but, I must own, I have more faith in the science of medicine, (barren as some wish to make it appear,) and fully believe that with careful study, this disease may be as certainly diagnosed as if it was situated on the external part of the body.

Sex and Age. The following table contains the analysis of the sex and ages of eighty-four carefully-observed cases of this disease.

AGES.	FEMALES.		MALES.	
20 to 25	-	1	-	2
24 „ 30	-	1	-	—
30 „ 35	-	—	-	2
35 „ 40	-	3	-	5
40 „ 45	-	4	-	13
45 „ 50	-	5	-	9
50 „ 55	-	4	-	2
55 „ 50	-	3	-	7
60 „ 65	-	3	-	6

AGES.	FEMALES.	MALES.
65 ,, 70	- 3	- 2
70 ,, 80	- 1	- 1
	—	—
	28	56
	—	—

The above table shows a greater preponderance on the part of the male over the female, as was also observed by Valliex. In his cases, thirty-three in number, twenty were males, and thirteen females.

If the table which I have given is examined, it will be observed that the minimum of liability in females, was from thirty to thirty-five years, while in males, it was from twenty-five to thirty.

The maximum in the first, was from forty-five to fifty years; while in the last, it was from forty to to forty-five. In females the liability seemed very nearly the same from the thirty-fifth to the seventieth year; while in males, it was greater from the fortieth to the sixty-fifth, but the latter presented a double tendency from forty to forty-five, than from sixty to sixty-five, and nearly treble over that of from thirty-five to forty.

Why men should be more liable to this disease at these periods, it is difficult to say. Is it, because, they begin from the thirty-fifth to the fortieth year, to indulge freely in the pleasures of the table? We find that at these ages they are more susceptible to chronic gastritis, and without for a moment attempting to assume an inflam-

matory origin for this disease, we cannot but think that it has something to do with its developement and progress.

In the four cases, two males and two females, where the disease occurred before the thirtieth year the disease was encephaloid in its character.

Seat of Cancer. In connection with the seat of the disease, it was found that the pylorus, or the pyloric portion of the organ, was affected in thirty-eight cases out of eighty-two. In sixteen of this number, the opening was more or less obstructed.

The lesser curvature stands next in frequency of liability. Then the general implication of the organ, the anterior and posterior walls being both affected, in a greater or lesser degree. In these last cases, eleven in number; in four of them, the cardiac and pyloric openings were free; in four, the last opening was obstructed; and in three, the first.

The following table represents the greater liability of one part of the organ over another to become affected in this disease.

Pylorus or its extremity	-	-	38 times.
Lesser curvature	-	-	10
General, the anterior and posterior	}	11	
walls being more or less affected			
Great extremity	-	-	9
— curvature	-	-	8
Cardia	-	-	5
			<hr/> 82

Lebert* found that the pylorus was affected in thirty-four out of fifty-seven cases. In eighteen it was alone affected. In nine both it and the lesser curvature were affected. In one of these cases there existed a number of tumors ; one of the largest of which, contained an encysted abscess. In another of the cases, in addition to the pylorus the whole length of the lesser curvature was affected, as far as the cardiac opening, which was free. In five of the cases the parts adjacent to the pylorus were more or less affected. In one case the great extremity was also affected ; and in another, the superior part of the duodenum.

In some of the cases, the narrowing of the pylorus was not very considerable, and particularly where the cancer had ulcerated. But in twelve, the opening was very much narrowed ; and in seven, so as scarcely to admit of the introduction of the apex of the little finger ; and in five, so much so, as to scarcely admit a quill or a female catheter.

In one case, an incephaloid tumor was placed before the pylorus in such a manner as to close it like a valve. The cardia was affected only five times. In two of the cases it extended to the lower part of the œsophagus. In one, it extended towards the lesser curvature ; while in another, it had made its ways towards the great curvature.

* "Traité, Pratique des Maladies Cancéreuses." Paris, 1851.

The narrowing of this opening was inconsiderable, in one instance only so as to render the introduction of the little finger difficult.

The lesser curvature was more frequently affected than the cardia: it was affected in seven of the fifty-seven cases. Its implication, at the same time, as the pylorus has been adverted to before.

The great curvature was affected in only two of the cases. In one of these, it was the lesser cul-de-sac that was affected.

In one instance alone, was the whole of the stomach affected, this was from encephaloid cancer, both the cardiac and pyloric orifices were free. The posterior wall of the stomach was affected in three of the cases, while the anterior wall was affected in five.

Implication of other organs.—This may take place in two ways; first, *directly*, from actual contact with the diseased part of the stomach. Secondly, *indirectly*, from the cancer cells being carried by the blood vessels or absorbents into them.

The organs or parts most liable to become affected *directly* are those in immediate contact with the stomach; as the liver, pancreas, spleen (scarcely ever), transverse portion of the colon, duodenum, diaphragm, omentum, and the abdominal walls.

From *indirect* or secondary implication, none of the organs (the spleen excepted), are exempt; but some present a greater tendency than others.

The liver, from its being the receptical for the blood from the stomach, and from being so directly in contact with it, is more liable than any other.

It was affected in thirty-eight of the eighty-two cases, in seven of them *directly, i.e.*, from the extension of the cancer from the stomach to it; while in the remaining twenty-one it was implicated *indirectly*, or more strictly speaking, *secondarily*. By indirect or secondary implication, the formation of masses by the growth of the cells, conveyed into the organ by the circulation is meant. These masses varied in size from a split pea to an apple.

The position of the disease seems to exert a considerable influence on the frequency, with which the liver becomes affected. It was affected either directly or secondarily in seven out of thirteen cases, when the lesser curvature was the part affected. In twenty-two out of the thirty-eight cases when the pyloric half was its seat. In two of the five cases, when the cardia was the part; and in two of the cases affecting the great extremity.

It occurred in one case only out of the nine cases where the disease was situated in the great extremity; and in two of the eleven cases where the disease was general.

In four cases, ulceration of the cancer had taken place, the walls of the stomach had become per-

forated, and more or less disorganization from the contact of food and liquids introduced into the stomach, had been induced in it.

Lebert mentions two instances, where that portion of the liver which adhered to an ulcer of the stomach, was gangrenous, the adjoining parts of the stomach were similarly affected.

In another instance, from the ulcer penetrating into the substance of the liver; an abscess the size of a large orange had been excited.

The walls of the gall-bladder were occasionally implicated; but this was *directly* and from contact with the diseased part of the liver.

The lungs stand next in frequency to the liver. They were the seat of secondary disease in ten of the eighty two cases. Out of this number, in three the diaphragm was affected directly.

In connection with the seat of the disease and the implication of the lungs. In six of the cases it was situated at or near the lesser curvature, and in two at the cardia.

The diaphragm when affected, became so from direct contact; but its subserous cellular tissue was implicated secondarily in some cases. In these cases, the subserous cellular tissue of the abdominal wall was generally affected.

The great omentum was affected in fifteen cases; in three of them, the mesocolon was also implicated. In three of these cases, the disease was

situated at the great curvature of the stomach ; and in one, at the great extremity.

The lesser omentum was implicated in five of the fifteen cases ; it was very frequently affected, when the liver was the seat of direct or secondary disease. The peritoneum was also affected in ten of the fifteen cases.

The mesentery, in the cases which fell under my own observations was affected in all the cases where the omentum was implicated.

The pancreas ; it is impossible to state how often this gland was affected, as most of the observers have omitted to notice its state. When the disease is situated on the posterior part of the stomach, it seldom escapes being affected either directly or secondarily.

The spleen was not affected secondarily in one instance ; but in one of the cases where the great extremity of the stomach was the seat of cancer, it was adherent to it, and cancerous deposits existed in the adhesions, and on the surface of the spleen adjoining the stomach.

The duodenum was affected, in eight out of the thirty-eight cases where the pylorus was affected.

The stomach in twenty three of the eighty two cases, presented as the result, either of direct or secondary implication ; one or more isolated tumors, or a great number of tubercles. The lymphatic glands in the immediate vicinity of the stomach, seldom escaped contamination. The bronchial

glands were, also, frequently affected; and when the cancer was general, they never escaped. Lebert found them affected in eight out of thirty-two cases.

Dietrich, "*Prage Vierteljahrschrift*," 1845,* mentions an instance where the periosteum of one of the lumbar vertebræ was affected, in another the anterior wall of the rectum. In one case, cancer occurred simultaneously in the stomach, ileo-cæcal valve, mesentery, bronchial glands, ovaries, and the fallopian tubes.

In one case, where the great curvature of the stomach was affected, the transverse portion of the colon was implicated.

The state of the kidneys, uterus, and other organs were not sufficiently noticed, in the cases, which I have collected from other observers, to enable me to give any definite results as to their relative frequency of liability.

In the twenty cases, which have fallen under my own notice, in two of the cases, where the peritoneal membrane, the omentum, and the mesentery were affected, the surface of the kidney was affected: in another, one of the kidneys was enlarged, and three-fourths of it was in a state of cancerous degeneration. In the other case, the surface of the ovaries, the fallopian tubes, and the uterus were affected. In the last organ, in addition to the implication of its peritoneal covering, two masses of the size of walnuts were found in its walls.

* Cited by Lebert.

Size of the Stomach. When any impediment to the passage of the food from the stomach into the duodenum exists, dilatation from the constant distension from the constant presence of food in it, will take place. But to induce dilatation, it is necessary that the obstruction should be of some standing: hence, it is far less frequently met with in cancer, than in canceroid disease of the pylorus. In none of the cases of cancer which have fallen under my notice was it dilated to any great extent, save in one instance, where it had been of some standing: but even in this instance the dilatation seemed to arise from obstruction in the pylorus, previous to the developement of cancer.

Diminution of its capacity is of much more frequent occurrence; this may take place when some obstruction to the introduction of foods exists at the cardia: fluids forming the sole sustenance, atrophy of the part unaffected with disease being induced; or from the extension of the disease its cavity becomes narrowed. In these cases, the stomach, on opening the abdomen, will appear of the natural size, but on cutting into it, from the thickening of its walls, its cavity will be so reduced in size, as not to be capable of holding more than six or eight ounces of fluid.

This gradual diminution of the cavity of the stomach was particularly marked in one case. The patient, when he first fell under my notice, could take a pint of arrowroot or gruel without

inconvenience, but for a week or two before death, not more than a tea-cupful could be taken. A case is mentioned by Dietrich,* which occurred in the Prague Hospital, where the stomach was found after death so compressed by encephaloid masses developed on its anterior wall, that its cavity was so reduced, as not to be larger than an orange. The cardia and duodenum were placed on the same line; the pylorus had disappeared.

In the case, which fell under my notice, the cancer was confined to the pylorus, and the stomach was so dilated as to be capable of holding six pints.

Duration of the disease. In no disease of the stomach are the characteristic features of cancer so well marked as in its duration, when once it is fully formed. But an insurmountable difficulty often exists to separating it from the pre-existing chronic dyspepsia, or gastrodynia, for they are often so blended, the one passing into the other by such insensible degrees, that it is not until the symptoms are fully formed and the cancerous cachexia developed that suspicion as to the real nature of the disease is excited.

In eighteen cases, which I have been able to watch, in twelve of them, symptoms referable to the stomach had existed from one to seven years before symptoms which could be distinctly referred to cancer arose: in the remaining six, there had been

* Cited by Lebert.

none, or but very slight premonitory dyspeptic symptoms. The duration of the disease was extremely variable, and did not seem to depend in any way on the position of the disease,—or at least as much as one would be tempted to suppose. The habits of the patients, and whether the disease was of a passive or active character, seemed to exert the greatest influence on its duration. This is certain, that the more it approached the encephaloid form, the more rapid was its progress towards a fatal termination. The following table shows the duration of the disease in the twenty cases, which fell under my observation, from the time that symptoms which could be considered to indicate the existence of cancer first appeared.

2 cases extended over a period of 24 months.

2	„	„	18	„
3	„	„	12	„
5	„	„	8	„
5	„	„	6	„
3	„	„	3	„

In the following cases, which Lebert noticed the duration of the disease :

2 cases	-	-	3 months,
5	„	-	3 to 6 „
6	„	-	6 „ 9 „
9	„	-	9 „ 12 „
4	„	-	12 „ 18 „
7	„	-	18 „ 24 „
1	„	-	24 „ 38 „

These results, he remarks, coincide with those obtained by Mons. Valleix, who, in twenty-three cases, found that the maximum duration was three years and a half, and the minimum four months.

Hereditary transmission. In the cases which fell under my notice I endeavoured to learn, whether any of the relatives had suffered from cancer, and what part of the body it had affected.

In sixteen only, out of the twenty cases, could this be traced.

In six of the cases, the mothers had in two died from cancer of the womb,—three, from cancer of the breast, and one, from cancer of the stomach.

In four of the cases, the fathers had died in three of them, from cancer of the stomach; and in one, from cancer of the face.

Napoleon Bonaparte died of this disease, his father had also succumbed to it. In the other six cases; in three, the aunts had died; in two, from cancer of the breast, and in one, from the same disease of the uterus: in the remaining three, the uncles, had died of cancer, two of the stomach; while in the other, nothing further was known than that he had died of “a cancer.”

Seat, forms, and structure of cancer. It is generally received that the cellular tissue is the commencing point of cancer,—the mucus and the muscular tunics becoming implicated as it extends.

In one instance alone, have I had an opportunity of observing cancer of the stomach in its earliest or

crude stage. A man, between forty and fifty years of age died, after the thorax was tapped for effusion consequent on pleuritis, under which he had laboured for eighteen weeks. A small tumor somewhat larger in diameter than a shilling, and about half the thickness was found in the stomach, about one-and-a-half inch from the pylorus. It protruded into the stomach, and the mucus membrane adhered slightly to it. The peritoneal membrane also adhered; but much less intimately, a few muscular fibres existing between it and the tumor, but they were pale and attenuated, as if they had suffered from pressure.

The tumor was enclosed in a rather thick cellular capsule, and when incised it was of a yellowish aspect. It was at first thought to be a tumor developed at the expense of the sub-mucus cellular tissue; but on scraping its cut surface, a little nearly clear fluid was obtained, which under the microscope presented the elements of cancer, but small, irregular, and with difficulty recognised. The surface of the tumor examined with a powerful glass, shewed it to be a made up cellular tissue interlaced, in the interstices of which the elements of cancer were observed.

He had never during life presented any symptoms referable to the stomach.

The effect of cancer on the sub-mucus cellular tissue, much more marked in the squirrroid than in the encephaloid or colloid forms, will depend on

the amount of irritation which it excites. It will in the ulcerative stage be found hard and thickened; sometimes infiltrated with fluid. In addition to these changes, it is frequently the seat of prolongations and secondary cancerous formations.

The changes induced in the muscular tissue, are also generally more marked in the squirrroid than in the other two forms.

When the food is retained some time in the stomach from some obstruction existing to its passage through the pylorus, (from the occurrence of frequent vomiting,) general hypertrophy is induced.

In one instance, where a cancerous tumor nearly encircled the stomach, about three inches from the pylorus, there was considerable hypertrophy of the muscular coat of the left extremity; while that portion of the coat between the tumor and the pylorus was pale and thin. In other cases where no vomiting has been present, or where liquids have been alone taken, and in small quantities at a time, the muscular coat has presented but little change, or it has been pale and atrophied.

The changes induced in the immediate vicinity of the cancer, on this coat are as Lebert remarks, very variable. In some cases, he found it to have attained a thickness of from two to three millimetres; in others, from four to five; and, sometimes, it had acquired that of a centimetre. But

in these it generally adhered so intimately to the mucus membrane, that its thickness was with difficulty measured.

The muscular structure, he continues, was sometimes very distinct; at others, it was not recognisable—in these cases it was of a pale yellow. “Sometimes when it was hard and hypertrophied, it was brilliant, ivory-like, and homogenous; but in these cases, fibrous hypertrophy existed; the muscular elements having disappeared. In some rare cases, these were replaced by colloid tissue.

In the majority of cases, white partitions traversed in a vertical or irregular manner the hypertrophoid muscular tissue. Sometimes in the form of little seed-like tumors.”

Cancer occurs in the stomach under three forms. First, *squirrroid*. Second, *encephaloid*. Third, *colloid*. The first is the most frequent; the last the least so. Lebert met with it in six out of fifty-six cases: while in the twenty cases which fell under my notice, not one was of this form; although, in several instances, it existed in some parts of the cancerous masses.

First, the *squirrroid* form. This form has derived its name from the hardness of the tumor, due to the predominance of the fibroid elements over the specific or cancerous. This peculiarity is often less marked in cancer of the stomach, where the cellular predominates. Hence, this form of cancer of the stomach, although not strictly *encephaloid* approaches it from this reason.

The following are the characters of squirrroid cancer as given by Brocca.*

“It is formed of fibrous tissue which interlace, and in the interstices, which are very narrow, the proper elements of cancer are enclosed. These elements present certain peculiarities, the cells are few in number; but the cellules, on the contrary are very numerous, but they are small, irregular, and flattened in different directions; many of them are furnished with tails; while others are lengthened or even crooked. But as the cancerous tumor increases in size and softens, they become more regular in form and larger.”

This is the type of the squirrroid cancer in the crude or first state. A state, he observes, from the presence of but few blood vessels, and the resistance offered by the fibroid tissue, which renders its progress slow, and the innocuity from secondary implication very lengthened.

Tracing a case of squirrroid cancer of the stomach, through its various phases, it will be found to increase in magnitude; but chiefly in a lateral direction, at the expense of the muscular and cellular tissues, sending prolongations into them, while, at the same time, the mucus membrane first becomes adherent, and then either ulcerates itself or from softening of the cancerous tissue below, it gives way.

* “Anatomie Pathologique du Cancer. Mem. de l'Académie de Médecine.” Tome xvi.

The ulcers, formed in the first manner, are at the beginning, shallow and small; while in the last, they are deep. At first, the edges are somewhat regular in form, but they become in a short period, but at what, it is difficult to say, irregular, raised and thickened.

In this state the rest of the tumor, if incised, will present in different points softened portions, due to increased development of the cancerous elements, and destruction of the fibroid tissue.

Second, *the encephaloid*. This form differs from the last in the solid or framework being cellular, instead of fibroid, and the specific elements of cancer being more developed.

The following* is the character of an encephaloid tumor in the first or crude state.

“It is rather small, generally regular, surrounded by a cellular membrane, more or less dense, by which it is isolated to a certain extent from the surrounding tissues. When incised it presents an homogenous, lardaceous, semi-transparent, sometimes blueish appearance. If pressed a little milky juice exudes, but this character may be wanting when the tumor is very recent. But even in this case it is only necessary to grate its cut surface with the edge of the knife to obtain the cancerous fluid, in which with the aid of the microscope the histological elements of cancer can be discovered.”

* Brocca opinion cited.

“If the pressure or grating is repeated, assisted by a small stream of water properly applied, the surface loses its polish and homogeneity. In this state, if examined by a glass, thin lamellas will be observed, interlaced in every direction, and if a small portion be placed under the microscope, they will be found to consist of cellular tissue. It is to this, that the tumor owes its density. Sometimes it is difficult to demonstrate the presence of the cellular tissue—from its being deficient. The tumor, in this case, is rather soft; but I am led to believe, that had the tumor been examined sooner the cellular tissue would have been found more plentiful. There is an exception to this in secondary cancer, the cellular tissue may be wanting, there being in reality no period of crudity. Again, instead of the lamella being very fine and in close approximation, they may be separated by large cellules. To this form of cancer, Müller has given the name of areolar.”

“In the squirrroid form, the fibrous portion goes on increasing with the tumour, while in the encephaloid it diminishes. As the encephaloid tumor increases in volume, it becomes of the consistence of the brain and in a still more advanced state, quite diffluent. This form of cancer is more vascular than the squirrroid and the softer it is, the more does the vascularity predominate.”

“The growth of the encephaloid form is rapid, and it, therefore, acquires a large size in a short

time, ulceration, hæmorrhage and vegetations soon manifesting themselves. This depends on the specific elements being in considerable quantity and the cellular tissue offering but slight resistance to its growth."

"It is propagated with facility both by the lymphatics and by the veins."

"The character of the colloid form is, that it is neither a tissue or an anatomical element, for it has neither structure or configuration."

"It is in fact an amorphous product,—the result of exhalation, deprived of all vitality,—its properties being strictly mechanical. It is not confined to tumors of a cancerous character, for it is met with in accidental tumours, glands, and in pre-existing cavities. Examined with the microscope, it will be found quite transparant, presenting neither globules or granules,—with a few thin traces of cellular tissue, crossing in every direction."

"The specific elements of cancer are present, under the form of free noyaux; few in number, as are also the cellules. These present themselves under very variable characters. In colloid cancer, of short standing they are small; but in that of long standing, they are large; and the cells are numerous. In these cases the cellules are very regular, and spherical or elliptic in shape."

"It often happens that the same tumor will present these opposite appearances; the transitions between the two can be easily followed."

Colloid cancer in a pure form is rarely met with, while it is common conjoined with squirrhoid or encephaloid matter.

Symptoms. The symptoms of cancer of the stomach will present considerable diversity in their character, if the disease is seated in the cardiac or pyloric openings, or in the centre of the organ. The period of the disease—whether it is in the non-ulcerative or ulcerative stage—will also present some peculiarities. The symptoms present in the encephaloid or squirrhoid forms differ but little in their general character, but the first runs its course with much greater rapidity than the last.

The following are the general symptoms of the non-ulcerative stage:—the digestion of food, if it has not been difficult, becomes so: in both instances it increases in severity. At the same time pain is experienced in the centre, or the sides of the epigastrium, at first, slight, occurring at irregular intervals, generally during digestion; but, subsequently it becomes constant and generally dull and uneasy. Still later, attacks of pain of a lancinating or shooting character, occur. In females, this pain will be generally observed to have a tendency to become periodically severe; and this will be the more marked if the menstrual discharge has not ceased, or if the disease has developed itself soon after its cessation. The pain, as just observed, is generally increased during digestion, and the more indigestible or stimulating the food,

the severer will be the pain : pressure is also painful. The pain is also observed to be more severe in the squirrroid than in the encephaloid form.

In a more advanced period,—or at least, when the cancerous growth has encroached on the cavity of the stomach,—a sense of fulness or tension will be also experienced in the epigastrium, which is increased after eating. This symptom will be more marked, if the centre of the stomach is the part affected.

By examining the epigastrium,—and this should be done early in the morning, while the patient is in bed, and before food is taken ;—a tumor or hardness may be detected by the touch or by percussion. For the last, the plessemetre will be better than the fingers, as it will enable the operator to define the extent of the dulness, and to trace its subsequent extension. The disease is more easily detected when seated on the anterior wall of the stomach, than when on the lesser curvature or posterior wall.

The changes which the disease induces on the general system, will be first manifested by an air of languor, disinclination to exertion and incapability of much labour. The skin in the pallid will become more so : sometimes, it will assume a leaden hue ; while at others, a yellow tinge. In those endowed with a dark skin, it will become deeper and assume a muddy aspect. The conjunctivæ are sometimes observed to be muddy ; while at others,

they are observed to become exceedingly bright and pearl-like. This last is a valuable indication as to the organic nature of the disease. The appetite, is at first normal; but as the disease progresses, it may fail, or become unusually keen.

The urine, in the early stage, generally preserves its normal characters, but generally speaking, it will be observed to be somewhat denser and richer in urea. But in the more advanced stages, when great emaciation is induced from hæmorrhage or an insufficient supply of food, it will become pale and watery.

When digestion is much troubled, the oxalates will be occasionally observed, and the presence of fever renders it scanty, high-coloured and depositing a sediment.

In eight cases observed by Becquerel, (*Semiotologie des Urines*); in three of them the urine contained albumen. I have, also, observed the urine to be albuminous when dropsy has been present.

The bowels are generally constipated, great difficulty often existing in keeping them regular.

When the ingress or egress of food is interfered with, from obstruction at the cardiac or pyloric openings, some diversity in the symptoms will be present. If the pylorus is the part affected, as soon as the passage of the food from the stomach into the intestines is interfered with, vomiting will set in—at first, it will occur at long intervals, and only when the stomach becomes overloaded,

from the opening not being sufficiently patent to admit of the food being got rid of as rapidly as it is taken ; but as the opening becomes narrower, it occurs more frequently.

It sometimes occurs when the pylorus is not altogether obstructed, but from the dilatation of the stomach the position of the opening becomes changed. It must be, however, observed, that vomiting may occur when no obstruction to the passage of food through the pylorus exists, from irritation, excited in the surrounding parts by the disease or in the pylorus itself; the contact of food inducing contraction of the muscular coat.

When the cardiac orifice is the seat of the disease, or if it becomes implicated from the disease extending to it; then an obstruction to the entrance of food into the stomach will exist. At first, it will show itself if the food is swallowed without being thoroughly masticated, it excites pain or uneasiness, sometimes a distinct feeling as if it had lodged for a few moments near the lower part of the ensiform cartilage. In a more advanced stage, liquids or food in a pulpy state will often alone pass.

Where the obstruction has existed for some time, the œsophagus becomes dilated; sometimes in a sacular, globular, or spindleform shape. In these cases, the food is swallowed, and to the inattentive observer, it seems to pass into the stomach; but it is soon brought up by an inverted action of the œsophagus but little altered. Sometimes

when it remains down for some time, it undergoes a change due to œsophageal digestion; it becomes pulpy and mixed with mucus. It is generally insipid, whilst that which comes from the stomach is highly acid, and resembles yeast in appearance, particularly if it has been allowed to remain a short time undisturbed.

The ulcerative stage. The occurrence of this stage is marked by a change in the nature of the vomited matters, from the admixture of blood; sometimes in the form of dark clots, but generally diffused through it, and tinging it of a dark colour. Sometimes a fluid resembling coffee-grounds or soot mixed with water is brought up. These appearances are due to the action of the gastric juice on the blood, poured out by the vessels opened by the ulceration. They cannot, however, be considered as distinct indications of the ulcerative stage, for they may appear in any case where blood is poured out slowly, or retained in the stomach for some time.

It frequently happens, that when an obstruction to the passage of food has existed, that it is broken down by the ulceration. When the pylorus is its seat, the vomiting before very troublesome, often subsides: when it is the cardia, food enters the stomach with less difficulty. Diarrhœa, in the first instance, generally makes its appearance, or the motions become tinged or mixed with blood.

Sometimes when no vomiting has been present in the first stage, it now makes its appearance

induced by the irritation which the discharge from the ulcer excites; while at others, the occurrence of diarrhœa or blood, mixed with or tinging the motions, alone indicate it. An important sign in doubtful cases, is met with in this stage; namely, the presence of the elements of cancer in the vomitted matters. They will be best detected in the coffee-ground-like fluid, or in the mucous or other fluid, brought up after the stomach has been emptied of the digested food.

If these fluids are brought up with much straining, the more likely are the cancer elements to be found, sometimes minute portions of the tumor may be discovered. In one case, they were observed in some dark fluid brought up the first thing in the morning.

Complications. Dropsy is one of the most frequent, and usually makes its appearance, in the form of anasarca or ascities as soon as the disease acquires sufficient magnitude, or from the liver or pancreas becoming implicated and enlarging, to interfere with the circulation of the blood, through the vena cava or the portal vein.

Sometimes from the peritoneum becoming the seat of secondary formations or chronic inflammation; while at others, it seems to arise from extreme debility of the circulation.

The liver from its position and being the receptical of the blood from the stomach, is, as before observed, more frequently implicated than any

other organ of the body. This may take place in two ways; namely, from the cancer extending to it from the stomach, or from the cancer cells being conveyed into it by the circulation, they multiply and acquire a magnitude, varying from a large pea to that of walnut or small orange. Their number is sometimes very considerable, while at others, there are but few: in this case, they usually acquire considerable magnitude.

The symptoms indicating the implication of this organ are generally so masked by those of the stomach, that they often pass unnoticed. There is generally pain in the region of the liver with enlargement of this organ, and it protrudes beyond the margins of the false ribs—the protruding part sometimes presenting according to the growth of the cancer, elevations, varying in size from a hazel nut to a walnut. The growth of these tubercles are generally rapid, and when the abdominal parietes are thin, it can be easily traced. In some instances, their position is marked by a tender spot which enlarges as they extend.

The symptoms of the implication of the lungs are also very obscure. Pain in the chest with difficulty of breathing and cough, would lead us to suspect that they had become affected, and particularly if isolated points of dulness are detected by the stethoscope. The lungs are occasionally affected with a low kind of pneumonia in the latter stages of the diseases, and the plural cavities often become the seat of effusion.

The implication of the omentum, mesentery, or abdominal walls is often unmarked by any symptoms; sometimes slight pain and tenderness exist, and when the abdominal walls are thin, by careful examination, small tumors may be sometimes detected.

The implication of the transverse arch of the colon, may be suspected, particularly if the great curvature of the stomach is the part affected with cancer; if the bowels are unusually constipated; if the right extremity and the ascending portion of this intestine, present a marked dilatation from the accumulation of feces over that of the left extremity and descending portion.

Cancroid disease of the pylorus complicated with cancer. One case of this complication has fallen under my notice. A man aged forty-two, by trade a shoemaker—habits rather irregular, until two or three years back, when he became a “total abstainer.” He has suffered for five or six years from dyspepsia, and since taking the pledge his bowels have been very confined, seldom acting without a strong purgative. His dyspeptic symptoms have, also, given him more trouble: this is due, to a great extent, to free indulgence of his appetite. About six months before seen, he began to be subject to vomiting, but only after his dinner. He had suffered from pyrosis for some time before this, but only occasionally. The vomiting has increased in frequency, and the costiveness of the bowels grown more troublesome.

His aspect is pale, features pinched, emaciation somewhat marked, the conjunctivæ clear, appetite voracious. He has the appearance of a man suffering from want. No indications of cancerous cachexia present.

A short time before the vomiting sets in, his face becomes of a yellow tinge, but as soon as it subsides it disappears.

A slight degree of thickening of the pylorus could be detected, and the stomach was somewhat enlarged. Urine rather scanty, but natural in colour, depositing urates on cooling. By a diet, consisting of beef and mutton tea, milk, and eggs, and taking cod liver oil, he made great improvement. After continuing under observation for some weeks, he ceased to attend. Six months later he again applied for relief.

A marked change now existed, and his face had assumed a cancerous aspect. Conjunctivæ, brilliant; pulse, weak; tongue, clean. The emaciation of his body had not greatly increased.

He now complained of dull pain in the epigastrium, increased by taking food, with tenderness on pressure. At times, and particularly in the night, he suffered from severe attacks of lancinating pain. Vomiting was very troublesome; coming on, in from one to two hours after food had been taken; sometimes when it was prolonged beyond the latter period, from great distension in the stomach, he was obliged to induce it by irritating

the fæces. By examining the epigastrium, hardness, and tumefaction could be detected, occupying the right half of the stomach.

Its lower margin could be distinctly traced by the dulness yielded on permission; not so its upper, for it was lost under the false ribs. His feet were œdematous, and by percussing the abdomen while in the erect position, a little fluid could be detected in it.

The following was the history, which he gave of himself. After ceasing to attend, he continued the diet and oil for three months. Then feeling himself much better, he resumed his work. A month after he had done this, the dyspeptic symptoms became as severe as ever, and he was obliged to relinquish it.

The symptoms continued unchanged for the ensuing two months,—under a diet consisting chiefly of iced milk. The remedial measures consisted of cod-liver oil, with aconite and opium to relieve the pain. When the pain was very severe, a bladder containing ice, applied to the epigastrium gave great relief.

At the end of this time, he began to complain of pain in the right hypochondrium, the liver enlarged, but no encephaloid tubercles could be detected. The anasarca and ascities also increased.

The vomiting, which by careful regulation of the quantity of milk, taken at a time had

scarcely troubled him; that which was brought up, consisting only of the ingesta, now became troublesome, and its character changed, it was dark coloured and had a peculiar acid disagreeable smell. That brought up in a morning while the stomach was empty, was of a dark colour, and by examining the sediment which it deposited by standing a short time, cancer cells mixed with blood, corpuscles and epithelia scales could be detected by the aid of the microscope. Three days before death, blood appeared in the vomited matters, and continued for two days; it reduced him very much, and he sank on the next.

After death, serum was found in the abdominal cavity; the liver enlarged, contained eight or ten encephaloid tubercles, varying in size from a hazel nut to a walnut. The lesser omentum contained tubercles, and the glands in the vicinity of the stomach were enlarged, as also were the bronchial and lumbar. The right third of the anterior wall of the stomach was the seat of cancer of an encephaloid character. Its inner surface was ulcerated. The disease ended abruptly at the pylorus, which was enlarged from cancrioid disease. The opening of the pylorus was narrowed, so as to scarcely admit the apex of the little finger.

Terminations. This is invariably fatal, and it may take place in various ways. First, from ex-

haustion with hectic. Secondly, from the occurrence of hæmorrhage, a large quantity of blood being lost, or from small quantities frequently repeated. When the disease is in an advanced stage, the loss of a very small quantity of blood is often sufficient to cause the patient to sink. Thirdly, from the development of pneumonia. Fourthly, from the extension of the ulcer, perforation of the walls of the stomach ensues; food escapes into the peritoneal cavity, and death ensues in a few hours; sometimes from the shock, while at others, from the occurrence of peritonites. If the patient is much reduced, and the quantity of ingesta which escapes large, death, in the first manner, generally ensues in from four to eight hours, while in those cases, where he has not been much reduced, and when the quantity which escapes is small, it may not take place for eighteen, twenty-four or thirty-six hours.

Is cancer of the stomach ever cured?

We are not in possession of any cases observed with sufficient care during life, and compared with the changes found after death, to enable us to come to a decided conclusion.

Still it is not impossible, but that a cure may take place: instances are not wanting, in cancer of the surface of the body, where it has ensued. In the early part of the non-ulcerative stage atrophy may ensue, from the cancerous elements becoming either blighted or dormant; perhaps.

from some defect either in themselves or in the materials from which they draw their nourishment. This is sometimes observed in cancer on the external part of the body. But as Brocca observes it is usually followed by a state of activity. This, however, does not follow as rule, for I am myself acquainted with a lady sixty years of age, who has had a small tumor in the breast for ten years, There cannot, I think, be a doubt of its cancerous nature, for her maternal grandmother sank from cancer of the breast, and she has a cancerous aspect. In her case the dormancy of the disease, may be, I think, attributed to her having adopted an almost pythagorean system of diet.

Atrophy is sometimes observed to take place in encephaloid tubercles of the liver, particularly when they are small.

In a case where they were in this state, the patient had died from diarrhœa of twelve weeks duration.

Dr. Bennett, of Edinburgh, "*Cancer and Canceroid Disease*," Obs. xix, found in a patient, who died from cancer of the uterus and stomach; the liver rather atrophied, with some deep puckerings, which corresponded to indurated yellowish masses in their centres, varying in size from a pea to a nut. These masses consisted of retrograde cancer cells with margarine."

In the *ulcerative stage*. Speaking of the possibility of cicatrisation taking place in a cancerous

ulcer. Lebert remarks,* "I am inclined to pronounce in favour of such a possibility, more from the observation of certain facts, than from theoretical reasons."

"We found, in one instance, an ulcer in the region of the pylorus covered with a kind of thin pellicule; however, the cancerous tissue existed below and around it. In another instance, an excavated cicatrised ulcer was found on the lesser curvature adherent to the liver; recent cancerous masses existed at the cardia."

"Lately we have observed an instance where a cancerous ulcer was completely cicatrised."

1. "At the after death examination of a man twenty-seven years of age,† the pylorus was found squirrroid and its opening narrowed, with implication of the lymphatic glands along the vertebral column. A cicatrised cancerous ulcer existed, occupying greater part of the circumference of the pylorus, its bottom was smooth, of a grey colour, covered by a thin membrane, firm, and of a greyish white colour."

2. "In the stomach of a female twenty-four years of age a triangular excavation was found, its borders hard and callous, deeply undermined in places. Its bottom was completely cicatrised, covered with a grey cellulo-fibrous tissue, smooth

* Opinion cited.

† "Prage Vierteljahrschrift, 1845," band iii. 116; band iv. 101, and 102.

and firm, and formed with the pancreas, thickened the posterior wall of the ulcer. The bottom of the ulcer was raised by little recent cancerous tumors, varying in volume from a pea to a lentil. The borders of the ulcer towards the pylorus presented an infiltration of crude cancerous matter, commencing to soften."

3. "In the body of a professor of gymnastics, aged sixty-five, who for the last fifteen years of his life, had suffered from disease of the stomach, and had at different times vomited blood, a depression was found in the vicinity of the pylorus, covered by a membrane, the borders of which were infiltrated with encephaloid tissue of recent formation. The surrounding lymphatic glands presented the same change. The pylorus and the cardia, from the contraction of the lesser curvature were not more than one inch and a half apart.

"The epiploon and the glands around the pancreas adhered to that part of the stomach which corresponded to the cicatrix; they were infiltrated with encephaloid tissue.

"He had vomited blood seven days before death. In one of the borders of the ulcer, infiltrated with cancer, an ulcerated artery half a line in diameter was found; another existed nearly on the point of being opened."

"These facts are of great practical importance, as they show, that cancerous ulceration of the stomach is susceptible of cure, at least locally."

Louyer Vèlleméy mentions two instances where persons who became affected with symptoms of cancer, yet both, got well.

1. "A man aged forty,* while labouring under profound grief began to suffer from shooting pain, with weight in the epigastrium; his strength diminished, and he vomited daily after meals. He got well in a month."

2. "A man aged twenty-two, was taken with symptoms like the last case; the matter ejected was of a dark colour. By the use of blisters and other remedies he was cured."

Neither of these cases are sufficiently marked to admit of their being termed cancerous.

The causes. Broussais held, that cancer was a result of inflammation (hypertrophy). This opinion was upheld by Andral; but in his *Précis d'Anatomie Pathologique*, he remarks,

"My opinion of the nature of cancer is somewhat modified: and I do not any longer consider it to consist of a state of hypertrophy of the cellular tissue."

The light which the employment of the microscope, in morbid anatomy, has thrown on the changes which the tissues undergo in disease, has swept away all doubts as to its nature.

Cancer is now, generally, acknowledged to be a specific structure, which by its growth destroys the existing tissues.

How this specific structure is produced, whether

* Cited in "Cyclop of Practical Medicine." Art. Cancer.

from the normal elements taking upon themselves new and diseased actions; or whether the elements already exist, and are brought into activity by some exciting cause, is yet shrouded in mystery.

If we consider the causes which bring cancer into activity, we find, that certain periods of life exert a powerful influence in assisting. In men, from forty to forty-five years; while in females from forty-five to fifty years.

The rich, from the observations of d'Espine, (*Annales d'Hygiène*, Paris, 1847),* seem more liable to this disease than the poor.

He further found, that cancer generally was more frequent among the rich than the poor; in twenty-one cases, fifteen belong to the first class, and six to the last.

In the cases which have fallen under my notice, the patients belonged to the middle class of society, such as drapers, shoemakers, tailors, clerks, &c. All of them followed occupations of a sedentary nature: or if they had no occupation, their habits were so.

It must be observed, that persons of this class are particularly liable to chronic inflammation of the stomach, less, perhaps from their occupations than from their mode of living.

Bayle (*Dict. des Sc. Médicales*) considered celibacy as a cause; but this opinion, so often re-

* Cited by Lebert

peated, is, as Valliex remarks, not founded upon proofs. Nearly all the cases observed by him were married.

Frank* considered intermittent fevers, and particularly those which had not been properly cured, to excite the disease. He also considered fasting a cause; and mentions in support of this opinion, the case of a priest, who had for twenty years, said mass very early in the morning, which rendered it necessary that he should take his breakfast very early. From a change in the time of saying mass, he was obliged to fast the whole morning. Soon after this change had taken place the disease made its appearance.

Mental anxiety is considered as an exciting cause.

In the cases observed by Valliex, in two, it was referred to this cause. In Lebert's cases three of them referred the commencement of their disease, back to periods when they had suffered in mind.

Both these gentlemen incline to the opinion, that mental anxiety acts as a cause only as from deteriorating the health, and thus favours the development of the disease.

In three of the cases observed by myself, the disease was attributed to this. In one case, the patient, a butler, had lost his place, which he had held for a great number of years, from some slight fault; it preyed much on his mind.

* Cited by Valliex.

In another instance, it was the death of the patient's wife, to whom he was much attached; while in another, it was the loss of an only son.

In two of the cases which I have observed; one was considered to arise from the healing of a very obstinate sore in the nose; the gastric symptoms developed themselves almost immediately afterwards. In another, from the healing of a fistule of the rectum by an operation.

In some of the cases, the disease was considered to have been induced by blows or falls on the stomach, to overstraining or severe and unusual bodily fatigue.

The immoderate use of spirits does not seem to exert the influence which one might suppose it would in producing the disease: a state of irritation of a less active character, but prolonged, seems most to favour its development.

Diagnosis of cancer of the stomach from other affections of this organ. In chronic gastritis pain exists in the epigastrium, more or less constant, but invariably increased by taking food, some kinds more than others: acid eructations; flatulence; thirst generally severe, particularly after eating, nausea, and sometimes vomiting. The pain is generally burning, particularly when food or liquids of an irritating nature have been taken, and lasting until they have either passed into the intestines, or rejected by vomiting. When the food taken has been unusally

indigestible, severe cramps are often excited, which lasts until the offending substance is got rid of. When the stomach is empty, if no distinct pain exists, a sense of soreness, sometimes one of tension, weight or fulness is present. The pain never becomes lancinating as in cancer; although, as just observed, it may become spasmodic from an irritant. Neither is hardness or tumor ever to be discovered, save in those cases where the pylorus becomes thickened; but then the tumor is small, seldom exceeding a large chestnut in size, and remains for months without increasing.

Cancer on the contrary is progressive, and when it is not under cover of the false ribs, its extension can be easily followed. The aspect of the face never changes in chronic gastritis, it may become pallid, when the disease is of long duration; but the pallidity is of that kind, which characterises an insufficient supply of food, and is accompanied by corresponding emaciation of the body. Chronic gastritis from some slight cause quite unconnected with diet, often undergoes a marked improvement, and the patient often fancies that he has shaken it off, when from some equally inappreciable cause it returns in all its former intensity.

This never takes place in cancer, when once it has advanced so far as to interfere with digestion; a carefully regulated diet may for a time check it,

and keep it stationary, but the symptoms very rarely disappear.

The vomiting of coffee-ground-like fluid is of no value, as an indication of the cancerous nature of the disease ; it may occur whenever blood is poured into the stomach and retained there, a sufficient length of time, to enable the gastric juice to act upon it.

The following general view of the symptoms of cancer and cancroid disease of the pylorus, diseases most likely to be confounded with each other ; and which it is most important that a proper distinction should be drawn between, from the fact, that death generally ensues from the first, even under the most judicious treatment in from one, to two or three years, according to the nature of the disease ; whether it is encephaloid or squirrroid ; while in the last, life may be prolonged, by care, for years.

Cancroid disease of the pylorus 1. Is usually preceded or accompanied by marked symptoms of chronic gastritis.

2. The tumor is invariably small, varying in size from a walnut to a very small orange. It increases but very little in magnitude ; months often passing without its undergoing the slightest change. Sometimes if the vomiting is diminished by appropriate measures, it may even diminish.

3. Years with due care may pass without its proving fatal.

4. Ulceration to take place in the tumor is very rare ; sometimes from great irritation induced by free indulgence of the appetite, and the use of stimulating drinks, it may take place in the tumor, or some other part of the stomach, blood is poured out, and the vomited matters become of a brown colour. Blood may be poured out, and yet its source cannot be detected : in these cases, the mucus membrane is found after death of a very deep red.

5. The stomach, when the disease has been of some duration, will acquire a very large size.

6. The face never assumes a cancerous aspect ; it becomes extremely pale, and thin ; sometimes of a yellow tinge, which deepens before the vomiting sets in. This last symptom seems to arise from the enlarged stomach pressing on the gall ducts.

7. The patient has the aspect of a person suffering from starvation, rather than organic disease.

Cancer of the pylorus. 1. Slight disorder of the stomach generally exists for a longer or shorter period before the disease develops itself.

2. The tumor is generally large—varying in size from an orange to a small cocoa nut ;—it increases rapidly in size, often from the measures generally employed. Vomiting seldom sets in until the tumour has acquired some magnitude.

3. A strict diet will, at the onset, retard its progress ; but otherwise, it usually proves fatal in from six to twelve months.

4. Ulceration is of constant occurrence ; sometimes from the opening of the pylorus becoming free, the vomiting subsides either altogether, or to a certain extent—diarrhœa.

then sets in. The vomited matters in this case are dark-coloured; and a fluid like coffee-ground is often rejected, in which cancer cells may, by careful examination, be discovered.

5. The stomach very seldom attains a large size.

6. The face assumes the peculiar aspect of cancer, in some cases, very early; while in others, not for some time: it become of a muddy, brownish, or leaden hue; sometimes from obstruction to the passage of bile along the ducts, a yellow tinge may be added.

7. The aspects of the patient, is, that of a person suffering from organic disease. Extreme emaciation seldom exists until towards the close of life.

Cases are occasionally met with, where collections of fæces in the transverse arch of the colon has lead to the supposition, that the stomach was the seat of cancer. This supposition is often strengthened by the vomiting after eating, which is generally present from the obstruction to the passage of the contents of the bowels, and from the distended state of the duodenum interfering with the entrance of the bile into it, it is re-absorbed, and the skin assumes a yellow tinge.

"A female* entered Pinel's ward, with a circumscribed lobulated tumor in the epigastrium. She vomited bilious matter; and the tumor was the seat of lancinating pain. He diagnosed cancer of the stomach. But she had never been ill, or had even suffered from disordered digestion. The tumor was very movable and not tender to the touch. We suspected that it was a collection of

* "Rostan, Cours de Clinique."—*Gazette des Hopitaux*, 1839.

stercoraceous matter, which often takes place in old people. Under the use of purgatives it soon disappeared."

"When *Chef de Clinique*, at *la Salpêtrière*, an old woman entered, emaciated and with the limbs œdematous. She had a tumor in the epigastrium, with vomiting of bilious, sometimes, glairy matter. She left the hospital at the end of six months. Sometime afterwards she returned, the tumor and also the vomiting had disappeared, and soon died."

"The stomach was found quite healthy."

Another circumstance, sometimes leads to the idea that the stomach is the seat of a cancer ; this is the great omentum, becomes contracted and forms a kind of ball close to the under part of the stomach.

Treatment of cancer of the stomach. There are few medicines which have not at some time or another enjoyed the reputation of curing cancer.

The preparations of mercury, calomel, and the bichloride, were once held in high estimation. These were followed in succession by those of arsenic, iron, gold, silver, iodine, and other metallic preparations each enjoying a kind of evanescent popularity or fashion. For physic like millinery or tailoring has its fashions ; this year this or that medicine is all powerful, as a remedy against this or that disease ; next year another, with quite as great a claim to the title will have displaced it. The preparations of opium, belladonna, conium, and

henbane, have enjoyed a more or less reputation in this disease, and they have, to a certain extent, retained it; not, because, they possessed any specific power over its elements; but, because, they relieved the pain which it excites in its growth.

The followers of Broussais, under the idea that cancer was an inflammatory disease, considered the repeated application of a considerable number of leeches, as a specific. In the few cases which it has been my chance to see treated on the continent, in this manner, the fatal result was hastened by the debility which they induced.

We are in possession of no specific against cancer, and probably never shall be. Our efforts must, therefore, be directed to such measures as shall keep the disease quiescent as long as possible, and at the same time, to allay pain when it exists. By these means, the life of the patient will be prolonged, and rendered less burdensome than it otherwise would be.

Diet must be placed in the first rank in carrying out these measures: it should consist of such articles as require but little digestion, and, at the same time, yield a large amount of nourishment. Milk of all substances promises these advantages; it should form the sole nourishment, with bread* and fresh butter.

* This should be made at home from the *finest* flour, and no salt should be employed in making it. Baker's bread is invariably made from *second* flour, very often of the worst quality. A large quantity of alum is added, for the purpose of giving the

The quantity of milk taken at a time, must be so regulated as not to excite distension. It is, best taken without being boiled, with or without sugar. When vomiting is troublesome, or much heat exists in the stomach, it may be iced, with great relief to these symptoms.

When there is much acidity, it is apt to disagree; in this case the admixture of one eighth of lime water for a day or two will prevent this. The quantity of milk necessary to be taken during twenty-four hours will depend, in a great measure, on the appetite; some are well-nourished on three pints, with eight ounces of bread, and two ounces of butter; while others require from four to five pints, with from twelve to sixteen ounces of bread. In some cases, where the demand for nourishment is great, it is advisable to take one or two raw eggs, beat up with the milk in the course of the twenty-four hours; but when the milk nourishes the body sufficiently, it alone should be taken; while in others, beef or mutton tea is necessary, but salt and spices should be strictly excluded. If either of these excite uneasiness in the stomach, they must be thrown up as glisters: when the irritability of the stomach is very great, all nourishment had better be introduced into the

bread a white appearance. From these reasons, its nutritive value is from ten to fifteen per cent. less than that made from the *best* flour, and the alum and salt which it contains, when the stomach is very susceptible to the action of irritants, often renders it very injurious.

system in this manner ; that taken by the mouth being confined to a few teaspoonsful at a time of iced milk or plain water.

In one case which fell under my observation, life was prolonged, for some months, by these means.

Wine, beer, and spirits must be strictly abstained from.

It may seem very irksome to be confined to a certain kind of diet ; but its irksomeness is slight compared with the advantages which it yields. If a person suffering from this disease is really anxious to prolong life and lessen pain, he will not for a moment hesitate to follow it ; particularly, if he bears in mind, that the disease fatal as it generally is, *may, if it is had recourse to in the first stage, perhaps, be cured by it.*

The due action of the kidneys, skin, and bowels, must be carefully attended to. The due performance of the functions of the first, should be encouraged, by drinking only the softest water ; if it has the slightest tendency to hardness, it should be first boiled ; while the action of the second should be kept up, by sponging the body with tepid or cold water every morning ; afterwards rubbing it well with a coarse towel or flesh brush for some minutes until a glow is produced : that of the bowels should be regulated by acquiring a habit of going every day, at a certain time, to the water-closet, If this should fail to keep

them regular, an enema of soap and water should be thrown up ; but purgatives by mouth should never be had recourse to.

As much time as possible should be passed out of doors ; fatigue being carefully guarded against, the mind should be occupied in some way or other, to divert it from the disease ; but neither laboriously or anxiously.

The remedial measures to be adopted, are few. Cod liver oil is one of the most valuable, but I give the preference to the vegetable oils ; such as almond or olive, as they are less apt to disagree with the stomach. The dose of each is from two to three tea-spoonsful twice or thrice a day.* When the lancinating pain is severe, some of the preparations of opium, combined with aconite, may be had recourse to. The sedative solution, is, perhaps, the best, in doses of from ten to fifteen minims, with from two to five minims of tincture of aconite (pharmacopœia strength), in a little water.

The rules which should guide cancerous patients, are :

First, great care should be taken not to distend the stomach ; a little and often, if the appetite demands it. It should be borne in mind,

* I have been in the habit of using for some time in dispensary practice, purified raw linseed oil ; and find that it is superior to cod liver oil. Quite as much benefit is received from two tea spoonsful, as from a table-spoonful of cod liver oil ; it is much easier taken, and is less liable to disorder the stomach.

that the more food taken into the stomach the more it seems to demand.

Secondly, to strictly avoid all stimulants, such as spices, salt, liquors, and all over mental or bodily exertion.

Thirdly, to breathe a pure atmosphere; to choose a warm residence; and the clothing to be moderately warm, yet not encouraging perspiration.

Fourthly, strict regulation of the bowels, but without the use of medicine.

SECTION V.

GASTRALGIA, GASTRODYNIA, OR PAINFUL AFFECTION OF THE STOMACH.

CHARACTERISTICS. *Pain more or less severe, occurring in paroxysms of variable duration of a twisting, gnawing, shooting, tensive or of a pressing character, seated in the stomach, unattended by any indications of fever, and in many instances, by no signs of derangement of the stomach.*

It appears to be a contraction of the muscular coat of the stomach induced, either by irritation directly applied to it, by increased determination of blood to its vessels, or by some other cause acting through, or on the nerves. I have, from the observation of a few cases during the presence of paroxysms, fancied, that the character of the pain showed the nature of the spasm; as, for instance, when it was twisting, the stomach seemed to undergo a kind of twist; when shooting it seemed to commence deep in the epigastrium, following the course of the nerves: when oppressing, the epigastrium appeared depressed, as if the stomach occupied less space than usual, while the contrary state existed, when it was tensive: this is the form, it presents when it occurs after food. I have frequently observed the pain to be gnawing in ulceration, and partial thickening of the stomach. In a case of cancer, the patient for nearly three years before it developed itself, had had attacks of gastrodynia, in which the pain was gnawing.

"It is considered by every author," observed Valliex, "that females are more susceptible than males to this disease; but in thirty-nine cases which I have collected, only twenty were females, and nineteen males. This is contrary to what we should expect from the known influence which leucorrhœa possesses in inducing this disease."

Chamberet, (*Dict. des Sc. Médicales*: art. "Gastrodynie), on the contrary, considered men more susceptible than females.

Barras considered, that gastrodynia declared itself between the ages of fifteen and forty-five, while Valliex from the cases which he collected from different authors, from sixteen to fifty-six. In forty-six cases which fell under my observations while connected with a dispensary: the youngest was eighteen; the eldest sixty-four.

The following table shews the sex and ages of the forty-six cases observed by myself:—

AGES.			FEMALES.	MALES.
15	to	20 years	2	0
20	"	25 "	0	0
25	"	30 "	8	4
30	"	35 "	2	2
35	"	40 "	2	4
40	"	45 "	0	2
45	"	50 "	6	0
50	"	55 "	2	2
55	"	60 "	2	4
60	"	65 "	2	2
			—	—
			26	20

This table, although, showing a greater predisposition on the part of females to this disease than males than was observed by Valliex; yet it does not fully represent the greatness of their liability, from the fact, that from gastroydria occurring during the existence of other affections, particularly in the period of uterine activity, it does not receive the attention from the patient or her medical attendant, that it does after the change of life. The cases which the table includes, were those in which the patients referred their chief trouble to the stomach, and the notes attached contain only to the most prominent symptoms connected with each case.

The causes. It is generally supposed, that persons of a nervous or melancholic temperament, are more susceptible to this disease than the sanguine. My own observations have led me to think, that temperament has but very little to do with the frequency of its occurrence. The fact of the sufferers when they come under treatment, particularly when the disease has been of some duration, being extremely nervous or low and melancholy, has led to this supposition. But it is founded on the state presented, rather than on the aspect of the person when in health. Every person, who has seen much of disease must have observed, how often, under long suffering, the sanguine or lymphatic temperaments pass into the nervous or melancholic.

Sedentary occupations have been considered to influence its production very materially. This is true, in connection with those forms in which the disease owes its origin to derangement of the functions of the stomach, or severe constipation of the bowels. But I have seen it in persons where neither of these causes existed. Often it was impossible to trace any cause for the disease, neither were the patients able to assign any.

In one case it was referred to the disappearance of an ague. In another to being one evening in the autumn on the marshes below Woolwich. Within the last few weeks, a female, who fell under my notice, considered her attack to arise from going by water, late one evening in September, from Putney to Richmond. Sometimes patients refer the attacks to suppressed gout or to rheumatism. The influence which the sudden retroversion of the first, has in inducing severe cramps of the stomach or intestines, is well known.

Schmidtman, (*Obs. Med. ex Praxi Clinic* : lib. iii.,) mentions three instances where they were attended with a gouty or rheumatic tendency. In one case, a female, aged thirty-six; the gastrodynia was accompanied by slight bleeding from the vagina; under treatment, both the pain and discharge ceased; but severe pain of the muscles and limbs set in. In another, it occurred in a crooked female, aged thirty-six, during pregnancy. The pain did not fully yield to the medicines employed.

At last, when the gastrodynia was very severe, pains in the haunch occurred. By the use of gout medicines, she was soon relieved. In the third, a man, aged twenty-four, had begun to suffer after exposure to cold and wet: it yielded only to gout medicines.

In Germany the suppression of the perspiration of the feet is considered a cause. Schmidtman has enumerated it as one, and Mondiere* has given a case.

Dr. McFarlane,† observed in a man forty years of age, who had been suffering from gastrodynia for three weeks, that the affection was caused by getting his feet wet. The same cause induced it in a delicate female aged thirty-eight.

The suppression of some cutaneous diseases, particularly those of long standing, by external applications has induced it. I have seen two cases where the disease arose from the healing in this manner of some patches of psoriasis. In one case, the gastrodynia did not entirely disappear, until the eruption reappeared.

In some cases the gastralgia is preceded by neuralgic, pains of some other part of the body. Barras had, when twenty years of age, nervous pains in the right temple: at twenty-nine, neuralgia of the spermatic cord: at thirty-six, an irregular intermittent fever. Eight years later,

* Cited by Valliex.

† "Glasgow Medical Journal," Vol. ii.

his digestion became difficult ; and the gastralgia was established by degrees. Guibert,* mentions the case of a female, who after suffering some time from headache, became subject to gastrodynia.

In females I have frequently found, that they have had often, at no very remote period, some neuralgic affection ; such as tic-doloureux, sciatica, hemicrannia, &c. Exhausting discharges, venereal excesses, great mental anxiety—grief, are placed among the exciting causes.

Barras mentions an instance where it was brought on in a man, aged fifty-six, from the “great grief caused by the loss of his son.” He mentions several other instances. I have frequently observed mental excitement induce it in females.

It is of constant occurrence, in those suffering from chronic gastritis, from slight excess, in the quantity of food taken, from its being acrid or not easily digested, from constipation of the bowels, from sudden exposure to cold while heated ; from damp or wet, or any other cause, which by inducing congestion of the muscular coat, or of the nerves of the stomach excite irregular contraction of the coats of the stomach.

In females, the state of the uterine functions exerts a powerful influence in inducing this affection.

“Whytt (Works,” edited by his son Ed., M. D., cclxviii), considered suppression of the

* Barras, Obs. xvii.

menstrual discharge and gout as the most frequent causes. He mentions the case of a "female aged forty-four, irregular, who was seized with spasms in the stomach soon after every meal."

It may ensue during the symptoms preceding the appearance of the menstrual discharge. From the discharge being retarded beyond its usual time; from being suddenly checked from exposure to cold or wet, or some severe mental shock.

Again, it may occur from the discharge diminishing in quantity and at last ceasing. In this case the gastrodynia is usually preceded, by some trouble during digestion, with constipation or scanty action of the bowels; and it may either occur suddenly, excited by one or other of the causes just named, or come on slowly, increasing gradually in severity.

When gastrodynia results from leucorrhœa; it seems rather due, in most instances, to the suppression of the menstrual discharge; unless, when it co-exists with the menstrual discharge, or has existed for some time. Then the debility which it induces renders the nerves more susceptible to the influence of cold, wet or malaria. It is not unfrequently attended by hysteria.

The last remarks also apply to the disease as it is observed in the chlorotic and anæmic.

It frequently occurs during pregnancy, particularly during the first months.

Symptoms. The affection presents itself under the forms named at the head of the section, as pains, more or less severe, occurring in paroxysms of a shooting, twisting, gnawing, burning oppressive or contracting character of variable duration, lasting from a few minutes to several hours. It is not always confined to the stomach, it may extend to the sides, the intestines, or the lower extremities; sometimes it affects the diaphragm inducing a sensation as if it was drawn up, rendering the taking of a deep inspiration impossible; while, at others, the heart seems to become implicated, and its action is either greatly increased, or it becomes irregular, sometimes laboured; at others, the lungs are affected, and the breathing is rendered hurried, irregular or oppressed. In some cases, there is extreme nervous agitation and trembling. In one which has lately fallen under my observation, the trunk and lower extremities were affected with convulsive shocks, about every minute, during the existence of attacks.

When the disease has been of some continuance, the powers of the mind are affected, the memory fails; mental application becomes impossible. The sufferers often sink into a state of melancholy or extreme nervousness.

The attacks may occur at different and defined periods. First, during digestion; second, when the stomach is empty, ceasing as soon as any solid food is introduced into it; thirdly, periodically.

First, during digestion; as it occurs at this period: it will be generally found, that its approach is slow; unless it owes its origin to some excess either in eating or drinking. At first, the digestion is observed to be slower than usual; attended by slight flatulence, sometimes by acid eructations, and a feeling of tension or uneasiness in the epigastrium. As the disease progresses, the feeling of tension gradually increases to one of pain of a spasmodic nature, lasting during the time digestion is going on. Sometimes the pain is much more severe after certain kinds of food, such as salt meat, soups, &c.

It is not uncommon to find in this disease, that articles of food in themselves of very easy digestion often from idiosyncrasy give rise to very severe attacks. The same is occasionally observed with regard to beer, wine, spirits or other fluids. Sometimes it is attended by tenderness at the epigastrium which remains for some time after the pain subsides.

In these cases the disease assumes an inflammatory type yet any attempt to allay the symptoms, by a rigid course of antiphlogistic treatment, instead of benefiting renders them more severe. The bowels, in this form of the disease, are generally confined; the urine scanty, with more or less sediment.

Second, when it occurs during an empty state of the stomach, it not frequently ends by the vomiting up of watery fluid, unless food is taken.

In most of the cases where this form of the disease was met with, the patients were occupied out of doors ; while, in the first, they followed occupations of a sedentary nature. They usually drank largely of beer or spirits and water.

Third. When it occurs periodically, it may take place every second or third night, waking the patient up and lasting from one to three hours.

When it occurs at a more distant period, as for instance, monthly ; it is in connection with a disordered state of the menstrual discharge.

The appetite in the three forms is generally keen, unless inflammatory symptoms are developed, then it fails.

Terminations. It is very seldom, indeed, that gastrodynia ends fatally, a tendency always exists towards a cure ; this often takes place spontaneously, from a change in the mode of living, residence or occupation, particularly if from a sedentary to an active one ; from the occurrence of disease in some other part of the body ; as, for instance, of the skin, or from the establishment of ulcers on the legs. Sometimes it takes place, and no appreciable reason can be assigned for its doing so. If it ends fatally, it is when ulceration exists, perforation ensuing, fatal peritonitis being induced from the escape of food from the stomach, or from the occurrence of rupture of the stomach, of which two instances are given at page sixty-eight.

Sometimes thickening of the walls of the sto-

mach is induced ; but, on the other hand, thickening seems often to induce it.

“ A widow, aged thirty-six,* had four years ago, her menstrual discharge checked by fright. Mucous diarrhœa followed, and this was succeeded by intense gastrodynia, for which she took brandy and water. This excited inflammation, and she vomited incessantly for a week. By bleeding and leeches she recovered in three weeks.

From this time the menstrual discharge was nothing more than a mere show ; at each period, she was seized with gastrodynia and vomiting. The first three attacks were attended by vomiting of blood,† this occasionally recurred during the next two years. For the first two and a half years the attacks of gastrodynia lasted four days and nights, without any intermission ; but during the next year the menstrual discharge having ceased to appear, the attacks became irregular but shorter. For the last six months they have recurred every two or three days, lasting twenty-four hours. She, at last sank, three and a half years from the time she was first seen.

The stomach was found generally thickened and indurated.

At (*page 84,*) will be found the history of a case where gastrodynia set in, from sudden suppression of the menstrual discharge. After death, a patch of thickening was found on the posterior wall.

Schmidtman, found in a young female who had

* Hopes' "Morbidity Anatomy."

† Dr. McFarlane, observed vomiting of blood in one of the cases which fell under his notice.

suffered for some years from gastrodynia and debility of the stomach; who, at last, sank from dropsy with low fever, the walls of the stomach thickened.

Treatment. This must be directed to the form under which the disease shows itself. If during digestion,

1. On getting out of bed, sponge the body regularly with tepid or cold water, followed by friction with a coarse towel or flesh-brush, for some minutes, until redness and warmth is induced. When these are not easily brought on, instead of sponging, the body should be rubbed with a wet flesh-brush and then dried with a soft towel. The last is a much better derivative than the first, and when the skin will bear it, should be used in preference.

2. Then drink from half to a tumbler of cold water. In some instances, water when cold is apt to excite pain; then the chill should be taken off it.

3. *Breakfast.* Cocoa prepared from the nuts; milk or milk and water, according as to which is found to agree best; with wheat-meal, (bran) bread,* if the stomach will bear it; if not, white bread, as dry toast, with fresh butter.

4. *Dinner.* Beef, mutton or lamb, kept for some time,—so as to insure tenderness,—boiled

* See foot-note at page 167.

or roasted. Fish, with white flesh, as whiting soles, &c.

Vegetables—cauliflowers, brocoli, greens, carrots—well boiled.

For drink, plain water or toast and water. Sauces, spices and melted butter must be excluded. Sometimes the stomach is so irritable, that meat or fish cannot be retained. When this is the case, —no fever being present,—the meat should be made into essence or gravy, and eaten with the central part of brocoli or cauliflower.

5. *Tea.* From three to four hours after dinner : cocoa prepared from the nuts, or milk and water. Bread as at breakfast.

6. *Supper.* A glass of water, with a baked apple or pear, or a few stewed prunes and a piece of bread and butter.

If these measures fail to effect a permanent cure, the patient should bring himself to live on milk and bread, taken in such quantities at a time as not to excite distension. The quantity of milk necessary for an adult will be from two to four pints, with from eight to sixteen ounces of bread in the course of the twenty-four hours.

The remedial measures, are, the oxide of bismuth, from five to seven grains, with ten grains of calcined magnesia; three minims of sedative solution of opium, and two of tincture of aconite, given three times a-day in sugar or jam, two hours after a meal.

When it occurs under the second form; namely when the stomach is empty, the habits of the patients must be carefully entered into, if they drink much beer, weak spirits and water, tea or coffee; the quantity taken of the two first must be first diminished one half; and in the course of eight or ten days to a third, to which if they will not altogether leave them off, they should be restricted.

I had lately under my care, a market gardener, who had suffered from this form of gastrodynia for ten or fifteen years, at intervals, which, refused to yield, until he left off drinking, which he was in the habit of doing, from eight to ten pints of beer a-day, with four or five glasses of gin and water. When it occurs in those who drink largely of tea and coffee, these beverages must be interdicted, milk or milk and water, or cocoa being taken instead. A glass of wine or good beer may be taken once or twice a-day, if the pain is not increased by doing so.

The same dietetic rules should be observed, which have been recommended in the other form.

The remedies which seem to be of the most service in this form of the disease, are arsenic in combination with nux vomica, and aconite given three times a-day.

The same treatment and plan of diet is also applicable to the third or periodical form.

But in the periodical form, which owes its origin to suppression or disorder of the menstrual functions, the treatment and plan laid down for the *first form* will be the most beneficial.

Measures directed to the state of the uterine functions should be had recourse to. If there is chronic inflammation of the neck of the womb, it must be removed by leeches or caustic; if suppression of the menstrual discharge, change of air; and if the strength will bear it, horse exercise.

If anæmia or chlorosis exist, one or other of the preparations of iron should be given.

SECTION VI.

PYROSIS OR WATER-BASH.

CHARACTERISTICS. *Sudden discharge of watery fluid, varying in quantity from an ounce to a pint from the stomach; insipid, but sometimes acrid to the taste, amounting almost to burning, occasionally bilious; generally preceded by severe constriction, burning or pain, at the pit of the stomach of variable duration, causing the body to be bent forward; while, at others, it is very slight. In the latter case it amounts only to a slight feeling of constriction in the region of the pylorus, followed in a short time, by a feeling as if the constriction passed along the stomach to the lower part of the œsophagus; and the appearance of a little cold insipid fluid in the mouth. It is never attended by fever, occasionally when of long continuance and severe, it induces emaciation with anæmia.*

Causes. It has been observed by Grasser to rage epidemically.*

My own observations lead me to think, that it is much more common in the country than in towns; among the poor who live much on slops, and are scantily clothed: in females, whose sole support for days together is tea and bread and butter: in men, who drinking largely, of weak beer, than the better fed and cared for. These with exposure to the cold damp morning air, with

* Cited by Reydellet, "Dict. des Sc. Médicales." Art. Pyrose.

none or but little food in the stomach, particularly in spring and autumn, seem to be the most frequent causes. In town's persons particularly, those passed the prime of life of sedentary occupations, of slight muscular formation, who have much mental anxiety, seem more predisposed than others. At least, such have been the cases which have fallen under my observation. It is endemic in Scotland, Sweden and Norway. Those who live near the mountains of Lapland are particularly liable to it: nearly one half of the inhabitants both male and female suffer. Linnæus states, that in some it lasted through life.* Heberdeen has also observed it to last the whole life.

Dr. Copeland observes, (*Dict. of Medicine*: art. Pyrosis); "that it has been attributed to the use of rye, barley, oats, and potatoes, and the want of animal food. The use of unfermented or unleavened bread has been supposed to induce it. The share which these have in producing this affection can scarcely be determined. But it is also prevalent in countries where dried and smoked meats are used, or dried fish—both the meat and fish being prepared without salt or with but very little."

The immediate causes, are; first, irritation of the pylorus or the pyloric half of the stomach. Hence, as I have before observed, when speaking

* Cited by Reydellet.

of chronic gastritis, it is a nearly constant attendant on this disease, when it affects these portions of the stomach.

Secondly, from disease of some organ adjacent the stomach, particularly the liver, or from disease of the pancreas itself, or the membrane lining its ducts : both of these causes are rare. When the pancreatic fluid is secreted in an undue quantity, when digestion is not going on, it very seldom finds its way out of the stomach, but passed off by the bowels.

Thirdly, from mental emotion. The influence which the last exerts in causing this disease is but very rarely noticed, when it does act, it receives but little attention both from the patient and his medical attendant.

Dr. Seymour has recorded the following instance.*

“A lady aged sixty-three, residing in the country, frequently the subject of pyrosis, often it occurred spontaneously ; but more frequently it was the result of some sudden emotion. A sensation was experienced of fluid gurgling about the umbilicus ; this was immediately followed by the discharge of about a pint of clear, tasteless, fluid. She had no pain ; yet a sensation of great relief followed it.

The following case lately occurred to myself.

A man, aged fifty three, pale, but not very thin, by trade a book-binder, extremely nervous,—habits very

* “London Medical Gazette,”—1828.

regular. For years, he was subject to attacks of pyrosis. This ceased, and was replaced by watery diarrhœa; two and three motions being passed in the course of the twenty-four hours; generally it was tinged with fæcal matter, but sometimes it was straw coloured or nearly clear. Each motion was preceded by a sense of weight in the epigastrium. If, while he suffered from this sensation, anything occurred to excite him, watery fluid was very apt to rise spontaneously into his mouth, to the amount of a tea-cupful.

Forms. It may occur under three forms.

First, it may be accompanied with the symptoms of chronic gastritis, in a more or less degree.

The pain, in these cases, is generally severe; particularly after food,—some kinds more than others—and is followed by the discharge of acid watery fluid.

In the second form, pain, or constriction, sometimes severe; at others, slight, is experienced, of variable duration; followed by the discharge of insipid watery fluid. The two forms may alternate with each other; one occurring after food; while the other, early in the morning, or when the stomach is empty. The bowels are generally confined, and the urine, unless a large quantity of fluid is drank, scanty.

Treatment. If the pyrosis is a symptom of chronic gastritis; the treatment directed for that disease, at page ninety-five, should be had recourse to.

But when the symptoms of gastric derangement are slight, the following is the plan I am in the habit of adopting, and with the best effect.

1. On getting out of bed, sponge the body regularly with tepid or cold water, followed by friction with a coarse towel or flesh-brush for some minutes until redness and warmth is induced. When these are not easily brought on, instead of sponging, the body should be rubbed with a wet flesh brush, and then dried with a soft towel. The last is a much better derivative than the first, and when the skin will bear it, it should be used in preference.

2. Then drink from half to a tumbler of cold water. In some cases, water when cold is apt to excite pain, then the chill should be taken off it.

3. *Breakfast.* Cocoa prepared from the nuts; milk or milk and water, according as to which is found to agree best, with wheat meal (bran) bread,* if the stomach will bear it, if not white bread, as dry toast with fresh butter.

5. *Dinner.* Beef, mutton, or lamb, kept for some time, so as to insure tenderness, boiled or roasted. Fish, with white flesh, as whiting, soles, &c. Vegetables—greens, brocoli, cauliflower,—well boiled.

For drink, plain water or toast and water. Sauces, spices, melted butter must be excluded.

* See foot note, at page 167.

Sometimes the stomach is so irritable, that meat or fish cannot be taken without severe pain.

When this is the case, the meat should be made into essence or gravy, and eaten with the central part of brocoli or cauliflower.

In some cases, a diet consisting of milk, alone succeeds in checking it—taken in such quantities, so as not to excite distension—with plain home-made white bread.

Tea. From three to four hours after dinner, consisting of cocoa prepared from the nuts or milk and water. Bread as at breakfast.

Supper. A glass of water, with a baked apple or pear, or a few stewed prunes and a piece of bread and butter.

The remedial measures are the oxide of bismuth, in doses of five grains, with ten of calcined magnesia; three minims of sedative solution of opium and three minims of tincture of aconite, three times a day, in jam, or suspended in thin gum water. If the bowels do not act regularly, a pint of tepid soap and water should be thrown up as a glister every morning; or a teaspoonsful of confection of sennæ or a tablespoonful of castor oil taken twice or thrice a week.

But the proper action of the bowels should endeavour to be established by acquiring a habit of going to the water-closet, at a certain hour, every day; rather than by having recourse to medicine.

SECTION VII.

GASTORRHŒA, OR MUCOUS VOMITING.

CHARACTERISTICS. *Vomiting of mucous, more or less transparent; sometimes filamentous, insipid, acid or bitter to the taste; occurring, sometimes, when the stomach is empty, at others soon after a meal, generally unmixed with any portions of the food which has been taken. In some cases, there is no pain, only a sensation of weight; while in others it exists, of a cramp-like character.*

This affection, the *caturrhe de l'estomach* of French writers, and the *margen katarrh* of German, is occasionally met with as an idiopathic disease, in those who eat largely or drink a considerable quantity of raw spirits, or in connection with chronic gastritis. But it is most frequently observed in chronic affections of the lungs; heart, and liver, where the due circulation of the blood is interfered with. A state of active or passive congestion of the mucus membrane of the stomach being induced and kept up for some time.

Henning, *Bereicht ueber die Med. Polyklin zu; Leipzig, 1848, bis 1852*, observes, gastorrhœa, is with us to a certain extent endemic, produced by drinking water holding a large quantity of sulphate of lime in solution.

In this country it most frequently falls under observation in old people suffering from chronic

bronchitis, in whom the disease during the damp wet weather of autumn, becomes aggravated.

I have observed in those who suffer from this affection, in consequence of spirit-drinking, that it is frequently accompanied by a large secretion of mucous from the œsophagus.

In the cases which I have had an opportunity of observing after death, the mucus membrane has appeared covered with tenacious mucous itself, more vascular than usual, the mucous follicles enlarged; in some instances distended with mucous. Once, when the gastric symptoms were marked, they were surrounded by a ring of ulceration.

Andral,* in a case which entered the hospital with the symptoms of chronic gastritis, with vomiting of nearly four pints in the course of the twenty-four hours, of white glairy mucus, after death, the follicles were found largely developed; the mucus membrane hypertrophied and brown in colour. He has also observed it exist with pallor of the mucus membrane.

Rokitansky, (*Pathol. Anatomie*: band iii. 181,) observes "the anatomical signs of this change, are a dark reddish brown or grey slate, even blackish-blue colour of the membrane; abundant secretion of a greyish white, sometimes glassy pituita, thickening increased density and resistance; *i. e.* hypertrophy of the mucus membrane, presenting itself in various grades.

* "Clinique Médicale." Tome ii. 80.

a. In the lowest degree, the mucus membrane of a simple white, and thickened, together with increased density of its substance.

b. In a higher degree, it appears under, very considerably increased, thickening of the membrane, with a wharty mammelated surface.

c. In a yet higher degree it presents itself as prolongations under the form of firm folds or prolongations.

The submucus cellular tissue and the muscular tissues are affected in a greater or smaller degree.

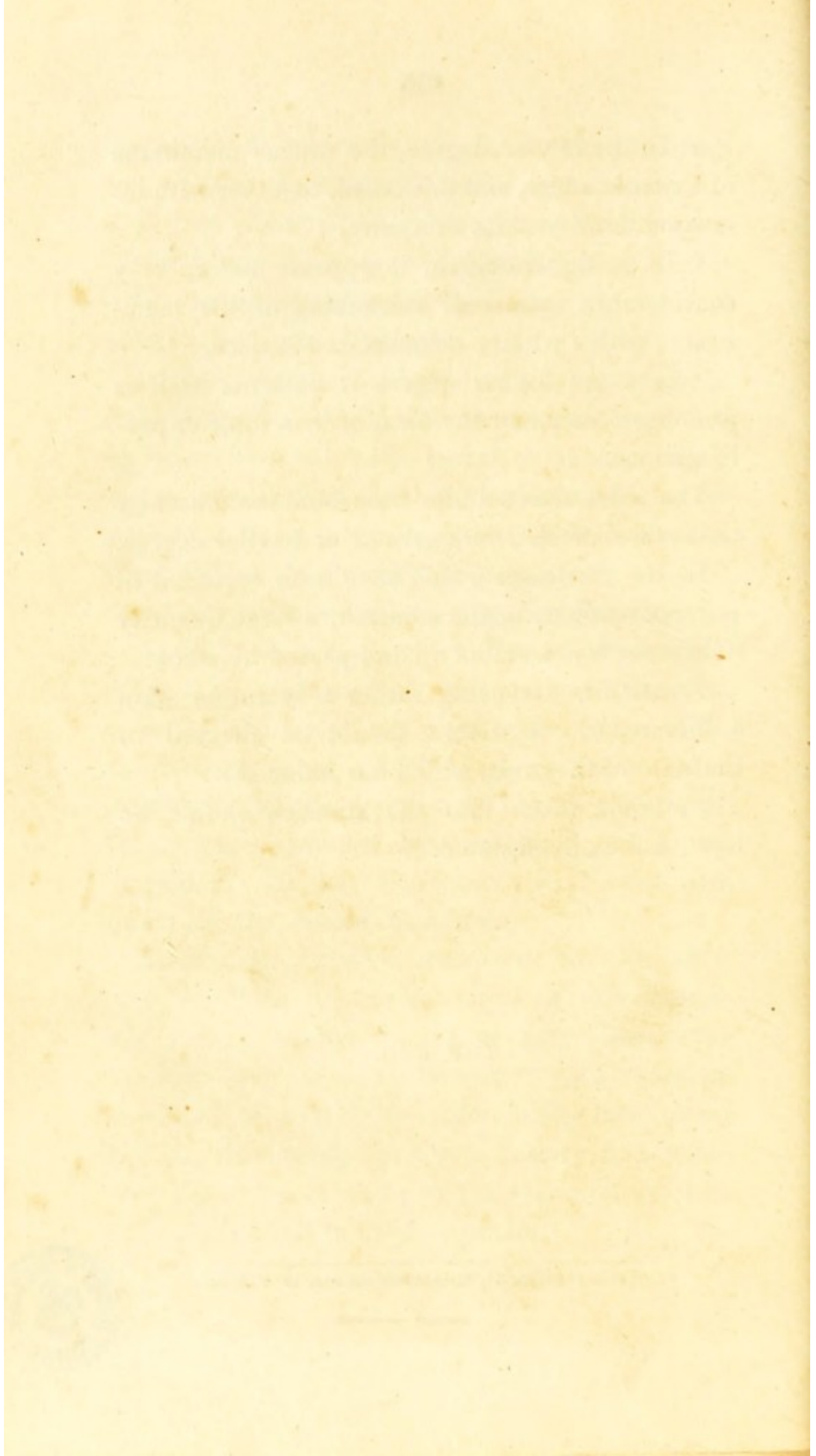
In the few cases which have been recorded of polypous tumors of the stomach, a large quantity of mucous was vomited up and passed by stool.

Treatment. It being rather a symptom than a disease, the treatment should be directed to the state of the organ which has induced it.

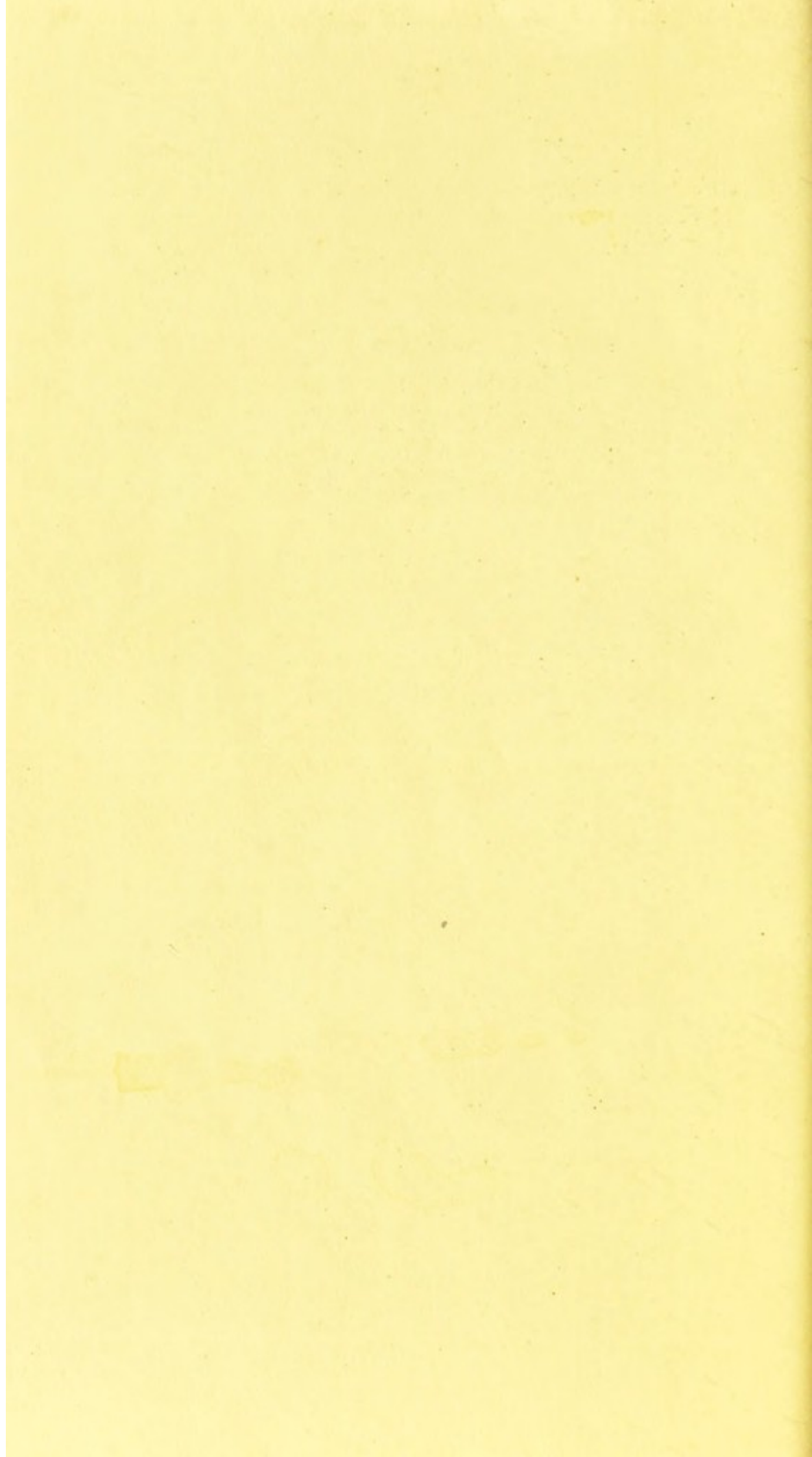
The food taken into the stomach should be light, and easily digested.

THE END.









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