Observations of morbid changes in the mucous membrane of the stomach / by Handfield Jones ; communicated by Bence Jones.

II.

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MORBID CHANGES

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MUCOUS MEMBRANE OF THE STOMACH.

BY

DR. HANDFIELD JONES.

COMMUNICATED BY

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It is not at all necessary for the object of this paper to give any detailed description of the structure of the mucous membrane of the stomach. It will be sufficient to refer to the works of Todd and Bowman, and Kölliker, and to state that my own observations are quite corroborative of the accounts they have given. On two or three points, however, a few remarks may be made.

I am inclined to agree with Kölliker that, in the normal condition, there are no glands in the pyloric region of the conglomerate kind or resembling a bunch of grapes. Bruch has stated that he has seen such, and so have I in many cases; but I believe the appearance to depend on a morbid change, in which partial destruction of some tubes takes place, while their remains become convoluted and massed together with adjacent tubes. The low villous prominences which are almost constant in the pyloric region, and occasionally exist in the middle, contain a quantity of nucleated granulous substance, identical with that which is seen in the villi of the intestine. This is liable to abnormal increase, and then spreads as an interstitial formation downward among the tubes. The existence of this nucleated substance beneath

the basement membrane of the intestine (large and small) has not been sufficiently noticed; it must be one of the first seats of morbid change in inflammation, and we have seen bacony matter deposited in it. When I commenced my inquiries into the morbid conditions of the stomach, I was not aware that "lenticular," or solitary glands had been seen in the mucous membrane. Dr. Todd and Mr. Bowman make no mention of them in this situation; Kölliker says, "the lenticular glands certainly do not occur constantly in the stomachs of adults, even if they are possibly always present in those of children, at least in very many cases one meets no trace of them. In others they are seen to be extremely numerous, covering the whole surface of the stomach, yet one can hardly forbid the thought that the diseased conditions of the part, which are always present, have much to do with their formation." From not imagining that they could be normal structures, I termed them simply "nuclear deposits," supposing that they were of new formation. This is, however, in all probability, not generally true, or rather it is true only in a restricted measure. In some animals the solitary glands exist in a very marked manner. If the mucous membrane of a pig's stomach be dissected off, and macerated in dilute muriatic acid, the whole splenic region will show a prodigious number of dead white, round or oval, bodies, the size of a pin's head or a little larger, lying on the deep surface of the mucous membrane, in which they are partly imbedded. These consist of masses of nuclei, with a very little granular matter. In the stomach of the cat they may easily be displayed in the same way, but are much ~~swollen~~, and lie more completely in the substance of the mucous membrane; they are not confined to the splenie, but are seen in the middle and pyloric regions also. In a rabbit's stomach I could find no trace of solitary glands. In the stomach of a child, æt. 5, who died of a severe burn in a few hours, and whose organs appeared to be all healthy, the glands in question were very numerous. After dissecting off the mucous coat from the muscular, and holding it up before the light, there were seen all

over the surface a great number of minute translucent spots, about the size of a pin's head, in which the mucous membrane appeared to be deficient, but was not apparently depressed. When the mucous membrane was placed in dilute hydrochloric acid, or in tolerably strong acetic, the translucent spots were changed, so as to present a dead whitish opacity. They were most numerous and large in the pyloric region, and were most apparent on the deep surface; in the splenic region they were more numerous than in the mid, and were quite distinct on the inner surface. They consisted almost entirely of masses of aggregated nuclei. In vertical sections these glands were seen lying at the bases of the tubes, and often extending upwards a good way into the substance of the mucous membrane. In a female, æt. 23, single, dying with scrofulous disease and abscess of one ovary, in an extreme state of emaciation, the stomach was found tolerably healthy. On examining the mucous surface, in the way above described, the same translucent spots were observed, in which the tubes were absent, while their place was occupied by nuclei and granular matter. In another female, æt. 19, dying of disease of the brain, set up by mischief in the ear, the stomach, except some mammillation in the mid and pyloric regions, was healthy. In the splenic region there were a great number of minute pin-hole depressions, well seen on looking at the surface by direct light, and appearing as translucent spots with transmitted light. Acetic acid rendered some of these opaque; dilute hydrochloric acid scarcely altered them at all. By microscopic examination it was evident that the tubes were absent in the situation of the spots, which were, in fact, minute cavities containing a few nuclear particles and some oily matter. In the first of these three cases (the child) I think the solitary glands were in some degree abnormally developed. I have not met with them so readily in the stomachs of other children of about the same age. The second case shows the condition in which, I believe, they usually exist in the healthy adult. The third presents them so atrophied as to cause a manifest loss of substance in the wall of the stomach.

It is difficult to fix any exact limit to the healthy development of these glands; all I can say is, that I should regard the gastric tissue as in its most normal and efficient state when there were but few of these glands (or nuclear masses) to be met with, and when those that existed did not encroach materially upon the tubes. It is probable that there are great individual varieties, that they are naturally larger and more numerous in some persons than in others. The idea occurs very forcibly to the mind that these solitary glands, and their groups in the intestine (Peyer's patches), have really no use, and fulfil no function in the human body, but exist in a rudimentary state, in obedience to the law of unity of type. They may almost be regarded as portions of undeveloped embryo substance, existing in inverse ratio to the surrounding specially organised tissues, and with this view their simple nuclear structure, the same that is so common in embryonic parts, is very accordant.

It is, I think, very nearly certain that the epithelial contents of the tubes are thrown off during digestion, and form an important constituent of the gastric juice, probably the so-called pepsin. The evidence for this view is the following:—In some instances the epithelial contents of the tubes do not extend up to the surface, *i. e.*, do not occupy the fossulæ; while in others they are seen fused into an uniform mass, with remarkably definite outline which protrudes from the fossulæ on the surface, and resembles very much a villus or papilla. In one specimen I observed, in a vertical section, a layer of matter, apparently exuded epithelium, covering the surface, which was continuous beneath, with columns of epithelial substance rising out of the fossulæ. Dr. Beaumont seems to have noticed these papilliform protrusions of epithelium in the living organ, as he mentions that, on "applying aliment, or other irritants, to the internal coat of the stomach, and observing the effect through a magnifying glass, innumerable lucid points, and very fine nervous or vascular papillæ, can be seen arising from the villous membrane, and protruding through the mucous coat, from which distils a pure, limpid, colourless, slightly viscid fluid." The

substance of which these papilloid masses are made up is much more homogeneous than the epithelium of the tubes, neither cells nor nuclei can be easily seen in it. The epithelial particles seem to fuse together as they are thrown off. This may serve as an answer to the objection which Kölliker seems to adduce, viz., that the proper cells of the tubes are not to be found at all constantly in the layer of mucus lining the surface. That this is the case I am quite convinced, for, on examining the stomach of a cat killed while digestion was going on, I found, on examining the layer of chyme in immediate contact with the surface, no trace whatever of any cell structure at all, neither of columnar nor spheroidal epithelium. In vertical sections of the mucous membrane there were, however, seen some masses of altered epithelium within the fossulæ, and ready to exude. On the other had, in the stomach of a man who died suddenly after a meal, I found the layer of acid mucus in contact with the surface to consist of abundance of epithelium from the tubes, as well as flakes of columnar particles. Also, in vertical sections, examined without any pressure, the surface was seen to be encrusted with a layer consisting of distinct cells from the tubes. The proceeding which Lehmann successfully adopted in the preparation of an artificial gastric juice, viz., scraping the surface of the mucous membrane with a spatula, and using the expressed matter, indicates pretty clearly that the contents of the tubes are poured out in the formation of the natural secretion. Probably the only difference between different individuals consists in this, that in some the epithelium liquefies completely before it exudes, while in others it exudes as a mass and liquifies more gradually. Though Kölliker doubts that the exuding of the epithelium is a constant and necessary occurrence in digestion, yet he holds that the epithelial contents are all necessary for the formation of gastric juice. I can corroborate the statement of this excellent anatomist, that the acid reaction is much more intense in that part of the stomach where (in the pig) the gastric glandular structure is most developed. This corresponds,

also, with the observation of Messrs. Todd and Bowman, p. 206, vol. II, as to the greater digestive powers of the mid region of the pig's stomach.

The following observation relative to the condition of the gastric mucous tissue at birth, seems worth recording. The stomach of a male infant, who lived only four hours, contained much mucus, of a reddish tint, and markedly acid. In the splenic region the tubes were not distinguishable in vertical sections; they were utterly overlaid and obscured by interstitial nucleated tissue. In the mid region the tubes were rather more distinct; there were numerous large cells of tubular epithelium seen, but the tubes themselves were very much obscured by interstitial nucleated tissue. Acetic acid brought the nuclei into view in great numbers. In the pyloric region the tubes were quite distinct, though there were here also numerous elongated interstitial nuclei. The blood in some of the injected capillaries of the villi was changed into yellow pigment (by the secreted acid). In this instance we have another illustration of the often observed fact, that the embryonic condition resembles very much certain diseased states of adult life. The tissue at a certain part of the ascending scale of development is very like, in its mere morphetic characters, to the same tissue when descending the scale of degeneration.

In the tables accompanying this communication, the following deviations from the typically healthy condition are mentioned:

1. *Nuclear masses;* these, as I have stated, are the solitary glands, and it is doubtful what degree of their development is to be considered as surpassing the physiological limit. It seems probable, both from actual observation, and from the behaviour of the same structures in the intestines, that they may become hypertrophied, and encroach abnormally upon the proper secreting tissue. Again, it is certain that they may undergo atrophy, and thus occasion loss of substance and thinning of the mucous membrane in the spots they occupy. Sometimes their atrophy seems to take

place by a kind of liquefying, so that a cavity is formed containing a clear fluid and some nuclear corpuscles. In other instances there is no distinct cavity, though there may be a depression on the mucous surface, and the mass appears to degenerate fattily, the wasting corpuscles being mingled with molecular oily matter, often in large proportion. From the large, probably hypertrophied masses, there is a gradual transition to the next form of change. It seems worth while to retain the term "nuclear masses," as it expresses correctly the constitution of the so called solitary glands, and, it being clearly understood that they are not actually abnormal structures, separates them in a marked manner from the proper secreting tissue.

2. *Diffused nuclear formation,* in extreme instances, extend uniformly throughout the mucous membrane. The nuclei are mingled with more or less granular matter, and the tubes are more or less atrophied and obscured by the interstitial deposit.

3. *Inter-tubular fibroid formation,* this is very commonly associated with the preceding, and consists simply in this, that the exudation in which the nuclei lie, passes into the form of a more or less fibroid or homogeneo-fibroid stroma. In this, elongated or fibre-forming nuclei may sometimes be seen. The material is very similar to that which thickens the Glissonian sheaths in some cases of cirrhosis. In some cases a change takes place in the tubes themselves, such that they become converted into nucleated substance, similar to that which surrounds them. Their epithelial contents are changed into a granular mass, containing many more nuclei than in the healthy state, while the homogeneous wall of the tube wastes and disappears, and so the intra-tubular nucleated mass blends with the extra-tubular, and the whole mucous membrane is converted into an uniform material loaded with nuclei. In extreme cases the tubes are utterly atrophied, and the whole thickness of the mucous membrane is occupied by fibroid or granular stuff, in which some altered remnants of the tubes may be brought into view by means of acetic acid. The basement membrane of

the surface is often absent in parts where there is much inter-tubular formation, and the nucleated fibroid tissue is then exposed. It may, however, have been covered in by the columnar epithelium during life.

4. The tubes appear, in some instances, *to decay spontaneously*, or, at least, not from the atrophic pressure of new formed fibroid tissue; the mucous membrane may then present a mere mass of granular and celloid débris, with interspersed fat vesicles and fatty matter.

5. *Black pigment* may be deposited in the mucous tissue sometimes in great quantity; it is occasionally within the tubes, more often between them. It appears in the form of granules and masses. In other cases yellow pigment is to be found. Both are to be regarded as proceeding from altered hæmatine.

6. *Cystic formation* is occasionally met with; it seems to take place in three ways: (1.) A nuclear mass liquefies, and leaves a cavity which is occupied by a clear fluid. (2.) While atrophy of the tubes is taking place, a portion of one becomes distended into a cystic cavity. (3.) A cyst is produced (*de novo*) as a large vesicle, a true new formation.

7. *Mammillation* is often seen in lesser degrees, and not unfrequently well marked. It affects especially the pyloric third or half of the stomach. To obtain a good view of it, or indeed not to overlook it, it may be absolutely necessary to wipe off a thickish layer of tenacious adhering mucus. It seems to be of two kinds, or to be produced in two ways. One may be called healthy, and appears to depend on some unusual contraction of the corium of the mucous membrane. That this may take place is very intelligible from the circumstance stated by Middeldorpf, and confirmed by Kölliker and Brücke, that there exist numerous organic muscular fibres in this layer. I have observed that this mammillated appearance is produced in some specimens in a very marked manner, or, if not entirely produced, rendered much more striking by immersing the mucous membrane in water, or in dilute acid, which seems to have a constringing action on some of the component tissues, probably the corium. The

other form of mammillation is morbid, and seems to be essentially connected with fissuring of the mucous membrane, or local atrophy. The thickness of the mucous layer is tolerably uniform in the healthy state, but in some cases when it is dissected off and held up to the light, it is seen to be much thinner in certain parts than elsewhere. The glandular layer seems to be, as it were, broken up into separate portions by fissures running through it. This condition may exist without any mammillation. A section made at right angles to the surface across a depression between two mammillæ shows the tubes in that part shortened, sometimes at the free surface only, sometimes at the deep also. The cause of the shortening seems to be in many instances the disintegration of a superficially seated nuclear deposit. The notching or depression thus produced is sometimes so deep as to fissure the mucous membrane quite down to its corium. In some cases the notching may be the result of simple atrophy, or superficial ulcerations, or such cracks as occur in psoriaris of the skin. The following case is a good example of atrophic change taking place extensively with partial conservation of the healthy structure:—A man, æt. 57, died from a fracture of the skull. The surface in the splenic region at its lower part presented numerous spots about the size of a pea, much more prominent than the intervening surface, and when held up to the light these spots were seen to be much less translucent than the intervals. These prominent spots were more numerous and closer together in the lower part of the mid-region, at the upper part of which, and in the pyloric, there was marked mammillation. The tubes were found to persist, and to be healthy in the prominent parts, while in the intervening thinner they were very much atrophied amid an overwhelming infiltration of nuclei, with circumscribed nuclear deposits at the bases of the tubes. It seems pretty clear that there is a good deal of analogy between morbid mammillation, the result of organic change, and the granular condition of a wasted kidney. The mammillations and the granulations are the parts where most of the natural tissue remains.

8. *Gathering up of the lower parts of the tubes in* the pyloric region so as to form a group of convolutions something like the acini of a conglomerate gland is often observed. It is not quite clear how the change is produced. It seems as if several tubes lost their upper parts by obliteration, and that their then remaining portions were drawn together and convoluted. In an extreme instance the groups of convolutions are found lying beneath the mucous surface, surrounded by fibrous tissue, and manifestly destitute of any outlets. In these cases the epithelial contents of the tubes are commonly fatty and wasted.

9. There is much difficulty in determining exactly what conditions of the *epithelium of the tubes are unhealthy*. Their contents are often of a very opaque fatty aspect, especially in their lower half; but this scarcely seems to be abnormal. In a few instances I have observed an apparently true fatty degeneration of the epithelium, the nuclei and cells being converted into shrunken fatty masses. Not unfrequently the epithelium appears more or less stunted and atrophied, or of a less soft, finely mottled aspect, and its cells look withered and shrunk. In the catarrhal condition it is pretty certain that it is not only the epithelium of the surface and fossulæ (the columnar), which furnishes the abundant mucus, but that of the tubes also, which is thus diverted from its proper use. Large cells from the tubes may not uncommonly be seen imbedded in the tenacious plasma. Sight, however, is quite inadequate to detect the qualitative changes which the epithelium in these and other cases undergo.

10. *Self digestion,* in slighter degrees, is of very common occurrence, and is invariably confined to or most marked in the splenic region. The mucous membrane is stained more or less deeply of a reddish colour, is less thinned, very slippery, difficult to hold so as to make a section, and semi-translucent. The tubes appear in some measure wasted, the submucous white filamentous tissue partly dissolved, and the blood in the vessels converted into yellow pigment. In much rarer cases the mucous membrane is destroyed, all except a slight coating that still remains along some of the vascular

ramifications which are seen coursing as black streaks on the white submucous tissue. The nerves and vessels are seen altered just as when they are treated with strong acetic acid; their nuclei are rendered very apparent.

11. Small dark red circumscribed spots seen on the surface of the mucous membrane are manifestly the result of hemorrhage, or at least of the exudation of hæmatine. The microscope shows in these parts an abundance of dark pigment granules. Sometimes in these spots ulceration is manifestly taking place; the surface is sunk, the basement membrane gone, the tubes quite lost, and replaced by a fibroid tissue infiltrated with yellow pigment. With regard to larger ulcers, such as perforate the walls of the stomach, I have not been able to observe anything to distinguish them from other ulcers, or anything that could account for their origin and progress. The base of the ulcer has appeared of a yellowish-grayish aspect, and some of the substance forming it has shown nothing but a low fibroid tissue, with more or less numerous corpuscles and granular matter, in which lie imbedded fat-cells and remains of vessels. In one instance there were numerous mould filaments in the base of a gastric ulcer, and in another instance in that of a duodenal ulcer; but I do not at all suppose that these had any essential connexion with the lesions. The tissues bordering the ulcer have not presented anything constant or to be specially noticed; sometimes they appear tolerably healthy, sometimes they are diseased in the same way as other distant parts, sometimes they are the seat of blood congestion, but this is not often the case. Ulceration, I believe, is essentially dependent on that which we cannot see; viz., a certain quality of the exudation, and a certain alteration of the nutrition of the tissue affected. It may, I think, be pretty safely asserted that examination of an extending ulcer of the cornea would show no peculiarity that could account for the progressive decay, and absorption of the texture. When separation is taking place, both the aided and unaided eye can see something of the process that is going on, but the destructive action is only

apparent by its results. When we understand the nature of the assimilative power, we shall understand also that of the ulcerative. The following highly interesting case, for which I am indebted to Dr. Bristowe, seems to me to have some bearing on the mode in which ulceration occurs:

"A girl, æt. 12, died at a late period of typhoid fever, from copious intestinal hemorrhage. She was extremely emaciated. There was hepatization and purulent infiltration of a large portion of the left lung. The lower part of the ileum presented numerous ulcers. But the most extensive destruction of mucous membrane existed in the colon, especially in the cæcum and ascending portion. From this part hemorrhage had taken place. The mucous membrane of the stomach had a peculiar appearance. It presented a very considerable number of depressions of a roundish, oval, polygonal, or very irregular shape, the area of which varied between that of a silver penny, and a quarter of that size. They appeared to be produced by atrophy of the mucous and submucous tissues. They were generally somewhat paler than the surrounding healthy membrane, and many were studded with black points, apparently discoloured vessels. The black spots, though most numerous in the depressions, were by no means confined to them. The morbid appearance was observed over nearly the whole stomach, but was deficient for an inch or two near the pylorus, and was perhaps most distinct between the cardiac and pyloric extremities. Not far from the pylorus was an irregular depression of the largest size, having all the characters above described, except that in its centre was a small oval darker-coloured pit in which the mucous membrane appeared to be deficient. It had the appearance of a contracting and imperfectly healed superficial ulcer, and the thinner mucous membrane round it was thrown into delicate scarcely visible folds." In the specimen which Dr. Bristowe kindly sent me the general surface was pale, the margins of the spots were rounded over smoothly, and not sharp cut. The spots were manifestly depressed, and the tissue was more translucent in them than elsewhere. On examination of vertical sections, the tubes

of the mucous membrane were found perfectly healthy; but in the depressions they were destroyed, their place was occupied by mere granular débris and oily matter, and the basement line of the surface was lost. There was no particular change in the submucous tissue. The healthy tubular tissue passed rather abruptly into the disintegrating, and there was no deposit or morbid formation of any kind in the parts affected. It was true and simple disintegration and perishing. No injected vessels were seen by the microscope, nor any pigmentary deposits as from exuded hæmatine. The morbid condition in this case was the result, I believe, of extremely depressed organic power. The nutrition of the gastric mucous membrane, in particular spots, failed, and the tissue passed into a state of decay, it might almost be said, of sloughing. This was not identical with ulceration, but it verged nearly upon it, and had life been prolonged, would doubtless have passed into it; indeed, in the large depression near the pylorus, ulceration seemed actually to have occurred. The case may be regarded as a transitional instance between sloughing and ulceration, and illustrates both processes. Inflammation, it seems certain, had nothing to do with it.

12. The mucus which covers the surface of the stomach in gastric catarrh is generally very tenacious, adheres with remarkable pertinacity to the membrane, is neutral or slightly acid, and consists of an homogeneous-granulous fluid, imbedding very numerous columnar epithelial particles, and often more or less distinct remains of the contents of the tubes. The nuclei of the cells from the tubes persist long after the cells themselves are quite disintegrated, and may be seen in great numbers amid the plasma. They must not be mistaken for mucous corpuscles, which I believe are very rarely present. The columnar particles are more permanent than those from the tubes. Small fragmentary crystals of triple phosphate (as I believe them to be, from their solubility in acid) are very commonly seen in abnormal gastric mucus. The contents of the stomach are often of a dirty chocolate colour; in this case the fluid may be acid or alkaline: it

consists of watery mucous fluid, containing besides epithelial debris and remnants of food, numerous meshes of dark orange pigment: these I suppose to result from effused blood or exuded hæmatine, and to be only a less degree of the black matter which is often vomited in cancerous disease. I have observed torulæ in the mucus of the stomach of a diabetic patient.

The tables accompanying this paper have been drawn up from examination of 100 cases taken just as they presented themselves. This way of proceeding is of course less advantageous for ascertaining the symptoms that attend on diseased states; but it gives, on the other hand, a fairer view of the comparative frequency with which such states occur, and seems on the whole the best to pursue in breaking ground upon a subject which is in a great measure new. I am too well aware of the extreme liability to error which besets all statistical inquiries, to bring forward with anything like implicit confidence the results which seem deducible from these tables; I only produce this as a first effort for the ascertaining of points which will require further and more diversified and abler observation to settle completely.

The proportion of males among the 100 cases is very far above that of females, being 65 : 35, or nearly double. This must be borne in mind in estimating the relative liability of the two sexes to diseases of the stomach.

I will first examine the influence of *age* and *sex*. It appears that out of the 100 cases, there were 28 that might be considered quite healthy, or nearly so. Of these, 15 were males, and 13 females, which indicates a decided less tendency to disease in the female sex.

There were 10 under 10 years of age.
13 „ 20 „
16 „ 30 „
19 „ 40 „
23 „ 50 „

The others ranged from 57 to 74. This result indicates sufficiently a tendency to maintenance of the healthy state

in the early years of life, and also demonstrates that organic change is no necessary attendant upon old age. In case 33 there were numerous sarcinæ in the stomach, and symptoms of their presence were observed during life. In case 43 there was the most extreme vascular congestion, which however appeared to be more of a passive than of an active kind, and to be produced chiefly in consequence of great fluidity of the blood, and venous engorgement. In case 62, though the glandular structure was generally healthy; there was an ulcer with thin edges, at whose base a vessel was seen nearly exposed; the mucous surface was also in a state of catarrh.

In 47 cases the splenic and mid regions of the stomach were either healthy, or not greatly diseased, while the pyloric was generally more or less affected. In a few of these the pyloric was as healthy, or more so, than the other regions, but in the great majority the reverse was the case. Of this group, 29 were males and 18 females, a ratio not very dissimilar to that which exists between the numbers of the sexes. This would indicate that the female sex is as liable as the male to minor degrees of disease. Of this series of cases,—

0	were under	10	years of age.
5	,,	20	,,
14	,,	30	,,
22	,,	40	,,
33	,,	50	,,
40	,,	60	,,

While 7 ranged from 62 to 77.

Here, again, age appears to exert a decided predisposing influence to organic change. In 2 cases (53 and 67) there were sarcinæ in the stomach; the latter was in a state of catarrh.

In 11 cases there was a moderate amount of destruction of the tubes. Of these 10 were males, 1 female, an excess on the side of the male sex which must be purely accidental, at least in the degree indicated by the numbers.

1	of these was	under the age of	10 years.
2	„ were	„	20 „
3	„	„	30 „
5	„	„	40 „
10	„	„	50 „

In 2 cases (Nos. 49 and 68) there were ulcers. In this group it is very apparent how the liability to disease increases with advancing age.

In 14 cases there was a great amount of destruction of tubes. Among these there were 11 males and 3 females. This result coincides with that obtained in the preceding group respecting the greater immunity of the female sex from organic change of the stomach. The numbers, however, are not sufficiently large to make the evidence conclusive. Of these 14 cases there were—

0	under the age of	20	years.
3	„	„	30 „
4	„	„	40 „
5	„	„	50 „
8	„	„	60 „
12	„	„	70 „

One was 70, and one was 90. Here again the influence of advancing years is sufficiently apparent. In one of this group, No. 40, there was cancer of the pylorus.

Among the 100 cases were 6 of more or less decided ulceration, which are reckoned also in other classes with respect to the general state of the mucous membrane. It is rather remarkable that among these none were under 48 years of age. A case of perforating ulcer, which I met with after I had completed the above number, was 52 years of age. Including this one, there are seven cases, the average of whose ages is 59. This was to me an unexpected result, as I had believed, from the authority of others and my own previous observation, that ulceration occurred chiefly in young females. Of the seven cases, five were males, and two females. Rokitansky states "that the disease occurs chiefly at the period of puberty, and very often, particularly

in the female sex, as early as the tenth year." He further states "that it is invariably accompanied by chronic catarrh and blennorrhœa of the gastric mucous membrane;" but this I think is hardly the case in England. I have not noted the existence of catarrh in more than three cases out of the seven, and in one of these it is doubtful whether it was at all marked.

In 16 of the 100 cases, the catarrhal condition was observed, the surface being covered with abnormal mucus in greater or less amount. Of these 10 were males and 6 females.

There were 2 under 20 years of age;
5 „ 30 „
7 „ 40 „
9 „ 50 „
10 „ 60 „
And 4 varying from 64 to 77.

The frequency of catarrh thus increases with advancing age; but the earlier periods of life are by no means exempt.

There were 9 cases in which the patients were known to have drank immoderately, and to these 2 more, subsequently observed, may be added. Of these 11, 1 was healthy; 6 were tolerably healthy, or not diseased in any great degree; in 1 there was a moderate amount of destruction of the tubes; and in 3 this was very great. From this it would appear that the habit of hard drinking has not a very marked effect in inducing degenerative disease of the glandular structure of the stomach. The last case I examined especially bears out this conclusion. The man was only 49 years of age; he had been, as reported, "a drunkard and a very hard liver," in the East Indies, had sunk himself materially in the social scale by his misconduct, and died at last within a hospital mainly from debility. Except considerable hypertrophy of the heart, and a fatty state of the liver, there was no very decided organic disease. The mucous membrane of the stomach was much congested, except in the pyloric region. The splenic and mid regions presented a very tolerably healthy state of their tubular structure. In

the pyloric region the tubes were atrophied and obscured by interstitial nucleated fibroid formation. Just such a condition this was observed in numerous patients whose lives had certainly been very unlike his.

Among the 100, there were 18 cases of marked scrofulous disease, not including instances of tubercular deposit, which were but slight, or obsolete. In 4 of them the gastric structures were healthy. In 10 they were tolerably healthy.

In 2 there was moderate, and in 2 there was great destruction of the tubes. The conclusion is that scrofulous disease, using the term in its widest sense, does not exert any marked influence in the production of organic disease of the gastric gland tissue.

Without reference to microscopic examination, which, had it been possible, would have been most desirable, there are found among the 100 cases, 16 of renal degeneration occurring without marked disease of the liver, and 8 in which both organs were diseased. In the former group there were 3 in which the gland tissue of the stomach was healthy (1, however, of these was in a catarrhal condition, and had an ulcer); 5 were tolerably healthy, 1 being affected with catarrh. In 2 there was moderate destruction of the tubes, 1 of these presented two ulcers and a cicatrix. In 6 there was great destruction of tissue, but 1 of them had attained the advanced age of 90.

Of the second group of 8,—1 was healthy, 3 were tolerably healthy, in 3 there was great destruction of the secreting tubes, and in 1 only moderate.

Taking the two groups together, it appears that in one half the whole number there was decided organic change, while the remainder were tolerably healthy, except that one was ulcerated. This result points certainly, I think, to the existence of a tendency in renal degeneration to be associated with similar change in the stomach. That age is not the real cause of the degeneration in the diseased cases appears from taking the average of the ages in the two sets; in the healthy it is 52, in the diseased 51.

There were 12 cases of heart disease, chiefly dilated hypertrophy. 5 of these coincided with renal and hepatic degene-

ration, 1 with renal degeneration only. Of the 12,—4 were healthy, 3 tolerably healthy, in 2 there was moderate destruction, and in 3 there was great destruction of the stomach-tubes. In 1 case of moderate destruction there were also two ulcers and a cicatrix. The stomach disease coincided with renal and hepatic (one or both) four times, once it did not. From this it appears that heart disease, with its usual attendant of venous engorgement, has probably no great influence in the causation of degeneration of the gland tissue of the stomach. In case 43, where the whole vascular system of the stomach was intensely congested, the tubes appeared tolerably natural.

Among the 100 there are found 7 cases of cancer, and to these may be added 2 more subsequently observed. Of these, 1 was healthy, 5 tolerably healthy, and in 3 there was great destruction of the tubes. In 2 of these cases the pyloric region of the stomach was itself the seat of the cancerous disease. The record of the healthy or degenerated state relates of course to the condition of the remaining mucous membrane. As the greater number of the cases were tolerably healthy (as far as regards the stomach), as in one of the diseased there was coincident degeneration of the liver and kidneys, and as the average of the ages of the diseased is considerably above that of the healthy (50 : 40), it cannot be affirmed that cancerous disease has much potency in inducing degeneration of the gland tissue of the stomach.

In only 3 cases out of the 100 is there mention made of the patient's having suffered from chronic rheumatism or gout. In all of them there existed also renal degeneration, and it is not possible to say whether this or that was the cause of the great destruction of gland tissue which prevailed in 2 of the 3 cases.

There are 2 cases of diabetes, in both which the gastric tissue was tolerably healthy.

I am inclined to hope that the appended tables will furnish a good deal of illustration of diseased states of the stomach, which can scarcely be embodied in formal deduction. To aid the reader in his survey, I add references to the cases

which seem most worth his notice. Instances of great destruction of the secreting tubes: Nos. 2, 5, 8, 19, 29, 40, 44, 59, 63, 69, 76, 90, 92, 93. Instances of ulceration: Nos. 6, 7, 49, 62, 68, 80. Instances of the catarrhal state: Nos. 11, 24, 27, 34, 45, 48, 54, 57, 62, 67, 72, 74, 77, 80, 93, 99. Instances in which scrofulous disease was well marked: Nos. 11, 16, 26, 34, 37, 39, 46, 47, 54, 57, 61, 63, 66, 79, 90, 91, 95, 100. Instances in which renal or renal and hepatic disease existed: Nos. 3, 13, 19, 20, 22, 27, 29, 32, 35, 40, 43, 49, 62, 63, 69, 74, 76, 83, 84, 87, 90, 92, 93, 94. Instances of diabetes: Nos. 14, 79. Instances where cancer existed: Nos. 5, 7, 15, 28, 40, 61, 77. Instances in which the patients had been addicted to drinking: Nos. 3, 4, 5, 19, 26, 68, 80, 82, 93.

With regard to the symptoms by which these morbid states might be expected to declare themselves, it has been matter of great disappointment to me to find that they are so obscure as to be scarcely at all noticed in the records to which I have had access. The following case shows that considerable wasting of the glandular tissue of the stomach may take place without any apparent symptom.

E. G., female, married, æt. 52, had been subject for eight years to epileptic fits, occurring very frequently. In one of these she set her clothes on fire, and was burnt severely. She lingered for rather more than a month, and died. She always had good digestion, never complained of pain in stomach, could eat any kind of meat. Was very strong and well nourished. All the organs appeared healthy except the stomach, on the surface of which were several ecchymosed spots, and the ileum and cæcum, in which were patches of deep red congestion. Microscopic examination showed the tubes in the splenic region tolerably healthy; those in the mid-region were utterly atrophied, and replaced by a fibro-homogeneous stroma, densely loaded with nuclei and granular matter; those in the pyloric region were also extremely wasted, and lost amid fibroid formation.

It is possible that in this case the part of the mucous membrane which retained its healthy structure was able by

increased activity to compensate for that which had perished, and to supply an adequate amount of gastric juice. It is, however, remarkable that so considerable change should have occurred without any local symptoms. This probably depended on the atrophic process having been very gradual. Similar instances of latent, though most serious changes, are met with in other parts—as the cardiac valves, the liver, and kidneys; so that the circumstance is by no means without parallels. In the above case, and in others of the same kind recorded in the tables, I believe the change to have been quite independent of inflammation; but in the following case (for which I am indebted to the kindness of Mr. Ancell), attacks of inflammation seem to have been the efficient cause of the morbid state.

A man died about the age of 50, in a state of atrophy and exhaustion. He had suffered for years from dyspepsia and congestion of the liver. The earlier attacks were of an acute character, and were relieved by blisters; the later were of a more chronic kind. He was several times slightly jaundiced, and his skin at last assumed a permanent dingy, greenish-yellow hue. He was much troubled with sickness. Gentle alterative treatment was of much benefit in the earlier periods of his disease, but latterly nothing did him any good. The autopsy showed some diminution in size of the liver, whose cells were much loaded with yellow pigment; there was some thickening of the capsule. The bile was exceedingly yellow, rather abundant. The kidneys were large, very highly congested, and their capsules very adherent; their tubes contained fibrinous casts, and the epithelium was unhealthy, containing a great deal of oil. Small concretions of carbonate of lime were impacted in the mammellæ. The mucous surface of the stomach was marbled and mottled over about its middle; towards the cul-de-sac it was the seat of punctiform injection if not of extravasation of blood. In the part which was microscopically examined, there was very little trace of the tubular structure, the tissue was completely pervaded by nuclear deposit.

I am satisfied that this stomach was extensively affected

by atrophy of its proper tissue, with interstitial nuclear formation, although, as I had not then directed my attention specially to morbid conditions of this organ, the examination was not so satisfactory as those which I have made recently. By a reference to the groups of different cases given above, it will be seen that the catarrhal state is by no means coincident with destruction of the tubes either in its greater or lesser degree. Now the catarrhal state implies a degree of inflammation of the mucous membrane, but this does not seem to have any marked influence in producing the interstitial deposit which coincides with atrophy of the secreting structure.

In concluding this paper, which I feel is but a first labour in a hitherto little cultivated field, I cannot but remark how strongly the degenerative tendency characterises the disease of the present day. We know not whether it was so in former times, but for ourselves the lesson is plain and clear, that the integrity of the vital force, which we call health, must be carefully cherished if it is to be long preserved. From diminished vital power there is no great step to organic decay; and if the one exists any length of time, there is too much reason to fear that the other is in progress. If the researches I have made do nothing more, they show that degenerative change in one important organ is no unfrequent event, and it requires but a moderate pathological experience to show that the same is true with respect to many other parts. How does it then behove us to look out for and anticipate, as far as possible, these insidious disorganising processes, against which our therapeutic endeavours are often so unavailing!

It is a pleasant duty to acknowledge the very kind assistance I have received while engaged in collecting the observations above recorded from the medical staff of St. George's Hospital, and from my colleagues at St. Mary's. To the curators of the museums at both these institutions I have to offer my best thanks for the many friendly offices they have done me, as well as to Mr. Philliten and Mr. Mushen, resident officers at the Marylebone Infirmary.

Cases of Morbid Changes in the Mucous Membrane of the Stomach.

No.	Name.	Age.	Sex.	History. Disease fatal.	Post-mortem Examination.	Condition of Stomach.
1	E. Caswall.	5	F.	Ill 3 weeks or more with fever; improved; she was approaching convalescence; appetite was good 3 days before death, which occurred in an attack of syncope.	Body emaciated; pale. Portions of both lung consolidated. Kidneys unusually firm.	It was typically healthy in all parts, but quite pale.
2	T. Powell.	62	M.	Labourer.—Regular habits; working hard; health seems to have failed 9 months; at end of which he died in a state of extreme anæmia.	Heart large; walls rather hypertrophied; valves of left side thickened, but efficient. Organs generally healthy.	Tubes of stomach almost wholly destroyed; the mucous membrane reduced to a basement membrane, with a thin substratum of granular matter and indistinct nuclei, below which there is a thick layer of fibroid tissue containing in its deeper parts numerous fat-vesicles.
3	J. Lawrence.	45	M.	Nursery gardener.—Has lived and drank hard at times. Rheumatic fever 10 years ago. Died of fever with pneumonia 2 weeks after admission. Complained latterly of pain and weight at epigastrium, as if nothing passed there.	Right lung in great part consolidated. Pericardium adherent to heart. Liver pale and granular. Kidneys not much wasted, but of granular surface.	Mucous membrane in some parts dark stained, for the most part of a light pale pink. In the discoloured parts there is a deposit of black pigment *in* and *between* the tubes, in other parts there are small deposits of yellow pigment. Splenic region—tubes show a tendency to disintegrate; their epithelium is atrophied. Mid region—tubes tolerably healthy. Pyloric region—tubes obscured and atrophied, by interstitial nucleated fibroid deposit.
4	W. Leary.	40	M.	Labourer. — A drinker. While intoxicated injured his hand so that amputation of all the fingers and metacarpal	Heart large and flabby: lining membrane blood-stained; blood fluid. Liver affected with marginal fatty degeneration. Lungs	Mucous surface pale; reaction feebly acid splenic, middle, and pyloric region quite healthy.

No.	Name.	Age.	Sex.	History. Disease fatal.	Post-mortem Examination.	Condition of Stomach.
				bone had to be performed. Tetanus came on. He died on 11th day after admission, and 3rd of tetanus.	congested posteriorly. Kidneys healthy; a cyst the size of a nut on the left.	
5	Jas. Walker.	64	M.	Engaged in business. Not hard worked. Has drank much. Ill 10 months, feeling weak and coughing. Has marked arcus senilis. Digestion good until last 2 months; getting worse. He died with profuse hæmoptysis.	Left lung and heart throughout, especially opposite sixth rib and costal cartilage, where there was an oblong, firm, encephaloid, flattish mass. At the root of this lung there was a mass of cancerously diseased bronchial glands, and the tissue around was soft and broken down as from effused blood. Right lung and other organs healthy. No fatty degeneration of cardiac fibres.	Mucous membrane marbled along the lesser curvature; natural to the eye in the greater part of its extent. Cardiac region—tubes very much atrophied by interstitial formation of nuclei and fibroid tissue, some cystic cavities; corium of mucous membrane thickened and beset with nuclei. Mid region similarly affected, but not quite in the same degree. There appeared to be fattily degenerating nuclei masses, and small fat cells here and there. The basement membrane was perfect. Pyloric region—tubes distinct, though still rather obscured by interstitial formation.
6	M. Stark.	50	F.	Widow, charwoman.—Has had good health generally: 11 children. Admitted suffering with dyspnœa, dropsy, and debility. Urine not albuminous. Died by asthma in 2 days.	Dropsical effusion in pleuræ and peritonæum. Left lung œdematous and emphysematous; right lower lobe nearly consolidated from effusion of bloody fluid. Heart flabby; purpuric spots on its surface; valves healthy; mitral somewhat thickened. Liver slightly granular. Kidneys not wasted; surface smooth; very firm.	Stomach rather large, presented a circular contraction 2½ inches from pylorus. Internal surface pale, rugose, of natural aspect, except at the lesser curvature on the posterior surface, where there were two ulcers, a larger one quite circular nearer the pylorus, and a smaller one oblong nearer the cardia. Their margins were not much thickened, evenly rounded, and devoid of the least vascular injection. There were no adhesions on the serous surface corresponding to the ulcers. There was much highly acid fluid

						in the stomach. The tubes in the splenic and mid region were quite healthy, as also in the pyloric, but they were surrounded in this part with fibroid formation. Some fattily changing nuclei deposits were seen in the corium of the pyloric region.
7	R. Westover.	54	M.	Shoemaker and shopman. —Good health till last 5 years; since then has been ailing more or less in chest and side. Admitted in state of semicoma, with paralysis and some rigidity of left side. Died next day. Slight arcus senilis.	A scirrhous tumour, the size of a fist, in posterior lobe of right hemisphere of brain; serous effusion in ventricle and at base. Left lung partially condensed. Heart healthy looking; fibres of left ventricle in process of degenerating fattily. Numerous adhesions around upper and left portions of stomach. Other viscera healthy.	The cavity of the stomach was contracted, in an hour-glass fashion, by a long puckered cicatrix passing transversely across it, rather nearer the pylorus than the cardia. Contents highly acid. Tubes in splenic and mid regions tolerably healthy; in pyloric exceedingly obscured by nucleated fibroid interstitial formation. Basement membrane in this region was lost, and there was little exuding epithelium.
8	M. Kenny.	50	M.	Jaundiced on admission; abdomen tense and tympanitic. He got very weak; lost appetite. Died on 13th day after admission. Some purpuric spots on cheek. The jaundice appeared 5 months before death; he had no illness before; was never well after.	There was great ascites and much effusion into left pleura. Lungs emphysematous. Heart small; valves rather thickened. Universal chronic thickening of peritonæum, and soft, solid, fibrinous exudation in subserous tissue of recto-vesical fossa. Kidneys small; not manifestly diseased; some hemorrhage into tubes. Hepatic cells loaded with pigment, and numerous collections of green or orange pigment throughout the parenchyma. Ducts com. chol. in some degree obstructed.	Stomach internally of healthy aspect, but marbled near the pylorus. Splenic region—no tubes discernible; they are replaced by nucleated fibroid tissue. Mid region in nearly same state; some nuclear masses at the bases of the tubes. Pyloric region—tubes extremely atrophied in the same way. There was a very little exuding epithelium on the surface. The basement membrane was distinct in some parts, lost in others. The submucous tissue was quite natural.
9	E. Cude.	44	M.	Pelvis crushed by falling timber. He died in about 2 days.	Thoracic and abdominal viscera healthy. Bladder and urethra la-	Splenic and mid region—tubes healthy. Pyloric region is spotted and stained by black

No.	Name.	Age.	Sex.	History. Disease fatal.	Post-mortem Examination.	Condition of Stomach.
					cerated. Both pubic bones fractured.	pigment; the tubes are much wasted, and in some parts are quite lost; there is much interstitial fibroid tissue. The epithelium of the tubes is fatty, and there is much oily matter scattered about them, and even in the corium.
10	G. Chambers.	64	M.	Had good health until 9 months ago; since then difficulty in making water. On admission, retention of urine for 24 hours. Urine drawn off excessively offensive, alkaline, turbid, loaded with triple phosphates and muco-pus. Appetite good. Urine became almost black, opaque, and intolerably fetid. He died in a comatose state, having previously had some pain in abdomen, the bladder being empty.	Body in good condition. Brain and thoracic viscera healthy. Two ulcerated openings at the upper part of the bladder were filled up by the intestines. Peritonitis and purulent exudation. Mucous lining of bladder very congested, and of an olive green hue.	Reaction acid. Splenic region—tubes tolerably healthy in some parts, wasted very much in others; some nuclear deposits at bases of tubes. Mid region covered with tenacious white mucus, consisting of epithelium from the tubes; its surface was pale, and its aspect healthy; tubes very much obscured by nuclear and indistinct granulo-fibroid deposit. Pyloric region—tubes distinct.
11	R. Goulding.	52	M.	Cough 1 year. Admitted with muco-purulent, and bloody expectoration. Legs very œdematous; urine slightly albuminous.	Lungs condensed, and tubercles scattered all about; vomicæ at both apices. Heart healthy. Liver enlarged.	Reaction of mucus acid. Mucous membrane much injected in splenic region, and covered generally with tenacious whitish mucus. Splenic and mid region—tubes healthy; much epithelium exuding on surface. Pyloric region—tubes healthy, but much obscured by interstitial nuclear and granular deposit.
12	D. Ford.	28	M.	Injury to head. Fell into coma, and died during the night.	Fracture of frontal and both parietal bones. Masses of coagulated blood on surface of dura	Splenic region and mid region—tubes very healthy. Pyloric region—tubes tolerably healthy, but much obscured by inter-tubular

					mater. The surface of the brain at several parts was bruised and softened. Much clean fluid in lateral ventricle.	and infra-tubular nuclear deposits, extending quite into the corium.
13	J. Bowen.	25	M.	Ill 14 days with cough and severe pain in right side. Tongue brown and dry; skin cold; extreme depression; breath of fetid and gangrenous odour. Died 1 day after admission.	Body in good condition. Lymph and much sero-purulent fluid in right pleura. Right lung's lower lobe consolidated, infiltrated with lymph and pus, in part gangrenous and broken down. Upper lobe of right and left lung healthy. Heart large, but healthy; fluid and lymph in pericardium. Liver large and coarse. Kidneys very large; mottled.	Reaction faintly acid; surface generally pale, with some patches of injection near pylorus, and some mammillation in the same part. Splenic and mid regions—tubes very healthy, with fibroid formation extending between them at their bases. Pyloric region—tubes greatly obscured throughout by interstitial fibroid thickening.
14	J. Thibel.	29	M.	French exile.—Ill 8 months. Much emaciated. Passed, on admission, 10 pints a day of saccharine urine. Appetite had been very good; had failed much lately. He used to take 170 oz. of milk daily, as well as meat.	Body much emaciated; an abscess, containing ℥j of dark brown and fetid pus in apex of right lung, and several patches of more or less solid cacoplastic deposit. Similar patches in left lung; other viscera healthy. Kidneys natural, but the epithelium of the tubes is very fatty.	Reaction acid. Mucous membrane dead white colour. Splenic region—very much altered by self-digestion. Mid region—tubes perfectly healthy; epithelium fatty, some nuclear deposits. Pyloric region—epithelium wasted, fibroid formation in some parts, and nuclear deposit in others.
15	M. Callaghan.	38	F.	Mammary scirrhus of 1 year's duration. Died by gradual sinking.	Firm encephaloid tubercle-like masses in interior of lungs and beneath pleura; one also in liver.	Reaction slightly acid. Splenic and mid region—tubes healthy, with nuclear formation rather considerable at their bases, and extending up among them. Pyloric region—tubes very distinct, with some interstitial fibroid obscuration.
16	E. Parfitt.	20 months.	F.	Ill 5 months off and on; very much emaciated. Symptoms referred to chest.	General tuberculosis. Lungs quite stuffed with tubercles. A few in liver and kidney. Mesenteric glands affected.	Stomach contained food; reaction acid; surface pale. Tubes in every part healthy. Epithelium exuding in great abundance from orifice, and forming a layer on surface.

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
17	W. Cox.	46	M.	Fell out of a cart on his head; convulsions came on some hours after; they became continuous, and he died in 4 days.	Body in good condition. Blood extravasated under scalp and in the subarachnoid spaces at the vertex, chiefly on the left side. Surface of hemispheres bruised, and blood extravasated in their substance. Left parietal and temporal bones fractured. Thoracic and abdominal viscera healthy.	Mucous membrane mammillated in every part. No vascular injection. Splenic and mid regions—tubes very healthy; epithelium fatty in lower parts, slightly fibroid thickening at bases and mid, and some nuclear deposits in same part in splenic. Pyloric region—tubes tolerably healthy, much obscured by interstitial fibroid formation, their lower ends forming convoluted groups.
18	E. A. Perren.	17	F.	Rheumatism; pericarditis; great restlessness and distress; sloughs formed on back; death by asthenia in 4 weeks.	Pericardium adherent by soft lymph to heart, externally adhered to ribs and lungs, which were engorged; pleuritic lymph exudation on both sides. Heart healthy, except a fringe of vegetations round mitral orifice.	Reaction acid. Splenic region—tubes healthy. Mid region—tubes not wasted, but much obscured by fibroid formation. Pyloric region in same state. Epithelium of tubes exuding abundantly.
19	J. Edgeson.	32	M.	Gout hereditary in family; has had several attacks. Has not lived at all regularly. General anasarca came on after getting wet. Is a painter and glazier. Urine albuminous, and containing casts. Gout appeared in wrist 3 days before death. Pleurisy and ascites occurred during illness.	Whole body dropsical and exsanguine. Brain pale; of good consistence. Lung œdematous, congested at back; fluid and lymph in pleuræ and in pericardium. Peritoneum contained much bloody fluid and fibrinous adhesions. Kidneys rather small, pale, granular, and mottled.	Splenic region—highly congested; tubes so obscured by fibroid and nuclear formation that they are scarcely to be seen; some are undergoing fatty degeneration. Mid region—tubes in same state; a large nuclear accumulation at the bases of the tubes in one part encroached considerably upon them.
20	N. Sampson.	60	M.	Servant.—Has always lived well. Admitted with fracture of femur; 2 days after delirium tremens appeared; he improved, and went on well, except	Body appeared healthy; 4 oz. of fluid in left pleura; lower lobe of left lung completely hepatized, and whole of right. Heart healthy. Calcareous deposit in aorta and	Reaction acid. Splenic region—tubes tolerably healthy; some large nuclear deposits encroaching on them. Mid region—tubes rather wasted; some encroaching nuclear deposits. Much fat in submucous tissue of

21				that no union of the fracture took place. About a month after accident, chest symptoms came on, and he died in 3 days.	other large arteries. Liver healthy. Spleen small and pulpy. Kidneys, surface granular and wasted. Very imperfect formation of callus.	these two regions. Pyloric region—tubes healthy; unobscured.
	Eliza Baker.	10	F.	Admitted with fever in an advanced stage; ill 14 days; abdomen tense and tender; epigastric pain; slept little. Died in 10 days.	Body emaciated; abdomen distended. Peritonitis with fibrinous and sero-purulent exudation had been set up by the irritation of the mucous coat of the ileum; one of these had perforated the intestinal wall, but adhesions had prevented the escape of contents. Abdominal viscera healthy. Lungs congested; middle and lower parts of right consolidated and softened. Heart healthy. Blood everywhere very fluid.	Reaction acid. Splenic region—there was a good deal of sub-tubular nuclear deposit, which in one specimen was so considerable that it formed a layer nearly as thick as the remaining depth of the tubes on which it had encroached. Mid region—tubes healthy; slight fibroid formation encroaching on their bases. Pyloric region—tubes remarkably healthy, and unobscured.
22	H. Boyce.	35	M.	Never had rheumatic fever. Ill, more or less, 18 years with palpitation of heart; more last year; unable to do his work as a costermonger. Anasarca; orthopnœa; heart greatly enlarged; systolic bruit in left side; impulse forcible. Pulse rather weak and unequal. Lungs engorged; absolute dulness in lower half of left back. Urine highly albuminous; contains casts, glomeruli, blood globules. Died in a few days.	Left ventricle of heart very much hypertrophied. Mitral curtains and cordæ tendin. thickened; orifice contracted. Aortic valves thickened. Surface of aorta rough and puckered by semi-cartilaginous patches. Kidneys diseased, enlarged, and mottled. Liver firm; nutmeg-cirrhotic. Lungs engorged; lower lobe of left condensed by Oiss of fluid in pleura.	Mucous membrane appeared healthy, rather more pinky than natural. Splenic region—tubes tolerably healthy; some fibroid formation at their bases. Mid region—tubes very much obscured by fibroid deposit and much wasted. Pyloric region—tubes not much wasted, but obscured a good deal by interstitial fibroid formation. Basement line perfect in all the regions. Very little exuding epithelium. Abundance of fat in sub-mucous tissue.

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
23	L. Gunden.	5	F.	Ill 6 months with cold and cough. Palpitation 2 months ago. Three days ago had a fit; after which she had hemiplegia of the right side, and speech was affected. This was not of long duration. There was a loud systolic mitral bruit. She improved in 2 months very much, and was about to be discharged, but got an attack of severe pain in cardiac region, with roseolar eruption on face, and sonorous râles in left chest. Urine was soon after slightly albuminous; œdema appeared, and the face was much swollen at the time of her death.	Body much emaciated. Heart very much enlarged and dilated; filled with enormous black clots. Some pericardial adhesions. Large rough vegetations on mitral flaps; aortic valves healthy. Left lung much condensed; contained traces of recent and older extravasations. Right lung condensed in some degree, and presenting some small cavities filled with puriform fluid. Liver enlarged; very firm; rather dark. Spleen large, dark, firm, with a fibroid nodule in its anterior margin. Kidneys tolerably healthy; fibroid formation was taking place in them.	Reaction acid contained digesting food· Splenic and mid regions; in both, the epithelium of the tubes is very fatty at their deeper parts; no wasting; no intertubular deposit. Pyloric region, tubes very tolerably healthy, but there were some nuclear deposits, mingled with oily matter, advancing upwards from the corium and causing local wasting. Epithelium exuding very abundantly on surface.
24	Jas. Mortimer.	7	M.	Admitted with extensive strumous disease of left elbow and hand, and right ankle. Five weeks after, an attack of violent diarrhœa. Twenty-four days after, urine was of a dark olive green, and highly albuminous; abdomen distended. In 16 days after he died; having passed latterly very little urine.	Marked pallor; general anasarca. Right lung, upper lobe hepatized incompletely; lower lobe healthy. Left lung healthy; no tubercles in either. Bronchial glands enlarged by scrofulous deposit. Kidneys enlarged; surfaces very white and smooth. Liver large; tolerably healthy. Spleen much enlarged; contained deposits of bacony matter. Some sero-purulent fluid in pelvis.	Reaction acid; surface pale, covered with much mucus. Splenic region—tubes not much wasted, but imbedded in fibroid tissue. Nuclear deposits very marked encroaching on the tubes; epithelium abundant. Mid region in nearly the same state as splenic; nuclear deposits in the substance of the mucous membrane. Pyloric region—tubes not materially wasted, but obscured by much interstitial deposit; nuclear masses exist at their bases, encroaching on the tubes. Fragments of bacony matter seen in the tissue.

25	— Scales.	9	M.	Died with acute desquamative nephritis after scarlatina. No stomach symptoms.	General œdema. Fluid in pericardium. Lungs œdematous.	Reaction slightly acid. Splenic and mid-regions—tubes perfectly healthy; epithelium very fatty. Pyloric region—tubes healthy, containing a less fatty epithelium.
26	M. Haley.	38	M.	Always a hard drinker; much exposed to weather; subject to winter cough; much emaciation; worse last 5 weeks; no hæmoptysis. He soon sank and died.	Tubercles and vomicæ in both lungs. Heart healthy. Kidneys of normal size, dark, and congested. White pericardial patch.	Reaction acid. Appearance healthy, smelling of brandy. Splenic region altered in some measure by self-digestion; tubes natural. Mid-region—mammillated tubes natural. Pyloric region—slightly mammillated; tubes very much obscured by fibroid formation. Fatty degeneration of their epithelium in many parts.
27	J. Macreath.	49	M.	Twenty-four years ago had a paralytic stroke; lately, 2 fits. Has pains all over head; increased greatly by coughing; has a continual noise in his head the last 6 weeks. There is a large carbuncle on the side of face. He sank into coma and died.	Brain healthy. Lungs very œdematous; right rather condensed and softened. Heart healthy; several pericardial adhesions. Adhesions on surface of liver; its tissue soft; highly congested. Both kidneys excessively wasted.	Splenic region somewhat altered by self-digestion; tubes tolerably healthy, but there is a good deal of nuclear and fibroid formation in the sub-tubular tissue, and extending up between the lower parts of the tubes. Mid region in similar state. Pyloric region similarly affected, and the lower parts of the tubes thrown together into convoluted groups. There was much mucus on the surface in all the three regions.
28	M. A. Little.	70	F.	Was extremely exhausted from previous illness and old age. Diarrhœa at intervals during last month. Abdomen became tympanitic and painful. Two days after, she sank.	Body pale and emaciated. Much bloody fluid in both pleuræ. Lungs emphysematous. Heart healthy. Serous and fibrinous effusion in peritonæum. Twenty-five gall-stones in gall-bladder, and much dark black bile. Liver contained several masses of hard encephaloid. Spleen and kidneys healthy. Cancerous stricture of rectum.	Aspect healthy. Reaction acid, rugæ marked, empty. Splenic region slightly mammillated; tubes tolerably healthy; some fibroid formation at their bases. Mid region—tubes healthy. Pyloric region—tubes not materially wasted; lower ends convoluted; much intertubular fibroid formation.

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
29	Chas. Hawell.	63	M.	Of rather full habit. Face and neck purple from congestion. General dropsy, dyspnœa, and cough for 1 month. Heart's action irregular. Pulse remarkably feeble and irregular. Expectoration rusty and adhesive. Urine scanty, loaded, slightly albuminous. Died 15 days after admission.	General anasarca; much serous effusion in left pleura, compressing left lung, which was healthy, as well as the right; a small pericardial patch. Heart's cavities all dilated; left ventricle hypertrophied. Considerable calcareous deposit in mitral valve. Much fluid in peritonæum. Liver small; its capsule contracted in many parts. Spleen small; firm; capsule opaque. Kidneys congested; firm;, capsules adherent, surfaces granular and cysted.	Strongly acid chyme in stomach. Splenic region—mucous membrance dark-coloured, thinned; tubes very much disintegrated; a prodigious amount of fibroid formation in sub-tubular tissue and corium, which is all full of elongated and fibre-forming nuclei. Mid region—tubes more or less completely broken up; their debris mingled with melanic granules. Fibroid formation as in splenic region. Pyloric region—tubes tolerably healthy, involved in much fibroid thickening; lower ends rather convoluted, and epithelium fatty. Muscular coat greatly thickened near pylorus. Submucous tissue not indurated. No congestion in any part of stomach.
30	G. Morrison	45	M.	A footman. Was exposed to the cold outside a carriage while heated by walking. Diffuse cellular inflammation came on, affecting the right side of the neck, the cheek, and extending down into the axilla. Died by asthenia in 3 days.	Lungs rather engorged posteriorly; other viscera of chest and abdomen healthy, except a few cysts on the kidneys.	Rugæ well marked; no general congestion; but intense injection of the vessels in the margins of some of the rugæ. Splenic region—tubes very healthy. Some nuclear deposits encroaching on the bases of the tubes. Mid region—tubes healthy, but with nuclear and fibroid formation encroaching on their bases. Pyloric region—tubes very much obscured by fibroid formation; here and there the lower parts convoluted. Mid and pyloric regions markedly mammillated; the mucous membrane is thinner in the furrows than elsewhere, and the tubes in the same parts are shortened.

31	E. Wilkins.	29	F.	Fell out of a 3-story window which she was cleaning. Enormous effusion of blood under scalp; perfect unconsciousness; pupils immoveable. She sank and died the same night.	Body well formed; old cicatrices on legs. Blood effused beneath the arachnoid and in its cavity. Inferior part of right hemisphere much bruised on surface. Cranium fractured; bones not depressed. Lungs greatly congested. Anterior part of spleen slightly bruised. Viscera otherwise normal.	Reaction acid. No trace of congestion. Slight mammillation in cardiac and pyloric regions. Splenic region—tubes very healthy, epithelium fatty. Mid region—tubes show a tendency to disintegrate, nuclear deposits and fibroid thickening at their bases. Pyloric region—tubes healthy.
32	R. Anber.	27	M.	Admitted with dropsy of 3 weeks' standing. Had rheumatic fever 12 years ago; no palpitation since. Complexion pale and waxy. Urine smoky; highly albuminous. Had pain in back. The dropsy increased, and he died in about 7 weeks.	Considerable œdema of lower limbs and scrotum. Some serum in both pleuræ and peritonæum. Left lung rather compressed; right œdematous at back part. Heart healthy. Liver weighed 6½ lbs.; its edges much rounded. Capsule of spleen thick and opaque. Kidneys enlarged; surfaces smooth and mottled.	Surface covered with acid chocolate fluid. Splenic region—tubes tolerably healthy. Mid region same, with some nuclear and fibroid formation at bases of tubes. Pyloric region—tubes very much obscured by fibroid formation. Mucous membrane somewhat acted on and altered by acid contents.
33	E. A. Smith.	13	F.	Was quite well until 3 months ago; since when her feet and legs began to swell, and were so 14 days. Pain and palpitation occurred after anasarca had ceased. Much loss of flesh; appetite good. Loud systolic mitral bruit. Cough and bloody mucous expectoration. She improved a good deal, but in about 6 weeks had an attack of bilious vomiting with weight and pain at chest after food This subsided in great measure under treatment. But she sank gradually, and died about 3 months after admission. Urine was very albuminous at the last.	Body universally anasarcous; very pale. Patches of great congestion and of extravasation of blood in right lung. Left less congested; much compressed by the greatly enlarged heart. Pericardium adherent. Mitral valve apparently efficient; other valves healthy. Kidneys healthy. Liver gorged with blood.	A large quantity of grumous dark matter (altered blood) lining the surface; it contained very much yellow granulous pigment, and numerous sarcinæ. There was emphysema of the sub-mucous tissue. In all the three regions the tubes were tolerably healthy.

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
34	L. Famin.	16	F.	Has lost much flesh; was well and strong 3 months ago. Has latterly felt weak, and out of health. Much pain in abdomen. Bowels relaxed; night sweats; cough dry. Abdomen hard, tense, tender. Signs of softening tubercle in the apices of lungs. Appetite bad; slept badly. Sank gradually.	Body emaciated; extremities anasarcous. Very numerous miliary tubercles in lungs. Bronchial glands tuberculous. Heart healthy. Peritonæum thickened; scrofulous deposit in it, and in omentum and mesenteric glands. Intestines vascular and adherent to each other by means of scrofulous deposit. Mucous lining of ileum at lower part ulcerated. Some small tubercles in kidneys and spleen.	Reaction acid. Mammillation of mid and pyloric regions. Splenic region contained numerous small ulcers, the size of a pin's head. No marked injection anywhere. Splenic region—tubes tolerably healthy, but the continuity of their line was often interrupted, either by complete excavations or by wasting of the tubes on their free or their deep ends. There were nuclear deposits in the sub-tubular tissue and in the mucous membrane. Mid region—tissue in nearly the same state; a cyst was seen in one nuclear deposit at the free surface. Pyloric region—tubes much obscured by fibroid formation. The mid and pyloric regions were covered with yellowish green mucus.
35	G. Clark.	55	F.	Admitted moribund; having suffered for some time from cough and dyspnœa, with general anasarca of lower limbs for about 10 weeks.	Body well made; general dropsy. Lungs œdematous, and lower parts softened; right pleura almost full of yellow fluid. Old pericardial adhesions, and local thickening of visceral layer. Both ventricles of heart greatly dilated. Mitral valve somewhat thickened and rigid at its margin. Aortic valves abnormally thin. Much fluid in peritonæum. Kidneys very dark, hard, congested, and cysted. Liver very dark, nutmeg appearance. Spleen dark and very firm, with an opaque, hardened capsule.	Mucous surface injected much; mammillated; lined with bloody mucus; not acid. Splenic region—tubes tolerably healthy. Mid region—tubes tolerably healthy; black pigment in the tops of the short villi; a cyst seen lying near the surface. Pyloric region—tubes much obscured; not wasted. Epithelium exuded abundantly from tubes in mid-region; it consisted chiefly of finely-granulous matter, free nuclei, and small cell particles.

36	H. Jacobs.	37	M.	He had an apparently old spinal curvature; suffering severely from dyspnœa, with cough and difficult expectoration. Chest full and resonant; ribs not moved in inspiration; loud, prolonged expiratory rhonchi. Was much relieved by copious cupping; but in a few days the dyspnœa returned and he died.	No disease of vertebræ; only a considerable anterior posterior curvature. Both lungs very emphysematous in front; bronchi congested, and loaded with muco-pus. Heart large; valves tolerably healthy. Kidneys congested; other viscera healthy.	Mucous membrane of a reddish colour, lined by a layer of dark chocolate-coloured mucus in its splenic half, and by a paler mucus in pyloric half. Reaction highly acid. Splenic region—mucous membrane thin; dark-stained, semi-translucent, and soft; tubes do not appear wasted, but altered by self-digestion. Mid region—tubes healthy, but rather altered by acid. Pyloric region—tubes healthy, unaltered.
37	W. Oliver.	30	M.	Admitted with pretty severe hæmoptysis of 1 week's duration. Had had before similar, but less severe attacks. Had had cough a long time, was much emaciated and very weak. Sputa became in 9 days purulent and free from blood. There were signs of tubercular disease at both apices. He took meat at first, but afterwards his appetite failed. He sank and died in 6 weeks after admission.	Both lungs contained tubercles and vomicæ; a large cavity in the left apex was lined by a smooth membrane. Muco-purulent fluid in bronchi. White pericardial patches. Heart healthy, abdominal viscera also.	Mucous membrane slightly injected; lined with yellowish mucous fluid; acid. Tubes quite healthy in all three regions; epithelium rather fatty in splenic; some inter-tubular and sub-tubular nuclear formation in pyloric.
38	J. White.	42	M.	A dark-haired, robust, muscular man; not fat. Had stricture, for which he was operated on by perineal incision. He died in 6 days, from diffuse cellular inflammation and slight peritonitis.	Much hypostatic congestion in back part of both lungs; they were otherwise healthy, as well as all the other viscera.	Surface smooth; pale. Some congestion in splenic region. The tubes of this part are very tolerably healthy, but altered by self-digestion. Mid region—tubes indistinct: in many spots there are nuclear deposits which are most considerable in the deeper parts of the mucous tissue, but which extend sometimes quite through it,

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
						destroying the involved tubes; in some parts the whole tubular tissue is completely pervaded by the nuclear deposit, and the tubes quite atrophied. Pyloric region—aspect uneven; tubes completely atrophied, black, wasted, and imbedded in a mass of fibroid tissue; basement membrane quite lost.
39	J. Goodacre.	34	M.	Ill 4 months with catarrh, and a sediment in his urine; pain in passing water, and pain in back. Has not lived hard. Urine contained much albumen and pus. He was very low, and could give no satisfactory account of himself.	Heart healthy. Lungs full of tubercles and cavities. Liver and intestines appeared healthy. Long bands of adhesion between the left lobe of the liver and the colon, and the opposite wall of the abdomen. Left kidney riddled by suppurating scrofulous deposits; some deposits of same kind in cortex of right. Scrofulous ulceration of left ureter. Miliary tubercles and extensive ulceration of the mucous membrane of the bladder. Much emaciation.	Mucous surface pale throughout. Splenic region—tubes tolerably healthy, but in some measure altered by self-digestion. Mid region—tubes tolerably healthy, but obscured by intestitial fibroid formation. Pyloric region—tubes very much wasted, scarce seen at all amid the great quantity of fibroid formation pervading the mucous tissue.
40	J. Haylis.	63	M.	Coachman.–Injured his left side 12 months ago; abscess formed just below the left costal cartilages at end of 6 months. He lost appetite; had much indigestion; got much thinner. In 5 weeks he returned to work, but another abscess formed. On admission there was a hard, brawny swelling over carti-	Lower limbs œdematous. Lungs œdematous, otherwise healthy. Peritonæum opaque and thickened. Several large cysts in left kidney; right not of healthy appearance. Liver hard, thickened, and contracted. Old adhesions and induration round liver and spleen. Two or three sloughy fistulous openings in skin of epigastrium led to and opened into a large sloughy	Cardiac portion pale; mid region blackish, discolored; pyloric third occupied by a large scirrhous growth, which formed a sloughing surface covered with fungous growths. Splenic region — tubes tolerably healthy, but tending to disintegrate, and encroached upon by fibroid formation. Mid region—tubes quite gone; tissue thoroughly infiltrated with nuclei and granular matter, fatty here and there. Some groups of pale vesicles were seen in the

				lages of false ribs and region of stomach, and 2 external fistulous openings. Appetite bad; can take no meat; has flatulence. A fecal smell was perceived from the ulcerated part. He sank, and died in about 1 month.	"foyer," communicating both with the transverse colon and stomach. Anterior wall of stomach in one third of it pyloric region destroyed by malignant ulceration. Cortical tubes of kidneys very much broken up; numerous cysts in medullary.	mucous tissue, and not far from the free surface. Basement membrane remained. Muscular coat was thickened, not the submucous. The cancerous mass consisted of fibres externally, and of villi formed chiefly by columnar epithelium internally.
41	Caroline Austen.	6	F.	Died, apparently from asthenia after scarlatina; was ill rather more than 3 weeks. Urine highly albuminous. Some diarrhœa occurred, and bed-sores formed.	Body pale; thin. Lungs exhibit in numerous parts patches of a pale colour, somewhat elevated and indurated; in other parts there are patches of dark congestion; some of the indurated patches contain puriform matter. Kidneys large and flabby; cortical tubes obscured by interstitial fibroid formation; some of them healthy; epithelium of others wasted, and tube dilated.	Stomach empty. Reaction not acid. The mucous membrane in all three regions was perfectly healthy; tubes quite natural.
42	H. Newt.	42	M.	6 or 7 weeks before his admission he had arrived from Egypt; had good health while abroad, except that on two occasions he had attacks of pain and gnawing sensations at epigastrium, with diarrhœa. Was confined to bed 3 weeks before admitted with cough, expectoration, pain in right side, and short breath; was much emaciated; there were five irregular crepitations	Body in tolerably good condition. Some fluid and fibrinous exudation in pericardium; white patch on heart, which was healthy. Left lung œdematous; right compressed by copious pleural effusion; a few tubercles in its apex. Some red fluid in peritonæum. Liver very large and adherent to diaphragm: it contained numerous masses of fibrine in various stages of softening; some of them were very large; one in the right lobe	Stomach dilated, except near pylorus; it contained a quantity of acid reddish fluid. Splenic region—mucous membrane exceedingly softened, quite translucent; tubes visible, but appearing as if half dissolved and reduced to faint shadowy streaks, containing opaque dots; their number did not seem diminished; no other trace of disease. Mid-region—tubes quite healthy. Pyloric region—tubes very tolerably healthy, but show some tendency to disintegrate; and there is some nuclear and fibroid formation encroaching on their bases, sometimes considerably.

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				throughout both lungs. In about 2 weeks he brought up a large quantity of thick pus, as from a cavity; was very low, and had diarrhœa, which continued, and he soon sank.	contained about a quart of curdy pus and fibrine. Colon and cœcum extensively ulcerated. Spleen friable. Kidneys rather large, with slightly adherent capsules.	
43	D. Clayton.	49	M.	Admitted December 7th, having suffered from palpitation and dyspnœa since June; never had rheumatism; no previous illness; his symptoms had come on quite gradually. A double bruit at base of heart, which was enlarged, and its action increased. Urine scanty, loaded, albuminous. Breathing soon became very laboured. He died in 1 week.	General anasarca. Left lung compressed by copious pleural exudation; a largish patch of thickening on visceral pleura. Right lung emphysematous, and some extravasation in it. Heart very large; white patch on its surface. Vascular walls somewhat thickened. Valves natural, except some slight thickening of the mitral. Commencement of aorta exceedingly thickened and indurated by calcareous and atheromatous deposit. Liver very large, congested, its edges rounded; a white patch in its capsule. Spleen congested; capsule thickened. Kidneys large and heavy; some horny deposits in their pyramids. Blood generally very fluid.	Rugæ strongly marked. Cavity quite empty. Whole surface throughout of a dark deep red, with only a little alkaline mucus in the furrows between the rugæ. Splenic region tubes healthy. Same in mid and pyloric. The capillaries were most strikingly and beautifully filled with blood, in every part, forming a fine plexus with very elongated meshes surrounding the tubes. Those at the mucous surface were much longer, and more highly congested than the vertical intertubular capillaries; there were numerous extravasations of blood around them, just beneath the basement membrane. There was no appearance of exudation taking place, the congestion, though so extreme, was in all probability passive from reflux of blood from the congested liver.
44	M. Burne.	27	F.	Is well in summer; has winter cough last four years. Gets no sleep; no appetite. Face and lips congested; breathing hurried. Signs in	Body well formed; of healthy aspect. Lungs do not collapse; very emphysematous, in some parts œdematous; lining membrane of bronchial tubes not congested; in	Splenic region—tubes extremely obscured by interstitial nuclear and fibroid formation; nuclear formations also in sub-tubular tissue; in some parts the tubes are exceedingly wasted, and their place occupied by massy

				lungs of capillary bronchitis, and of some consolidation. Dyspnœa increased, and she died in 24 hours.	some parts the lung tissue was in some degree solidified. Several fibrinous black nodules here and there, and interstitial black deposit. Mitral orifice is irregular, and its auricular surface is covered by a ring of granulations; the posterior flap is thickened, the anterior much shortened; other valves healthy. Seven large margins of lobules fatty. Kidneys hard and congested.	and extensive nuclear formations. Mid region—tubes much wasted, though still discernable; they are seen degenerating fattily amid a mass of nuclear and fibroid stuff, which is deposited here and there at the basis also of the tubes. Basement membrane absent. Pyloric region—tubes involved in abundant fibroid and nuclear formation, which has thickened the sub-tubular tissue also; tubes manifestly degenerating. Stomach contracted in middle; injected here and there; contained grayish acid chyme.
45	S. Howlett.	55	F.	Footman.—Has had good health in general. Had an attack "on lungs" 9 years ago; is subject to relaxed bowels. Skin cold; pulse rather week, quick; dyspnœa urgent; face dusky. Has spit up dark-coloured blood last few hours. Signs of consolidation in left front. He sank, and died rapidly.	A fine well made person. Upper lobe of left lung softened so as to break down readily, containing puriform matter. The other lobes of this lung and the whole of the right were highly gorged with bloody serum, and exhibited everywhere patches of dark congestion. Blood dark and fluid. Gall-bladder full of calculi. Other organs healthy.	Mucous membrane lined internally with greyish tenacious mucous. Mid region much injected with blood; black spots here and there. Splenic region—tubes in general tolerably healthy, but more or less wasted at their lower parts. Mid region—tubes healthy; surface covered by tenacious mucous containing orange pigment masses. Pyloric region covered by similar mucus; tubes extremely obscured by interstitial nuclear, granular and fibroid deposit, at least in some parts, others were found much less affected. Some separate nuclear masses encroached on the lower end of the tubes.
46	W. Barrett.	36	M.	Admitted emaciated, extremely depressed, suffering long from cough, and confined to bed with increasing weakness. Pulse quick; skin dusky; appetite good; took	Body in good condition. A large strumous abscess extending all over left elbow, not into joint. Some emphysema and a few tubercles in the upper part of right lung. Some in left. Mucous	Reaction feebly acid. Splenic region—tubes more or less obscured by nuclear and fibroid intertubular deposit; separate nuclear deposits in some parts; basement membrane of surface in several parts lost. Mid region—tubes in some parts healthy, in others

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				meat and wine. Sputa purulent and nummulated. He continued weak and low, with hectic. Sank in 10 days.	membrane of bronchi much inflamed and loaded with muco-pus. Strumous deposit in supra-renal bodies. Other organs tolerably healthy.	affected as those of splenic. Pyloric region—tubes much wasted and obscured by interstitial nuclear and fibroid deposit; some defined nuclear masses existed in the substance of the mucous membrane.
47	M. Williams.	30	M.	Admitted moribund, having suffered some time with cough and expectoration, with emaciation and increasing debility. He died in about 5 days.	Body in good condition. Tubercles and vomicæ in both lungs, with numerous pleural adhesions. Heart healthy. Numerous spots of ulceration in cœcum; tubercles in sub-mucous tissue of ileum. Liver, spleen, and kidneys healthy.	Reaction highly acid. Organ empty (as received). Mucous surface pale, mammillated in the mid-region. In all the splenic, part of the mid, and even of the pyloric region, the mucous membrane was in a very great degree destroyed by self-digestion, and the blood in the vessels changed to a dark-orange pigment. The tubes in the unaltered mucous membrane of the mid and pyloric regions were tolerably healthy.
48	Jos. Moore.	24	M.	Was ill only one week with catarrh and pain at lower part of chest. Had pyrexia and dyspnœa, with 5 crepitations at base of both lungs. Urine scanty and loaded; not albuminous. Expectoration abundant and frothy, afterwards became tinged with bright-coloured blood. He took a little antimony, afterwards calomel and opium, and was cupped; but the breathing became more embarrassed, and he died in 1 week.	Body in good condition. Both lungs much congested, at back part particularly, where there were small spots of extravasation. Heart very large; cavities dilated much; walls thickened. Valves healthy. Liver, spleen, intestines, healthy. Kidneys large, coarse, congested.	Reaction in no part acid. Mid and splenic regions highly congested, and covered with tenacious mucus containing black matter; pyloric region less congested, also covered with mucus which contained less black matter. The black matter consisted of yellow pigment. The tubes were very healthy in all the regions; some sub-tubular nuclear deposits existed in the splenic.
49	J. Marwood.	49	M.	Admitted, having had cough	Body largely made; integuments	Aspect of mucous membrane not healthy;

				and short breath 3 or 4 months, dropsy of legs for 1 week. No previous illness; no rheumatic tendency. Orthopnœa. Face pale and puffy. Urine scanty, clear, albuminous. Heart's sound remarkably weak and distant. Very little breath-sound in back, but coarse moist râles. Pericardial friction was detected after 2 days; and extended cardiac dulness. Same night he had a fit; right arm paralysed; coma increased; and he died in 5 days after admission.	anasarcous. Lungs rather emphysematous and œdematous; lower and posterior part of right partially consolidated and softened. Serous and fibrinous effusion in pericardium. Valves of heart dilated, and the anterior valve orifices enlarged. There was atheroma in mitral valve, and induration of the aortic flaps at their base, to a great amount. Peritonitis had taken place to some extent. Kidneys large, and contained one or two large cysts with firm fibrous walls: one of these was filled with a solid, fatty matter; surface of one kidney highly granular at one part. Liver large, with rounded margins and slight opacity of capsule. Spleen large, firm, and hard. There was a small empty old cyst in the right cortical stratum. Increased quantity of clear fluid in cerebral ventricles. Larger arteries at base of brain very atheromatous; aorta slightly. Blood generally very fluid.	it appears mottled and not smooth. Reaction not acid. An ulcer, the size of a half-crown piece, on posterior wall, at about the junction of the splenic and mid regions; it exposed the fibres of the muscular coat: close by it was the firm cicatrix of a former ulcer. On the anterior wall there was a smaller oblong ulcer, which had not penetrated deeper than the submucous tissue. Both ulcers had clean cut, adherent margins. Splenic region—tubes tolerably healthy; some nuclear masses at their bases, extending up among the tubes; capillaries much injected. Mid region—tubes completely atrophied, replaced by nuclear and fibroid deposit; basement membrane sometimes present, sometimes lost. Pyloric region darkened extensively by black pigment; tubes very much obscured by interstitial fibroid and nuclear deposit, and degenerating fattily. The black pigment formed masses lying in the superficial stratum of the mucous membrane.
50	C. Pearce.	11	M.	Suffered 1 year with symptoms of stone in bladder. Urine occasionally bloody, thick, muco-purulent, and alkaline. Micturition very frequent and painful. No stone could be detected by sound-	Body greatly emaciated. Peritonitis with fibrinous and purulent exudation. A large abscess in psoas iliac muscle, but not connected with diseased bone. Bladder divided into two cavities by a septum; much induration around	Mucous surface quite pale; reaction faintly acid. Splenic region—tubes tolerably healthy, but obscured by interstitial nuclear deposit. Mid-region in similar state. Pyloric also. Basement membrane in the two latter regions not distinct.

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
				ing. He was very pale and thin. An abscess formed and presented in right iliac region; it burst of itself; after which he sank rapidly, and died 6 weeks after admission.	its base. Mucous lining destroyed down to the muscular fibres. An ulcerated opening in the posterior part of upper vesical cavity. Kidneys in a most advanced stage of scrofulous disease. Other organs healthy.	
51	E. Stokes.	34	F.	A diminutive person, suffering 5 or 6 months from fits, in which she was quite unconscious. Amenorrhœa complete last 7 months. Was anæmic, ill-fed; had leucorrhœa and pruritus vulvæ. After 24 days she had a prolonged epileptic attack; after which she sank into coma and died.	Body somewhat emaciated. Arachnoid thickened in parts, with some yellow millet seed deposits upon it; its vessels congested. There were three or four calcareous masses in the arachnoid at the posterior part of right hemisphere. At posterior part of left there was a thickened mass of arachnoid, with much injection round it, and much fluid in its meshes: with this there was a kind of cyst connected which had caused some wasting of the convolutions. Brain natural; rather injected; two or three drachms of clear fluid in ventricles. Other organs all tolerably healthy.	Stomach extremely contracted; rugæ very marked; no trace of mammillation. Surface pale; reaction not acid. Splenic region—tubes in some parts tolerably healthy, in others well nigh obliterated by diffused nuclear deposits. There are more circumscribed deposits seen occasionally either in the deeper, or more superficial part of the mucous tissue; in the latter situation they cause depressions, such as exist in the mammillated state. Mid region—tubes healthy, but obscured at their bases by fibroid formation. Pyloric region—tubes very healthy, but rather obscured by fibroid formation extending up from the sub-tubular tissue.
52	F. Harris.	2¾	M.	Had had tænia; head enlarged and square shaped, probably from some effusion into ventricles. He got an attack of double pleurisy, of which he died after some days. Was very anæmic.	Body emaciated and pale. Lungs congested, but crepitant; compressed in some measure by abundant fibrinous and purulent exudation in both pleuræ. All the viscera healthy. Brain not examined.	Mucous surface quite pale; reaction acid; cavity empty. Splenic, mid, and pyloric regions all quite healthy; tubes natural, and their epithelium abundant.

53	C. Bishop.	46	F.	Cook.—Quite well until 4 years ago, when catamenia became irregular. Had then pain in head, giddiness and sickness; she got better until 6 months ago, when she had a fit; several have occurred since. Healthy aspect, good colour. Right side weaker than left, much pain in head, urine not albuminous. Left arm became rather rigid; she had several convulsive attacks, eyesight failed, and she died in about 6 weeks after admission; 10 days before death a carbuncle formed on neck.	An enormous quantity of fat on abdomen and among the viscera. Lungs and heart healthy, except a few cretaceous deposits in the former. Liver rather granular at anterior part, elsewhere healthy. Kidneys healthy. A patch of inflammatory softening in right corpus striatum and optic thalamus: an increased quantity of fluid in ventricles.	Surface quite pale, mammillated towards pylorus; covered with black matter, consisting of epithelial débris, remains of food, yellow pigment masses, and numerous sarcinæ. Splenic region—tissue altered by self-digestion, but the tubes seem to have been healthy. Mid region—tubes in some parts healthy, in others pervaded by diffused nuclear formation; or presenting among themselves or at their bases more circumscribed nuclear deposits. Pyloric region—the tubular tissue is in nearly the same state.
54	J. Chorley.	24	M.	Carpenter. — Relatives healthy. Has generally had good health. About 4 weeks ago he began to have pain in back and right side, and soon after his abdomen began to swell. Abdomen tender and distended, appetite bad, pulse 105, some cough and mucous expectoration. An indistinct tumour was observed in the upper and left part of abdomen; it did not increase remarkably, nor was there any great amount of ascites. The febrile state continued; he	Body emaciated, finely made, anæmic. Right pleura coated with areolated false membrane, and containing fluid. Left, coated similarly to a less extent, chiefly upon the diaphragm. Right lung œdematous at back part, somewhat congested. Left lung healthy, except a few sub-pleural miliary tubercles. Heart, kidneys, liver and spleen, healthy. There was an enormous quantity of scrofulous deposit in the sub-peritoneal tissue everywhere, causing all the viscera to be matted together into one mass. The intestines were ab-	Mucous surface very dark in the splenic region, and gradually becomes less so towards the pylorus; it looks uneven, is covered near the junction of splenic and mid regions by yellowish tenacious alkaline mucus, containing prisms of triple phosphate. Splenic region—tubes much obscured and atrophied by interstitial nuclear and fibroid formation, numerous subtubular nuclear deposits exist. Mid region—tubes in much the same state as splenic; pigmentary deposits in the mucous and sub-mucous tissue. Pyloric region—tubes in great part obliterated by fibroid formation.

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
				became gradually weaker, and died about 2 months after admission. Signs of pleurisy had been observed on both sides. His digestion at one time was pretty good.	solutely inseparable from each other.	
55	Millen.	63	M.	A grazier in good circumstances, who suddenly dropped down dead after having travelled 80 miles in a second class carriage in very severe weather. He had had a "fit" before. Arcus senilis existed.	Body fat, much fat in sub-serous tissue of abdomen and on heart. One slight white pericardial patch. Lungs healthy, except a little cretaceous deposit at the apices and some surrounding puckering. Heart very large, its valves appeared healthy, mitral orifice rather dilated. Walls of left ventricle not thickened, but presenting numerous patches of complete fatty degeneration. Liver, kidneys, and spleen, healthy.	Reaction acid. Mucus membrane injected at various spots, slightly mammillated in pyloric region. Splenic region—tubes tolerably healthy, a notable amount of nuclear formation in the subtubular tissue. Mid region—tubes perfectly healthy. Pyloric region—tubes tolerably healthy, more or less obscured by fibroid formation, their lower ends convoluted or drawn up into groups.
56	C. D.	1	F.	Ill 5 weeks, had at first croupy cough and fever, with convulsions and opisthotonos, afterwards some retching and sickness. She did not die comatose. No food was taken for at least 24 hours before death.	Kidneys enlarged, mottled. Lungs and heart healthy. Liver gorged with bile.	Surface quite pale, cavity empty. Reaction acid. Splenic region—mucous membrane almost entirely gone, sub-mucous tissue exposed, rendered translucent, blood in its vessels converted into yellow pigment. Mid region and pyloric—tubes quite healthy.
57	L. Clarke.	47	F.	Had cough and expectoration 8 or 9 months. Bowels open. Tongue furred. No sleep. No appetite. Pulse rapid and	Body greatly emaciated. Right pleura obliterated. A cretaceous obsolete scrofulous mass, and an empty vomica in upper part of	Mucous surface pinkish from injection, covered in most part of its extent by a tenacious chocolate-coloured mucus, which consists of a viscous plasma of faint acid

				feeble. Respiration in both sides deficient. Suffering much mental distress from death of husband. In spite of wine she declined, was very low and nervous, did not sleep; appetite was quite lost, so that at last she could take nothing but wine. Died 5 weeks after admission.	right lung. In left lung at upper part there was also a vomica and consolidation. White patches and streaks on pericardium. Right ventricle dilated, and anterior valve orifice enlarged. Some atheroma in origin of aorta and in mitral flaps. Kidneys gorged with blood, cortices mottled and rather fawn coloured. Some small cysts in broad ligament of uterus. Other viscera healthy.	reaction, imbedding multitudes of nuclear corpuscles, some celloid particles, and débris of food. Splenic region—tubes tolerably healthy, epithelium in lower part fatty. Mid region—tubes utterly obscured, if not completely atrophied by interstitial nuclear deposit. Pyloric region—tubes tolerably healthy, but much obscured by nuclear and fibroid formation.
58	Thos. Sheate.	57	M.	History of pleurisy 5 weeks before admission. Cough and muco-purulent expectoration. Tongue cracked and furred, brown. Pulse 100, no sleep; skin hot and dry. Signs of consolidation appeared in lower part of right side, and in right apex. Some delirium appeared at night; he became very drowsy, breath most offensive. Died in 17 days from admission.	Body in good condition. Left lung very œdematous. Right pleural cavity obliterated, all but a largish cavity at the upper and back part, which was full of purulent fluid, and lined with rather firm, recent fibrine. Upper part of right lung puckered, and contained three or four masses of cretaceous and putty-like scrofulous deposit. Middle and lower parts of right lung very much condensed, and contained several smallish-sized abscesses, full of fetid matter; there was no tubercle in their vicinity. Mucous membrane of bronchi inflamed. Heart healthy. Kidneys firm, with a yellowish cortex. Spleen pulpy, capsule thickened. Other organs natural.	Mucous surface pale, covered with pinkish, faintly acid mucus. Some mammillation in mid region about great curvature. Splenic region—tubes very healthy, slight trace of nuclear deposits at base of tubes. Mid region—tubes very healthy, but in some measure obscured by interstitial nuclear and fibroid formation, which is also going on in the subtubular tissue. Pyloric region—tubes tolerably healthy.

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
59	J. Greenfield.	53	M.	Systolic mitral murmur; liver enlarged; pain referred to it; effusion into both pleuræ; some dropsy. After having suffered from the effects of these conditions, he improved and was discharged; but after 14 months, dropsy came on again, and dyspnœa. Heart's action was irregular; pulse weak; veins of neck distended; urine deep coloured and clear. He died in a few days.	Gray thin hair; universal jaundice; anasarca of legs; much yellow fluid in peritonæum; heart very large; valves healthy; a white patch on surface; some opaque thickening of endocardium of left ventricle; lower lobe of left lung much compressed by abundant pleural effusion; upper pretty healthy; right lung everywhere adherent by old attachments to walls of chest, except below and behind, compressed, highly congested, upper lobe softened; capsule of liver much thickened; parenchyma dense, and yellow, and firm. Kidneys seemed tolerably healthy, but were unduly firm.	Surface in splenic and mid regions very dark, almost black in spots; it contained a large quantity of whitish chyme, highly acid. Splenic region—tubes almost utterly broken up, and reduced to a mass of nuclei and granular globules, mingled throughout with black pigment globules. Mid region—tubes in a very great measure broken up, and their place occupied by diffused nuclei and celloid substance; the basement membrane, however, was often distinct in this and the splenic region. Pyloric region—villi beautifully distinct, with their basement membrane, but tubes utterly obscured, if not obliterated, by circumscribed and diffused nuclear deposits. There was no pigment in this part.
60	W. Hopkins.	41	M.	For 3 weeks had pain and swelling in outer side of left thigh, which obliged him to leave his work as horse-keeper. Health has been generally good, but has not had substantial food last year; lives in a bad, dirty neighbourhood. Abscess was opened, but diffuse inflammation came on, which spread to the knee-joint. He sank, and died 1 month after admission.	Lungs contained numerous small secondary deposits in an early stage; liver very fatty; heart and kidneys healthy; synovial membrane of knee-joint inflamed, with purulent fibrinous exudation extending to it along the periosteum of the femur from the seat of the abscess.	Surface of dull pinky tint. It contained a dark acid fluid. Splenic region—mucous membrane rather thin; tubes have a decided tendency to atrophy, some subtubular nuclear deposits encroaching on tubes. Mid region—tubes generally healthy; they are shortened and obscured in some spots, corresponding to mammillating depressions. Pyloric region—tubes tolerably healthy, but much obscured by nuclear and fibroid formation, which involves also the corium.

61	C. Gillmore.	29	F.	Aspect tolerably healthy; not anæmic. Dysphagia 4 months; a mass of enlarged glands on left side of neck; much mucous matter rejected, in which were seen numerous large cells, opaque with oil molecules, apparently from the gastric tubes; reaction of matters vomited not acid (on one trial). Always delicate. Digestion pretty good until last 12 months; during that time very bad; beef-tea causes a burning sensation in stomach. After some days, much bloody fluid was brought up; she became less and less able to swallow, and died 6 weeks after admission, greatly debilitated.	There was an encephaloid tumour on the left side of the neck, pressing on the œsophagus, and causing ulceration of the upper third of this canal, and of the glottis, and parts around. The middle of the œsophagus, for about 2 inches, was not more than $\frac{1}{3}$ inch diameter, and opened by a slit-like orifice into the inferior part, which appears natural, but is choked up by a thick sebaceous matter, consisting of altered epithelium. Heart, kidneys, and liver healthy; right lung contained some tubercles at apex; left was full of tubercles, with a small cavity in apex.	Stomach rather large, elongated, very much depressed, contracted in the middle; contained much turbid, dirty yellow, acid fluid. Surface palish. Splenic region—tubes pretty healthy, but tending to disintegrate, with considerable subtubular nuclear deposits, encroaching sometimes on the tubes. Mid region—tubes healthy, but epithelium very fatty and wasted. Pyloric region—tubes tolerably healthy, but partly obscured by large nuclear deposits occupying the substances of the mucous membrane, as well as diffused more uniformly between and among the tubes.
62	Ann Rolf.	74	F.	Admitted in a state of insensibility; vomiting frequently. She fell down suddenly while walking across a room. Pupils contracted and insensible. Died next day.	Body emaciated; angular dorsal curvature; heart healthy; lungs pretty healthy in front, but back parts much engorged and condensed; liver healthy; both kidneys granular; a clot of blood and some serum in left ventricle of brain, and an effusion of blood under right side of cerebellum.	Surface pale, covered with much slimy, transparent mucus, highly acid. Some mammillation in mid and pyloric regions. On posterior surface of pyloric third, near its junction with the mid, there is an ulcer with smooth, thinned edges, of squarish shape, just exposing a vessel in the sub-mucous tissue. Tubes in all the three regions very healthy.
63	R. Nelson.	52	M.	In early life a jockey, latterly a nurse. Has been operated on for fistula in ano;	Tubercles and vomicæ in both lungs, with much inflammation; liver rather granular at anterior	Surface of dull, dirty pink tint, cavity nearly empty, reaction feebly acid. Splenic region—tubes more or less wasted, some-

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
				last 9 weeks had had bleeding from anus; cough, expectoration, diarrhœa, and emaciation about 3 months; signs of mischief in left chest; urine not albuminous; diarrhœa came on; he sank and died in a few days after admission.	part, fatty, and pale; heart healthy; kidneys highly granular; mucous membrane of rectum affected by old inflammation of dark slaty colour; sub-mucous tissue much thickened, some spots of ulceration, and some minute abscesses.	times completely, their place occupied by nuclear and fibroid deposit. Mid region—tubes very much atrophied by diffused nuclear and fibroid formation, with large nuclear deposits both at their bases and among the tubes. Pyloric region—tubes very much, almost entirely, atrophied by interstitial fibroid formation, with large nuclear deposits in the substance of the mucous membrane.
64	M. Jones.	25	F.	Housemaid. Has generally had very good health. Ill 11 days. A mottled rash on chest; abdomen tympanitic and rather tender; urine albuminous; it continued so throughout until her death, about 10 days after admission.	Body well made. Lower lobe of left lung highly congested, softened, and containing little air; right lung in nearly same state behind; heart and liver healthy; kidneys hard, but healthy in appearance; 3 ulcerated patches of Pyer's gland in ileum; rest of canal healthy.	Surface covered with reddish non-acid fluid; cavity nearly empty. Splenic region much injected; tubes in some parts tolerably healthy, in others much obscured or even wasted by sub-tubular and intervening nuclear and fibroid formation; here and there there are nuclear masses in the midst of the tubes. Mid region—tubes very healthy, but slightly obscured by fibroid formation. Pyloric region—tubes tolerably healthy, their lower ends in some measure convoluted.
65	W. Golding.	17	M.	Recent inguinal hernia; operation; signs of peritonitis; vomiting; death. Vomited fluid strongly acid.	Body rather decomposed; traces of peritonitis; adhesions and puriform matter round intestines. Heart, liver, and kidneys healthy; both lungs very much engorged at back parts. A portion of ileum, 1 inch long, was dead and sloughy; the part above the stricture was highly congested.	Cavity contained a large quantity of dark grumous, scarcely acid fluid; in this were numerous masses of dark yellow matter. Splenic region—tubes tolerably healthy, some nuclear masses encroaching on bases of tubes. Mid region—tubes in some parts very healthy, in others invaded by fibroid formation, extending upwards from the corium. Pyloric region—tubes generally healthy; but there are some large nuclear deposits between them, and at their bases.

66	Thomas Bacon.	41	M.	Ill 8 months, with symptoms of pulmonary phthisis. Anæmic aspect. There were all the signs of large cavities in the lungs.	Body much emaciated. Liver and kidneys pale, but healthy.	Surface pale, covered with tenacious non-acid mucus. Splenic and mid regions—tubes very healthy. Pyloric region—tubes very much obscured, if not destroyed, amid an abundant infiltration of nuclei and fibroid tissue; there were large nuclear formations in the sub-tubular tissue and corium. Lower ends of tubes often gathered up into opaque bunches of convolutions. Some parts much more affected than others.
67	A. Felby.	34	F.	A servant, single. — Had suffered with symptoms of bronchitis 17 days, had similar attacks before.	Lungs highly œdematous, congested; a little old tubercle at apices, general adhesions of both pleuræ. Heart, liver, kidneys, and spleen, healthy. Anterior edge of liver rounded, somewhat; surface of capsule thickened, and adherent to diaphragm. Body rather thin and pallid.	Surface smeared with acid mucus, most abundant in pyloric region; the mucus contains numerous sarcinæ. Splenic and mid regions—tubes very healthy. Pyloric region—tubes not healthy, their lower parts convoluted, obscured by interstitial nuclear and fibroid formation.
68	J. Oates.	48	M.	Before his admission bruised his chest severely by a fall, which caused much extravasation of blood over the right ribs. He had suffered from cough and pain in that side a long time, was exceedingly weak, and had ruined his health by drinking. He looked 10 years older than he said he was. A small venesection relieved his dyspnœa much, but he soon sank into a state of prostration, in which he sunk.	Body in good condition, muscular. A large quantity of turbid, dirty greenish sero-purulent fluid in right pleural cavity, both layers coated with recent lymph. Ribs not injured. Both lungs quite healthy. Heart rather large, but healthy. All the abdominal viscera healthy.	Surface darkish, except near pylorus; marbled aspect about lesser curvature; a kidney-shaped ulcer on posterior wall near the lesser curvature, and several dark red spots in its vicinity. Reaction feebly acid. Splenic region—tubes seem to be tending to disintegrate. Mid region—tubes indistinct, but epithelium abundant; there are some circumscribed nuclear deposits, and diffuse nuclear and fibroid formation. Pyloric region in same state.

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
69	— Eash.	90	F.	A nurse in Marylebone Infirmary, died apparently of old age; had some slight bronchitis.	Limbs spare. Much fat on abdomen and among viscera. Both lungs œdematous and engorged posteriorly; a mass of grayish induration in anterior edge of right. Liver healthy, some chronic thickening of its capsule. Kidneys highly granular, atrophied to one half their normal size. Uterus enlarged, retroverted, its cavity much enlarged and lined by a bloody coagulum.	Contracted except in splenic region, contained some thin, feebly acid, chocolate coloured fluid. Surface throughout of a rather dirty, slaty aspect. Splenic region—mucous membrane appears thinned, tubes excessively wasted, débris remaining here and there, with fatty contents, and some rather large cystic formations; these are all imbedded in a dense roof of fibroid tissue, which is traversed by a great number of yellowish streaks, consisting of oily molecules. Basement membrane perfect, with numerous oily vesicles below it. Mid region—basement membrane perfect, tubes converted into a coarse granular and fibroid tissue, containing celloid corpuscles and much free oil. Here and there are seen groups of convolutions, the remnants of tubes whose outlet is obliterated. Pyloric region—mammillated in some degree, tubes wasted and lower ends gathered into bunches, with much granular and oily deposit under the basement membrane. There were a few massy nuclear deposits.
70	E. Hunt.	26	F.	Married. Suckling 1 year and 10 months, is extremely emaciated. Had 1 month ago an attack of acute pain in abdomen, with fever and diarrhœa. Abdomen enlarging last 3 weeks, is tense,	Great emaciation. Much clear fluid of reddish colour in both pleuræ, compressing lungs considerably. Lungs, heart, and pericardium healthy. Peritonæum much thickened, opaque, and vascular, contained 2 quarts of yellowish	Contained a great deal of acid, semi-fluid matter, like white gooseberry jam. This consisted of large quantities of débris of food, mingled with very numerous fragments of columnar epithelial lining of fossulæ. There was some fissuring of the surface in the splenic region, but no mam-

				tender, and fluctuates. Pulse 132, feeble. Urine scanty and loaded. Had scarce any appetite. She was tapped, with some relief, but 14 days after had much diarrhœa, and then complained of violent pain in stomach after taking any food. Was tapped again, with some relief, but 1 week after she was attacked with vomiting of a very large quantity of dark bloody fluid, and died.	serum. A large ovarian tumour existed on the left side, non-adherent, it consisted of a lowly organised fibrinous product. There was a similar smaller tumour on the right. Uterus and abdominal viscera healthy.	millation; the tubes were tolerably healthy, but there was some diffused nuclear deposit, and some fibroid formation encroaching on the basis of the tubes. Mid region—tubes healthy. Pyloric region—tubes more or less atrophied, with much interstitial nucleated fibroid formation. Duodenum healthy, villi opaque, with oil drops of chyle being absorbed.
71	M. A. Locke.	35	F.	A cook, subject to winter cough, admitted December 13th, having had 3 weeks ago a violent attack of dyspnœa, tightness of chest, and pain at lower border of right side. Tongue dirty, appetite bad, very thirsty; lips purple, covered with herpes. Pulse 120, small and weak. Much cough, with copious prune-juice mucous expectoration. Physical signs of broncho-pneumonia. She improved a good deal, but had some attacks of vomiting, and once frothy stools. She sank and died unexpectedly, about 1 month after admission.	Body in tolerable condition. Right lung consolidated, excavated in middle and upper parts by cavities containing offensive, purulent, and grumous matter. No tubercles. There were several very small masses of softening yellow fibrine in the lungs, and the bronchial tubes were very full of thick mucus. The right pleura was almost wholly obliterated, the left contained Oj of serous fluid, and some fibrinous exudation. Left lung healthy, except in one part about the centre, where there existed one or two softening fibrinous masses. Heart natural, but the fibrine in the right cavities was in parts softened, pasty, and of a dull yellowish-white colour. Recent	Splenic part darkened by acid acting on blood, in some degree self-digested; some mammillation about lesser curvature. Splenic region—tubes tolerably healthy, but altered by self-digestion; some black pigment grains in their interstices. Mid region—tubes very tolerably healthy, a few small subtubular nuclear deposits. Pyloric region—tubes much obscured, amid a granulous and oily fibroid stroma, and more or less atrophied. Mucus on surface consists of tenacious plasma imbedding granular matter, altered nuclei, large cells from the tube and flakes of columnar epithelium; it is much more decidedly acid in the splenic than in the mid region. This abnormal mucus seems to be an unhealthy secretion from the tubes.

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
					peritonitis, with serous and fibrinous effusion. Liver and spleen much softened. Kidneys large and glossy. Uterus and appendages natural.	
72	— Tucker.	64	M.	Cough and bronchial expectoration during the last winter; hæmoptysis occurred some time ago, and again to a greater amount shortly before death.	Heart healthy. Lungs universally adherent to walls of chest; no tubercles; some masses of induration in various parts; much œdema of pulmonary tissue. Kidneys healthy. Liver tolerably healthy; a patch of thickening on its surface. Spleen small and soft, with surrounding adhesions.	Surface generally pale and smooth; marked mammillation towards pyloric region; — this part covered with viscid, glassy, acid mucus. Splenic region—tubes pretty healthy, but altered by self-digestion, dark pigment granules are dispersed through the tissue. Mid region — tubes very tolerably healthy. Pyloric region—tubes very much obscured by interstitial fibroid formation.
73	— Wiffin.	2	M.	Had scarlatina, ulcerated sore throat, and swelled glands; he became debilitated, and kept screaming continually till near death. Urine was albuminous; but there was no marked dropsy. He took only beef-tea and milk for some days.	Lungs collapsed at some parts near the borders; rather condensed at back parts, but still crepitant; traces of bronchitis. Heart, kidneys, spleen, and liver, healthy. Brain pale and wet. Skin and all the organs very pale.	Cavity empty; reaction very feebly acid. Splenic, mid, and pyloric regions show tubes quite healthy. Some nuclear deposits in splenic region at bases of tubes.
74	— Mills.	68	M.	Was an habitual sufferer from rheumatism; got an attack of dyspnœa, with symptoms resembling those of acute bronchitis, and simultaneous disappearance of pains from the joints. He was bled	Lungs highly emphysematous, and œdematous. Bronchi somewhat inflamed. Heart's muscular tissue soft; one aortic flap stiffened by a ridge of bony deposit, the other valves healthy. Liver and spleen healthy. Kidneys very	Surface in splenic region caused by fluid of acid reaction, and darkened here and there by altered blood. Part of the mid and of the pyloric regions are quite pale, and covered by dense non-acid mucus. Splenic region—tubes seem to have been tolerably healthy, but are much altered by self-

				with relief, but afterwards got worse, sank, and died.	much wasted by large cysts formed in their substance.	digestion. Mid region — tubes generally very healthy. Pyloric region—tubes imbedded amid much nucleated fibroid tissue; their lower ends in process of being gathered into branches.
75	M. E. Crawford.	4 months.	F.	Ill 1 month, with so-called decline. Bowels relaxed; bilious fluid stools.	Body pale; very much wasted. Lungs, heart, liver, spleen, kidneys, all healthy. The lower part of ileum had its mucous lining softened, and covered with bile-tinged and slimy pale mucus; it was not materially injected. The large intestine was darker externally than natural; the mucous membrane of the cæcum was of a slaty colour, and presented numerous spots of inflammatory injection, which in the lower part were converted into actual ulcers. Whole mucous tissue thickened.	Surface quite pale, covered with tenacious non-acid mucus. Tubes healthy, in all the three regions.
76	W. Whyles.	40	M.	Had good health, except a hydrocele, which had been cured 2 or 3 years before. Without previous ailment, except pain in the back occasionally, his legs had begun to swell, and face also. Aspect sallow, with red patches on cheeks. Pulse quick, regular. Tongue pretty clean. No evidence of disease in heart or lungs. Urine not albuminous, but he had all the	Body well made. Left leg inflamed; muscles softened, and containing much semi-purulent and bloody fluid. ℥vj of bloody fluid in left pleura. Both lungs at their lower part of a very dark, dull hue, softened. Much cretaceous matter in some bronchial glands. Heart very soft and flabby; cavities somewhat dilated; right anterior ventricular orifice very large. Endocardium blood-stained. Aorta atheromatous. Liver	Surface pale throughout, covered with a thin layer of acid slightly viscid mucus, containing much columnar and tubular epithelium. Splenic region—tubes appear atrophied, wider apart than natural, with much coarse nuclear and granular matter in their interstices. Mid region — tubes in process of being atrophied; they lie buried amid a mass of nucleated fibroid matter, in which are seen numerous fat-cells; they do not form a regular continuous row. Pyloric region—tubes in same state, and their lower parts gathered up into bunches.

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
				aspect of a man suffering from renal disease. After about 14 days, diffuse cellular inflammation came on, urine became albuminous and bloody, he sank and died.	soft and greasy. Kidneys rather granular and flabby, mottled and vascular their cortices greatly wasted in spots. Spleen soft. Other organs natural. There was a cavity in the liver containing matter like the débris of hydatids.	
77	G. H——.	21	M.	Suffered 2 years with dysentery, and latterly had ascites.	There was universal cancerous infiltration of the sub-peritonæal tissue, with a large mass involving the rectum and bladder. The organs were healthy.	Surface pale, covered with highly tenacious neutral mucus. Splenic and mid regions—tubes perfectly healthy. Pyloric region—tubes everywhere indistinct, buried amid an infiltration of nucleated fibroid matter; their lower ends in some spots gathered up into branches.
78	R. Stratton.	47	M.	Subject to cough for 30 years, ever since he had measles; spits blood in streaks, mingled with yellow thick sputa; his legs swell; is emaciated. Face dusky, swollen; eyes prominent. Urine not albuminous. Had some diarrhœa. Pleural friction was observed in both backs. He got worse suddenly, and died 18 days after admission.	Body œdematous; some serum in peritonæum; blood generally fluid. Slight effusion in pericardium; a long thin band of adhesion over middle of right ventricle, and adhesions also about large vessels. Right ventricle thickened and enlarged. Left of natural size. Aortic valves—only 2—thickened, their edges hardened and involuted; they were not efficient. Other valves healthy. Right lung everywhere adherent; its lower lobe gorged with black blood and serum; does not collapse; is soft and friable; its bronchial	Cavity contained a quantity of reddish chocolate-looking alkaline fluid. Mucous membrane much injected in splenic region;—in the middle it was quite of a dark red, in the pyloric of a slaty blackish-gray. Splenic region — tubes tolerably healthy, but there is a decided formation of nuclear fibroid matter, extending up from the corium among the tubes. Mid region —tubes in some parts extremely wasted by circumscribed and diffused nuclear deposits; in other parts they are tolerably healthy, and there is only some nuclear fibroid formation at the bases of the tubes, and encroaching among them. The intertubular capillaries are much injected, and

					tubes thickened and narrowed; upper lobes emphysematous. Left lung emphysematous; a small tubercular mass at its apex with puckering round it; otherwise healthy. Kidneys appeared healthy. Liver healthy.	there is in many spots a deposit of black pigment grains. Pyloric region — tubes tolerably healthy, their deep ends convoluted here and there; some interstitial fibroid formation; opaque fat masses in some of the villi, and black pigment deposited here and there.
79	J. J——	45	M.	Father of a large family. Had symptoms of phthisis some years. Suffered from diabetes 2 years. Average quantity of urine 24 pints daily; sp. gr. 1035. General anasarca at time of death.	Lungs full of tubercles; very large cavity in the left.	Reaction of surface markedly acid. Mucus of surface consists of homogeneous granular plasma, entangling débris of tubular and columnar epithelium with numerous torulæ. Splenic portion—mucous membrane rather darkened, thinned, and softened; tubes seem very healthy, but rather altered by self-digestion. Mid region — tubes very tolerably healthy, with a little interstitial nuclear formation. Pyloric region—tubes indistinct from intervening granular nucleated exudation.
80	H. Spillen.	56	M.	A potman.—Admitted unconscious, with very contracted pupils and hemiplegia of right side. Bowels freely acted on. He fell down suddenly and vomited, having, it was said, eaten a hearty dinner on the day he was attacked. He is in the habit of taking 5 pints of porter, besides gin, &c., daily. Died in 2 or 3 days.	No arcus senilis. Skin generally of a yellow hue. Dura mater very adherent to bones; vessels much congested. A thin layer of blood in sub-arachnoid tissue of cerebellum. Cerebral arteries slightly atheromatous. Central parts of brain much softened; ventricles much dilated;—left full of soft dark clot, right contained a little. Left corpus striatum and optic thalamus—broken down by extravasation of blood; and also septum lucidum. Traces of	Surface pinkish, smeared over with tenacious bile-tinged neutral mucus, in which were crystals of triple phosphate. Near the pyloric region and lesser curvature there are some spots the size of a small pea, which are incipient ulcerations, infiltrated by hæmorrhagic exudation. Splenic region—tubes very healthy. Mid region—tubes perfectly healthy. Pyloric region—tubes very much obscured, and more or less atrophied amid a copious infiltration of nuclear and granular matter; there are large nuclear deposits in the deeper layers of the membrane, containing much oily

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
					an old cicatrix in outer wall of right ventricle. Lower and posterior part of lungs softened and much engorged; some extravasation in parts. Left valve of heart thickened; slight atheroma of mitral valve and of aorta. Coronary arteries atheromatous. Liver highly scirrhotic. Capsule of spleen opaque; itself firm and hard. Kidneys congested and granular; their cortices wasted: much fat around them.	matter. In some sections, the tubes are almost wholly lost, and their places occupied by large nuclear deposits and granular and fibroid matter. In the situation of one of the small ulcers the surface was seen to be sunken, the basement membrane gone, and the tubes quite lost, while some remaining fibroid tissue was infiltrated with yellow pigment.
81	R. Randall.	17	M.	Sight failing since 6 or 7 years of age; has had some fits, and is half idiotic, otherwise has had good health. Cataract broken up. Some inflammation of eye followed, but soon yielded. 14 days after had febrile symptoms, followed by loss of power in his limbs, dilated pupils, staring eye. He rapidly got lower, speech failed and power of swallowing, and he died in 3 days.	Head well shaped. Superficial cerebral veins congested. Brain healthy. No fluid in ventricles. Lungs emphysematous and œdematous, and collapsed in some parts. Heart, liver, and kidneys healthy. Intestines, especially transverse colon, distended by flatus; Peyerian patches of ileum here and there much congested, and some large patches of inflammatory congestion in mucous membrane of cæcum and colon. Solitary glands very distinct; no congestion round them.	Cavity distended, containing grayish chyme feebly acid; surface pinkish. In splenic and mid regions—tubes tolerably healthy, but the mucous membrane is thinned at some parts, and the tubes shortened;—this change coincided in one instance with a diffused nuclear deposit in the substance of the mucous membrane. Pyloric region—lower halves of tubes so thrown into branches, that they look like conglomerate glands; they are filled with fatty epithelium. In some parts the atrophy of the tubes is more marked; there are distinct interspaces equal to two or three tubes in width, which are filled up by nuclear and fibroid formation, and there is much of the same also between the tubes.

82	J. Platt.	38	M.	Omnibus driver.—Not of steady habits; not a drunkard, but took spirits daily. Had a somewhat similar attack 16 years ago; health very good since, except slight winter catarrh. Voice very weak; much debilitated. Ill 3 weeks, having relapsed after a previous similar attack. Dyspnœa urgent; no ease in any position; legs highly œdematous. Expectoration scanty and dark. Urine loaded; not albuminous. Signs of engorgement of lungs. He got weaker, and sank in 5 days after admission.	Body pale; very robust and muscular; less anasarcous. Copious serous effusion in right, some in left pleura. Right lung consolidated to a great extent with solid exudation matter; tissue œdematous, softened, easily broken down. Left lung similarly affected, but to a less degree. Upper parts of both most affected. Heart very large; two aortic valves shrunk, thickened, and partially detached. Mitral healthy. Spleen much softened. Kidneys and liver healthy.	Cavity contained much watery and mucous fluid, slightly acid. Splenic and mid regions — tubes healthy. Pyloric region—tubes tolerably healthy, but showing a tendency to atrophy and to become bunched at their lower ends. In some parts they were more decidedly wasted. There were some small sub-tubular nuclear deposits, and more or less of diffused interstitial nuclear and fibroid formation. Duodenum injected; villi wasted and ragged.
83	M. Williams.	70	F.	Bed-ridden some months; had feverish and pulmonary symptoms; improved in a few days, so as to be able to take food well, but soon after rapidly sank. She took ℥iv of brandy 2 or 3 days before death.	Body rather wasted and pale. Lungs emphysematous and œdematous. Heart healthy, except some thinning of walls of right valve, and a little thickening of mitral flaps. Kidneys granular; rather wasted. Liver healthy-looking, but flattened with rather a large sub-serous patch of thickening. Spleen healthy and uterus.	Cavity so contracted, except at splenic end, as to resemble an intestine. Surface pale, with a little dotted injection; contains some darkish, non-acid fluid. Tubes in all three regions tolerably healthy. Some interstitial nuclear and fibroid formation in pyloric. Duodenum healthy.
84	J. Carroll.	58	M.	Had epileptoid fits 2 months, and perhaps longer, in which he had no convulsions, but was simply unconscious; there	Substance of brain healthy, but pale; ventricles distended. Lungs highly œdematous and congested at back parts. Heart strongly	Surface pale; reaction non-acid. Splenic region—tubes healthy, but their epithelium in lower ¾ths is remarkably opaque and fatty; the fatty opacity ceases when the

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
				was gradually increasing imbecility. He had hæmorrhoids, which bled much.	contracted; walls of left ventricle thick. Kidneys much wasted and highly granular. Liver and spleen healthy. Body thin and rather pale.	epithelium is diffused in the water around. Mid-region—tubes very healthy. Pyloric region—tubes gathering into bunches at some parts in their lower ends; no material increase of fibroid tissue. Duodenum healthy. There were some crystals of triple phosphate on the surface of the stomach and duodenum.
85	M. A. Harris.	10 months.	F.	A backward child; no teeth; ailing from birth; was suckled for 9 months. She had diarrhœa, and vomiting, and general emaciation.	Large intestine presented in its upper part numerous spots of tumefaction and injection, and in its lower numerous minute pinhole ulcerations. The mesenteric glands were considerably enlarged, not by scrofulous deposit. The ulcerations on the mucous membrane of the intestine showed under the microscope a distinct loss of tissue, with a large solitary gland lying in the sub-mucous tissue beneath.	Surface pale; reaction acid. Splenic region—tubes very healthy, but scarcely fully developed. Mid region—tubes quite healthy. Pyloric region—tubes quite healthy, forming a continuous row of simple parallel follicles.
86	J. Frost.	22	M.	Was taking mercury for syphilis before admission. Symptoms of fever. No sleep. Pain in head. Pulse soft, not frequent. Pupils afterwards became dilated. Tongue black, picked bed-clothes. He sank and died in 9 days after admission.	Body in good condition. Membrane of brain healthy; sinuses and cerebral veins much congested, as well as the substance of the brain. Ventricles filled with a slightly opaque serous fluid. Both lungs and heart healthy; 2 oz. of turbid fluid in pericardium; spleen soft and pulpy. Other organs healthy.	Empty, surface pale, smeared over with acid chocolate fluid, containing abundant débris of tubular epithelium, and a little pigment. Splenic and mid regions—tubes very healthy. Pyloric region—tubes not wasted; some local sub-tubular nuclear deposits, with interstitial nuclear and fibroid formation. Epithelium in lower parts very fatty.

87	W. Trowsdale.	45	M.	He had 2 or 3 attacks of cerebral symptoms, afterwards short breath, cough, and tremors; was very nervous. Had palpitation and pain in head. Appetite pretty good, took meat. He improved under treatment, but got again worse, had hallucinations before death.	Both lungs most highly emphysematous, bronchial tubes inflamed. Heart, liver, and spleen, healthy; liver much congested. Kidneys of natural size, capsules very adherent, surface uneven, some cortical tubes appear wasted, others are stuffed with dense granular matter.	Contained acid chyme. Surface in pyloric half much injected. Splenic region—tubes tolerably healthy, but much bulged and distended at their lower parts by epithelium; free fatty matter deposited underneath the basement membrane of the surface. In one part the lower ends of the tubes appeared to be giving origin to cysts. Mid region—the tubes show a tendency to waste, and to cyst formation, by distension of the blind ends; there are sub-tubular nuclear deposits, and some more diffused nuclear formation in the substance of the mucous membrane. Pyloric region—tubes fatty, and forming bunches at their lower ends, with much interstitial nuclear and fibroid formation.
88	M. A. Goose.	30	F.	Had rheumatic attack Oct. 3 and 19, after last was treated for heart disease. Ill 6 weeks, has had œdema of legs 3 weeks ago. Dry cough, dyspnœa, except when quite still. Loud mitral murmur at base and apex. Pulse 132. Enceinte 3 months. Urine high coloured, doubtfully albuminous. Much emaciated. Appearance became very bad, with heaviness and pain at epigastrium: 3 weeks after was much the same, could not take her food, dreaded to go to sleep for fear of being choked. Soon after	Body in tolerable good condition, extremities œdematous. Left pleura three parts full of fluid, much also in right. Lungs congested, œdematous. In upper part of left lung were 3 or 4 accumulations of softening fibrine and purulent fluid, surrounded by consolidated lung. No scrofulous deposit in any part. Pericardium universally adherent. Heart large, flaccid, mitral flaps rigid and opaque; bead-like fibrinous deposits along margins of aortic valves, and on auricular aspect of mitral. Kidneys, spleen, liver, healthy. Uterus equal a large orange in size,	Cavity large, containing an abundance of deeply bile-tinged acid (highly) chyme. Splenic and mid regions—rather altered by self-digestion, tubes very tolerably healthy. Pyloric region—tubes show a tendency to waste; there are nuclear formations in subtubular tissue encroaching among the tubes, and in some parts a good deal of interstitial fibroid formation.

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
				she miscarried. Urine became scanty and highly albuminous. She soon sank.	walls thin, very firm, its lining membrane dark, and roughened by fibrinous deposit. Veins in broad ligaments and ovaries contained fibrine and puriform dark coloured fluid. Left renal vein contained fibrine undergoing change.	
89	D. Brooker.	50	M.	Of aged cachectic appearance. Admitted January 13th for difficulty in passing urine, which had increased during the preceding 14 days almost to retention. No stricture. Urine highly offensive, containing pus. On 15th, an abscess was opened in the perinæum, and much pus was let out; after 2 days urine passed by this channel, and much pus by the urethra. Died by asthenia on 24th.	Body thin. All the organs of chest and abdomen tolerably healthy. On left side of bladder a pea-sized orifice, opening into a very large abscess on left side and base of bladder, and extending into prostate. This abscess had been opened from the perinæum, the areolar tissue of which was sloughy. Urethra quite healthy.	Cavity empty, reaction neutral. Splenic and mid regions—tubes healthy. Pyloric region—tubes fatty in their lower parts, which are more or less gathered into bunches, with some interstitial nuclear and fibroid formation.
90	E. Lonergan.	24	M.	Was quite well until 10 months ago, when cough, emaciation, and debility came on. Has some anasarca, thick curdy expectoration, appetite bad. Urine highly albuminous. Appetite failed completely; he got lower, and died 1 month after admission.	Lungs riddled with vomicæ at their upper part, and full of tubercles. Kidneys enlarged and mottled.	Surface pale, healthy. Splenic region—tubes very greatly atrophied; the tissue infiltrated by nuclear deposit, both diffused and in masses. Mid region, in about the same state. Pyloric region—tubes in general very much atrophied, with considerable granular and nuclear interstitial deposit.

91	E. Taddenham.	27	F.	Ill 12 months. Breath very short, aphonia last week; has had some diarrhœa. Died in 8 days.	Body emaciated, chest very contracted. Tubercles and vomicæ in both lungs. Cordæ vocales ulcerated. Stomach and other viscera much pushed down, but apparently healthy.	Surface stained by bile, reaction feebly acid. No injection. Splenic region—tubes in some degree wasted, epithelium stunted and scanty, some interstitial fibroid formation. Mid region—tubes in some parts very much atrophied, in others less; some subtubular nuclear deposits, some interstitial fibroid formation. Pyloric region—tubes almost entirely atrophied, in some parts, amid an overwhelming infiltration of nucleated fibroid tissue, with nuclear masses in some spots among the tubes.
92	Ann James.	70	F.	Confined to bed for 4 or 5 years, had suffered long from chronic rheumatism, and had attacks of mental aberration. No dyspeptic symptoms. Died with bronchitis.	Brain wet, but healthy. Subarachnoid fluid increased. Slight thickening of arachnoid on convex surfaces of hemispheres, scarce any gland: Pacchioni. Lungs rather emphysematous, much congested and condensed at back part. Heart healthy; a white pericardial patch. Liver fatty. Spleen small, healthy. Kidneys wasted and granular. Body pale and thin, fingers and toes much distorted.	Contracted very much, contained some chocolate coloured, feebly acid fluid, fine dotted injection. Splenic region—tubes have perished extensively amid an infiltration of nuclei and granular matter, some large masses of nuclei are seen. Mid region, in nearly same state; large nuclear masses at bases of tubes. Pyloric region—tubes much obscured and wasted from the same interstitial deposit. Duodenum appeared healthy.
93	B. Patrick.	49	M.	Coachman, has lived freely. Has had an eruption and swelling of legs 3 days. Pulse full and hard. After venæsectio ad ℥xij, purpura was less, but hæmaturia came on. Urine very scanty. After cupping on the loins, blue pill and diuretics; the quantity of	Body well made, purple spots on various parts of surface. Blood extravasated at back of scalp. Brain very wet, rather more fluid than natural in ventricles, not otherwise diseased. Lungs very congested, œdematous, some extravasation in lower part of right. Heart's cavities rather dilated,	Surface much injected, rather marbled, with two patches of black staining near middle of great curvature; pyloric region covered with tenacious mucus, reaction nowhere acid. Splenic region—tubes in great measure broken up amid an infiltrating fibroid stroma, with large nuclear masses in the deeper parts of mucous membrane. Among the débris there was an oval cyst

No.	Name.	Age.	Sex.	History.—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
				urine increased, but continued to contain blood. Blood has also passed in the stools and vomited. He sank and died in 15 days after admission.	otherwise normal. White pericardial patch. Liver very firm and cirrhosed, with opaque capsule. Spleen very soft, capsule opaque. Kidneys very large, smooth, with mottled surfaces and swollen cortex. Blood very fluid.	filled with granular cells. Basement membrane well marked. Mid region—tubes extremely wasted amid an infiltration of nuclei and fibroid matter, with sub-tubular nuclear deposits. Black pigment is deposited in the stained spots, chiefly between, but partly also within the tubes. Pyloric region, tissue in same state, groups of yellow pigment molecules here and there.
94	M. Ensor.	52	F.	Subject to bronchitis 3 years or more, had no dyspeptic symptoms. Sank gradually.	Body emaciated, pale. Right lung condensed in parts, and œdematous; the bronchi somewhat dilated, and their mucous lining thickened. Left lung much condensed and congested, bronchi dilated and inflamed. Heart healthy and liver. Kidneys rather wasted and granular. Spleen solid, of dirty gray aspect on anterior surface.	Splenic and mid region—tubes fairly healthy. Pyloric region—tubes more or less obscured and atrophied by interstitial nuclear deposit. Reaction acid. Duodenum healthy.
95	Ann Coles.	69	F.	Tenant of an almshouse, was 1 week in union; not ill, but feeble, and complained a little of short breath. She made no complaint of dyspepsia. Died quietly in bed.	Heart—walls flaccid, cavities loaded with blood. Lungs completely adherent to walls of chest, their upper parts full of miliary tubercles, and much condensed and consolidated. Kidneys, liver, and spleen, tolerably healthy.	Surface presents several black-stained spots, and contained much chocolate fluid of acid reaction, generally pale. Splenic region—tubes tolerably healthy, but rather altered by self-digestion; blood turned into yellow pigment. Mid region—tubes healthy, altered in some parts by self-digestion; at one dark-stained spot there were a vast number of large black grains within the tubes. Pyloric region—tubes generally healthy. Duodenum healthy.

96	W. Burnell.	16	M.	14 days ago inflammation of right leg came on without any cause. An abscess occurred in middle finger of left hand 1 week before. After admission several incisions made, much purulent discharge. Urine found albuminous. His respiration became quick, and cough came on. Pulse became excessively rapid; he got lower and died.	Body rather thin. Heart healthy, some turbid serum and films of fibrine in pericardium. Left lung much congested at back and lateral part, fibrinous layers on pleura. Right lung rather congested at back part, healthy; a cyst about the size of a walnut impacted in the hilus, and near it several enlarged glands. Kidneys, liver, and spleen, quite healthy. Pus in right sub-clavicular articulation and in right knee.	Surface smeared with a little yellow, feebly acid fluid. Tubes healthy in all the three regions, rather altered by self-digestion in a part of the splenic, which was red stained. Duodenum appears healthy to the eye, but the villi are utterly ragged and wasted, they have no basement membrane, and are full of fatty granules; reaction of the surface pretty strongly acid.
97	W. Newstead.	44	M.	A retired grocer, of full habit, subject to piles. While warm with walking was exposed to cold and damp. Afterwards had numbness of feet and legs. Has now pain in lower part of back, has lost use of legs 3 months. Urine very acid. Pulse quiet. After 14 days erysipelas attacked the left forearm, he became exhausted and sank.	Body very obese. Diffuse cellular inflammation of left arm. Brain healthy, except an increase of sub-arachnoid and ventricular fluid. Spinal meningeal vessels congested. Spinal cord healthy, except for space of 1 inch opposite 4th and 5th dorsal vertebræ, where it was much softened, but not discoloured. Spleen very soft. Kidneys soft and greasy. Bladder and other organs natural. Lungs greatly engorged. Heart flabby and soft, its lining membrane blood-stained.	Surface slightly pinkish, covered with a dirty chocolate coloured layer, consisting of columnar and tubular epithelium, remains of ingesta, and numerous dark orange pigment masses in mucous plasma. This is highly acid. Splenic region—tubes quite healthy, and little affected, though the sub-mucous tissue and fat-cells are decidedly altered by the acid. Mid region—tubes quite healthy. Pyloric region—tubes healthy, with some fibroid nucleated formation encroaching on their bases. The smell of this stomach was most peculiarly rancid and penetrating.
98	H. Knight.	62	M.	Labourer. Ailing last 3 months, but for last 18 has had incontinence of urine when the bladder has been at all full. Much emaciated lately, appetite very good. Very weak. Some diarrhœa	Body in good condition. Lungs and heart healthy. Pleuræ adherent. Peritonitis and purulent exudation in abdomen. Intestines, liver, and spleen, healthy. A circumscribed abscess at fundus of bladder; it was hypertrophied and	Surface injected in splenic region, pale elsewhere, covered with a thin layer of neutral mucus. Splenic and mid regions—tubes healthy. Pyloric region—tubes very much obscured, and in great measure atrophied by interstitial nuclear formation, with large nuclear deposits extending some dis-

No	Name.	Age.	Sex.	History—Disease fatal.	Post-mortem Examination.	Condition of Stomach.
				last few days. Has had a cough for years. Urine light coloured, soon becoming alkaline, contains pus and casts (?). The catheter drew off a good deal of urine after he had passed water. After some days, pain in the abdomen, and green vomiting came on, and he sank.	fasciculated, contained a large quantity of purulent urine, ureters and pelvis of kidneys dilated. Kidneys softened, injected with numerous small abscesses disseminated through their substance. A firm tumour of the size of a small walnut projected into the bladder; it was of prostate gland structure, contained in a firm, fibrous capsule.	tance along the bases of the tubes and among them. In one section there was a largish cyst, with a caudate offset.
09	M. Trivett.	77	F.	An inmate of the workhouse some years, had no particular symptoms of dyspepsia. Ill about 1 week, with febrile symptoms; improved, but one night was found speechless, after getting out of bed, and died in an hour.	Body rather thin and pale. Heart appeared healthy. Lungs emphysematous and œdematous. Liver and spleen tolerably healthy; kidneys also, but shrunken at one part of surface. A very large fibrous tumour in the pelvis.	Cavity much contracted in the middle; surface rather injected, especially at the pyloric part, where it is covered with some tenacious whitish mucus. No acid reaction. Splenic region—some trace of mammillation; tubes tolerably healthy, but in some spots there is an extensive infiltration of nuclear particles among them. Mid region—tubes tolerably healthy. Pyloric region—tubes much obscured by nuclear and fibroid interstitial formation, their epithelium wasted and fatty.
100	W. Smith.	13	M.	Suffered with symptoms of morbus cordæ; scrofulous 6 months or more. Appetite generally good, took food well. After the opening of a large abscess he got emaciated and weakened; feverishness came on shortly before death, and there was at last some bleeding from the wound.	Lungs congested, but free from tubercle. Heart, liver, kidneys, and spleen, healthy. Numerous enlarged glands, solid in the lower part of ileum, with much surrounding congestion. Hip-joint disorganised, cartilages destroyed, bone carious	Surface quite pale everywhere. Cavity contained a good quantity of dark acid fluid. Splenic and mid regions—tubes tolerably healthy, some abnormal fibroid and nuclear formation at their bases in some spots. Pyloric region—tubes quite healthy.

EXPLANATION OF THE PLATES

Illustrating Dr. Handfield Jones's Paper on Morbid Changes in the Mucous Membrane of the Stomach.

Fig.

1. Stomach tube, containing black pigment grains at its lower part.
2. Vertical section of splenic region of mucous membrane of the stomach, the tubes all broken up, and their débris mingled with very numerous black pigment globules. Some of the altered tissue is shewn more highly magnified at (*a*). The mucous membrane was of a very dark colour, in some spots black.
3. Vertical section of mucous membrane of stomach in mid-region. A deposit of nuclear particles is seen encroaching on the tubes.
4. Vertical section of mucous membrane in the mid-region, showing complete wasting of the tubes, and their place occupied by granular and oily detritus and fat-vesicles. The basement membrane still persists.
5. Vertical section of mucous membrane in pyloric region, the tubes much obscured and atrophied by interstitial nuclear deposit. A cystic cavity with a caudate offset is seen in the substance of the mucous membrane.
6. Vertical section of mid-region of mucous membrane of the stomach, showing the tubes utterly wasted, and replaced by fibroid tissue. At (*a*) are shown two cyst-like remnants of the tubes which were brought into view by acetic acid. The basement membrane of the surface still exists.
7. Atrophied epithelium from stomach tubes.
8. Catarrhal mucous from surface, it contains some cells from the tubes, numerous nuclei, and a columnar particle.
9. Healthy epithelium; cells from the tubes and columnar particles.
10. Vertical section of gastric mucous membrane in mid-region, showing several papilloid masses of epithelium exuding from the follicles.
11. Vertical section of upper part of mucous membrane in the mid-region, showing a cyst lying in a nuclear deposit. Diameter of cyst $\frac{1}{66}$ inch. It contains nuclei, and a clear fluid.
12. Vertical section of mucous membrane in pyloric region: the tubes in the upper part have disappeared, in the lower they are undergoing fatty degeneration. Much oily matter is dispersed through the tissue. The basement membrane is gone.
13. Vertical section of mucous membrane of mid-region of stomach. The tubes are almost entirely obliterated, and the basement membrane is lost.

Fig.

14. Vertical section of mucous membrane of stomach in the mid-region. (*a*) Basement membrane. (*b*) Tubes degenerating. (*c*) Corium thickened. (*d*) Submucous tissue.
15. Remnants of three tubes breaking up into granular tracts of nuclei.
16. Vertical section of mucous membrane of stomach about the mid-region. The tissue is pervaded by nuclear deposit, and the tubes are indiscernible. Nuclei are seen also in the corium and submucous tissue. At the lower part are two opaque fatty masses; the basement membrane is seen in the upper border.
17. Vertical section showing the mucous membrane fissured in two places down to the corium.
18. Vertical section passing through a notch on surface of mucous membrane: the notched part is covered by a layer of nuclei. Tubes partially disintegrated.
19. Mucous membrane of stomach; the tubes atrophied, the whole tissue pervaded by nuclear deposit.
20. Vertical section of pyloric region, showing the villi and the nucleated substance within them. This substance was abnormally developed in the deeper part of the mucous membrane.
21. Vertical section of mucous membrane of stomach, containing a nuclear mass in its substance. The mass is in part displaced, and an empty cavity left. The surface is covered by a layer of disintegrated epithelium. (*a*) Separate nuclear particles.
22. Vertical section of mucous membrane, showing a large cystic cavity occupying its whole thickness. (*a*) Basement membrane of surface. (*b*) Mucous membrane pervaded by nuclear deposit. (*c*) Corium.

Fig 1.

Fig 2.

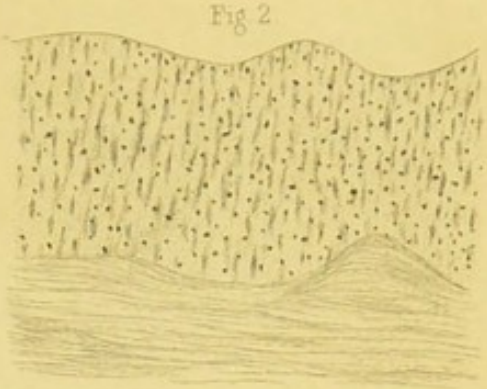


Fig.3.

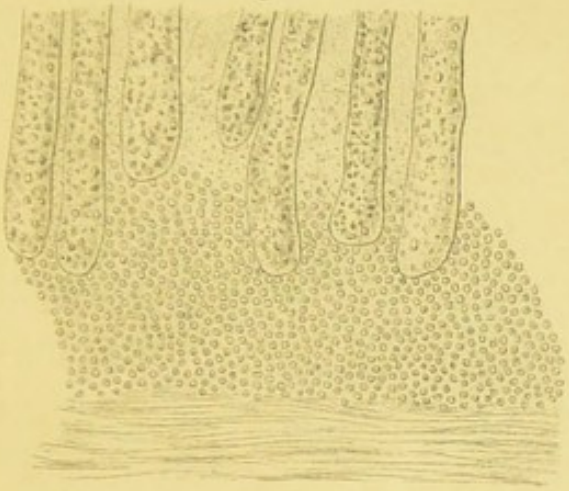


Fig. 4.

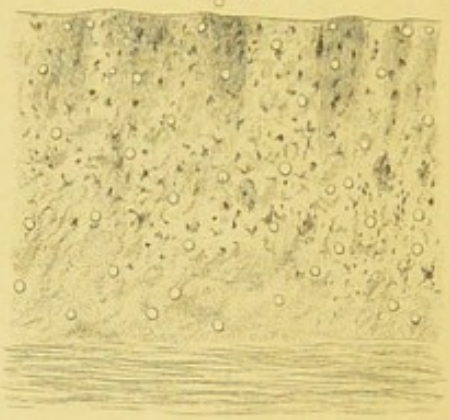


Fig. 5.

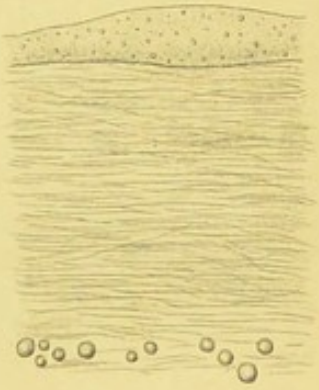


Fig. 6.

Fig. 7

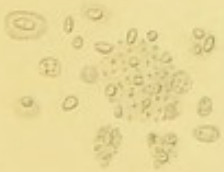


Fig.8.

Fig.9.

Fig.10.

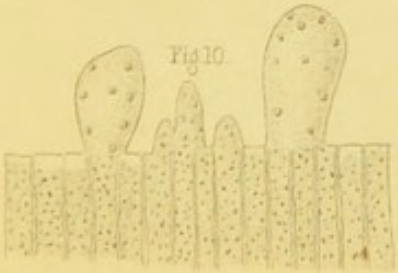


Fig.11.

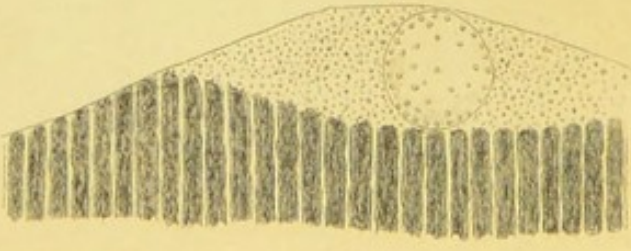


Fig. 12.

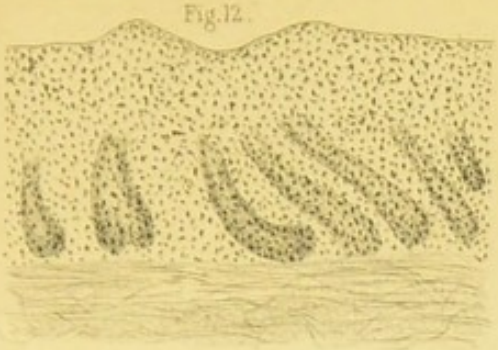


Fig. 13.

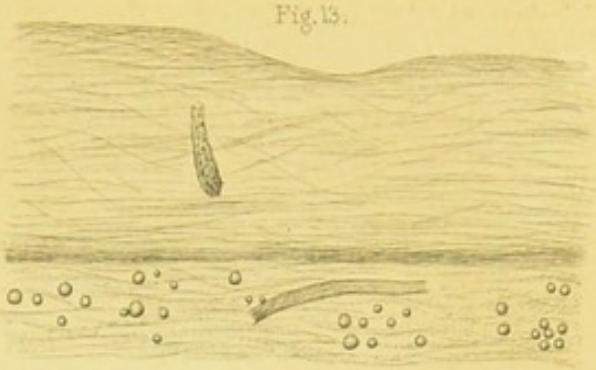


Fig. 14

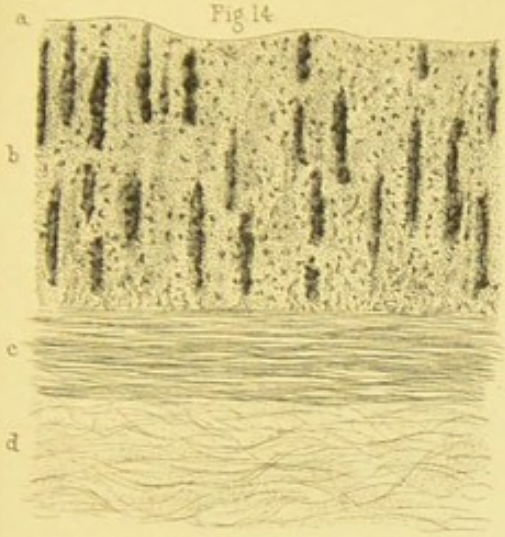


Fig. 15.

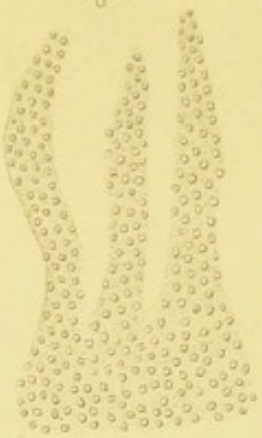


Fig. 16.

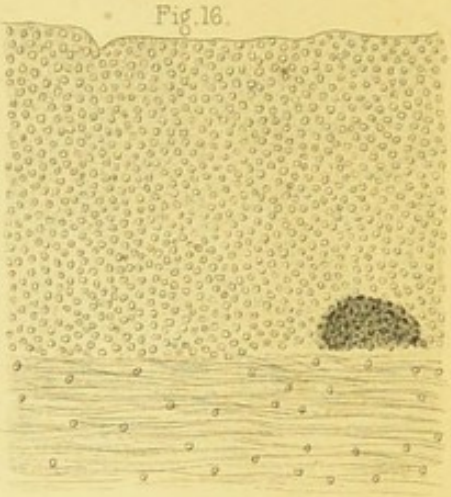


Fig. 17.

Fig. 18.

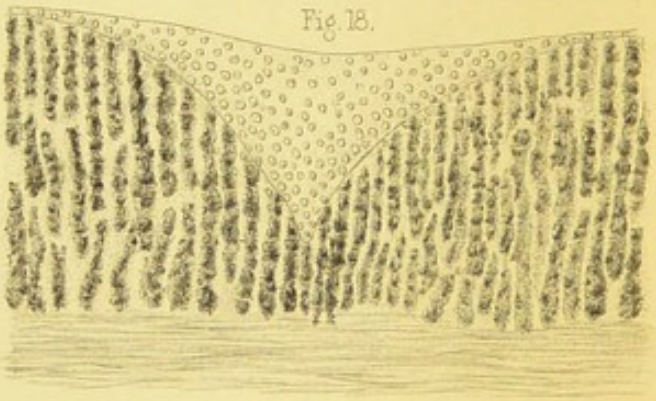


Fig. 19.

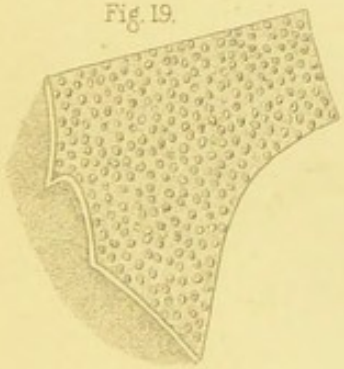


Fig. 20.

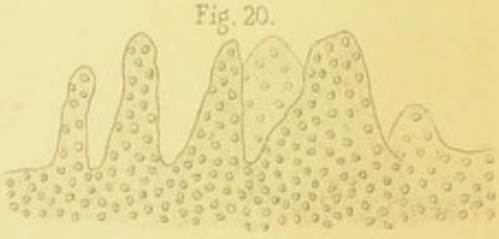


Fig. 21.

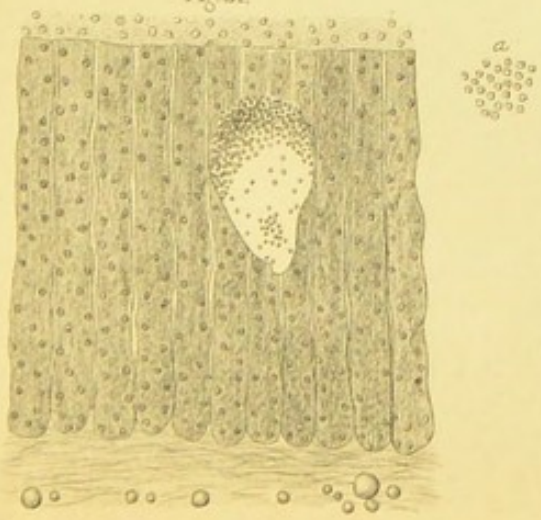
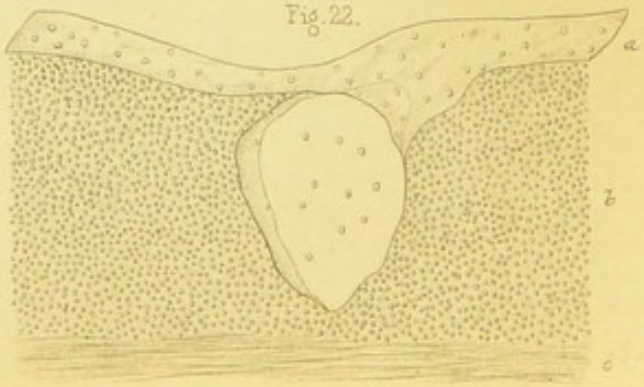


Fig. 22.



C.H. Ford Lith.

Ford & West Imp Hatton Garden.