ON ALBUMINURIC ULCERATION OF THE BOWELS.

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I PRESUME to bring before the Society an accompaniment and result of renal disease to which I have formerly briefly referred, but which has not yet received the notice which is due to it, whether as regards its pathological interest or its vital importance. I am not aware that the concurrence of ulceration of the bowel with albuminuria found mention until 1876, when, in the Croonian Lectures of that year, I ventured to adduce two cases of this enteric lesion in connection with the granular kidney, unexplained by either typhoid or tubercle and not to be accounted for otherwise than as related in some manner to the renal disease.¹ The late Dr. Greenhow presently enabled me to add a third, which, with the two before mentioned, was cited in my second edition of 'Albuminuria' in 1877, with the recognition that the intestinal change resulted from the renal,

¹ 'British Medical Journal,' April 22nd, 1876, p. 560.

though at that time it was not apparent how the association was brought about. In the following year I called the notice of the Pathological Society to a case of "Ulceration of the Bowel as a Consequence of Renal Disease,"¹ with the particulars of a microscopic examination of the bowel, made by my former clinical clerk Mr. A. Shann, which revealed the hæmorrhagic nature of the process.

During the considerable time which has passed since these observations were published I have been on the watch for the enteric complication of albuminuria, which has long taken its place—at St. George's at least—among the things to be looked for in post-mortems relating to renal disease. I now propose to ask the attention of the Society to the experience which has accumulated, making use not only of my own cases, but also of those which have occurred in the practice of my colleagues, to whom I tender my thanks for their permission to do so. To avoid the length and tediousness of complicated narratives, I have condensed the records into a tabular form, which will present in brief the essential particulars. These have been for the most part gathered from the hospital post-mortem books, though I have occasionally been able to refer to my own notes in addition. The observations extend over forty years. The first case came under my notice when I was clerk to the late Dr. Bence Jones, though the connection of the ulceration with the renal disease was not recognised until later instances had thrown a backward light upon it, and enabled it to be recovered from a remote past to illustrate comparatively recent pathology.

I have brought together twenty-two cases of ulceration of the bowel, concurrent with albuminuria and not with any other condition by which the enteric lesion could be explained. In two of them there was also ulceration of the stomach, possibly of the same nature, and a single instance will be found concerning the same organ which must be ad-

¹ 'Path. Soc. Trans.,' vol. xxix, p. 117.

mitted to be of doubtful value, though of some interest in relation to the conditions under which it occurred. I have appended, with design to throw light upon the morbid process, eight instances of extravasation of blood without ulceration, but similar in place and circumstances to it.

With regard to the bowel, the ulceration was confined to the small intestine in eleven cases; confined to the large intestine in five cases; in five both were affected. In one the position of the ulceration was not more exactly defined than as "near the cæcum." Within the small bowel the region most frequently affected was the ileum, though no part was exempt. In the large bowel the colon suffered with the greatest frequency, though the cæcum was affected alone or with other parts of the bowel in three instances.

The ulcers were not associated in particular with any of the glandular structures of the intestines, but affected the mucous membrane without any obvious preference excepting in general terms for the lower part of the ileum. Peyer's patches were usually exempt, though in one instance (that of Williams) they were involved. The solitary glands of the cæcum were recorded in one case as intensely congested but not ulcerated. In several the valvulæ conniventes were found to be either ulcerated or congested, so that if the morbid process have any special choice, however rarely exercised, it would seem to be for these structures. In size the ulcers varied from two inches by one to spots no larger than the marks of raindrops. The ulcers were usually regular in shape, more or less circular, without thickening, and with "punched" edges. In some instances the ulcerated surface had become covered, as if by a process of healing, with a delicate membranous film (Jackson, Hissgen).

The most conspicuous characters of the morbid change were derived from hæmorrhage, old and new, in the neighbourhood of the ulcers. Pigmented stains and recent ecchymoses were common—the latter in situations, such as the edges of the valvulæ conniventes, where the

ulcerative process has been known to declare itself. The most important characteristic of the ulcers is their tendency to perforate and set up peritonitis, in other words their deep origin or penetrating character.

This introduces the minute anatomy of the ulcers and the morbid process to which they are due. The most constant factor, and that which presents itself as of the greatest significance, is extravasation of blood. The earlier observations which led to this conclusion have been corroborated by more recent ; I may refer especially to some microscopic examinations which Mr. Fenton has recently undertaken at my request. These relate to two preparations in our museum which had not hitherto been examined in section. They belonged to the cases of Hissgen and Parker ; and though they had been for fourteen years in spirit, there was no difficulty in recognising the hæmorrhage connected with the ulcers. It is probable that the effusion of blood in the submucous coat, which has been microscopically demonstrated in three instances, is the primary and essential lesion upon which the ulceration is consequent. The general fact of effusion of blood in connection with these ulcers rests on a much wider foundation than the few cases where it has been described with microscopic minuteness. Not only are ecchymoses and pigmentations continually associated with the ulcers, but intestinal hæmorrhages, particularly in the submucous coat, are not infrequently observed without ulceration in connection with advanced renal disease, hypertrophy of the heart, and retinal hæmorrhage. I have annexed a table which displays eight cases of this nature.

Besides the ulceration which has been described as belonging to the intestine, I have brought together three cases in which the stomach presented a similar change in similar circumstances. In two of these the stomach was ulcerated together with the bowel, and possibly by a similar process. One of the subjects was a child of eight, an age at which ulceration of the stomach is exceedingly rare. In this instance the gastric ulcer was surrounded by traces of

old hæmorrhage, while similar signs were abundant about the ulcers in the intestine. Putting aside the evidence of hæmorrhage in the stomach in this instance, the gastric ulcers were not noticeably different from those of common experience.

Putting all the observations together, we recognise in connection with chronic albuminuria a peculiar form of ulceration of the bowel which is associated with, and probably produced by, submucous hæmorrhage; while similar hæmorrhage also presents itself in the same circumstances unattended by ulceration. There is reason to believe that the stomach may, however rarely, participate in the same process.

I will take brief note of what may be called the foreign relations of the intestinal lesion and the association of hæmorrhage in the bowel with hæmorrhage elsewhere. In the total of twenty-two cases where the intestine was ulcerated, with or without the stomach, the retinæ were the seat of albuminuric changes, hæmorrhagic or otherwise, in nine. In the same series hypertrophy of the heart was recorded in nineteen, as if the intestinal lesion were but one of the cardio-vascular series.

Looking at the conditions of kidney found together with this ulceration in the twenty-two cases referred to, advanced fibrosis was present in all but two; in fourteen cases the kidneys were described as granular; in four as fibrotic, or in a state of interstitial nephritis; in two as well-marked examples of the large white kidney of nephritis. Assuming, as we may, that the large white kidneys were affected with interstitial as well as tubal inflammation, it is to be concluded that twenty of the twenty-two were in some phase of advanced renal fibrosis. Reverting to the two exceptional cases where renal fibrosis was not recognised: in one (Powell) the kidneys were certainly the seat of old disease, and were probably fibrotic, though not assuredly so. They were irregular in shape, had adherent capsules, and one presented a cicatricial depression. The other (Louisa Booth) was a case of lar-

daceous disease which has especial interest in relation to the ulceration of the bowel. The lardaceous disease was not the cause of the ulceration, but its result. There had been general dropsy, presumably renal, at the age of twelve. This appears to have been succeeded by the special ulceration, perforation, and a circumscribed abscess within the peritoneal cavity. The consequent profuse discharge by the bowel led to general lardaceous disease which superseded or masked the renal mischief, and proved fatal at the age of twenty-one.

The symptoms of this complication of renal disease present themselves usually towards the fatal close, though there is evidence in old cicatrices found after death that the ulceration is not always immediately fatal. The symptoms are those of bowel irritation, sometimes such as might belong to dysentery, with which are often associated those of peritonitis and perforation. In the course of these there may be certain reminiscences of uræmia; it is difficult to say how far the occasional obstinate vomiting may have this origin, though other manifestations of the uræmic state appear to be much in abeyance when those of the intestinal lesion are prominent.

The post-mortem observations before us show that peritonitis was present in about a third of the cases, in seven of twenty-two; and that perforation had occurred about half as often, in four of the number. The symptoms of irritation of the bowel are diarrhœa and griping. The diarrhœa is by no means always present; there may indeed be constipation and a need for purgatives. The diarrhœa is sometimes profuse, and the chief cause of the prostration which in these cases is apt to be the mode of death. The motions are often liquid, and like those of typhoid; rarely they contain mucus. The griping pain is often prominent, and is most marked after food. A boy (Charles Dodd), who suffered much in this way and died with peritonitis and perforation, furnished his own diagnosis as "a twisting of the guts." He had served a butcher and acquired the rudiments of anatomy.

One of the most noticeable symptoms is vomiting, which is often frequent and either spontaneous or readily provoked. A woman (Maria Jackson), under Dr. Bence Jones, had so much vomiting that for a time her disorder was attributed not to the kidneys but the stomach; sickness had been habitually induced by the sight of food and even by the sound of the dinner-bell. In some of the cases recorded it was a matter of doubt how far the vomiting was dependent on the state of the bowels and peritoneum, and how far uræmic. This symptom appeared most prominently when peritonitis was present. Hiccough was occasionally noticed.

Death is usually brought about by prostration and collapse, due either to the diarrhœa or to the peritonitis with or without perforation. Delirium was present towards the close in three of the twenty-two cases. The advent of the abdominal symptoms is usually succeeded by death in no long time; in five cases where this interval was recorded it varied from two days to over two months. In one which has been already referred to (Louisa Booth) there was evidence of albuminuric ulceration a year before death, which led to perforation, a circumscribed abscess, profuse purulent discharge, and lardaceous disease. In a minority of the cases (nine of twenty-two) no bowel symptoms were noted.

Without occupying the time of the Society with considerations which must be obvious, I will rest content with having invited attention, and that in somewhat more detail than before was possible, to a result of chronic renal disease which has hitherto received little notice, but which apparently belongs to a well-known class, for it is presumably of hæmorrhagic origin, is akin to the retinal alterations, and has relation to the cardio-vascular changes of which hypertrophy of the heart is the most constant indication.

The enteric manifestation has interest clinically as well as pathologically, for it commonly foretells the

approach of the fatal ending, and often brings it about in modes which have been sufficiently denoted.

In conclusion, I have to record my obligation to Mr. William J. Fenton for making the microscopic observations to which I have already referred in connection with his name, and to Dr. Rolleston for assisting him.

TABLES OF CASES.

Cases of Albuminuric

Name, physician, date.	Age.	Cause of renal disease.	Duration of renal symptoms.	Urine.	Kidneys, P.M.	Heart, P.M.	Retinæ.
Maria Jackson. Dr. Bence Jones, 1853. Croonian Lectures, 1876	30	—	6 months	Highly albuminous, sometimes bloody; low sp. gr.; casts	Granular, contracted; arteries thickened	L.V. hypertrophied	Much dimness of sight
Charles Dodd. Dr. Dickinson, 1872. Croonian Lectures, 1876	14	Stone? lithotrity at age of 3	3 years	Trace of albumen; casts; pale; low sp. gr.	Granular, contracted, fibrotic; right atrophied from stone	L. V. much hypertrophied; weight 8 oz.	Advanced albuminuric retinitis
Thomas Wilding. Dr. Whipham, 1878	39	A great drunkard; scarlatina in infancy	Edema 2½ months	Highly albuminous, sometimes bloody	Granular, contracted; weight 8½ oz.	Hypertrophied; weight 18 oz.; recent pericarditis	—
Francis J. Williams. Dr. Dickinson, 'Path. Trans.,' vol. xxix, p. 117, 1878	20	Scarlatinal dropsy at age of 6	14 years (?); polyuria 2 years	Highly albuminous; casts; pale, copious	Granular, contracted, fibrotic; weight 8 oz.	L.V. hypertrophied; weight 15 oz.	Advanced albuminuric retinitis
William Shrapnell. Dr. Whipham, 1878	24	—	2½ months	Highly albuminous; pale	Very granular; weight 11 oz.	Enormous hypertrophy of L.V.; weight 39 oz.; recent pericarditis; pulmonary apoplexy	—

Ulceration of the Bowels.

Renal symptoms.	Bowel symptoms.	Ulceration, P.M.	Disease bearing on ulceration.
No dropsy; obstinate vomiting throughout, thought to be uræmic; epistaxis	Obstinate vomiting; latterly griping abdominal pain and diarrhœa. Died of peritonitis	Turbid fluid in peritoneum; intestines glued together by recent lymph. Lower half of ileum thickened; showed red and dark patches of discoloration, and patches of ulceration of no great depth covered with thin membrane. Colon natural	None.
No dropsy; frequent headaches; obstinate vomiting regarded as uræmic; convulsions	Obstinate vomiting; griping pains in belly; abdominal tenderness; diarrhœa	Recent peritonitis. Lower two feet of ileum contained many ulcers, some of which were linear and corresponded with valvulæ conniventes; these often exposed peritoneum. Mucous membrane between swollen	None.
Edema, ascites, vomiting	Latterly diarrhœa and vomiting, with epigastric pains, especially after meals	Small ecchymoses, especially on valvulæ conniventes. In colon, for two feet below valve, small star-shaped and elongated ulcers, the latter transverse; edges congested	None.
No dropsy after original attack; great arterial tension, epistaxis; dyspepsia, vomiting	Nausea, vomiting, griping abdominal pain, tenderness; pain, especially after food; constipation, needed purgatives; mucus in motions	Purulent fluid in peritoneum. Many small ulcers in ileum, mostly in Peyer's patches, clean cut as if punched out, three of which had perforated. Lower half of ileum congested and pigmented. Colon pigmented and ecchymosed. Microscopic sections of ileum showed dark pigment mixed with blood crystals in submucous coat	None.
No dropsy; hæmoptysis, dyspnœa	No local symptoms; constipation, needed purgatives	Numerous ulcers in lower part of ileum and upper part of colon. In colon ulcers numerous near valve. In the middle of the ileum two old, practically healed ulcers, large as Peyer's patches. Recent ulcers small, roughly circular, and with raised edges. Hæmorrhages and pigmentation about ulcers. No peritonitis	None.

Name, physician, date.	Age.	Cause of renal disease.	Duration of renal symptoms.	Urine.	Kidneys, P.M.	Heart, P.M.	Retinæ.
Frederick Hissgen. Dr. Dickinson, 1879	27	—	2 years	Highly albuminous; sp. gr. 1008	Granular, contracted; cortices shrunk; hæmorrhages in Malpighian capsules	L. V. hypertrophied; weight 16 oz.	Albuminuric retinitis
Philip Parker. Mr. Holmes, 1879	58	A painter	—	—	Very granular; weight 10 oz.	L. V. hypertrophied; R. V. thin; weight 10 oz.	—
Edward Powell. Dr. Dickinson, 1878	21	—	Abscess of hip at age of 8 years; diarrhœa 2 months	Trace of albumen; scanty, high coloured	Both congested; capsules adherent; left irregular in shape, with depressed fibrous patch	Healthy; weight 10 oz.	—
Benjamin Cotton. Dr. Dickinson, 1881	46	Had dysentery in India	Edema 4 months	Albumen = $\frac{1}{2}$; scanty, latterly bloody	Large, white; weight 21 oz.	L. V. hypertrophied; weight 22 oz.	—

Renal symptoms.	Bowel symptoms.	Ulceration, P.M.	Disease bearing on ulceration.
No œdema; headache, vomiting	Much pain in belly for 40 days before death, especially about umbilicus, where was tenderness; constipation; hiccough; no diarrhœa; latterly delirium	Peritonitis and extravasation of fœces. Several perforations in ileum and many ulcers in various stages. Ulceration extended from middle of jejunum to middle of ileum. Ulcers generally clean cut; mucous membrane in their neighbourhood covered with thin filmy layer. Tips of valvulæ conniventes apparently first ulcerated. Peyer's patches not especially affected. Colon exempt.	None.
<p><i>Examination by Mr. Fenton, 1893.</i>—The submucosa is œdematous and swollen from the presence of recently extravasated blood. Around the hæmorrhages are signs of inflammation, <i>i.e.</i> small-cell infiltration, probably the result of the hæmorrhage. The vessels are engorged with blood, and the walls of the arteries are thickened. There are some pigment masses in the submucosa, probably evidence of former hæmorrhage. The peritoneum has recent lymph on its surface. The mucosa has entirely gone in parts, with, in some places, part of the submucosa; the removal has the appearance of having been effected by a process of digestion rather than by active inflammation</p>			
Admitted with fracture of thigh; no renal symptoms recognised	Bowels confined at first, then profuse diarrhœa with abdominal pain, tenderness, vomiting, and delirium. Sank from abdominal disturbance, which began 5 days before death	Peritonitis. Descending colon and sigmoid flexure thickened and "worm-eaten." Ulceration more or less continuous in these regions, with many recent hæmorrhages. Bowel nearly perforated in several places. <i>Postscript, 1893.</i> —After keeping in spirit punched-out appearance well shown. In many places round, sharp-edged hollows like indentations made by raindrops. <i>Examination by Mr. Fenton, 1893.</i> —Submucosa œdematous and swollen by recently extravasated blood. Small-cell infiltration around hæmorrhages, as in case of Hissgen, and probably from same cause. The vessels, especially the veins, distended with blood. Pigment masses present. The mucosa has in places been removed as in preceding case	None.
None beside diarrhœa	Obstinate diarrhœa for over 2 months, with exhaustion, delirium, and death	Several small ulcers of mucous membrane, surrounded by slate-coloured zones of old hæmorrhage, on valve and just above it. Congestion of small intestine and stomach	None.
Edema; some ascites	No bowel symptoms	Ulcer of the size of a sixpence in small intestine 2 feet above valve; ulcer clean, regular, pigmented. Congestion 6 inches above, but not about, ulcer	None.

Name, physician, date.	Age.	Cause of renal disease.	Duration of renal symptoms.	Urine.	Kidneys, P.M.	Heart, P.M.	Retinae.
Sarah Greenfield. Dr. Dickinson, 1882	39	Repeated pregnancies (?)	Head-ache 6 months	Highly albuminous; sp. gr. 1012; polyuria	Granular, contracted; weight 8 oz.	L.V. hypertrophied; weight 16 oz.	Albuminuric retinitis
Louisa Booth. Dr. Dickinson, 1883	21	General dropsy at age of 12, which lasted 12 months; œdema recurred 4 months before death	11 years (?); 4 months (?)	Latterly albumen = $\frac{1}{2}$; polyuria	Lardaceous; weight 9 oz.	Weight 6 oz.	—
Ann Harffery. Dr. Wadham, 1885	19	Scarlet fever in 1871; nephritis in 1873	8 years	Albumen = $\frac{1}{2}$; casts	Left kidney contracted and fibrotic; right tubal nephritis	L.V. much hypertrophied; weight 10 oz.	—
Ann Mackay. Dr. Wadham, 1885	15	Scarlatina in 1873 (?)	—	Albumen = $\frac{1}{2}$; smoky, scanty; casts	Fibrotic, contracted, pale; capsule adherent; weight 4 oz.	L.V. hypertrophied; weight 8 oz.	—
Ann Shaw. Dr. Champneys, 1888	49	Stricture of urethra (?)	—	Contained blood and pus; alkaline	Both granular; right atrophied; left enlarged and contained abscesses	Old mitral disease; weight 16 oz.	Hæmorrhages in both
George Windover. Dr. Dickinson, 1889	58	Painter; gout	—	Albumen = $\frac{1}{2}$; pale; sp. gr. 1012	Granular, contracted, cysted; weight 6 oz.	L.V. greatly hypertrophied; weight 22 oz.; recent pericarditis	Albuminuric changes in both

Renal symptoms.	Bowel symptoms.	Ulceration, P.M.	Disease bearing on ulceration.
No dropsy; headache, vomiting	Acute abdominal pain with looseness of bowels 2 days before death	Many pink injected patches on peritoneum. Many prominent congested villi on small bowel, some of which are beginning to ulcerate	None.
General dropsy at age of 12. One year before death showed symptoms of circumscribed abscesses in peritoneum, due (as was subsequently ascertained) to perforation of intestinal ulcers, no doubt due to former albuminuria; then constant discharge of pus from bowels, and consequent establishment of lardaceous disease, which affected liver, spleen, and kidneys. Recurrence of albuminuria and dropsy, with diarrhoea, vomiting, and prostration		Irregular ulcers in large intestine, some of which, in the sigmoid flexure, had perforated the bowel and were in connection with the abscess cavity outside; ulcers irregular in shape, with thin edges. General lardaceous disease, which was apparent during life	None.
No œdema latterly. Died with uræmia and convulsions	Pain in belly 10 days before death, which recurred in severe paroxysms; formerly constipation; diarrhoea latterly, abdomen resonant and tight	Ileum for 6 feet contained ulcerated patches stained with faecal matter. Ulceration connected with congestion and interstitial hæmorrhage. Some of the vessels plugged by coagula	None.
No œdema at any time; epileptiform fits; urinous smell in breath. Died with convulsions	None noted	Ulcers "near cæcum"—the largest 1 inch by $\frac{1}{2}$ inch. Cæcum and colon present many black patches of the size of pins' heads, due to intense congestion of solitary glands. Congestion present in other parts of bowel, but not to same extent	None.
œdema, vomiting; Died of uræmia	Vomiting (uræmic?). No distinct bowel symptoms	Large ulcer in middle of transverse colon.	None.
œdema, ascites	None recognised	Ulcers in transverse colon	None.

Name, physician, date.	Age.	Cause of renal disease.	Duration of renal symptoms.	Urine.	Kidneys, P.M.	Heart, P.M.	Retinæ.
Henry Webb. Dr. Ewart, 1890	52	Painter	—	Loaded with albumen	Large, white; not lardaceous; weight 16 oz.	Weight 14 oz.	—
Thomas Spaul. Dr. Cavafy, 1890	24	Calculi (?)	3 months	Cloud of albumen; pale; sp. gr. 1010	Both granular; stones in left; left weighed 1 oz.; right 7 oz.	Both ventricles hypertrophied; weight 18 oz.	Albuminuric retinitis; hæmorrhage in right
Henry Slemon. Dr. Ewart, 1890	56	Whiskey drinking (?)	—	Albuminous; scanty, bloody	Granular, contracted; weight 4 oz.	L.V. hypertrophied; weight 12 oz.	—
Jane Moss. Dr. Cavafy, 1890	48	—	3 weeks	Albuminous and lithatic	Fibrotic; contained old infarcts; weight 8 oz.	Both ventricles hypertrophied; weight 16 oz.	Normal
William Jones. Dr. Cavafy, 1891	66	—	5 years	Slightly albuminous; copious, pale	Granular, red, contained caseous masses; weight 12½ oz.	L.V. hypertrophied; weight 29 oz.; pericarditis	—
<i>Ulceration of Stomach possibly Albuminuric,</i>							
Jessie Bevan. Dr. Dickinson, 1888	17	—	2 years	Albuminous; low sp. gr.	Contracted, granular, fibrotic; weight 5 oz.	Great hypertrophy of L.V.; weight 16 oz.	Albuminuric changes

Renal symptoms.	Bowel symptoms.	Ulceration, P.M.	Disease bearing on ulceration.
Edema, headache, vomiting, dyspnoea, drowsiness	None noted	Two sharply cut ulcers in first part of duodenum. Mucous membrane of duodenum injected	None.
Headache, vomiting, dyspnoea; edema latterly	None observed	Ulcer in commencement of duodenum. Cæcum extensively ulcerated, with blood in mucous coat. Old ulcers in sigmoid flexure. Tar-like fæces in colon	None.
Edema. Died of uræmia. Had also cirrhosis of liver and ascites	None observed	Ulcer in ascending colon. Hæmorrhage in mucous coat of sigmoid flexure	None.
Edema; delirium	Diarrhœa; motions like those of typhoid	Intestines discoloured externally at intervals. Internally discoloured patches to a marked extent, together with ulceration in the duodenum. A few patches of ulceration in the jejunum. Hæmorrhagic patches in ileum and sigmoid flexure. The hæmorrhages were in the submucous coat, and evidently the primary condition, the ulceration being secondary	Scars at apices of lungs.
Much œdema; mitral systolic murmur; dyspnoea; epistaxis	None observed	One large and two small shallow ulcers in the first part of the duodenum; no thickening; no trace of new growth	None.

with or without Ulceration of the Bowel.

Edema, headache, vomiting	Epigastric pain after food (ulcers of stomach); much abdominal pain and vomiting	Several small ulcers in <i>stomach</i> , the largest about size of threepenny piece. Numerous ulcers from upper part of ileum to lower part of descending colon, in early stage. Mucous membrane thickened and ulcers "punched out." Numerous small brown extravasations beneath peritoneum of ileum	None.
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Name, physician, date.	Age.	Cause of renal disease.	Duration of renal symptoms.	Urine.	Kidneys, P.M.	Heart, P.M.	Retinæ.
Emily Potter. Dr. Dickinson, 1881	8	—	7 months	Albumen = $\frac{1}{2}$; alkaline	Interstitial nephritis; unequal in size. Bladder hyper- trophied	L.V. greatly hyper- trophied; weight 5 $\frac{1}{2}$ oz.	—
Emma Killick. Dr. Dickinson, 1891	53	—	3 weeks	Albumen = $\frac{1}{2}$; lithatic	Red, granular; weight 10 oz.	Hyper- trophy and dilation of L.V.; weight 17 oz.	—

Cases of Intestinal Hæmorrhage

Charlotte Rayner. Dr. Cavafy, 1887	40	Pregnan- cies (?)	7 months	Blood and pus	Granular, contracted; weight 6 oz.	L.V. hyper- trophied; weight 17 oz.	Albumin- uric retinitis
Edward Heath. Mr. Pick, 1890	42	—	—	—	Highly granular; cortices shrunk; weight 10 oz.	Enormous hyper- trophy of L.V.; weight 20 oz.	Hæmor- rhages in both
Elizabeth Lucy. Dr. Dickinson, 1890	47	—	12 years (?). 2 months (?)	Solid with albumen; scanty, bloody	Congested; cortices swollen; weight 16 oz.	Weight 12 oz.; recent peri- carditis	—
Henry Fowler. Dr. Whipham, 1891	43	Painter; gout	3 months	Albumen = $\frac{1}{10}$; pale; sp. gr. 1010	Granular, cysted; cortices shrunk; weight 9 oz.	Hyper- trophy of both ventricles; weight 23 oz.	—

Renal symptoms.	Bowel symptoms.	Ulceration, P.M.	Disease bearing on ulceration.
Swelling of face; no general œdema; wasting; much cardiac tension; gums spongy and bleeding	Vomiting, diarrhoea. Day before death sudden agonising pain in abdomen (perforation)	Recent peritonitis. Local extravasation of fæces. Small intestine from about the middle shows extensive erosions of mucous membrane, with several well-marked ulcers opposite the mesentery; three of these in the last foot of the ileum perforated; no thickening about them. Similar ulcers in cæcum and colon. Intestines deeply stained with extravasated blood; fæcal contents also blood-stained. <i>Stomach</i> shows an ulcer near the pylorus, of the size of a sixpence, surrounded by traces of old extravasation of blood	None.
Much œdema; systolic murmur at apex; hæmoptysis; fluid in pleura	"Indigestion" for 3 years before death	Several small ulcers in <i>stomach</i> , with several cicatrices of healed ulcers. Surface of stomach congested and covered with mucus	None.

in connection with Albuminuria.

Vomiting	None noted	Small intestine congested, and small patches of hæmorrhage in mucous membrane. No ulcers	None.
Repeated epileptiform fits after a fall	None noted	Numerous hæmorrhagic patches throughout large and small intestines, and also on stomach	None.
Acute œdema; suppression of urine latterly	None observed	Extensive ecchymoses in cæcum. No ulcers	None.
No œdema; asthma; epistaxis. Died of dyspnœa	None observed	Numerous submucous hæmorrhages in ileum. No ulceration	Cretaceous tubercle in right lung.

Name, physician, date.	Age.	Cause of renal disease.	Duration of renal symptoms.	Urine.	Kidneys, P.M.	Heart, P.M.	Retinæ.
William Werby. Dr. Whipham, 1891	61	—	7 months	Nearly solid with albumen; scanty	Small, white, smooth; not lardaceous; weight 12 oz.	Hyper-trophy of L.V.; weight 25 oz.; recent pericarditis	Advanced albuminuric degeneration; hæmorrhages
Richard Seymour. Dr. Dickinson, 1892	46	—	5 months	Albumen = $\frac{1}{2}$; scanty	Granular, cysted; cortices shrunk; weight 12 oz.	L.V. hypertrophied; weight 30 oz.; recent pericarditis	Small hæmorrhage in left
John Read. Dr. Whipham, 1892	37	Drink (?)	—	Albumen = $\frac{1}{2}$; pale	Small, red, granular, cysted; weight 6 $\frac{1}{2}$ oz.	Great hyper-trophy of L.V.; weight 18 oz.	—
John Reardon. Dr. Dickinson, 1892	28	—	1 month	Albumen = $\frac{1}{2}$; scanty	Tubal nephritis; congested; weight 13 oz.	Hyper-trophy of L.V.; weight 16 oz.	Hæmorrhages and inflammatory effusion

(For report of the discussion on this paper, see 'Proceedings of the

Renal symptoms.	Bowel symptoms.	Ulceration, P.M.	Disease bearing on ulceration.
Edema; bronchitis; dyspnoea; uræmic smell	None observed	Small submucous hæmorrhages throughout small intestine. A pigment mass in sigmoid flexure. No ulceration anywhere	Old vomica at apex.
Edema; arterial tension; dyspnoea	None observed	A few submucous hæmorrhages in ileum. Small pigmented area in ascending colon. No ulcers	None.
No œdema; alcoholic paralysis	None noted	Several ecchymosed areas in ileum. No ulcers	None.
Much dropsy; tense pulse; bronchitis; uræmia	None observed	Lower part of ileum and cæcum show numerous small submucous hæmorrhages. No ulceration or pigmentation	None.

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